Architecture Education in the Islamic World

Proceedings of Seminar Ten
in the Series
Architectural Transformations in the Islamic World
Held in Granada, Spain
April 21-25, 1986
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Seminar Participants

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His Excellency Jose Rodriguez de la Borbolla, President of the Junta de Andalucia

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His Highness the Aga Khan

Opening Statement
His Majesty the King of Spain Don Juan Carlos I

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Emilio Garcia Gomez

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William Porter

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Architecture and Society
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CRATerre
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Bangladesh
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Egypt
Abdel Mohsen Barrada
India
B.V. Doshi

Iran
Darab Diba

Syria
Aladine Lolah

Tunisia
Ali Djerbi

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Closing Remarks

His Highness the Aga Khan

Editor ....................... Ahmet Evin
Production Manager ........ Patricia Theseira

Cover Illustration Alhambra, The Hall of the Ambassadors, detail (photo: C. Norberg-Schulz)
Seminar Photographs: by Gary Otte


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Seminar Participants

His Majesty the King of Spain Don Juan Carlos I
Her Majesty the Queen of Spain Dona Sofia of Greece

His Highness the Aga Khan
Her Highness the Begum Aga Khan
His Highness Prince Amyn Aga Khan
Her Highness the Begum Sultan Mohammed Shah Aga Khan

Mr José Aguilera
Journalist
SPAIN
Radio Exterior de Espana
Prado del Rey
Madrid
Spain

Special Radio Correspondent for broadcasts to the Arabic-speaking countries.

Professor Adil Mustafa Ahmad
Architect
SUDAN
University of Khartoum
P.O. Box 321
Khartoum
Sudan

Chairman, Department of Architecture, Khartoum. Designed the residential complex of Omdurman Islamic University, and published widely on residential architecture in the Arab world.

Dr Jamel Akbar
Architect
SAUDI ARABIA
King Faisal University
P.O. Box 2397
Dammam
Saudi Arabia

Assistant Professor of Architecture
Vice Dean for Graduate Studies and Research

Professor Adeyinka Adeyemi
Architect
NIGERIA
House 7
Etsu Nupe Road
Main Campus
Amedu Bello University
Zaria
Nigeria

Head, Department of Architecture and School of Architecture, Zaria
Chairman, Board of Education, Research and Technology, Africa Union of Architects.

Professor Meen Mobashsher Ali
Architect/Engineer
BANGLADESH
Bangladesh University of Engineering & Technology
Dhaka 2
Bangladesh

Chairman, Department of Architecture
Director, Housing and Environmental Research Cell, Faculty of Architecture and Planning
<table>
<thead>
<tr>
<th>Name</th>
<th>Position/Country</th>
<th>Details</th>
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<td>Professor Mohammed Arkoun</td>
<td>Historian</td>
<td>ALGERIA/FRANCE</td>
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<td>2 Square Port Royal</td>
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<td>Director, Institute of Arabic and Islamic Studies.</td>
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<td>Investigator and practitioner of Islamic building</td>
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<td>Mr Rifat K. Chadirji</td>
<td>Architect/Planner</td>
<td>IRAQ</td>
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<td>In private practice; visiting scholar, Harvard University.</td>
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<td>Founder and President, Iraq Consult, Baghdad.</td>
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<td>Member of the 1993 Master Jury, Aga Khan Award for Architecture</td>
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<td>Honorary fellow, RIBA</td>
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<td>Author of Taha Street &amp; Hammersmith, Concepts and Influences.</td>
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<td>Mr Mohamed Chaker</td>
<td>Journalist</td>
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<td>Senior reporter of the Maghreb Arab Press for the</td>
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<td>Professor Charles Correa</td>
<td>Architect</td>
<td>INDIA</td>
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<td>Works include townships and major buildings in India</td>
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<tr>
<td>Mr Richard Cox</td>
<td>Author</td>
<td>UNITED KINGDOM</td>
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<td>Writer, Board Member of CARE Britain.</td>
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<tr>
<td>Mr Peter Davey</td>
<td>Architect/Journalist</td>
<td>UNITED KINGDOM</td>
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<td>Mr Rafael De La Hoz</td>
<td>Architect</td>
<td>SPAIN</td>
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<td>Professor Darab Diba</td>
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<td>Professor and former Chairman, Department of Architecture, Tehran</td>
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<td>University consultant, Ministry of Housing and Ministry of Culture</td>
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<tr>
<td>Professor Ali Djerbi</td>
<td>Architect</td>
<td>TUNISIA</td>
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<td>Institut Technologique d'Art</td>
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<td>Professor and former Director, Institut Technologique, d'Architecture</td>
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<td>et d'Urbanisme, Tunis.</td>
</tr>
</tbody>
</table>
Mr Alberto Donaire
Rodriguez
Escuela Técnica Superior de Arquitectura
Av Reina Mercedes s/n
41012 Seville
Spain
Professor of Architectural Projects,
Director, High Technical School of Architecture at the University of Seville
Head of the Seminar on "Structure and Ornament in Arabo-Hispanic Tradition"

Mr Riad El-Rayyes
Journalist
SYRIA

Al-Mostakbal
4 Sloane Street
London
United Kingdom
Senior writer for Al-Mostakbal.

Dr Abdewahed A. El-Waki1
Architect
Pleasant House
29, Mount Pleasant
London WC1X 0AP
United Kingdom
In private practice.
Consultant to Municipality of Jeddah and to Ministry of Pilgrimage and Endowment, Kingdom of Saudi Arabia.
Aga Khan Award recipient 1980.
Member of the 1986 Master Jury, Aga Khan Award for Architecture

Professor Mahdi Elmandjra
Sociologist
B P 53
Rabat, Morocco
Professor, University Mohamed V, Rabat
Former Assistant Director General for Social Sciences, Human Sciences and Culture, UNESCO
President, International Association of Futuribles
Member of the Club of Rome and of the Academy of the Kingdom of Morocco
Member, 1986 Master Jury, Aga Khan Award for Architecture

Mr Josep Esteve Armengol
Architect
C Major, 81
Cervera (Lérida)
Spain
Architect in private practice, specialising in traditional materials and techniques
Professor of construction techniques, School of Architecture, University of Grenoble
Member of CRA/erre.

Mr José Antonio Fernandez Ruiz
Architect
Carmenes de la Muralla, 46
Camino de San Antonio
18011 Granada
Spain
Technical Secretary of the Official School of Architects of Eastern Andalusia

Dr Emilio Garcia Gomez
Diplomat
Isace Peral, 1
28015 Madrid
Spain
Member of the Spanish Royal Academy, the Royal Academy for History, the Accademia dei Lincei (Rome), the Academy of the Kingdom of Morocco, the Academy of Tunis.
Former Ambassador to Baghdad, Beirut and Ankara
Minister in Kabul
Correspondent of the Academies of Cairo, Damascus, Baghdad and Jordan.
Mr Leopoldo Gil Nebot
Architect
SPAIN

Valls y Taberner, 5
08006 Barcelona
Spain

Director of the Superior Technical School of Architecture of the University of Navarra

Mr José Manuel Gonzalez
Vallcarcel
Architect
SPAIN

President, International Committee for Historical Towns, Toledo.
Vice President, ICOMOS, Spain

Professor Oleg Grabar
Art and Architectural Historian
USA

Fogg Museum of Art
Harvard University
Cambridge, MA 02138
USA

The Aga Khan Professor of Islamic Art, Harvard University
Member, Steering Committee, Aga Khan Award for Architecture

Professor Syed Gulzar Haider
Architect
CANADA

Carleton University
School of Architecture
Ottawa, Ontario K1S 5B6
Canada

Professor of Architecture
Member, Organization of the Islamic Conference (OIC), International Commission for the Preservation of Islamic Cultural Heritage, IRCICA, Istanbul, Turkey.
Member, Organising Committee, King Fahd Award for Design and Research in Islamic Architecture.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Employer</th>
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<tr>
<td>Professor Renata Holod</td>
<td>Architectural Historian</td>
<td>CANADA/USA</td>
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<td>Philadelphia, PA 19104</td>
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<tr>
<td>Associate Professor of Islamic Art, Architecture and Urban History</td>
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<td>First Convener, the Aga Khan Award for Architecture</td>
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<td>Member of the Steering Committee, 1980-1983</td>
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<td>Mr Anwar Hussain</td>
<td>Journalist</td>
<td>PAKISTAN</td>
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<td>Director, Current Affairs, Pakistan Television Corporation</td>
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<tr>
<td>Mr Hugo Houben</td>
<td>Engineer</td>
<td>BELGIUM</td>
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<td>Ecole d'Architecture de Grenoble</td>
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<tr>
<td>10, Galerie de Baladins</td>
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<tr>
<td>Senior Engineer, Training and Operations, CRATerre</td>
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<td>Chairman of the Post-Graduate Course on Earth Architecture at the School of Architecture of Grenoble</td>
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<td>Founding Member of CRATerre, Architechna and EsCo.</td>
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<td>Mr Hasan-Uddin Khan</td>
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<tr>
<td>Executive Editor of Mimar</td>
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<tr>
<td>Until 1976 in private practice on low-income settlements in Pakistan. Former Convener of the Aga Khan Award for Architecture</td>
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<td>Member of the Steering Committee.</td>
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<td>Partner, Zahir-Ud Deen Khwaja Associates.</td>
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<td>Founding member of the Institute of Architects, Pakistan.</td>
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<td>President, Lahore Conservation Society, Member, Board of Governors, National College of Arts, Lahore</td>
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<td>Mr Spiro Kostof</td>
<td>Architectural Historian</td>
<td>TURKEY</td>
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<td>958 Cragmont Avenue</td>
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<td>BERKELEY</td>
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<td>Berkeley, CA 94708</td>
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<tr>
<td>Professor of Architectural History, University of California, Berkeley</td>
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<td>Past President, Society of Architectural Historians</td>
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<td>Author, Caves of God, The Third Rome and A History of Architecture</td>
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<td>Dr Antonio Lamela</td>
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<td>28009 Madrid</td>
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<td>Director General, Lamela Urbanistica y Arquitectura, Service and Planning Consultants</td>
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<td>Professor Ronald Lewcock</td>
<td>Architect</td>
<td>USA</td>
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<tr>
<td>M 1 T Room N52-453</td>
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<td>77 Massachusetts Avenue</td>
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<td>Cambridge, MA 02138</td>
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</tr>
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<td>Aga Khan Professor of Islamic Architecture, Massachusetts Institute of Technology Technical co-ordinator for UNESCO campaigns, for Sana'a, Shibam and the Wadi Hadramat, Member, 1986 Master Jury, Aga Khan Award for Architecture</td>
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<tr>
<td>Professor Aladine Lolah</td>
<td>Architect/Planner</td>
<td>SYRIA</td>
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<td>Aleppo</td>
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<tr>
<td>Professor of Architecture and City Planning, Aleppo University.</td>
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</tr>
</tbody>
</table>
Seminar Participants

Professor Kum Chew Lye  Architect
HONG KONG

Knowles Building
Pokfulam Road
Hong Kong

Dean, Faculty of Architecture.
Head, Department of Architecture University of Hong Kong.
Tutor, A A. London

Mr Kamil Khan Mumtaz  Architect/Planner
PAKISTAN

18-A Mian Mia Road
Lahore 15
Pakistan

Practising architect.
Former Chairman, Department of Architecture, National College of Arts, Lahore.
Member, 1983 Steering Committee, Aga Khan Award for Architecture

Mr Pere Nicolas Bover  Architect
SPAIN

Almirante Oquendo, 13A
07014 Palma de Mallorca
Spain

Architect in the Ministry of Plastic Works and Urbanism

Professor Christian Norberg-Schulz  Architect
NORWAY

Slendalsveien 100
Oslo 3
Norway

Professor of Architectural Theory and History.
Rector, Oslo School of Architecture.

Mr Eduardo Ortiz Moreno  Architect
SPAIN

Cuesta Del Caidero, 4
18009 Granada
Spain

Architect in private practice
Consultant to the Ministry of Public Works and Urbanism

Dr Sıha Özkın  Architect
TURKEY

32, Chemin des Crêtes de Pregny
1218 Geneva
Switzerland

Deputy Secretary-General, Aga Khan Award for Architecture
Former Professor of Architecture and Theory of Design, and
Vice President, Middle East Technical University, Ankara

Mr Cho Padnasee  Architect
INDIA

179 West Heath Road
London NW3 7TT
United Kingdom

Course Director, M.Sc in Architecture, Bartlett School of Architecture and Planning, University College London
Formerly, Dean of Studies, Bouwcentrum, the Netherlands
Deputy Head, Development Planning Unit, London.

Professor Haluk Pamir  Architect
TURKEY

Faculty of Architecture
Middle East Technical University
Ankara
Turkey

Associate Professor of Architectural Design and Environmental Psychology.

Dr Mehmet Doruk Pamir  Architect
TURKEY

2771 Bagdat Cad. D:8
Güzepe
İstanbul
Turkey

Architect in private practice.
Formerly Professor of Architecture, Middle East Technical University and Pennsylvania State University
Member, 1986 Master Jury, Aga Khan Award for Architecture.
Mrs Tempa Perez de Guzman  Conservationist  SPAIN
Calle Betis 1, Atico
Seville
Spain
President, Amigos de Sevilla
Member of the Executive Committee of ICOMOS (Spain); of Pablo de Olavide; of the Hispanic Society Museum of America (New York); of the Metropolitan Museum of Art; and of the National Trust

Professor Attilio Petruccioli  Architect/Conservationist  ITALY
Via Goiran, 23
00195 Rome
Italy
Professor of Design, Faculty of Architecture, Rome
Director, Islamic Environmental Design Research Centre of Genzano di Roma

Professor William Porter  Architect/Planner USA
Room 10-390
Massachusetts Institute of Technology
Cambridge, MA 02139
USA
Professor and former Dean of Architecture, Massachusetts Institute of Technology
Member, Steering Committee, Aga Khan Award for Architecture

Mr Juan Ramirez de Luca  Journalist  SPAIN
ABC
Serrano 61
28006 Madrid
Spain
Architectural journalist

Workshop on Architecture as Art

Dr Fernando Ramos Galindo  Architect  SPAIN
Escuela Tecnica Superior de Arquitectura
Seville
Spain
Chairman of Architectural Construction studies
Director, Superior Technical School of Architecture, Seville

Dr Magdy Tewfik Saad  Architect/Planner EGYPT
P.O Box 13286
Amman
Jordan
Associate Professor of Architecture and Urban Planning, University of Jordan
Member of the Regional Planning Committee for the Five-Year Development Plan (1986-1990) of Jordan.
Member of the Jordanian Planning Consultants for the Sultanate of Oman.

Mr Manuel Ramos Guerra  Architect  SPAIN
Asuncion, 55-3A
41011 Seville
Spain

Dr Vicente Sanchez de Leon Pacheco  Architect  SPAIN
Torpedero Tucuman, 16
28016 Madrid
Spain
Dean and President, Official School of Architects in Madrid.
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Country</th>
</tr>
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<tr>
<td>Mr Carlos Sanchez Gomez</td>
<td>Architect</td>
<td>SPAIN</td>
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<tr>
<td>Pedro Antonio de Alarcon</td>
<td>Practising architect specialising in restoration of Arab and Moorish monuments.</td>
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<tr>
<td>Ms Mildred F. Schmertz</td>
<td>Architect/Journalist</td>
<td>USA</td>
</tr>
<tr>
<td>McGraw Hill</td>
<td>Editor-in-Chief, <em>The Architectural Record</em></td>
<td></td>
</tr>
<tr>
<td>Dr Ismail Serageldin</td>
<td>Architect/Planner</td>
<td>USA</td>
</tr>
<tr>
<td>2386 N Edgewood Street</td>
<td>Fellow of the American Institute of Architects.</td>
<td></td>
</tr>
<tr>
<td>Dr Sharon Siddique</td>
<td>Sociologist</td>
<td>USA</td>
</tr>
<tr>
<td>52-A St. Patrick's Road</td>
<td></td>
<td></td>
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<tr>
<td>Mr Tay Kheng Soon</td>
<td>Architect</td>
<td>SINGAPORE</td>
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<tr>
<td>Architect Tengarra</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08-3555, Bukit Merah Central</td>
<td>Block 162</td>
<td></td>
</tr>
<tr>
<td>Singapore 0305</td>
<td>Architect in private practice</td>
<td></td>
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<tr>
<td>Professor Said Tazi</td>
<td>Architect</td>
<td>MOROCCO</td>
</tr>
<tr>
<td>Ecole Nationale d'Architecture</td>
<td>Chaire Erraha Terre Plein Hassan</td>
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<tr>
<td>Rabat</td>
<td>Director, Ecole Nationale d'Architecture</td>
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<td>Morocco</td>
<td>Head of the Architectural Research Department</td>
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<td>at the Ministry of Housing</td>
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<tr>
<td>Professor Ilhan Tekeli</td>
<td>Civil Engineer/Planner</td>
<td>TURKEY</td>
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<td>Faculty of Architecture</td>
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<td>Middle East Technical University</td>
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<td>Turkey</td>
<td>Professor of Regional Planning, Middle East</td>
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<td>Technical University</td>
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<tr>
<td>Mr Gerard Wilkinson</td>
<td>Journalist</td>
<td>IRELAND</td>
</tr>
<tr>
<td>Aiglemont</td>
<td>Head, Department of Information and Publishing, the Secretariat of His Highness the Aga Khan.</td>
<td></td>
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<tr>
<td>Dr Said Zulficar</td>
<td>Historian/Conservationist</td>
<td>EGYPT</td>
</tr>
<tr>
<td>32, Chemin des Crêts de Perny</td>
<td>Secretary General, Aga Khan Award for Architecture</td>
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<td></td>
<td>Formerly Programme Specialist, Division of Cultural Heritage, UNESCO</td>
<td></td>
</tr>
<tr>
<td>Mr Chérif Zaouch</td>
<td>Engineer</td>
<td>TUNISIA</td>
</tr>
<tr>
<td>Tunisian Institute for Appropriate Technology</td>
<td>President, Tunisian Institute for Appropriate Technology</td>
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<tr>
<td>Mr Wolf Tochtermann</td>
<td>Architect/Planner</td>
<td>GERMANY</td>
</tr>
<tr>
<td>UNESCO</td>
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<td></td>
</tr>
<tr>
<td>7, place de Fontenoy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75700 Paris</td>
<td>Programme Specialist, Division of Population and Human Settlements, UNESCO</td>
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Welcoming Remarks

His Excellency Antonio Jara Andreu
Mayor of Granada

Your Majesties, Your Highnesses, Your Excellencies, Dear Friends,

Once again I have the pleasure of beginning my speech by saluting with respect and affection the presence of the King and Queen of Spain in Granada. With their constantly supportive stance and their uncompromising message of modernity and progress to all the people of Spain, they are a welcome, necessary, and, if I may be permitted to be extremely frank, a very useful presence for all Spaniards who work every day to improve that lively and fertile reality known as Spain.

On yet another day and in the name of all the citizens of Granada, with great affection and devotion I welcome you, Your Majesties.

With the same pleasure, this morning I have the honour to salute the presence in Granada for Your Highnesses the Prince Aga Khan and the Princess Begum Aga Khan Your Highnesses, together with our warmest welcome, please accept the hospitality that Granada offers. This is a city that is proud to have been a meeting place, a place of peaceful co-existence of peoples and cultures. We are happy to have you in our city, and we would like you to feel at home with us. May Granada be like home to you. Welcome.

Dear Friends, as before Istanbul, Jakarta, Fez, Amman, Dakar and Cairo and, today Granada receives you with obvious pleasure and, if I may say so, special hope for good results from this Tenth International Seminar of the Aga Khan Award for Architecture.

Few tasks are as noble as the effort to reconcile tradition and cultural diversity with progress and the achievement of a better quality of life for all citizens. To promote the consideration of the nexus, history-culture-living space, is always necessary effort and one that deserves applause. I wish you success in your work.

We hope that Granada may contribute to the accomplishment of your noble objectives. Particularly this city which has suffered, and sometimes still suffers, from the effects of architectural ignorance, an urban space that has historically been subject to intolerant and traumatic interventions, would feel itself honoured if some day, in the near future, it would merit the attention of a seminar devoted to it by the Aga Khan Award, like the one it welcomes.

Your Majesties, Your Highnesses, Dear Friends, in the name of the municipality and the people of Granada and in my own name, once again welcome.
Welcoming Remarks

His Excellency Jose Rodriguez de la Borbolla
President of the Junta de Andalucía

Your Majesties, Your Highnesses, Honourable Guests, Ladies and Gentlemen,

Before beginning my brief speech, I would very much like to express my great pleasure in having Their Majesties the King and Queen of Spain present at the official opening ceremony of the Aga Khan Award Seminar on Architecture Education in the Islamic world, organised under the auspices of His Highness the Aga Khan. With such prestigious patronage this seminar is surely destined to be a success, an achievement that will only be further enhanced by the presence of outstanding personalities and renowned specialists who are here with us today. I would like to wish you all a pleasant stay in Granada and in Andalusia, hoping that together with the fruits of your labour here, you will return to your homes with pleasant memories of Andalusian hospitality.

A more appropriate setting in which to hold this seminar would have been difficult to find, considering the topic that will be discussed. Your deliberations are surely to be enhanced by the magical atmosphere of the setting. Granada and Architecture, Andalusia and the Islamic world, are concepts and realities linked by strong historical and aesthetic affinities.

As you all know, Andalusia was, from times immemorial, a distant lodestar to the West for those venerable civilisations that ventured to travel towards the dazzling Mediterranean lights. The ancient and endearing Hispanic soil became a land longed for by many, attracting peoples of different races, customs and beliefs. The region was soon transformed into a universal cultural stage: a true melting pot of fruitful interchange. But in the long and cosmopolitan history of Spain, the Islamic period has a special place. Almost eight centuries of Muslim rule made a definitive mark in the memory of the Spanish people. Andalusia and her people would most certainly lose some of their special characteristics were this splendid moment in Spain’s history simply ignored. It would be impossible to understand the characteristic traits that define us, our way of living or the words we use to express ourselves, without referring to this past.

Moreover, the most outstanding artistic and architectural expressions created on Andalusian soil bear the indelible mark of the Islamic period. I am not just referring to the impressive dimensions of Cordoba’s Mosque, the vertical gracefulness of the Giralda or the Nasrid splendour of the Alhambra and Generalife of Granada; I am also referring to the rugged enchantment of Rhonda or of Priego de Equeza. Andalusian cities preserve a singular architectural style which may serve as a model capable of meeting contemporary needs for space and sociability. The open, tolerant and straightforward Andalusian character is partly shaped by those cities in which her people live. With the discovery of America, the region’s people transmitted their building forms and technology to the new land, along with Islamic designs. Arches, roofing and skirting-boards in Mexico or in Quito share a common background with Islam, which from the Amazon to the steppes of Central Asia, has inspired one of the most universally disseminated architectural styles.

Andalusia and the Mediterranean countries lie at the centre of a unique aesthetic crossroads. When today’s Europe heeds the mysterious call from the South, with its meridional attractiveness, the people who make up a part of this privileged universe, will do their utmost to transform it into a harmonious one, a peaceful frontier of culture, progress and tolerance.

Together with the achievements of this Seminar, I would like to express my hope that this higher objective may also become a reality.

Thank you very much.
Opening Speech

His Highness The Aga Khan

It is the greatest privilege for all those concerned with the Aga Khan Award for Architecture that Your Majesty has graciously consented to preside over the inauguration of this seminar. Your honouring us today is not only an affirmation of the importance which Spain attaches to preserving her magnificent architectural inheritance. Your presence symbolises support for a wider concept: that the cultural heritage of the world is a global responsibility and that the richer, more industrialised nations should be concerned for the cultures of the less developed ones.

Your Majesty, your welcoming us to this legendary Palace of the Alhambra is a vivid reminder that Spain is uniquely qualified to foster such understanding. Your country protects some of the most beautiful manifestations of Islamic architecture. At the same time the living links your own civilisation maintains internationally through its achievements, faith and history and the constant renewal of its energies can give inspiration to the parallel efforts of those seeking to revive the creativity of Islamic culture.

Thus the famous city of Granada is the right place in which to hold a seminar concerned with a key aspect of the re-invigoration of Islamic architectural practice: the education of architects.

Your Majesty, some of this distinguished audience may wonder why I should be sponsoring such a seminar when I am neither an architect nor an educator; when, at best, I am probably no more than a rather difficult client of architects.

The reason is that, as a client, I have long been aware of how acutely the built environment which we inhabit affects the qualities of all our lives, whether we are Christians or Muslims, rich or poor. To prove satisfactory and stimulating the multifarious structures comprising that environment must express the ethos of its civilisation.

The starting point for the Aga Khan Award for Architecture was a realisation that changing social and economic conditions, coupled with the accelerating pace of technological development, were inflicting upon the world’s 800 million Muslims an environment which often did not reflect their culture’s life-styles, their faith and hopes or even the demands of the climates in which they live.

Accordingly, since its foundation ten years ago the Award has sought to focus professional and public attention on directions in architecture which will enrich the physical environment of the Islamic world.

As part of this process the Award has organised a series of seminars on contemporary architectural issues. There was previously no established international forum for the discussions and analysis of problems facing those who design for Muslims.

The seminar which Your Majesty is inaugurating today is in many respects a culmination of all the work that has gone before. The education of architects is the key to the profession’s competence; its attitude towards its role and responsibilities; and, especially, to its social, cultural and environmental sensibility.

In the past the horizons of architectural education have often been limited to principles of construction and the aesthetics of design and decoration. The Award seeks to stimulate architects to think and learn more widely about their art; about the vast spectrum of sources from which they legitimately can and should draw inspiration; about the impact their work will have on the future of the societies they serve.

Through exchanges of information the Award can promote understanding of the Islamic design vocabulary and the cultural and humanistic implications of the Islamic faith relative to its built environment. An architectural language is usually a distinctive trait of any major culture and continuity in the culture requires continuity in the evolution of that language.

Whilst a broader based education embracing cultural, demographic and economic influences will improve the student’s comprehension, later in his career he is likely to need more specific qualifications. Such buildings as airports and hospitals, corpo-
rate offices and hotels, even sports facilities, have become so closely focussed on the activities they support that each has its own high technology. The architect's professional upbringing must probably now cater both for a wide basic learning and a narrowing toward specialisation as he progresses.

Because the Award is not an educational institution, I established the Aga Khan Program for Islamic Architecture in 1979 jointly at Harvard University and MIT. Its aim is to promote research and teaching in Islamic art, architecture and urbanism. Two aspects of the Program's work deserve mention here. One is the compilation of an illustrated, analytic archive, recording Muslim built environments and accessible to students. The second is the development of relationships with schools of architecture in Islamic countries: in my view a vital activity. I am delighted that experts from the Program and noted academics from other schools are contributing to the theme lectures, case studies and workshops of this seminar.

Students who later practise outside their own countries or cultures will face unfamiliar considerations which you, the educators, can help them understand. Whether they serve Hispanic, Far Eastern, African or other societies, or whether they work in the Islamic world, they will have to emphasise with that civilization's cultural base and bridge a vast gap between it and the predominantly Western idioms and technology which have become the stock in trade of so-called "international" architecture.

This is not the moment to recall the historic origin of this gap; the point is that the situation is now changing. Within the Islamic world, it is increasingly being recognised by the politicians, financiers, industrialists, planners and architects who control development that architectural idioms which reflect Muslims' social patterns are compatible with an improvement in their quality of life; indeed, are likely to be a pre-condition of such betterment. It has been a major concern of the Award to promote that recognition.

One fundamental issue is the evolution of a design language capable of satisfying Muslim values. This does not mean copying the outward forms of the past. For example, the Master Jury has premiated the Kuwait Water Towers as being advanced technologically whilst enhancing the Islamic architectural vocabulary.

However, it is not only in the realm of technology that we must seek appropriate design. The vast majority of Muslims are rural dwellers and are poor. For them the self built house has always been the principal form of shelter and it is certain to remain so. But this need not exclude these people from the benefits of modern architectural practice.

The architect can have a valued role in Third World rural development by being the professional who both enables development to take place and raises its standards, by assisting villagers to build more effectively for themselves.

Such guidance can involve complex factors. Safety, from fire and seismic disturbance; health, improved through protection against climatic extremes and through proper ventilation; sited concepts that conserve productive agricultural land and the cost-effective concentration of services. The architect-planner must re-examine local materials which the vernacular architecture employs, but which are often eclipsed in the minds of developers by concrete, glass and steel, and suggest a blend which is viable aesthetically, technically and in price. He will have to regard dormant traditions as domains of knowledge with contemporary relevance.

And what of the rural immigrants who crowd inexorably into the Third World's cities with no comprehension of the patterns of life and space which used to make city living tolerable?

By the year 2000 — already uncomfortably close — there are expected to be fifty cities with populations over fifteen million. Forty of those fifty are in the Third World. Many are Muslim or have substantial Muslim communities. One has only to study projections for the growth of Cairo or Jakarta to appreciate that urbanisation is likely to be the outstanding architectural and planning issue of the early twenty-first century.

Unofficial housing in cities reveals elements of poverty, lack of facilities and uncontrolled — often unsafe — housing that are also found in villages. This comparability was demonstrated by the effectiveness of simple indigenous techniques in the Jakarta Kampung Improvement Programme, which the Award also premiated.

Will the rising generation of architects have been educated to participate in the re-structuring either of the cities or the rural areas? Will they be able to do so within the terms of a specific culture?

Only the educators can provide the tools of knowledge with which the coming generation of architects will address these issues.

In most of the Islamic world formal architectural education — as opposed to apprenticeship — is a relatively recent phenomenon. What we are seeking of those who will build in the Islamic world is a sympathetic approach to our culture and faith: a willingness to share in finding solutions to changing circumstances.

Your Majesty, through your generous patronage this week's discussions are being held in the Alhambra at the heart of a fabled Spanish city: appropriately linked symbols of the great cultures, both of which have had an enduring impact on the built environment of the world, both of which must educate their architects to face the challenges of the coming century. If this Seminar can contribute to a revival of Islamic architecture which emulates the superb continuity of Hispanic achievement, then this activity of the Award will have fully served its purpose.

Your Majesty, it is my honour and privilege to ask you to declare these proceedings open.
Opening Statement

His Majesty The King of Spain
Don Juan Carlos I

Your Highnesses, Ladies and Gentlemen,

The Queen and I are both very happy to be in this beautiful city of Granada and to have the opportunity of meeting the members of the Steering Committee of the Aga Khan Award for Architecture that today begins an international seminar.

The support which the Award offers for the preservation of the various cultural traditions of the Islamic World, especially regarding buildings and towns is worthy of the highest praise and admiration.

The accomplishments of the Award in suggesting future directions for Islamic culture and at the same time contributing to its conservation and diffusion are manifested in the awards given every three years, the studies and publications that are realised, the seminars that are organised and the funds so generously donated.

The links of our Arabic heritage with the Islamic world make even more interesting for Spain the attention that the Aga Khan Award for Architecture directs to our country, where so many samples of a common historical past are to be found.

I thank the Steering Committee of the Award and especially, His Most Serene Highness, Prince Karim Aga Khan, for selecting this magnificent setting of the Alhambra, so full of evocations and memories, to celebrate this international seminar.

I warmly greet, in the name of the Queen and in my own name, the distinguished personalities who will take part in this seminar, wishing them all a happy stay in our country, and I offer my best wishes that the results of the sessions that commence today be very brilliant ones.

I hereby officially inaugurate the seminar on "Architecture Education in the Islamic World" of the Aga Khan Award for Architecture.
Keynote Address

Emilio Garcia Gomez

Destiny is inscrutable and Time is fraught with unpredictable vicissitudes, what the Arabs call duwala. A favourable gust of wind, which a few years ago took me to the Mosque of Cordoba to speak on the occasion of receiving an honorary doctorate, has brought me today to take the floor, in the presence of my King and of a Prince who is Imam of the Ismails and a descendent of the Prophet, in no less a place than the heart of the Alhambra, facing the inscription of a poem by Ibn Zamrak whose spirit has accompanied me through half a lifetime. Your Highness it would be presumptuous of me to voice my approval of your choice of the Alhambra as the venue of this seminar, but it is not impertinent on my part to express my respectful gratitude to Your Highness for this choice. Related to the important fields of study that the Aga Khan Award promotes, the Alhambra complements two of the prior settings, which I know very well: the Shalimar Gardens in Lahore, that are unrivalled save by those of the Generals and, the Palace of Topkapi in Istanbul, unrivalled in its situation. They constitute a marvellous triad.

Historically, the Alhambra is the only remaining Muslim royal palace from the medieval times. But its survival would count for little were it not for its great beauty, and especially for us, were it not the fact that the Alhambra combines not all (for the domain of Islam is vast) but, certainly, many of the characteristics that meet together in its great art.

It is to some degree true that royalty and architects in the Islamic world did not build with blasphemous audacity for eternity, because they knew that all is perishable save the Countenance of God (kulha fanin illa wahtu-hu). The Alhambra, too, is fragile and has survived only by a miracle. In essence, it is the great tent that the nomadic sheikh pitches in the desert, upon stout poles, but garnished with exquisite carpets, represented in the pavilion of the Alhambra by ornamental and glazed tiles, columns, star-sprinkled plastering and escutcheons, eaves of precious wood and muqarnas.

If a golden rule for sound building is integrity of materials, which must not disguise themselves or dissemble — as men should not do either — the Alhambra is free from falsity. Just as we say in common parlance “for bread, bread; for wine, wine”, so, too, the Alhambra calls plaster, plaster; sun-dried brick, brick; glazed clay, tiling; the wooden roof, woodwork. But, what it does do is to project onto those ordinary materials the light of supreme perfection.

The great Islamic sovereigns, true to the principle that everything is ephemeral, did not take their seats upon a traditional throne. Instead each, while respecting the work of his ancestors, renovated his own surroundings and there pitched his tent. The Nasrid kings in their creative period, the fourteenth century, did not depart from this rule. I hold it to be incorrect that the renowned Tower of Comares now before our eyes, the work of the great Yusuf I, was the definitive official seat of his monarchy. In a very recent work I have pointed out for the benefit of the scholarly community, and in a forthcoming book I shall do so for the general public, that the Court of the Lions was not, as was thought, either a private residence or a harem, but a new ceremonial and administrative quarter, a new mashwur (council chamber), created by Mohammed V. It is smaller, but more elegant and refined. In truth, in this quarter Charles V pruned the Arab constructions with a far sharper hook than is thought, and consequently, he shut off their light. I hope to prove it.

No one has been able to establish incontrovertibly that the Holy Writ of Islam contains an absolute injunction against the representation of living beings. The question goes much deeper. In Islam, as also in other Oriental spiritual traditions of which it is the heir, there has always been an aversion to any sacreligious attempts at imitating the Creator. Hence, the absence of plastic arts, and moreover, in ancient literature, the absence of the novel and drama. The ornamentation tends towards inanimate abstraction, and it is curious how, after all these centuries, the troubled West is showing a convergent trend. In the Alhambra this predisposition to favour abstraction translated into practice reached its peak. There are exceptions: the stylised lions of the fountain that lock towards the ancient Orient; and the later paintings of the Hall of the Kings, the work of an Italianate brush. Aside from these anomalies, the only living thing represented in the Nasrid palace is the word: religious phrases, eulogies and poems, which I have just finished translating into Castilian verse. But in Islam the word lives; it is life, as is the alphabet. The rest is sublime geometry, from the floor paving to the coffered ceiling: glazed tiling, plaster mouldings, cupolas with muqarnas and ceilings intricately carved. To decipher them we have to read Arte de la Laceria by Prieto Vives (the only name I cite, because his book is undeservedly neglected). Their detailed interpretation involves enigmatic calculations, and they are not precise ones. But for the simple spectator the fascination of beauty suffices, not forgetting the colour, which must have been delicate and brilliant.
From the calligraphic inscriptions we know that the gilded letters glittered amidst ornamental plasterwork of ultramarine blue, or ground lapis lazuli. As for the mural ceramic work, either it evoked a coloured sea, according to Arab metaphors, or, for a Western viewer, Harlequin costumes out of which, due to a horror of anthropomorphism, the body of Harlequin has escaped. Never had there been such beautiful decoration in the past, nor was there to be again in the future, despite its mechanical adoption in North Africa.

We know that Islam is less ascetic than other creeds and not only permits but even encourages the enjoyment of God’s ephemeral gifts in this world. It is even said in the Koranic depiction of Paradise that its fruits will resemble those of the Earth (les nourritures terrestres). Hence the fondness of Muslims for naturalism. The most resplendent light enters the Alhambra, turning some of its halls into wondrous lanterns (others are left in semi-darkness), or, if we listen to the sounds, into gigantic bells. From what we now call The Tower of the Peinador de la Reina, also the work of Mohammed V, it was said that, apart from its function as a lookout post for spying, it allowed one not only to see the houses of Granada’s citizens but also to hear their inhabitants cough. Hence the Nasrid garden, whose miraculous prototype is the Generalife, hortus clausus, a tapestry of vegetation, a foretaste of Paradise. And, there was water to supply palaces and gardens, the delight of those whose ancestors had been thirsty nomads; water brought from the mountains, not much, for it was not abundant, but enough to seem abundant, flowing softly or precipitately and gushing out in fountains and springs.

In their attitude towards water the Arabs were like those money-changers in the old Flemish paintings caressing their little columns of gold coins. There is no more moving sight than that little “water stairway” in the Generalife, whose handrails are inverted tiles down which the water runs bubbling in miniature cascades.

I have tried, with necessary brevity, to make the point that, while the Alhambra does not exhibit by any means all the characteristics of Islamic art, it does to an excelled degree combine many of them, and resolves not a few paradoxes.

There is, in fact, a conflict between economic poverty (and hence, poverty of materials) and art. But we know that art, as unpredictable and fleeting as time, comes to rest where it pleases and for as long as it chooses, just as a people’s cultural apogee does not always coincide with the zenith of political power. Some see a contradiction between artistic refinement and defensive and martial vigour. I do not agree. When King Abdullah of Jordan visited the Alhambra in 1949, he remarked as he left, stroking a column in the Court of the Lions, “Now I understand why the Arabs left Spain”. It was the comment of a Bedouin, as he called himself. But, in the Topkapi in Istanbul, there is a picture by Sinan Bey which shows Mehmet II, the proud conqueror of Constantinople, bringing towards his nostrils an exquisite little rose. False analogies are also invoked to suggest, for example, that refinement encourages voluptuous sensuality, and from this the Alhambra’s reputation has suffered greatly at times. I do not see the connection. When refinement is so subtle as the Alhambra’s, it seems to me a sign of majesty. Inside, with its polychromy gone, the Alhambra is now white, as are many Greek statutes, for monuments grow old like people, and it is not necessary to colour their white hair. But, outside it is red. Its name (a very ancient one, far antedating the Nasrids) means precisely that: “the red one”. What is curious—I refer to a strange coincidence that I have never seen properly stressed—is that the last dynasty to reign in it were called the Banu’l-Ahmar, meaning “Sons of the Red”. Red was the heraldic colour of the monarchs of Granada, who we know even wrote officially on red paper (“scarlet letters”). White and red! They are the colours of majesty. The ancient imperial mantles were purple with an ermine lining that showed at the cuffs and collar, as the snows of the Sierra Nevada form the background to the blood-red Alhambra.

Another main colour of the Alhambra is the green of its grove. The grove is, of course, Christian: the Alhambra’s greenery was all within its walls, for the idea of a fortress in use being surrounded by leafy trees, providing ideal hiding-places and protection for enemies, is a sheer absurdity. The Christians, in love with the Alhambra, wrapped it in the dark, quivering emerald of the grove as if with a protective quilt. I once said that even the magnificent fortified Palace of Charles V was the stone pillow presented by the Crown of Spain to the plaster Alhambra for its delicate and feminine frailty to rest upon.

If Your Highness were to ask any citizen of Granada, or any Spaniard, about the Alhambra, he will tell you that it is Arab, but at the same time, viscerally Spanish. It has spent more time with us that it has with the Arabs. It is bonded to us, to that complex organism called Spain. And there you have the solution to the last and abiding contradiction of this monument. How can the Alhambra, in all its fragility, have come down to us almost intact? The answer is: because it was loved by the Monarchy who made it a royal residence, by the nobility who lived in it, and by the commoners who once occupied it — by all. The Alhambra lives on because it has been protected by the strongest binding force that resides in human beings; it has been preserved by love.
Introduction

William Porter

Our keynote speaker, Garcia Gomez, used the Alhambra as a metaphor for architecture. Architectural educators should then be the custodians who would keep architecture open to the many arts, free from falsity, refined and elevated in its taste — through love of architecture and of all it serves. If they are to merit this lofty designation, the educators must be able to answer positively His Highness the Aga Khan’s probing question: “Do professors and educators have a fundamental relationship to the society in which they live?”

Repeatedly during its discussions the Steering Committee of the Aga Khan Award has questioned whether architectural education reflected the special circumstances of architecture in the Islamic world, and whether, if not, it could prepare architects to function effectively there. Rapid development characterises many countries; Western products, and systems of thought, governance, and commerce have inserted themselves abruptly; poverty and conflict dominate many regions; and there seems to be little cultural ballast. Moreover, architecture, as it has generally been practiced in the West, seems little concerned with regional and cultural specificity, and careless about the sources and uses of the technologies that it utilises. It was against this background that the AKAA Steering Committee decided upon the topic of architectural education for Muslims and for those practicing in the Islamic world.

Ideological questions arise around the seeming dichotomy between secular and religious approaches to education, symptomatic of a fundamental rupture with the traditions of Islamic thought and understanding. Contemporary interpretations of faith in the Islamic world create methodological as well as political and ideological difficulties that hamper further critical analysis.

Judgments of art and the artistic content of architecture depend crucially on understanding the complex mechanisms of political and ideological power, on an understanding of the memories, dreams, aspirations, ideals, and visions of a society, and on evidence drawn from each locale by skilled researchers. Indeed art may be a route to the most profound mythic expression of a society, but it is blocked unless each society becomes more self-reflective, more open to the research and thought of scholars from anywhere in the world, and supportive of exchange of ideas among all scholars and educators.

Current programmes of architectural design seem implicitly to focus the role of the architect on too narrow a range of problems in society, unresponsive to poverty, emergency, and stern climate that the majority of Muslims suffers, and unused to dealing with the clienteles in greatest need. And technology, as taught in architectural curricula, is not persuasively linked to materials and techniques that are available and appropriate in many regions of the Islamic world; instead it is often linked, at least implicitly, to architectural forms found in Western countries and the technologies that support those forms.

The papers, presented under “Approaches to Education,” and the discussions that followed raised these and related issues that challenged both the superstructure and the foundations of architectural education — its organisation as well as its content. In the case studies, discussed under “Experience,” the seminar was treated to a wide variety of educational practice and theory. Through the cases came evidence of directions of change as well as evidence of culturally based concerns that have been part of architectural education in Muslim countries for years. Many teachers are not engaging their own regions increasingly in their teaching, drawing upon local and traditional ways of building and designing for ways of living more reflective than before of the range of conditions in their societies.

Many ideas emerged from the Workshops under the section “Looking Ahead” for how to improve education, but some of these ideas raise as many questions as they provide answers. Some of the suggestions were to get a wider variety of expertise than at present into studio teaching, especially to include historical, cultural and sociological perspectives; to develop a common vocabulary of working concepts in architecture and to reintegrate theory and practice in design based on local modes of production and aimed at satisfying locally defined needs; and to teach technology in ways that address both traditional and local technologies as well as modern industrial technologies and in ways that are strongly related to architectural form-making.

Additional suggestions focused on changes that would lessen the rigidity of the curricula and that would release administrative constraints that in many countries, for example, prevent teachers from practicing.

There were also suggestions for new research centres, summer training programmes for teachers in each of the several areas addressed by the papers, and exchange programs for teachers and researchers; for prototype buildings as demonstrations of and catalysts for new thinking in architecture; and even for a “new Bauhaus” with the mandate that “architecture must turn to the whole society.”

But perhaps the strongest idea that emerged was the need for a continued “space of freedom” for architectural educators to discuss these matters, to carry out trial reforms in education, and to come together periodically to discuss and evaluate them in a spirit of optimism and mutual support. And the need also emerged to reach the public or, more precisely, the various publics that the universities and architects can address in order that, in the closing words of His Highness the Aga Khan, “our space of freedom, of thought and debate isn’t restricted to the seminars, but becomes part of our everyday lives and of the people with whom architects are working.”
The Education of the Muslim Architect

Spiro Kostof

This is my first direct involvement in the proceedings of the Aga Khan Award although, thanks to their exemplary published record, I am, of course, familiar with the nature and particulars of the concerns of the Award. And as a newcomer, it behooves me first to introduce myself, which is to say, to justify my presence in your midst.

I am the child of a Greek family, born and raised in Turkey. I have, therefore, first hand knowledge of an estimable Islamic country, and also of the concepts underlying the dar-al-Islam, the millennial gift of that religion to secure under its aegis a community of disparate peoples and cultures.

My home town is Istanbul, the great city of Constantine, Justinian, Fatih, Suleyman and Ataturk. It is this city that engraved upon my mind, before all else, the power of historical continuities, of the remarkable ability of urban fabrics to bestir and adjust themselves through time, transcending the specificities of one tradition and living on to host another.

By training and practice, I am an architectural historian who believes his primary task to be the effort to recreate and convey the actual processes of designing, building and using the man-made environments of the past. I understand architecture to mean, quite simply, all buildings, the standard and the fancy, and their arrangement into landscapes of form. In my work I am concerned with context and ritual, with uses and users.

There are, in my view, two sides to the history of architecture, and they are inseparable — or should be. That history is, first of all, the documented account of, and commentary upon, our built world. But people lived in these places — and still do. They have played and prayed and died in them — and still do. I consider it my professional imperative not to excise their story, not to speak of architecture as if it were a collection of empty, pretty shells. It is with that story that the history of architecture becomes a moving dialogue between ourselves and the place and time of our inquiry, and the historian a sort of moderator, an interlocutor if you like, between us and them.

Recently I published a general history of architecture with some of these directives in mind. In it I spoke of houses and monuments of the public realm, and of Muslim, Christian and Hindu architecture and their concurrence. I paired Florence with Cairo, Venice with Istanbul. I tried to look at the protean physical responses of world cultures to the common urgencies of human existence — faith, death, power and the anxiety of being abroad in a realm not entirely of our own making and beyond our comprehensive understanding.

More to the point for this seminar, I put together, ten years ago now, a book on the history of the architectural profession, which has much to say about the education of the architect, and even a little bit to say about the architect within the culture of Islam.
Finally, you might wish to know in this *apologia pro praestantia sua* that since 1965 I have taught history in the school of architecture of the University of California at Berkeley, and that my repertory includes a course on Islamic architecture offered intermittently and with special fondness, more as a labour of love than because of any claim to pre-emptory scholarship. The course is popular, and most of the students who take it are of course non-Muslim. They take it, at the most ephemeral level, because the material is different, exotic, unfamiliar, visually appealing. But somewhere along the way I invariably glimpse a deeper motivation. In attending lectures, they are engaged in a reflective protest against the authenticated roll call of their own Western tradition, its seeming determinism; and so they expiate the stealthy knowledge that prejudice, chauvinism and the imperialist urge breed as readily at drafting tables as they do in the workings of regimes and the uncharted regions of ill-education minds. In the end, we are what we know.

I rehearse all this in order to lay bare the background for the remarks I have prepared by way of a prelude to your deliberations on the education of the Muslim architect. I realise that the title of the seminar is given as “Architecture Education in the Islamic World”. But those of us who teach Muslim students in Western institutions should not presume to know how it should be done in their home countries, or if, indeed, there has to be an architectural education in the Islamic world distinct from what that education should be in the Western world. If this is not the case, then the venue of that education should be of little consequence.

What is there, I wonder now, more to being a Muslim architect than that one is born and raised within the fold of Islam, which, as we know, ranges in intensity from the fundamentalist to the secular? Does it involve more than being desirous of contributing one’s talents to that great commonwealth of faith—a contribution which can itself range from doing architecture in an Islamic country in an Islamic mode, to doing good architecture anywhere, the excellence of which will ultimately enhance the fortunes and influence of Islam? I remember Mr Correa, in one of your seminar reports, saying that it was Le Corbusier’s work in India that blazed a trail for a whole generation of young Indian architects creating Indian architecture, and I have testaments of the trail of Hassan Fathy across the landscape of Western campuses galvanising the sensibilities of Western architects and their students with the fervour of his message.

Obviously I am manoeuvring myself into a position where I can argue, for the subject at hand at any rate, that the disjunction between East and West has been overdrawn. By this I do not at all mean that students from Islamic countries are well served by attending foreign schools of architecture, or others closer to home modelled after them. I mean, rather, to raise two immediate points of commonality.

There is, to state the more obvious point first, no standard model in the West for the teaching of architecture, though there are some shared teaching methods, such as the indestructible tradition of the design studio; and I am sure this is the case in Islamic countries as well. So here we have a commonality of confusion, if you will, or, to sound positive about it, of pluralism.

More importantly, the dilemmas confronting the educators and students of architecture in the Islamic world in the last twenty years are more fully matched in the West than is generally conceded. Our architecture, too, has been through a long history-denying phase which caught up with us in the acidic ferment of the 1960s. We, too, have struggled to mitigate the often heartless, problem-solving, aloof orientation of an internationalist technocracy by pleas for consideration of the unempowered, searches for cultural anchors in the surging tides of efficient and formulaic uniformity, care for the needs of users and the encouragement of participatory processes. And, when programmes such as the Aga Khan Award set out to restore a sense of historical depth to the making of a modern Islamic environment, we, too, had finally stemmed the culture-resistant asceticism of the Modern with a Post-Modern defence of place and time.

So we may, after all, be in the same boat. The upheaval of the post-industrial era brought a crisis of culture to both of us, to the West earlier and in more protracted fashion. We went through the long succession of historicist exercises called “revivals”—Greek and Gothic and Romanesque and Egyptian—in search of a mythic womb, of a way to hold on to what we knew we had achieved, while plunging to a new and fearsome adventure whose outcome we could not see. That search for us has yet to end. The East confronted a similar crisis more precipitously, but with similar reactions.

The main architectural question for all of us, in the East and in the West, may well be the same, central one of how we educate young men and women who wish to practice the venerable profession of architecture in the overwhelmingly complicated enterprise of our day.

I have some thoughts to share with you on this head. They will not formulate a curriculum or propose a line of action. They are the ruminations of one who has taught in an unusual and first-rate school of architecture for twenty years, one who had the luxury of studying what went on during that time, reflecting upon it dispassionately, because he did not have to worry about ever having to do architecture.

Let me rush into the breach with some bold assertions, and ask your indulgence as I elaborate upon them.

1) *The education of the architect is not exclusively, or even primarily, a function of schools of architecture.* The reliance of the education of the architect on professional schools is, as history goes, a recent occurrence. It has to do with the professionalisation of architecture beginning a century or so ago, with licensing, with the increasingly specialised building types and building technologies, and other such developments that removed the architect from the intimacies of a craft-oriented trade and of apprenticeship, involving learning by doing. Prior to that and since the 1600s, there was only the French academic tradition, which we loosely call the
Beaux Arts, as a structured curriculum with claims of universality. What a school implies is, in fact, a common body of knowledge and a common method that can be imparted to would-be architects, and the presumption at least of a well-articulated theory on which this intellectual construct is believed to rest. The resistance to architecture schools, the urge to disparage such institutions, has always been there. For those who saw and see architecture as an intuitive and practical art, the rigidity of a curriculum propped up by book-learning was, and is, hard to take.

But schools are here to stay. The profession is, indeed, far too complex to master empirically, unless one strictly limits its practice. And so, we are saddled forever, it would seem, with the huge task of designing and redesigning curricula. My present point is that, inevitable though schools and the varying merits of their approaches may be, we should emphasise the exceedingly circumscribed role they play in the education of an architect. There is no substitute for the experience of travel that opens the eye and builds up a storehouse of impressions, no substitute for the excitement of association with a superior practitioner whose work one admires and whose path one wishes to follow on for a while.

And beyond that comes life and learning. We understand the needs of others to the extent that we have insisted on a full life for ourselves; we can provide for the settings of social institutions to the extent that we have been broadly educated, broadly read, given the wherewithal to reflect on the course of human affairs and to scan the reaches of human achievement. For these the Beaux Arts or the Bauhaus are no substitutes. You will recall Queen Hatshepsut’s architect Senmut boasting: “I had access to all the writings of the prophets; there was nothing which I did not know of that which had happened since the beginning.” And Vitruvius’s famous list of what an architect ought to know is fatiguing even to read: “Let him be educated,” he begins straightforwardly, “skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.” If the final ambition of the architect is not simply to accommodate programmes but to comment upon them, then the education of the architect cannot stop at structure and form.

We have long peddled the notion that architecture is itself a language of cultural expression, that you can read from buildings, without the help of any other documents, the intentions of the culture that produced them. Time and again we read that “Buildings cannot lie; they tell the truth directly or by implication about those who made and used them and provide veracious records of the character and quality of past and present civilizations” (John Gierag). But buildings do lie; or, rather, they will tell us only as much as we are able to read into them. Thus, architecture is not a substitute for general literacy. A mastery of the sophisticated specialisations now encompassed by the practice of architecture does not exonerate the architect from grasping the fundamentals of the cultural realm that deal with institutions and social patterns and the creative orbit of the arts.

2) The process of professional initiation starts its course long before its formal unveiling at the schools of architecture

By the time students have found their way to a school of architecture, they have been marked in a number of ways. Many are from privileged backgrounds, and they do not want for support and encouragement. Families that might cringe to have a son go in for painting or the theatre would proudly acknowledge his choice of a career as an architect. Architectural students are thought to possess certain talents — for conceptualising, say, or for beautiful drawing — which singles them out, and they are admitted to the school at least in part on the strength of this promise. Society has a high estimate of their profession, and they themselves have absorbed edifying messages of a select calling.

It is because of these advance messages, I suggest, that things go wrong and dis-
appointment sets in. Professional acculturata
tion has supplied two myths, and insists on perpetuating them. One of these is the
famous Fountainhead syndrome — the
architect as triumphant genius, as Procte-
thean form-giver, a larger-than-life figure
who replenishes the repository of great
monuments with visual or structural pro-
digies of his own.

There is, of course, nothing wrong with hero
architects, no reason we should do without
them any more than we should do without
our great poets or painters. We shall not
deny our cultures the heights attained by the
likes of Sinan or Frank Lloyd Wright. But the
possibilities for such superstardom come
rarely in any culture; and the place for tran-
scendent monuments is extremely restricted
in the general business of making cities and
villages, because we need very few of these
beacons of community and very many of the
standard, unremarkable buildings that sur-
round them and give them their dignity,
their iconic status. And, anyway, you cannot
train heroes to be heroes, you can only tell
them what it takes.

It is also at least arguable that in the final
analysis, despite all our Selimiyes and Taj
Mahals, we do not best change the world or
improve human existence by the isolated
gesture of grand design or by environmental
fist. The shape of our built environment is
the shape of our culture, and that shape is an
intricate and incremental artifact, the result
of thousands of little acts contributed by
many generations. It consists of forms and
lives. It is a shell brimming with human con-
tent. It is also a vulnerable artifact, gossa-
mer for all its evident solidarity. Big names
in architecture and urbanism have enhanced
and redirected it, but they have also torn
and savaged it. Grand schemes, heroic
monuments, we know only too well, come
often at the expense of what was there. They
can displace and dislocate; they can eradi-
cate or render meaningless stretches of
collective memory. The self-absorption of
great egos can be a terrible thing.

The second myth is a more idealistic one; it
was common in the 1960s and early 1970s. It
is that architects can rearrange priorities,
make the world a happier place, help bring
about an order that is more equitable and in
which injustice will become more intoler-
able. We have had a long string of utopias
along these lines that equated a good society
with good design.

Alas, social happiness is a collective strug-
gle, not just a professional one. Beautiful or
reasoned buildings do not always bring ab-
out beautiful behaviour or reasoned re-
ponse. And sometimes there are flashes of
rare humanity and beauty in the worst of
slums. Cities are amalgams of the living and
the built. There is no way in which design
alone will breathe life into a dying human
enterprise, any more than a vibrant sense of
community can be attributable altogether to
the act of design. We expect too much of
architects, we blame them for too many
things.

Now, I am not out to destroy myths. I be-
lieve sincerely that the act of design is more
a solemnity than a simple skill, that it par-
takes of some elemental thinking about who
we are and how we want to live. It has the
power to order the land and ready it for
attitudes. It can mould those huge improb-
able configurations we call cities to live-
liness and joy. It can lend dignity to our pub-
lc institutions. But design is not enough. It
does not in itself hold the key to social
change. To flog the architect for society’s
failings is a fruitless exercise. To credit him
with its successes is false praise.

It is crucial, therefore, that we impart to our
charges in the schools a fair image of credi-
table performance, that we paint judiciously
the broad challenges of vision and the li-
imited horizons of action. A good architect,
we must insist, is one who gives his best
whatever the assignment, whether a whole
city or an interior remodelling, and we then
must proceed to specify what the “best”
should be. It is crucial for the beginning
student to understand that those, too,
contribute who mend and touch up and in-
sunate. You yourselves have elaborated in
past seminars on the enormous task ahead
to rehabilitate and conserve historic
environments in Muslim countries. Much of
this work may have to be done on an ad hoc
basis. Such repair is not glamorous. It does
not win magazine attention. The reward sys-
tem of the profession as it is discriminates
against cautious fine-grained work of this
kind. That is why we who teach in schools of
architecture must downplay old myths, and
bring forth new models of professional
worthiness. We need to convey with force
that the architectural enterprise is incre-
mental and collaborative, across space and
across time; that the cities we live in are
elaborate, generational devices, always
fiding up, never finished; that there are
thousands of little incidents, of space and
colour and repose, that account for a Venice,
a Damascus, an Isfahan, and that these are
not accidental nor are they attributable to
name architects. If we can convey all this,
we will have a happier mood around our
schools, fewer dropouts among our student
body, a smaller number of graduating stu-
dents who abandon the field for something
else out of a frustration that comes from
inflated expectations. The message should
be that to be a good architect is like being a
good citizen. One designs what is right and
responsible, whether it is noticed or not, as
one should vote, say, and refrain from spitt-
ing or littering, whether it is being noticed
and rewarded or not.

3) Architecture schools should not consider
the training of architects to be their only
charge.

What is an architecture school? I think we are
all agreed that, as we have them now,
such schools are there to train students for
the profession and propel them into it. In
other words, they are there to make archi-
tects. Perhaps because I am not an architect
and yet choose to teach in a school of archi-
tecture, I have long held that we have been
missing a great chance to make architecture
a vital part of the general discourse, a public
concern like food and politics. We have
been missing this chance precisely because
we insist on looking at architecture schools
exclusively as the training centres for young
professionals.

However, architecture does not depend on
architects alone. Thus, its study should not
be restricted to them alone. For example, by
"Avant Projet, Place du Sultan Bayezid", 1902, a proposal for Istanbul's Beyazits square by the Beaux-Arts-trained Parisian architect Joseph Antoine Bouvard (1840-1920). Bouvard's proposal would have turned the square into a civic center. (A) is the Ministry of War, (B) the Sultan Beyazit Mosque, (C) is a new Hotel de Ville, which would dominate the square, (F) marks the Ministry of Finance, and next to it, at the left edge, is an Imperial Library. The project disregarded, however, the slope of the site and the pre-existing dense urban fabric between monuments.
the time at which we in architectural seminars bemoan the destruction of our patrimony and devise stratagems to forestall it, it is already many stages too late. Members of communities themselves must know what they have, be proud of it, and insist on holding on to it. This means that they have to be enlightened about the built environment somehow, preferably from grade school on. At an advanced level, schools of architecture could then become centres of general humanistic education, places where one comes to learn about architecture because it encompasses so much of the human adventure, regardless of whether one is going to be an architect or not, in much the same way that one might enroll in a department of literature without having the slightest inclination to be a professional writer. This, then, will become the place that trains future preservationists and clients who will commission buildings for themselves and others, journalists and critics who will write about architecture, or educated people who become conscious of what a great legacy our built world is and what it takes to bring it about, and who will move on to another career with this consciousness in their mind, ready to impart it to their children, or, perhaps, exercise it in their neighbourhood. Architecture then can be a fundamental discipline of human learning, as, indeed, it is, and not always and finally only a profession.

4) The answer to the question, "Of what use is the study of history in the education of an architect?" is another question: "What kind of history?"

Whether we are training professionals or educating students who are simply "majoring" in architecture, history is central — and for the same reasons. The history of architecture, properly taught, has general validity. Or, rather, there is not, in my view, one kind of history for architects and another kind for others.

I am, of course, quite sensitive to the fact that architects are interested in history often as a rich quarry of form. That is a perfectly valid interest. Buildings are based on other buildings. Sinan was obsessed with Hagia Sophia because of its shapes, the size of its dome. He quarried it, stripped off its specific cultural programme, and surpassed it at Selimiye in Edirne. For this kind of formal recall there is no need for historians. But form is always a receptacle of meaning, and architectural meaning is ultimately lodged in history, in cultural contexts. That is what must be explained, that is where the historian comes in. Every shape, every bend in the road has a precise explanation. Form involves institutional arrangements, laws, economics, or what Dogan Kuban once called in these seminars "the inertia of cultural behaviour." Muslim students must know of matters like waqf, of social programmes like külliyes, of the history of institutions like the tekke which are organisational and cultural concepts first, before they become architectural types. They should know about the ascendance of the state in the modern period and how it undermined the role of community groups, private patronage, and similar agencies of rapport between architecture and people. I agree wholeheartedly with Dr Mona Serageldin and François Vigier who deplore the superficial approach that passes for a renaissance of Islamic architecture, and who make it clear that in order to go beyond this cosmic subterfuge, professional curricula will have to undergo major reforms. They have pointed out that architectural history courses must stress the social, cultural and ecological factors that gave rise to specific architectural forms, rather than treating these forms as a purely plastic art and that the evolution of institutions and their influence on the spatial organisation of cities must be understood.

I would go a step further. As long as architectural history is taught as a separate academic discipline, it will remain poorly integrated with the instruction of design. We must find new ways to organise studios. We must incorporate the complicated historical processes at work on the environment into the immediate culture of studio instruction. Bruno Zevi has been attempting this fusion in his Istituto Storico-Critico in Rome, but it is form-making he has foremost in mind as students dissect the workings of Michelange-

lo's dome for St Peter's, for example, in clever analytical models and such. The building process is part of history, surely, but it is not what I have in mind. To make architectural history, as I understand the field, a partner in the act of contemporary design would indeed inspire continuities of the sort we so admire in great cities like Fez or Florence or Vienna.

At the practical level of conservation this partnership comes naturally. To do that job properly one has to know how to study and interpret building fabrics in terms of materials and techniques; one has to be able to read and interpret surviving drawings and other such empowering documents, and be able to resuscitate the physical reality that they record.

5) The current architecture everywhere in world ill prepares the graduating student for the realities of professional practice.

This is in the nature of a summation, of course. All along I have been leading up to this conclusion. What I have actually delivered is much less prescriptive than you might have wished: I apologise. My purpose has been to establish a general climate for the study of architecture, to pinpoint misplaced intentions and suggest new attitudes, because I think schools of architecture are in some ways dusty and anachronistic as they are presently constituted.

I have not even touched on the question of preparing students for what is rather alarmingly referred to as "the outside world". Basically, I think we might agree, students who come out are rather naive about the economic aspects of building, and the realities of clients and how to secure commissions. They have, as I discussed, romantic notions of their roles, and are quite confused as to how they should behave professionally, how they can be effective. And they have only the murkiest notions about ethics. They do not know how to be active in social and political issues through their profession. This is no longer a strong point in the architectural world. The architect as a public figure has been in decline for quite
some time. The key issue here is this. An architect is a trained professional who solves design problems. A palace for a corrupt ruler is a design problem, so is a concentration camp. Should you design them? Somebody obviously does. Would you change your mode of designing to continue being employed after a radical change of regime that favours a design language that is not your own?

At any rate, architectural education cannot be value-free. We who are individually, who we are culturally, is part of the equation. If the architect has to persuade a client that doing things this way rather than that way will produce a more humane environment, or a more splendid one, or a more honest one, then his own convictions, his values will certainly condition his brief. You might even be able to make a case that architectural education should be completely redirected, so that it becomes predominantly value-based, rather than knowledge-based and skill-based.

Here is a related issue: would you design, should you design, something for a culture that is not yours? Many Western firms, as we all recognise, do so with gusto. You have seen their work in Islamic countries in all your seminars. Was this so because until quite recently internationalism was an article of professional faith? In a conference on educating students of the so-called developing countries in European schools, held a while back in Newcastle-upon-Tyne, John Habraken of MIT argued that "a profession can only be a profession when it shares certain principles, theories and methods that it holds valid and useful in all circumstances and in all places." Now we are not so sure. We are also worried about spiritual trespassing, if I may call it so. Hassan Fathy said in one of the Award seminars that he could have designed the church at Gouina needed by the non-Muslim community, but he refused to do so, he called in a Christian to do the job. Will Muslim students in the future refuse to design projects that are unfamiliar to them as Muslims, or antithetical to the Muslim way of life?

Here is where that core concern, the nature of Islamic architecture, comes in. The two extreme positions were stated with some passion in the very first Award seminar, and I wish I could have heard the presentations in person.

Seyyed Hossein Nasr argued that "There is no way of discussing Islamic architecture and evading the problem of the principles of Islamic architecture and what Islamic architecture means. There is no way of avoiding meaning. God is meaning (ma'na). We have to be at the quest of this meaning." He proposed that Islamic architecture be trained once again in the traditional way, that the old crafts resurrected, and thereby the old ways brought back. All this reminded me of Augustus Welby Pugin one hundred and fifty years ago and his advocacy of the Gothic style as the only vehicle for a reformed society. It reminded me of the moral arguments of the anti-machine Arts and Crafts Movement in England and elsewhere all through the later nineteenth century.

Doğan Kuban, the product of a secular Muslim country would have none of this. He said: Islamic architecture is "something created by those people who call themselves Muslims. It is as simple as that." So, presumably, in this accepting view a skyscraper can be Islamic architecture and so, too, a five hundred room hotel, if they happened to be designed by Muslim architects.

This is no minor matter. If westernization is taken to be a fundamental disruption of Islamic culture, a terminus post quem non, then a whole range of building types from factories to office buildings would be outside the purview of an Islamic architect who wishes to remain within the bounds of his culture. The application of Islamic decor will not absolve the design, since a Frenchman could do as much and just as easily. The only honorable course might be to try to reinterpret the programme within the experience of Islamic tradition. Certainly apartment towers have their counterparts in things like the rab' type of collective housing in Cairo. The hotel could also be reinterpreted in line with the traditional way of putting up guests and visitors — and work from that to a new form that has nothing to do with the high-rise hotel.

I started this talk with autobiographical details. I spoke of being a Greek raised in Turkey, of Istanbul and its lesson of urban continuities. I hope you will not think me too preachy if I return to these preliminaries, in order to point out their relevance to what I have randomly been implying all through this paper. Because of who I am and what I do, I find talk about a violently disrupted tradition a bit unsettling. Westernized buildings of the nineteenth century in some Islamic countries are already on their way to being appropriated into the tradition, as the International Style, uncompromisingly historical to the last, has already been absorbed into the great historical traditions of the West. Time may mellow the appeal of more recent specimens of modern architecture in Islamic lands. History heals. Survival confers dignity. It would be counterproductive, if not impossible, to attempt to separate Islamic culture from modern culture. And this separation might not even be the Islamic thing to do. The unity of Islam from the start accommodated pluralism. It accepted and absorbed alien elements into its sturdy frame. The culture itself changed and developed all along; its vigour was its principal drive. To reduce the vast wealth of Islamic architecture to its "essentials" leaves either to an uneducative catalogue of common features — minarets, mihrabs and the like — or else to such generic headings as "dexterous handling of scale", "adoption of geometric forms", "interesting structural forms", and so forth. (I am quoting from the paper delivered by Mr Khwaja in your opening seminar of 1978). These reductions can only impoverish and restrict the education of the Muslim architect, and deprive the West of the benefits of our all too spasmodic commonality.
The Architecture of Unity

Christian Norberg-Schulz

In our contemporary culture, architecture education is in a state of crisis. We have today a better knowledge in most fields than ever before, and better technological means at our disposal, but still, in most places, the built environment is decaying because of meaningless construction. Thus, we may talk about a general environmental crisis, and accordingly, a crisis of architectural education. As an architect and an educator, I have been giving much thought to the reasons for this state of affairs.

My conclusion is simple: we have forgotten the language of architecture. Firstly, we have forgotten to experience architecture as a meaningful expression of human life in a certain place, and secondly, we have forgotten the use of the language of architecture as a means to serve man's need for meaning and belonging. With the word language, therefore, I intend what keeps and communicates man's modes of being in the world. To recover the language of architecture is the primary aim and the basis of architecture education. The purpose of this paper is to show what that means, using Islamic architecture as an illustration.

I do not pretend to explain Islamic architecture, but merely wish to demonstrate an approach that may help us to accomplish the needed return to architecture. Let me emphasise: before we can teach architecture, we have to know what architecture is, and at this seminar that means asking the question: What is Islamic architecture? I ask this question also to prepare for another, concluding question: Is it possible and meaningful to create an Islamic architecture today?

Islamic architecture is experienced as a positive fact as soon as we visit an Islamic environment; it is there as an immediately recognisable presence, from Afghanistan to Arabia, from Egypt to Andalusia. It is there as something which tells us that we are no longer in Graeco-Roman and Christian Europe. Another world becomes manifest, a world which makes us feel different and which demands different perceptions from us. Also we know it when we are in an European city, rather than an Indian or Chinese one, and we know it before we encounter any human being or see any written sign. And yet, these different worlds are basically similar, consisting of towns, streets, buildings, things and people.

In what, then, does the difference consist? How, then, do we know where we are? We know where we are because human life takes place in spaces determined by natural elements and buildings possessing a distinct character. Evidently such "characters" are more or less general. When I say that we know it when we are in a European city, I may add that we also know that we are in an English rather than a German one. Yes, we even may distinguish a Tuscan one from a Sicilian one, but that would demand a certain level of knowledge on the part of the visitor.

The spaces we experience when we travel about are primarily public rather than private, and they may be urban spaces as well as interiors of public buildings. The difference between environments, therefore, stems from different spatial properties, which may be classified in the broad categories of volumetric types and various kinds of boundaries. We immediately perceive the suq or bazaar of an Islamic city as a distinct type of volume, and the same happens when we enter a mosque, such as the famous one in Córdoba. To recognise an Islamic city, however, we do not have to visit particular places; we feel the Islamic presence everywhere, due to a characteristic treatment of the spatial boundaries, just as we experience European cities as such for the same reason. First of all, Islamic architecture becomes manifest in the wall, where the Islamic sense of being in the world is kept and visualised. Certainly, not all walls in all Islamic cities are treated in the same way, but basic properties and motifs are omnipresent, albeit with varying frequency. And, just as important, those properties that distinguish European cities are as a rule absent.

What, then, are these basic properties? The Islamic wall may in general be characterised as a dematerialised "skin" which, to a greater or lesser extent, is covered by a complex, linear ornamentation. The plastic, anthropomorphic elements that determine the European wall of classical derivation are entirely lacking. The Islamic wall is, moreover, different from the transparent wall of Gothic architecture. The latter, certainly, also appears as a kind of network of slender members, but, while the Islamic lines are abstract and without bodily presence, the Gothic ribs are experienced as lines of force; they make up a structure rather than an ornament.

The Islamic wall, thus, has a less obvious relationship to the earth than the European one; it does not stand and rise in the same structurally determined way, but seems to express a more general kind of being in space. This goes together with its particular geometric organisation. The other boundaries of Islamic space have an analogous character. Thus, the floor is a carpet-like, extended surface, and in the mosque it is, in fact, covered with geometrically patterned

Cairo, a street

Photo C Norberg-Schulz
Alhambra, the Hall of the Ambassadors, detail
Photo: C. Norberg-Schulz

carpets. The ceiling, finally, shows the character of the Islamic boundary in a particularly pronounced way. Here the surface often dissolves completely into a transparent, luminous network of insubstantial forms, without, however, losing its general continuity.

A certain distinction between up and down is nevertheless present. The ceiling and higher part of the wall are often white with a very dense ornament, whereas the lower part and the floor gains a somewhat more concrete presence due to the use of coloured glazed tiles. Another characteristic difference from the traditional European wall is the lack of pictorial representation; when recognisable "figures" appear, they are always swallowed up by the ornament and become integral parts of comprehensive totality. As a substitute for the European image, however, calligraphic elements consisting of quotations from the Qur'an are introduced. Due to the ornamental character of Kufic script, these also become part of the totality.

In general, the spatial boundary of Islamic architecture may be described as a continuous, insubstantial surface structured by a boundless ornament, where faint echoes of the world of things appear and disappear. An omnipresent luminosity accentuates the general feeling of integration and unity. The primary manifestation of Islamic architecture, therefore, consists in a comprehensive "character", rather than a set of distinct figural elements.

This does not mean, however, that Islamic architecture negates building types and formal motifs. No architecture could do without these, since a character always has to gain presence "as something". A study of architectural history shows that the building types of any culture are based on general volumetric types, such as the rotunda, the basilica and the hypostyle hall, three spatial forms that possess general validity, because they derive from the fundamental structures of existential spatiality: centre (goal), way and domain. The mosque, for example, is basically a hypostyle hall, where a dome is sometimes introduced to mark or symbolise a centre. In Islamic architecture, the general volumetric types are, however, significantly reinterpreted and modified. Like the ornamental wall, cities and buildings consist of elements which are integrated rather than separate, and often of indeterminate extension. The hypostyle mosque, thus, is in principle an "open" form, where spatial elements could be added or taken away without destroying its meaning. (Consider this in relation to Alberti's famous dictum that in a classical composition "nothing may be added or taken away except for the worse").

In Islamic architecture figurative elements, such as tower, dome and courtyard, are therefore points of orientation within a comprehensive totality, rather than final, symbolic goals. They appear out of a totality given a priori, which they do not constitute but rather are submitted to. Here we arrive at the basic difference between Islamic and European architecture. In the latter, the "place" is constituted by the buildings or "institutions" (that is, to use Louis Kahn's term, the "place" in European architecture is determined from "within"), whereas in the former it is determined from "without", being "given" as an eternal fact.

In the man-made environment, even an eternal fact, however, must become present as a set of different places. Hence, the Islamic city comprises spatial as well as formal variety. As a first, spontaneously perceived differentiation, we recognise the difference between the urban space of everyday life, and the interiors of mosques and other principal buildings. While the former generally appears as an "informal" and multifarious labyrinth, and often has a somewhat rundown and shabby look, the latter exhibit a high degree of formal order and articulation, and generally a perfect upkeep. Evidently, therefore, Islam admits that the organised unity that is the basic characteristic of its architecture does not apply directly to realities of man's temporal, everyday-life world. As a consequence, Islamic architecture is "introverted", and its meaning becomes manifest primarily in enclosed gardens, courtyards and interiors. What is given as an eternal fact from "without" thus becomes visible from the inside.

Horseshoe Arch
Although it shuns figural forms, Islamic architecture, like any other architectural system, needs recognisable elements. The horseshoe arch may be mentioned as one of the typical motifs of Islamic architecture. In contrast to the semi-circular arch of the Western tradition, the horseshoe arch has the centre higher than its foot, and, therefore, seems to rise and open up. Thus, it loses its structural quality and becomes an ornamental form, combining repose and radiating lightness. In general, the horseshoe arch shows how a motif may become a distinctive "sign", representing a whole architectural system. This is possible because it unifies basic properties of the system in a simple form. More complex and particular, but of equal importance, are the muqarnas which in Islamic architecture are used to take care of the transition from plane to curved surfaces. Basically the muqarnas are related to the squinches and pendentives of European architecture, but they interpret the transitional surface in a fundamentally different way. Consisting of a more or less complex "honeycomb" of small niches, the muqarnas eliminate any kind of plasticity and make the ornamental and luminous quality of the Islamic boundary stand forth in a particularly fascinating way.

The light that is visualised and geometrised by the muqarnas, is focussed by the mihrab, the large niche which in every mosque indicates the qibla, or direction towards Mecca. Although it is empty and devoid of any pictorial imagery, and hence does not represent a symbolic goal, the mihrab is experienced as a place of primary significance. Accordingly, it is often given a particularly elaborate decoration. Being simultaneously empty and rich, the mihrab seems to express the very content of Islamic architecture.

In the Islamic mausoleum basic meanings also stand forth in an elementary way. The mausoleum usually consists of a cube crowned by a dome, and since it represents a reality which reaches beyond daily life, this form evidently offers a key to the Islamic conception of the world. A related volumetric composition is found in the Dome of the Rock in Jerusalem, where a dome rises

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The Great Mosque of Cordoba, interior
Photo C. Norberg-Schulz

Alhambra, the Hall of the Two Sisters, dome
Photo C. Norberg-Schulz
above an octagonal substructure. A study of the hidden geometry of the plan shows that it represents an elaboration of the dome-cube theme. When the Dome of the Rock was built between 688 and 692 A.D., Mecca was inaccessible to pilgrims, and Jerusalem temporarily became the centre of the Islamic world. The building must be understood as an expression of the function, rather than a mere echo of Byzantine models, as is often suggested in the literature on the subject.

The cube theme also appears in the Ka’ba at Mecca. The very word Ka’ba in fact means “cube,” and because of its form, the Ka’ba manifests the basic directions of space: the cardinal points, the zenith and the nadir. Here the cube is complemented by the dome of the sky itself, rather than by a built symbol. The presence of the circle, however, becomes manifest in the surrounding floor-pattern. The Ka’ba is covered by a black cloth (kiswa) which is changed every year. Thus the abstract shape is transformed into a living body, which is “clothed” as it to protect its mysterious meaning.

A last element characteristic of the Islamic environment has to be mentioned: the minaret. While other buildings extend horizontally, the minaret is nothing but a vertical axis. As such, it is also a kind of “centre”, but rather than being a goal like the Dome of the Rock or the Ka’ba, it acts as a mere “reminder” of heaven. Therefore its position in relation to the adjacent buildings is relatively free, and in contrast to the Gothic steeple, it does not rise up in space, but appears as simply “being there”, expressing thus an a priori link between earth and sky.

My description of the elements and basic formal properties of Islamic architecture has revealed a singularly structured and unified conception of the built environment. Everywhere spaces and buildings are characterised as belonging to the same comprehensive world, by means of a boundless surface ornament. Although it does not appear throughout, this ornament is potentially omnipresent, and also the various kinds of introverted rooms are submitted to a continuous spatial network. In the mosque the spatial pattern is directed towards Mecca, whereby the whole Islamic environment becomes centred. At the centre we do not find a particular image, but a condensed visualisation of that general order which everywhere is suggested.

What is Islamic architecture? The question comprises a “how” as well as a “why”. So far we have been concerned with the how. It is now time to ask why Islamic architecture has become as it is.

Five times a day all Muslims recite their declaration of faith and thus express their submission to a common understanding of the world. The very word “Islam” in fact means “submission”, and the mosque (masjid) accordingly becomes the “place of prostration” or “surrender”. The Islamic credo implies that there is only one Being, and everything that exists partakes of this sole Being: “There is no divinity but God”. The world, therefore, is understood as the self-revelation of God, as transmitted by the Prophet: “I was a treasure concealed, and wishing to be recognised, I created the world.” At the same time, however, God is exalted above the world, and all things, although they partake in divine Being, have an ephemeral nature. They are transitory and pass away, and it would be fundamentally wrong to give them too much importance. Hence, the disorder and frequent decay of the Islamic urban scene. In social terms the unity of being means that everybody is equal, as partakers in the umma, or community of believers. Thus we understand why the Islamic conception of “form” does not mean outline and figure, but the stamp of an essential unity. And, when individual forms sometimes appear, they are treated as archetypes rather than individual things. It is important to emphasise that the Islamic unity is not the result of gathering and synthesis, but given a priori, everywhere and at all times. Islam, thus, considers itself the original religion, which returns to Abraham, that is, to the beginning.

A unity which contains all qualities can only be expressed as a comprehensive pattern or ornament, a weaving of horizontals and verticals. The carpet, in fact, is the most typical expression of Islamic art. It is an insubstantial object which contains the directions of earth and sky, and where accidental forms may appear, which, however, submit to the general pattern.

In the given world the unity of the real is made manifest by light, a “being” that is everywhere at the same time as it remains invisible. Thus, the Qur’an says “God is the light of the heavens and the earth” (XXIV, 35). Light is hence understood as a spiritual presence, which, when it meets the stuff of the earth, gives everything its presence. The Spanish-Islamic philosopher ibn-Masarra wrote: “Without the sunbeam falling on them as they float in the air, the minute particles of dust would not be visible, and without the dust particles the sunbeam itself would not show.” This metaphor implies that without the presence of the spirit, the world would not possess any reality.

Since light is diffused along straight lines, it may be visualised as a geometrical star-like
pattern of interwoven rays. An ornament of stars that interpenetrate and develop out of each other is therefore the clearest representation of divine presence and unity. At the same time as this pattern is infinitely extended and therefore at rest, it also contains rhythms which endow the world it comprises with a temporal movement.

When light meets inorganic and organic matter respectively, two "forms" result: crystal-like structures such as the muqarnas and continuous floral patterns such as the arabesque. In both cases "form" implies geometry. The point of departure is the circle, the perfect form without beginning and end. By dividing it by four, five, six or eight, patterns arise which may be extended infinitely. Since the first ordinance of Islam is to bear witness to divine unity, and since this unity becomes manifest as geometrical patterns of visualised light, the architect is the muhandis; that is, "he who geometrises". Divine unity however, is also revealed in the word of the Qur'an, and, accordingly, the Islamic ornament comprises the calligraphic elements already mentioned. Thus, the word appears within the comprehensive pattern, making it speak. Arabic script is also a kind of weaving of horizontals and verticals, and may, therefore, easily be integrated in the general pattern. As I have already pointed out, the script substitutes the themes of Christian iconography. Since calligraphy gives visible form to the word, it is considered the most noble of the arts.

I have maintained that the Islamic ornament has to be related to certain volumetric forms to gain real presence. Among these, the dome and the cube are of basic significance. The circular dome, therefore, represents the uniform sky, whereas the square cube is a visualisation of the earthly domain of differences and conflicts. By means of ornamentation the two are united at the same time that a certain differentiation of pattern and colour preserve the identity of both. It is important to note that the heaven-earth relationship in Islamic architecture always proceeds from above, in contrast to European architecture, where the characters of standing and rising are dominant.

The interpretation of Islamic architecture, however, is not exhausted by explaining its religious basis. Since Islam originated in a natural environment of a particular kind, it also has to be related to the properties of this environment. Islam thus has to be understood as an answer to the problem of making human dwelling possible in the desert. It is certainly an important fact that Islam was born in a desert-like land, and that it mainly became diffused in regions of similar characteristics. To dwell in the desert puts man face to face with the hardest possible task, in a physical as well as a psychological sense. The desert does not contain any fixed point to hold on to; it is boundless, monotonous and barren. As a consequence the ancient Egyptians related it to death,
and the very word “desert” comes from deserere, to abandon. As it does not offer any protection, the desert is the very negation of “place”. The presence of an oasis does not change this fact; psychologically the oasis remains a dream, a paradise which belongs to another world. A phenomenological description of the desert substantiates these general remarks, and also offers indications about how to make dwelling in this kind of environment possible.

In the desert the complexities of our everyday-life world are reduced to a few, simple phenomena: the infinite extension of the uniform, barren ground; the immense, embracing vault of the cloudless sky; the burning sun which gives an almost shadowless light; the dry, warm air, which make us breathe a different environment. As a whole, the desert seems to make an absolute and eternal order manifest. This order, however, remains distant. It is suggested by the sky rather than the earth. The course of the sun, thus, describes an almost exact median, and divides space into Orient, Occident, midnight and midday, that is, qualitative domains that in the South are commonly used as denotations for the cardinal points. Sun and sunset connect day and night without transitional effects of light, and create a simple, temporal rhythm. The change of seasons is hardly felt, and the dimension of time in general supports the sense of an eternal order.

The earth, on the contrary, is distinguished by the chaos of emptiness, and does not offer man a sufficient existential foothold. It does not contain any individual places, but forms a continuous, neutral ground. Since there are no boundaries, no things appear, and nothingness reigns. In the desert, therefore, man does not encounter the multifarious forces of nature, but experiences its most general properties. This is the existential situation behind the Arabic proverb: “The further you go into the desert, the closer you come to God.” Monotheism, the belief that there is only one God, in fact came into being in the desert countries of the Near East. Both Judaism and Christianity are related to the desert, and in Islam monotheism found its most consistent expression. For the Muslim the conception of the one God is the only dogma, and by proclaiming the unity of God, the Muslim confirms the unity of his world, a world that has the genius loci of the desert as its natural model. For the desert dweller, the genius loci becomes a manifestation of the Absolute.

Existentially, the desert is in a very particular way, and its being has to be known as such to make dwelling possible. Islam demonstrates that the Arab has become a friend of the desert, and the desert determines his basic attitude to the world: tawhid, the consciousness of divine Unity. Thus, the desert is no longer understood as death, but has become a basis for life. This does not mean, however, that the Arab settles in the desert. To settle, he needs an enclosed area, a defined place within the infinite environment. To enclose a space is, hence, the original act of desert architecture. The next act is to structure this space in accordance with the understood world, that is, with the order of sky and earth. As has already been pointed out, the sky offers the abstract form, whereas the earth offers the concrete materials and elements which serve to give the cosmic order presence. Thus, in the oasis, the slender trunks of the trees that rise from the flat expanse of the ground seem to make the more general order of horizontals and verticals that constitute Islamic space manifest. The first mosque at Madina had palm trunks to support the roof, and in the Umayyad interiors the presence of the palm grove is still felt. Within the abstract order of desert space, no truly plastic objects are possible, the classical play of light and shadow is extinguished, and everything is reduced to surface and line.

Islam itself and Islamic architecture belong together as one answer to the problem of making the desert a dwelling place, in the full sense of the term. Through Islam, the nomadic life of the Bedouin gains a new dimension. Its eternal repetitive pattern of life becomes part of a spiritual reality, and in the pilgrimage to Mecca this fact is ritually enacted. This does not imply, however, that Islam is reduced to a result of environmental determinism. When man makes friends with an environment, in the sense suggested above, he understands Truth, and in the case of Islam, a Truth that transcends the locality where it was revealed. That is, the Truth revealed by the desert also discloses basic qualities of the world in general.

Understanding and becoming friends with the desert, however, does not imply that one repeats the environmental character in desert architecture. Rather, the courtyards and interiors of Islamic architecture represent a complement to the desert. As artificial oases they are protected places, distinguished by blue and green, the colours of water and vegetation, and by white, the colour of freshness and illumination, in contrast to the yellow of the burning sun. The Islamic image of paradise is accordingly a walled-in garden containing four rivers which indicate the cardinal points, at the same time as they reflect the sky, uniting the high with the low.

My description of Islamic architecture contains the basic components of the language of architecture: topology, morphology and typology. Topology refers to man’s actions in space, that is, his orientation. Islamic space is infinite rather than goal-oriented, although it is directed on the Ka’ba. It is therefore relatively free from local implications, whereas European space becomes manifest as a particular place. Morphology refers to man’s identification with certain environmental characters that are embodied by the built forms. Islamic architecture, however, does not know the concept of embodiment, in accordance with Islam’s negation of incarnation. I have used the term “dematerialisation” to express this. The lack of embodiment however, does not mean that things disappear. They are certainly there, but are characterised as non-material entities. Thus, we find most of the formal elements used in European architecture, but they are interpreted differently, by means of a particular treatment of the spatial boundaries.

Finally, typology refers to the constituent, recognisable parts of architecture, such as the dome, the cube, the courtyard, the col-
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umm and the arch. Again, Islamic architecture presents to us a known world, which, however, is interpreted in the light of the general concept of unity. The architectural elements, thus, are not understood as individual presences, but as ephemeral reflections of the Divine.

Together, topology, morphology and typology constitute the language of architecture, a language that, in the particular case of Islam, possesses an unsurpassed consistency and generality.

Thus, we arrive at the concluding question: Is it possible and meaningful to create an Islamic architecture today? Since Islamic architecture primarily is a manifestation of a religious conception of the world, it evidently depends on the strength and integrity of its spiritual basis. Our time is, as we all know, not very favourable to the spiritual dimension, and generally aims at reducing everything to what is measurable. Islam, therefore, certainly is in danger. On the other hand, it might possibly help bring forth a renewal of spiritual values. The need for such a renewal is commonly felt. Because of its general and timeless character, Islamic architecture has kept alive through the centuries in various places and under changing conditions. It has, however, also been open to a necessary adaptation to circumstances. Without giving up its basic Arabic qualities, it has become particularised as Persian, Egyptian, Moorish, Indian and Turkish, and I cannot see any reason why it should not also become modern.

To substantiate this position, I have to say a few words about the ends and means of modern architecture. As an expression of the open and dynamic contemporary world, modern architecture developed the concept of free plan (plan libre), and in accordance with the aims of modern art, it also wanted to get rid of any literary content. As a result, modern architecture became abstract or non-figurative, and hence opposed to the traditional values of European architecture. It is evident that modern architecture in this regard approaches what I have called “abstraction” in Islamic architecture. But, there are also basic differences. Modern architecture did not have any spiritual basis, but, rather, took the possibilities offered by modern technology as its point of departure. In this respect it represents a continuation of the European structural tradition. In the long run, that is, when all memories of the past had been erased, the non-figurative approach led to emptiness or to arbitrary caprices.

Today we experience a reaction against abstract modernism. Rather than the pursuit of an international style, the present post-modernism wants to express the complexity of the contemporary world. An architecture of pluralism is hence coming into being, which is both new and old, and aims at the creation of environments with different characteristics. In my opinion this ought to happen without losing the basic concept of openness. In any event, as a result, we experience today a great variety of architectural forms, and the problem of meaning has become more important than the demand for structural honesty.

Against this background, a modern, or rather, a post-modern, Islamic architecture seems possible and even necessary. Islam is one of the great cultural powers of the present world, and it certainly ought to find a contemporary architectural manifestation, that is, a new interpretation of its traditional values.

A new Islamic architecture, however, can only develop if we know what Islamic architecture in truth is. Many of the buildings erected in Islamic countries today show a lack of such an understanding, and simply exhibit a meaningless juxtaposition of Islamic motifs. Fortunately positive exceptions exist, and, in order to close in an optimistic vein, I shall quote one important example.

The new Ministry of Foreign Affairs in Riyadh (1980-1984) by the Danish architect Henning Larsen certainly represents an inspiring contribution to the development of a new Islamic architecture. Larsen has studied, understood and revived the basic qualities I have discussed above. His point of departure was a fortress-like, introverted block containing a courtyard, interpreted as an enclosed garden. During the design process, the courtyard became a system of interrelated spaces, all of which possess a certain volumetric identity, recalling the covered bazaar streets, gardens and interiors of traditional Islamic architecture. At the same time, they form a continuous network, where spaces appear and disappear within a comprehensive unity. The character is thoroughly Islamic, since the spatial boundaries are treated as surfaces rather than as plastic reliefs. Islamic ornament also appears at critical points to give the surface an appropriate interpretation, and the light entering from above revives the ancient symbolism.

Being a modern ministry, the Riyadh building demonstrates that the expression of Islamic unity is not tied to traditional building tasks. Unity is a timeless and universal concept, and, therefore, it may become manifest over and over again, and in any circumstance, if only we understand its architectural implications. In Islamic architecture the concept of unity is set to work, and every Islamic building, therefore, becomes an imago mundi, in the most fundamental sense of the word. As an imago mundi, Islamic architecture offers an explanation of the nature of architecture in general, and, thus, it extends its importance beyond the borders of the environment where Islam was born. It thereby also offers a basic contribution to our understanding of the language of architecture, and, hence, to contemporary architecture education.
Islamic Culture, Modernity, Architecture

Mohammed Arkoun

How should one analyse and articulate these three different concepts that refer to so many complex activities? Since we are dealing with architectural education, we must examine Islamic culture and modernity in the perspective of architectural activity today. Thus, our search and thought will be directed toward students and professionals in architecture. In other words, we have to answer questions such as the following:

What place should Islamic culture have in the training of students at schools of architecture?

What aspects of Islamic culture are relevant to this training?

How should these aspects be taught to encourage modern thinking in Islam as well as in architecture?

How should one approach modernity itself in order to bring into our knowledge of Islam and of design practice creative methods and new exploration?

Other questions will be raised in the course of this essay. Our aim is to introduce architects to the main difficulties that have accumulated since Islamic culture. How should these difficulties be a prerequisite for any improvement in the curriculum followed in schools of architecture.

I shall start with basic information on Islamic culture and modernity. With these references in mind, we can try to think afresh about a key concept in Islamic history: the concept of rupture.

Islamic Culture

This expression is used currently today by Muslims and non-Muslims alike to stress the impact of Islam on all levels of social and historical existence in the so-called “Muslim societies”. Since Islam is used as a mobilising reference by many political movements, all important activities in societies are described as “Islamic”. That is why we need to question the legitimacy of the expression, Islamic culture.

It would be enlightening to ask why we speak more commonly of Western culture with its different national expressions — German, English, French, Spanish culture — than of “Christian culture”. Why, on the contrary, do we use more often and more naturally the expression Islamic culture than terms such as Egyptian, Turkish or Iranian culture? The difference is due to the historical process that generated a secularised culture in one case, but strengthened and generalised a religious perception in the other. If we study carefully this historical process, we can correct the false image of Islam that is imposed by Muslim tradition and translated without adequate explanation by many Orientalists.

In the classical age of the history of Islam, that is, during its first five centuries, i.e. between the seventh and eleventh centuries A.D., a clear distinction was made between mundane culture named adab and religious culture practiced as religious sciences (ʿulamāʾ dinīyya). Adab is literature, poetry, language, the wisdom of nations, history, geography, education, the social code of good behaviour, scientific skills that can be mastered in a rational and educated way, and professional activities, especially those of the officials in the administration of the Caliphate. Udaba were those cultivated, learned, active writers, poets, physicians, philosophers, judges, government ministers who constituted the urban elites in classical Muslim society. Their knowledge and social activities were related to mundane realities or the terrestrial life called dunya. Religion, or din, was, of course, present, but as a general, accepted set of beliefs, explanations, rules, rites and visions relating man, the creature, to God, the Creator. The state run by the Caliph, dawla, had to apply religious law to maintain the mundane life along the lines and in the spirit taught by religion. These are the three d’s — din, dunya, dawla; three differentiated but articulated spaces in which all human existence has to unfold. There has been a rich literature dealing with the relations between the three d’s; many books on ethics and politics are entitled Adab al-dunya waʾl-din, comprising the knowledge and education that one needed in mundane and religious existence.

It is not right to repeat that “Islam” does not separate religion and politics. Of course, the theological and legal view insist on the priority of religion as the revealed truth to organise and to rule the City according to the Divine Will, but this theoretical claim did not prevent the development of a mundane culture and a political practice that was actually cut off from religious principles.

The differentiation between religious thinking, knowledge and life on one side, and mundane culture and profane existence on the other, reached a high degree of elaboration with the dominating philosophical trend under the Buyid dynasty (320-454 A.H. 932-1052 A.D.). During this period, a humanist culture expressed in Arabic was developed primarily in Iraq-Iran. One has to speak, then, not on an homogenous Islamic culture, but on cultural trends in an Islamic context.

How this humanist achievement came to be replaced by rigid “orthodox” teaching in the official schools, or madrasas, founded by the Seljuk dynasty (429-590 A.H./1038-1194 A.D.) is another historical step which needs special attention. The concept of orthodoxy is understood in the Muslim tradition to embody the authentic continuity of the original teaching of the Qur’an and the Prophet. However, historically, it is the transformation of culture and thought as it has been imposed by political power, by the Caliphate and the various princes, or umara, who conquered their position by force. One very significant example can help to illustrate orthodoxy as an ideological concept that shaped the culture in an Islamic context from the eleventh to the twentieth century. After the year 432 A.H./1041 A.D., an important text known as the official creed of the Abbasid Caliph al-Qadir (d.422/1031) was frequently read in public gatherings. This text is a rigorous Sunnite definition of what a true Muslim should believe. Among many strict beliefs set forth in a dogmatic style,
there is a prohibition against referring to the theory of God's created Speech, which embodied an important tenet of a rival theological school, that of the rationalist Mu'tazilites. This meant that political power — the Caliph — could decide theological issues without any intellectual confrontation. It was a decisive shift from religious and intellectual concerns to ideological-dogmatic attitudes that have increasingly dominated all cultural life in Muslim societies to this day.  

We have so far presented the learned urban culture expanded in the Islamic Empire during the classical age. This culture was shared to various degrees by the architects who built the monuments, mosques, palaces, and houses for the urban rich. It was not necessarily shared through a written literature; oral ways of teaching and communication were more efficient than written ones. The aesthetic and mythic environment was also expressed and shared through various arts, crafts, celebrations, collective rites that were all related to very ancient culture that were adapted and vivified in the new Islamic context. Architecture, painting, planning were influenced by Byzantine, Iranian, Roman, Indian, Turkish, Mughal, and other traditions. That is why it is difficult to speak generally of "Islamic" architecture. When we speak of architecture in the spirit of Islam, we forget that Islam itself as a religion and a system of thought has been influenced by several traditions of culture that were deeply rooted in the Middle East a long time before the manifestation of the Qur'an. 

There is, particularly, a common ancient Mediterranean space that was perpetuated and expanded by Roman, Byzantine, Christian and Islamic empires until the time of the creation of the West as a new cultural entity, one characterised by modernity. Islam cannot be presented as a purely Oriental religion and culture, isolated from the Mediterranean world of myths, archetypes, systems of thought, tradition of knowledge, ways of representation, rules of life, types of forms, urban fabric and rural exploitation.

This broad historical and anthropological view of culture in the Islamic context is rejected and negated by the strong and widespread ideological vision of Islam that has been imposed throughout the present Muslim world by political movements labelled "Islamic" movements. Here we face a big issue. The most impressive architectural projects performed in the last twenty years in several Muslim countries are either just produced by modern technology or are more influenced by the conventional, formalistic, standardised representations of a so-called "Islamic" culture or tradition than by the pluralistic and rich trends which characterised cultural life during the classical period, as we have discussed. Many mosques illustrate this fact. 

The urgent task of modern teaching is to emancipate the present vision from apologetic, scholastic and conformist perception of the Muslim heritage. I do not mean that we must go back to the culture and architecture of the classical age, a return that is the typical, mythological claim of the Muslim attitude that was developed under the name of Salafiya. This involved a return to the form and the substance of religion as it was exemplified by the Salaf, the pious ancestors of the time of the Prophet and the so-called Rightly Guided (Orthodox) Caliphs. To get free of this pious dream, we must first understood what is meant by modernity and how Islam can be presented today through a system of thought open to the new scientific spirit.

**Modernity**

All aspects of our existence in contemporary societies is ordered and produced by what is called modernity. Modernity characterised by a continuous and rapid technological and intellectual change is our present way of life and thought. All societies are not equally concerned with and affected by modernity, and modernity does not have everywhere and for all groups in a given society the same components and expressions, but no society, no group, is totally untouched by modernity, whether positively or negatively. Because modernity is among us, in us, we need to make a special effort in order to subject it to a critical evaluation. We are used to perceiving tradition in opposition to modernity, primitive or archaic cultures in opposition to modern civilisation and knowledge. During the colonial period and even today, Western thought developed a theory of modern civilisation based on a Eurocentric outlook that has been used for legitimising Western domination over underdeveloped, "traditional", primitive societies.

This outlook is still evident in the way in which aspects of Muslim societies are described today, and many Islamists insist on the opposition of Muslim tradition to modernity. What does this mean? To what extent and in what conditions can a given tradition be opposed to modernity?

The first danger we should avoid is that of reducing modernity to all contemporary aspects of life as opposed to those of antiquity or of the past; in each stage of history new and ancient elements of life and thought are in an interactive process that leads the "modern" to become traditional or out of date. The Qur'an introduced, for example, a tremendous modernity in all levels of existence of the Arabian society at the beginning of the seventh century. This modernity has been embodied to various degrees in many societies, and this modernity also became the Islamic tradition, which means for believers the uppermost expression of the Truth. For those who adopt this latter conception, modernity becomes viewed as totally negative and described as bid'a, or "innovation". In this vein, material discoveries and new tools such as the radio, camera, television, or telephone have been considered as dangerous or negative innovations; special authorisation by Muslim jurists was needed to prove that such "innovation" did not conflict with the Tradition. This is the paradoxical use of religion by societies. Initially, a deep change is introduced in the values and the symbolic system of representations, and all subsequent changes can be accepted and integrated in the new system. However, under the pres-
sure of the state and cultural constraints, the symbolic system is changed by jurists and theologians into legal codes and dogmatic principles, and into postulates imposing one creed for all believers, whose history is then controlled by those same rigid codes and creeds.

To understand the nature, functions and horizons of modernity in societies influenced over many centuries by the phenomena of Revelation, it is necessary to consider the competing concept of societies of the Book. A very confusing situation has been created by the historical evolution of Western societies since the sixteenth century. Let us try to emancipate our present thought from this growing confusion. For this purpose, we shall analyse first societies of the Book; second, secularised societies.

**Societies of the Book**

Societies of the Book are all those deeply influenced during many centuries by the phenomena of Revelation, the word of God, as it has been collected and recorded in the Holy Scriptures, which are the Book = Biblos = Kitab. This definition includes, of course, the three main manifestations of Revelation through Moses in the Bible, through Jesus of Nazareth in the Gospels, through Muhammad in the Qur’an. We do not consider here the particular systematisations of Revelation as it has been elaborated by theologians for their own communities. These elaborations are, of course, different; for Christians, the Word of God is incarnated in Jesus presented as the Son of God; for Muslims, the Word of God is expressed by God Himself in the Arabic language and communicated by the Prophet Mohammad, and the Jewish conception is one that is closer to that of Muslims. But these are just modalities of expression and transmission of the same basic phenomena. God speaks to mankind to guide people on the Right ways leading to Salvation. This belief takes material form in a typical “speech” expanded by theologians, lawyers, artists, writers, craftsmen, builders, and others in cultural productions. We must stress the general impact of these phenomena so that we can differentiate between the “modern”, secularised mental space and the religious space that we are trying to discover. There is no sphere of activity or knowledge that can be recognised or accepted outside the limits traced by Revelation. Reason itself is the obedient servant of Revelation in the following fields of its activities:

1) In relation to language. Language is taught by God, meaning that it is primarily rooted in the “names taught by God”; secondly, in the realities created by God. This definition is directly opposed to the modern conception according to which language is a system of signs, like all other semiological systems.

2) In relation to society and terrestrial history. Both are seen and interpreted in the eschatological perspective of eternal life, of punishment, reward and salvation. I refer, for example, to the vision of St Augustine in Christianity, of al-Ghazali in Islam.

3) In relation to the community as a body politic. Political power has no legitimacy outside the authority of God expressed in this Speech, explicated by theologians with authorised, unanimously accepted methods (ecclesiastical hierarchy; rabbis; ulama).

4) In relation to the physical world. All existing things are signs referring to God as the Creator; the vision of the created world is opposed to the modern experimental vision of the “objective” world that one can know only through one’s perception (critical epistemology of knowledge).

5) In the relation to value. Aesthetic, ethical, intellectual and spiritual values are true when they are rooted in the Absolute of God; wrong when they are unrooted, not derived correctly from the Revelation. Economic value has no existence by itself; material property is illegitimate if it is not purified by its use for the sake of God. In Islam, the divine law or shari’a gives a legal qualification, or hukum, to every existing thing in the world, to any initiative, attitude, thought or judgement manifested by a man in his life. All is finalised, seen, evaluated in the perspective of God, to whom every individual existence is related in the present life and the hereafter.

This all-encompassing vision needs, of course, to be described with more detail in each society and each stage of history, but our purpose here is just to suggest how radical the mental rupture is between societies of the Book and present-day secularised societies. All the vocabulary used in the former societies is no longer relevant to the latter: parables, metaphors, signs, transcendence, mysticism, adoration, contemplation, value, truth, absolute and all related qualifications are reconsidered in the context of our intellectual modernity and technological power.

It is currently objected that Islam is imposing again even vis-à-vis the West the traditional vision common to societies of the Book, but we shall show that this is just an ideological and apologetic claim without any historical or theological base. On the contrary, the so-called Muslim societies are increasing the gap between the traditional vision of societies of the Book and a material modernity cut off from its original intellectual roots.

**Secularised Societies**

Secularisation is commonly presented as a historical evolution and a cultural achievement specific to Western societies. According to this image, the process of secularisation started in the sixteenth century with the renaissance and Reformation, and had a continuous success and expansion through political revolutions, scientific discoveries, industrialisation, urban development, rural migrations to the growing cities. The capitalist system of production and exchange imposed a new relation to the physical world, an individualist philosophy based on a positivist knowledge and a strict separation between religious beliefs and politics. In France, the separation between the State and the Church reached a definite legal expression in 1905, but already the French Re-
volution in 1789 had brought about a major symbolic rupture when Louis XVI was executed; political power legitimised and made sacred by the Church in the ancien régime was at that point delegated to the people by imposing popular sovereignty.

All this is true, and more can be said on the bourgeoisie as a secularising social class facing the Church as a political and economic force since the Middle Ages. The confrontation became harsher and more decisive when the working class appeared in the industrialised societies as a more radical secularising force "enlightened" by Marxist philosophy. The bourgeoisie created a secularised state, but adhered to an idealist philosophy open to religious inspiration and symbolic values praised in societies of the Book. Marx and Engels rejected metaphysical idealism as well as theological systems of thought inherited from societies of the Book. In the same intellectual line of radical criticism, Nietzsche deconstructed the genealogy of ethics and repudiated the moral values derived from traditional religious techniques. Freud added to this intellectual revolution the discovery of the deep psychic structure commanding the life of the so-called conscious.

It is essential to understand that secularisation is not a simple change in material civilisation; it is mainly and more radically a shift from one mental structure and space to another; all the knowledge inherited from medieval and classical ages is either cancelled or reinvested in the new cognitive vision, methods and postulates. A new reason with new categories, horizons and ambitions is used in all scientific activities instead of the "eternal" reason imposed and shared in societies of the Book. Actually, the new reason and science destroyed and transformed another reason that had been used for, a longer time and in a broader popular level of life than the reason involved in societies of the Book. I refer here to pragmatic knowledge, institutions, culture, social structures, economic systems of production and exchanges used in each ethnic group living in archaic societies.
For example, in North Africa today, there are three types of reason and culture:

1) The more primitive and ancient one represented in the Berber groups before conversion to Jewish, Christian or Islamic beliefs;
2) The traditional one related to societies of the Book;
3) The modern, contemporary one introduced since the nineteenth century by the West.

These three levels can be seen in the customs, social and political institutions, economic activities, styles of building and urbanisation. As an example, one could look at the architecture in the M’Zab of Southern Algeria.

There has been over the centuries a dialectical interaction between the first two levels, before secularised culture appeared and marginalised the archaic and traditional “reasons”. This competition is described by anthropologists as an unequal struggle between oral and written culture; a mythical versus a logoscentrist use of the reasons. Logocentrism as a demythologising, rationalising culture started with Aristotle (as against Plato), expanded in the Middle Ages and invaded all intellectual space with the development of modern science. The struggle has been strong between philosophers and religious ‘ulama in Islam. The philosophical (i.e. logoscentrist) trend passed to the West after the twelfth century, especially through Averroes’ and Avicenna’s works.

In the contemporary Muslim world, the competition between societies of the Book and secularising forces is stronger, harsher and more decisive than it had ever been since the emergence of Islam as a historical force and a cultural system. Why do Muslims resist secularism more than Westerners or the Japanese? Is it because Islam has already discovered, taught and actualised all the sciences, institutions, economic and social organisations introduced by modernity? Is it also because modernity is a bad way of life that leads man astray from the Right Path traced by God in the Revelation? Or, is it, rather, because the majority of the Muslim population is still dominated by the archaic and traditional culture, and thus, unprepared to receive the more sophisticated culture produced by modernity? These questions are and should be the major part of the intellectual and scientific training in academic teaching today: it is the only chance for Muslim societies to understand and master all the consequences of the historical rupture, which have not been seriously considered as the key phenomena dominating the present evolution.

The Concept of Historical Rupture

Muslim contemporary discourse rejects totally the concept of historical rupture in the existence of Islam, understood as a religion of eternal, unchangeable values entirely revealed by God; correctly, scrupulously, accurately transmitted and interpreted by authorised learned men, the ‘ulama or ‘a‘ima ma mujahidun. The companions of the Prophet, or sahaba, were the first and most privileged generation of Muslims, all favoured by God with perfect intellectual and ethical gifts so that they memorised, understood and explained perfectly the integral heritage of the Revelation: the Qur’an and the Tradition, the sunna or hadith of Muhammad. The following generations learned from the sahaba and perpetuated all of the body of knowledge called Islam, to which all Muslims have to turn for all their terrestrial needs, activities and production.

Interpretations, applications of this divine, eternal knowledge can be different, and indeed they have been, are and will be different. However, there is only one orthodox interpretation and actualisation in the historical process of Muslim societies. That is why the law, the shari’a derived from the authentic corpus of the Divine Knowledge, is also unchangeable, not subject to historicity. According to this vision, states like Pakistan, the Sudan, Arabia and Iran have restored the shari’a.

“True” Islam, seen and lived from “inside” is totally cut off from history. If a Muslim historian mentions, for example, that three so-called “Rightly Guided Caliphs” have been assassinated, three objections are raised against him by the militants for “eternal Islam”: that he fails to see Islam from inside because he adopts “Western” knowledge; that he is just an Orientalist, hostile to “Islam”; and that, actually, the three Caliphs were killed by non-Muslims, who were opposed to Islam. Similarly, if one tried to describe this type of perception and knowledge as being typically and basically mythical, related to the social “imaginary” more than to historical reason, the same collective voice, using the contemporary Muslim discourse, objects that mythology does not exist in the Qur’an, the “imaginary” and even imagination cannot be invoked to deal with “eternal” Islam, which is entirely built on a perfect, scientific, heavenly Reason. When the Qur’an speaks of mythology in the meaning of legends, false fables, it uses the world istura which, in modern Arabic, conveys the concept of myth. Of course, the total lack of correlation between istura and the modern anthropological concept of myth is not thought through and remains unthinkable in the context of the present Muslim discourse.

The mental context of this collective discourse explains the semantic manipulation made of the Qur’an by all those who select verses or fragments of verses, cutting it from their linguistic and cultural-historical context to introduce it in the present ideological context with rights and all the related vocabulary used in the contemporary political discourse. It is just the same procedure used by architects who cut classical buildings and their semiotic environment and introduce it in a totally different urban fabric and with different semiotic functions.

What do all these remarks mean? To what conclusions do they necessarily lead? We can provide some answers if we follow two inseparable ways of thinking and research:

1) The imaginary production of societies.
2) The search for a more adequate relation between knowledge and reality.
The Imaginary Production of Societies

Any given society in any given time is produced by the continuously combined, interacting activity of reason and imagination. However, the history of the past is usually presented as a rational or, at least, a rationalised process, which excludes the participation of imagination. Imagination is the privilege of poets, artists and prophets; it creates images, parables, symbols to add an aesthetic dimension to the realities of human existence, or to show a transcendent truth beyond the ordinary explanations of reason. This is the creative imagination that is at work in all myths and symbols invented by each community to recapitulate its origins and permanent values. However, imagination is also receptive to illusions, incorrect representations of reality, images of truth generated through social and political rivalries in which competing groups interpret a common heritage—like Islam as expressed in the Qur’ān and the experience of Mohammad in Madina—in accordance with their divergent interests and aims. Mythological and ideological systems of representation are thus derived from the original myths and symbols shared by several groups or different ethnocultural communities. These systems are generated, memorised and used as a model of collective thinking and acting thanks to the social ‘imaginary’ and collective memory. The contemporary Islamic discourse, as I have presented it, is a typical illustration of the social ‘imaginary’ generated out of the time of Revelation and Prophetic teaching and producing the history of societies through representations of that era which are taken as the authentic continuity of the revealed Truth in illo Tempore. We have seen that the central characteristic of these representations is the negation of history and the disguising of procedures in order to transform social, psychological, political realities into idealised images of the eternal Message.

The disguising process covering the actual history with idealised images started at least as early as the political triumph of Mu‘awiya in A D 661 when the original experience of articulating political power to the Authority of God was reversed and the political power began to use the Authority of God just as an idealised image to be manipulated by the ‘ulama to legitimise the so-called Caliphate. This was the first rupture in the history of Islam. The second rupture was intellectual and cultural: after the ninth century, classical pluralist Islamic thought started to be neglected and forgotten under the pressure of ‘orthodoxy’. The third rupture appeared after the nineteenth century when Western modernity was introduced in Muslim societies. The intellectual and scientific distance between ‘orthodox’ Islam and modernity has been deepened by two divergent evolutions. Muslims continued to oppose an imaginary vision of a Golden Age of Islam to conquering modernity, exploring more and more the world, human existence, societies, history. According to them, modernity says ‘Man is the vice-gerent of God on the earth’. They react against all the concrete economic, social, political forces operating in present-day societies; again they cover up reality with so-called religious teachings.

Architecture as an Integrating Activity

What are the consequences of this historical evolution and the present socio-cultural situation for architecture as an integrating activity? Architecture and the urban fabric in the last twenty years cannot be evaluated outside the conflicting visions and the divergent interests of the new social classes in Muslim societies.

A useful distinction must be made between an integrated architecture and an integrating, but not necessarily integrated architecture. The first is people building for people according to commonly shared culture, needs, tools, materials, economic possibilities or solidarities. The second is official, conceived and performed by highly trained architects for the upper classes, the ruling political elite or rich individuals. The values involved in the two are different. The integrating function of the official architecture depends on its capacity to include collective concerns, basic needs, deeply rooted aspirations, forms and symbols crossing social and economic frontiers. Mosques, cathedrals, synagogues, and temples are integrated and integrating monuments as long as they have been built by a collective effort: craftsmen, masons, engineers and highly inspired artists sharing the symbolic beliefs of the traditional societies. It is not only a question of styles and forms of building; the status of the work itself contributes to strengthen the integrating function of the built environment. Once a salary is paid to every worker by an anonymous state or a big firm, ancient emotional relations to the work change. With the end of the participation of members of a traditional guild, people, a village or inhabitants of a quarter of a city, the symbolic capital shared by the group is replaced by strict technical execution of the work in the time that has been set and paid for, excluding aesthetic, ethical and spiritual investments by the individual in a collective enterprise.

The links between the built environment, the workers, the work and the shared symbolic capital can be illustrated by a comparison between the ancient mosques in Damascus or Kariouan, for example, and the recently constructed Mosques of Brussels or Geneva. In the first, the functions are essential, numerous, dynamic and far-reaching, and include the whole socio-cultural space; in the second case, the mosque is an isolated, abstract space—indeed, an isolating place, cut off from the rest of socio-cultural life instead of integrating it in any sense.

The same disintegration can be noticed in Muslim societies themselves, where modern economies and demographic pressures have produced the situation described by Charles Correa about Bombay. Great, inspired architects can produce masterpieces of architecture, richly conceived and beautifully designed in total harmony with the physical elements and spaces. However, these masterpieces, like the National
Assembly built by Louis Kahn in Dhaka can be, at the same time, totally alien to the whole society. However, such successful masterpieces as pure architectural performances are very rare. In Muslim societies we mostly find Western models reproduced either with a highly sophisticated technology, or on a modest scale for average people. The historical rupture described above is translated in a discontinuous built environment where rich modern villas, modern hotels, banks, and airports co-exist with poor public housing, ancient deteriorated medinas, spreading haphazard housing, slums. These show clearly a dislocated society, a dependent economy and a disintegrated culture.

Any attempt to improve this situation has to consider architectural education as a totalising enterprise for integrating very large societies in a modern style of life. Programs of training in schools of architecture should include not only the history is Islamic art, but also the history of Islamic thought combined with social and cultural anthropology. The past of Muslim society is very present and active, as I have shown, but only in the form of oppressive ideology. In the name of Islam, this ideology is imposing forms of architecture and shapes of urbanism which are relevant neither to Muslim tradition, nor to modern life and culture. The problem of privacy, for example, is all based on a legal status of women that is in strong opposition to the modern conception of human rights. This alienating vision and practice can be stopped only with a scientific knowledge of all the issues involved. In the meantime, architects should refuse to translate an alienating ideology into built forms, even when they are generously paid by kings, emirs and presidents.

I would even say that theological culture is a relevant topic for emancipating the architects and the users from imaginary representations of the past and its “religious” values, or from a positivist, functionalist conception of modernity. I say “theological culture”, not theology as a specialised discipline. How can one deal with any religious question without a theological culture? And, how can one establish a critical distance from modernity if traditional values are not objectively confronted with modernity?

What I am proposing here is new and far from the dominating trends of architectural education. If architecture is a free artistic creation, it does not need a systematic study of literary and historical descriptions. If it is a major activity engaging for long periods the relations of people to the landscape, the modes and ways of adapting the space to the individual and the collective existence, then architects, more than other professionals, should have a solid knowledge of all the determining aspects of human life. It seems to me that one of the most decisive problems in all Muslim countries today is the elimination of women from all public activities and the obligations put on them by law to devote their life to domestic tasks, when men keep a monopoly of all civil decisions and public activities. With such rigorous separation, archaic and traditional culture is kept and transmitted by women at home, while modern constraints, behaviours and performances are accepted and imposed outside. This is another psychological and even psychic rupture which governs the whole society; and there is no way other than theological culture or brutal revolution to deliver Muslim societies from this overwhelming contradiction. When architects from big firms accept to design in such ideological environments without any intellectual responsibility, because they are not aware of the issues at stake, they simply participate in strengthening for many years visions that are collectively alienating.

The Aga Khan Award for Architecture has been created precisely to face these historical problems in the Muslim world. How is it possible to insert modern thinking and technology in archaic and traditional societies? How is it possible to evaluate a modern scientific approach — against all ideological and apologetic claims — the positive values of the Muslim Tradition to infuse it into our modernity? These are two constant, inseparable ideals of the Award. The originality of the Award is to master the past, the present and the future of Muslim societies through architecture and urbanism as integrated and integrating activities. This is at one and the same time a cultural and a political revolution with the greatest implications for a new civilisation.

Reference Notes


3 I am reporting here objections currently raised by “students” and ‘ilmama after several lectures I gave in Muslim and Western universities.

Chadirji

Professor Arkoun has stated that in our everyday life we are becoming more and more secular, a natural development of the twentieth century; yet, intellectually, we seem to be living in the Middle Ages. In terms of architecture, we are still looking at it in the same way we look at Islam, that is, in terms of religion. The so-called “Islamic” architecture is really a cultural form of expression rather than a religious one and that is why I think the designation “Islamic” architecture is inappropriate and misleading, for then we can also speak of “Christian” or “Hindu” architecture.

There are those who speak of the modern architecture of our part of the world as a product of new ideologies and as being strongly influenced by what is considered to be a search for unity. Personally, I do not believe there is such a thing as unity. When I design, I design for a secular purpose and derive inspiration from the forms that surround me, a tradition that I would like to live with and see continue. It is not because of some belief that I create, but rather to preserve my identity and individual character within the context of international cultural development; nor is it with the intent of rejecting internationalism that I design, but rather with a view to contributing towards it by enriching it with variety and colour.

Arkoun

I agree totally with Mr Chadirji. We really should not use in our discussions here, and in the activities of the Award the word “Islam” or “Islamic” when referring to culture. This leads to misinterpretations and, in the ideological/political trends of today’s Muslim world, it can even be extremely dangerous and result in unfortunate consequences. The main reason for this is that such a presentation of Islam is totally divorced from historical truth.

What exists in our societies today and what are the actual forces governing them? To answer these questions we must not speak of “Islamic culture” or “Islamic architecture” because these concepts are too wide and are therefore impossible to define. What we should rather ask is what is going on in Morocco, or Algeria, or Iraq, or any other Islamic society. Nobody would think of present the architecture of Western societies such as that of, for example, Germany, France or England, by describing some specific characteristic of a church or palace built there. Nobody would do this. Then why do we do this when speaking of Islamic architecture?

The basis for historical masterpieces that were produced in the classical age of Islam no longer exists today because the culture behind them no longer exists. We must therefore look to the Muslim societies of today for our answers and solutions in order to understand the nature of our task.

Saad

With reference to the statement made by Professor Diba. I must express my deep concern about the way in which many architects look for architectural recipes in the Holy Books. There is a vast difference, I am afraid, between the Holy Books and cookery books! We desperately need to redefine the culture to which we belong, and thereby be able to identify the architecture which should be taught to our students.

Abdelhalim

Professor Arkoun identified two distinct points in the development of Islamic thought which he considers to be crucial for understanding the obstacles facing Islamic thought and culture. The first is the suppression of rationalism by forbidding the works of ibn-Rushd on the autonomy of reason; and the second, the rupture that took place in Islamic culture as a result of the impact of modernity. He also suggested that no works of intellectual value can be traced between the first and the second. Hence, the task of rethinking architectural education in the Isla-
mic world will be confronted with this problem. The only intellectual discourse that has been permitted since the suppression of the autonomy of reason is politically motivated with no real value for the task at hand.

With regard to the first point, I tend to agree with Professor Arkoun. However, I would like to suggest that philosophical texts are not the only means of recording the intellectual development of a given culture. Buildings, artifacts and all other tangible forms of intellectual expression can also be considered equally valid "texts" embodying an explicit or implicit record of a particular period in the creative development of that culture. I am convinced that through a systematic analysis of Islamic buildings we could formulate a discourse, or any number of discourses tracing the intellectual development of Islamic history. The soul of Islamic culture is embodied more in its buildings than in other of its creative forms of expression.

As for the second point with regard to the rupture in Islamic thought caused by modernity, it seems to me that we will not necessarily find solutions to our problems by simply adopting a modern way of thinking. On the contrary, it is more important to identify a new mode of thinking which will not only get us out of our problems caused by the rupture but, hopefully, solve the very problems of modernity itself. This, I believe, to be important, and possible. The answer perhaps lies in reinvigorating the spirit of the autonomy of reason, yet within the confines of Islam.

**Kostof**

I would like to address some of the issues that Mr Chadirji and Professor Arkoun spoke of. None of the societies of the Holy Book have anything to contribute to architecture. In fact, monotheistic religions begin with an emnity of architecture, especially monumental architecture. It is part of their baggage to deny an architectural tradition because in it is embedded the values they want to replace. The first notion of a church in the Christian tradition is a place and a community of people without an architecture. The word *ekklesia* refers to a community of people, not to a building. Therefore, we should not rely in our discussions on support for an architectural tradition from the Holy Books themselves. They are predicated on something quite different. It is only when the religion has survived the initial generation or two does it realise that one cannot have a universal impact without having a structure, a building of some sort. It is then that the mosque develops as a building type. In the beginning, any building or open space would serve because, as in the case of Christianity, the community was important, not the structure.

My second point is about this notion of Islamic architecture. I cannot tell you how much I agree when it is said that there is no such thing as Islamic architecture, if it is understood to be a prescriptive description for some kind of stylistic entities or formal evidence. Islamic architecture indeed exists if we understand it as being the entire spectrum of buildings in the entire world of Islam produced over a number of centuries: that is, Islamic architecture, as a broad term, used, if we must, in the same way as one could refer to Christian architecture. What the West did, I think, was to begin the process of discrimination very early. Islam refuses to do that. We used to refer to a Christian architecture, and that was five hundred years ago. Then we began to discriminate and speak of a medieval architecture, and then of classical, Gothic, Romanesque and so forth. The process of discrimination means that we begin to recognise the wealth of the tradition produced and to realise that there is a certain cohesion which may come from regional identification rather than from one's religion. In other words, to carry on endlessly about the imperial courtyard house as being characteristic of Islam is to ignore the fact that this house was also typical in ancient Mesopotamia and Assyria. We are impoverishing the discussion if "Islamic" is understood to be some kind of a universal term referring to a style.

**De la Hoz**

Both the teaching and practice of architecture are based on an alternative method provided by technology and art. The final result is architectural creativity, an important cultural expression. The teaching of Islamic architecture shares the difficulties inherent in the teaching of any architecture. In addition, since it involves a culture different from European cultures, the ones called "modern", the teaching of modern Islamic architecture entails adding a new element of complexity.

Islamic culture, that of the believers who subject themselves to a superior order, represents a biological approach to human existence, whereas European culture is basically rationalist. Both of these distinct philosophies, cultures or different readings of the universe encountered each other, for the first time, in Andalusia, a millennium ago. As an Andalusian, I know how impossible it is to integrate them into a single culture, just
as water and oil do not mix. The Spanish spirit suffers and benefits creatively from this on-going struggle. In my understanding the teaching of modern Islamic architecture must accept this fact and not try to find a simplification that impoverishes both cultures. The goal will be to train new architects whose hearts vibrate to a rhythm dictated by their brains.

Gonzalez-Valcarcel

The subject of the training of Islamic architects should be focussed, on studying in depth the Islamic architecture of the past, the actual “architecture without architects” which is found nowadays, not on trying to create an Islamic architecture completely opposed to the examples of architecture from the colonial periods.

As a Spanish architect who for many years has taken care of Toledo, a town that is exemplary for its integration of various cultures and religions, and which accomplished, through its famous school of translators, the noble mission of transmitting the advanced culture of the Caliphate of Cordoba in the dark ages of medieval Europe, I have been able to see how the Islamic way of life, which, from my point of view, was an integration of various classical cultures from the ancient world, persists in the city life of Toledo.

I think that the revival of Islamic architecture and urbanism should be based on two critical studies. On the one hand, one should study the past Islamic culture in its most developed era, and, on the other hand, one should study the vernacular architecture, so full of wisdom and intuition. These must be pursued with socio-economic studies and religious and political ones, not forgetting modern technology and the actual way to conceive urbanism. In addition, one must not forget Western architecture. From these critical studies should emerge a synthesis that could offer the best way to define the identity of the present and future Islamic world in terms of its own cultural tradition.

II. Pamir

My question is addressed to Professor Arkoun who could perhaps explain what kind of a social system model he is referring to. Instead of explaining social relationships in historical terms, I think an analytical approach would be more appropriate in which the interrelationships among religion, education, architecture, would be defined.

As to whether Western societies are secularised, it is my belief that they are not. There is a high culture and a low culture, or popular culture, which has become more secularised. Professor Arkoun’s discussion of modernity is really based on everyday social relationships and I do not think Western societies are secularised in those terms. For example, we can see the influence of Christianity in the planning of parks, city planning and everyday business relations. Also in Turkey, for instance, which is considered to be a secularised state, people are returning to a style of life that is rooted in Islam. So this question of secularisation is really not all that simple. Before we can talk about whether there are actual differences between Eastern and Western — Islamic and Christian — societies in terms of secularisation, we should first define their social system. That differences exist there is no doubt, but what these differences are is still to be determined.

Correa

With regard to the idea of rupture within Islam, I really do not think it matters in terms of architecture because that is what it is actually all about: a kind of compulsive intervention without necessarily understanding the problem. The poet, for example, does not really have a basis for action, but in writing his poem he illuminates life, gives us an insight beyond material statistics. It seems to me that there is a reason to accept the intervention of rupture as long as we make it something positive, and perhaps use it as a catalyst for new forms of creative expression.

Serageldin

The concept of “rupture” is indeed an important one. It permeates much of the discussion in this room. It is reflected in the need for constantly asserting the uniqueness of the Muslim environment, its differences from the rest of the world and its “separateness” from the broad world trends. This is a serious problem, and reflects an ambiguity which results from the intellectual rupture about which Professor Arkoun spoke as well as from the political rupture of historic continuity manifested by the colonial experience and the socio-economic ruptures resulting from accelerated modernisation during the last generation.

To the problem at hand: recognition of these realities requires that we bring a discriminating eye to the survey of our heritage and an open mind to the possibilities the world has to offer. To accept and integrate some of the new and reject and discard some of the old as well as some of the new: this is the way powerful, self-confident cultures cope with the world and keep renewing themselves. A flight from current problems into the realm of the past is neither feasible nor desirable.

It is the critical, open attitude that is required to create an intellectual climate for adequate discourse and instruction in our universities. Architectural education per se cannot be isolated from this overall intellectual environment.

Norberg-Schulz

I would like to make a comment on Professor Arkoun’s paper in which he suggests we not use the word “Islamic” because it is “dangerous”; and I venture to say that if we do not do what is “dangerous” we will never get anywhere. I think we should not hesitate to confront the “danger”. Man today is in a seemingly paradoxical situation confronted with the desire for the particular, a return to what is local, while at the same time forced to cope with what is
we can and must extract principles which make those buildings stand out with their value and meaning. If we do not do that, then we are left with meaningless fragments. As in human life, we have to create unity and balance between the general and the particular.

Barrada

It has been mentioned that there is no such thing as an Islamic architecture and some even argue that indeed it never existed. If it did not exist, or does not exist, we would have to invent it because of its crucial role in helping restructure the disintegrated cultures we find in most parts of today’s Islamic world. It would certainly be better, of course, if it were based on the continuation of what is considered to be tradition, but it need not be.

Arkoun

One of the main difficulties facing Muslim societies today is the problem of how to interpret the Qur’an for various purposes—such as the one we are discussing here—of how to create an Islamic architecture based on Qur’anic precepts. We must remember that the new generation of young people since the 1950s and 1960s has been brought up in a new ideological atmosphere, in societies fighting to be free from colonial rule. And now we have to speak to this generation of activists, we have to answer their questions that have no reference to Islamic cultural tradition or Islamic thought as they should and would be known through the study of history. Their questions are those which we hear in the ideological discourse of official media spread throughout the so-called “Islamic” societies; they want to know, for example, how to organise political institutions on a Qur’anic basis.

The point is that is impossible to initiate a new intellectual and cultural approach to the Qur’anic text. During the first five centuries of the Hijra, Muslim thinkers developed an extremely elaborate and complex science of exegesis called the usul al-fiqh, in which we find the principles and methodology of how to read and interpret the Qur’an, the Islamic law. It is an intellectually rich science. But today’s young generation does not even know what usul al-fiqh is! How do we introduce it to these young people? How do we re-introduce an intellectual distance to the Qur’an itself, as it used to be in the classical age? This is the tremendous historical rupture from which we are suffering today. It is impossible and naive to ask what the precepts in the Qur’an are in order to create a modern architecture. This is a totally irrelevant question.

What should be asked is: What are the cultural and intellectual conditions of today? Islamic thought has to approach the Qur’an in the cultural context of modernity, which has created intellectual conditions in knowledge, historically and intellectually, different from those of the Middle Ages. The science of linguistics used for reading and interpreting the Qur’an by Tabari, the great exegete of the Qur’an is no longer relevant today. The science of usul al-fiqh—that is, the methodology of Islamic jurisprudence—is not based on the same concept of history as is used today by modern culture. This is what historians call an epistemological rupture in thinking and culture. But all these issues are totally ignored today and we remain solely on an ideological level which is, unfortunately, dominated by political forces and further confounded by the West’s discourse about Islam. We find eminent scholars teaching in the most famous universities of the West who take the floor and make solemn proclamations about Islam. What they proclaim is totally irrelevant to the questions that are being raised by the young Muslim generation of today. Such is the issue at hand, how to confront these acteurs sociaux. The task is very great indeed.
Defining an Art of Architecture

Renata Holod

For a historian of architecture treating the record of the past as art presents a variety of difficulties and challenges. The consideration of any building for its design qualities can be an end in itself, and often the study of architecture within an architectural curriculum stresses this aspect perhaps to the exclusion of other approaches. Yet formal analysis alone cannot in the end yield that density of discourse on architecture which is at the same time explanatory of the past and generative for the present. The other approaches are, briefly, archeological and chronological, contextual in a political, social and cultural sense. By archeological and chronological, I mean the close examination of a building or a setting in all of its details and all of its periods of construction and use. For it is only with this base of data that even the most simple analytical tasks can be achieved. The recording of the building is the first necessary step. The fact that very few of the buildings within the millennial history of the Islamic world have been fully recorded and analysed presents a major obstacle to developing a fine-grained picture of what was built at any one time, or, in other words, of what was the constructional ethos and praxis. To develop criteria for detecting quality in a building, its own immediate context of related buildings has to be found.

Can we be sure what was considered to be the art of architecture when any one of the buildings of the Islamic architectural record was constructed? It has been said that there exist no manuals or theoretical works on architecture within the Islamic world where the qualitative aspects of architecture were clearly spelled out. And, even more, that architecture was only building and that, as a craft, it possessed no concomitant intellectualisation of the process and product. It is perhaps true that no single work exists on the model of an Albertian treatise. At least, none has surfaced in the customary places, that is, associated with philosophical texts. It may be premature, however, to characterise whole traditions of architecture as being without any intellectual component or any intellectualisation, when little real investigation of their cultural and intellectual contexts has occurred. This paper will indicate some areas of investigation which appear to be quite promising for developing the bases for a theory of Islamic architecture. And it is only from this vantage point that one can begin to shape conceptions of architecture as art that are inherent in Islamic civilisation.

Sources for the discovery of the theoretical bases for the making of architecture in the Islamic world must be sought in several fields that may be far flung and unrelated to each other but are nevertheless related to one or another aspect of architecture. Thus, rather than generating a theory from the exterior and developing criteria for judging a work of architecture as art or not, I shall attempt to sketch out those areas which, in my opinion, are fruitful ground for the discovery of the attitudes and patterns of thought about the usage of architecture within Islamic high culture — the precondition for discourse on architecture. I am purposely presenting a series of examples which would reveal a similar density and preoccupation with aspects of the built environment which we find in other civilisations (Chinese, Classical or European, for instance) with better articulated or better publicised conceptions of art and aesthetics. The concept of art and the concept of architecture as art are culturally bound and must therefore be investigated within their own terms.

A preliminary survey of those areas within Islamic civilisation which, all agree, had developed a particularly rich, varied and conscious internal commentary reveals that within them there existed a use of and a pre-occupation with the built environment, if not with architecture itself. The areas which did yield information were literature, philosophy, jurisprudence, geometry, astronomy, of which all reveal an encouraging richness that must now be exploited and developed into a fully articulated system of analysing and evaluating Islamic architecture.

It then comes as no surprise that al-Maqdisi, a philosopher writing in the tenth century would develop the classic argument about the existence of God in terms of the construction of a building. It is a concretisation.
which drew directly upon his own experience of the major transformation the Islamic world was undergoing at the time. By all accounts this was its single most intense urbanisation (and construction) phase prior to the contemporary period.  

“If it were permissible to imagine the creation of this world without a creator, it would in fact be possible to imagine the existence of a building without a builder, a piece of writing without a writer, of a design without a designer, of an image without a painter. It would, in fact, be permissible to the one who sees a solid residence and a firm building to believe the following: a pile of earth was gathered together without a gatherer; it was then mixed without a mixer until cohesive and moist; then it was moulded into bricks of perfect proportion and admirable squareness without someone to plan it in advance and to fashion it; then the foundations of the residence laid themselves out, its footings strengthened themselves, its pillars and transoms rose up, so that its walls could be extended and its corners completed; and mud bricks flew into the air, landed on their proper sides and arranged themselves in the most beautiful order; then the joists and beams fell on their own according to the measurements of the apartments and of the sectors and were cut for building without anyone gathering them and cutting them; then the wood was hewn without a hewer, sawed without a sawyer and smoothed without a plane; when (these wood pieces) are completed, the uneven parts straightened out they rise on their own grooves, transform into ceilings over rooms and their pillars rise under them; then a sheathing covers them (ceilings), doors open and shut on their own; then the building is covered with lime and mud, paved and plastered; it is decorated with different kinds of ornaments and designs. And so the work is finished, the building is completed, its separate parts united in the best fashion and the most perfect arrangement. Not one of its partitions, bricks, or wooden beams appear without the viewer’s admiration for its wisdom and its purpose, all of this without the maker who made it, the fashioner who fashioned it, the expert who formed it, the planner who planned it.”

Not only does al-Maqdisi discuss the building in great detail and with an acute awareness of the construction process but also he admires quality in building, “its wisdom and purpose”. The use of the building process in philosophical and theological literature should not only be regarded as a typical argument for the existence of God. It is also, in my opinion, highly indicative of the way in which thinking about building and about architecture permeated the many spheres of intellectual life in the tenth century A.D. If creation was envisaged as a building process, then as a corollary one can assume that the building process itself was intellectualised.

And we can no longer speak only of building in some incohoate realm of traditional, natural or historic architecture, without the ability to conceptualise and to create discourse about it.

So pervasive was the consciousness of the built environment and of the process of building that it filters into the realm of belles lettres. An example has been identified in the case of the wind tower in Egypt.

Apparently this architectural importation and innovation so preoccupied the imagination of the literati that scores of poems were composed utilising the wind tower as metaphor for the various states of love. To give three examples, one by Burhan al-din al-Qirati (1326–1379) has the following lines:

I am a badahanj all filled
With emotion, joy and happiness.
High on top of me, the pigeons sing.
Inside me, the wind recites love poems.

And, a mansion where our badahanj stretch-
es up high,
Love-sick curing the thirst of violent passion.

If, when it is hot, a grating there is opened,
"Love for her came to me, before I knew
what love was".

(The last line a quote attributed to Laila Wa
Majnun, a romance).

One by Ibn al-Tubi (first half of the eleventh
century):

I came to him on a hot summer day,
And he gave me a frosty welcome.
I said: "I do not have a badahanj in my house,
But the face of that fellow is my badahanj"

Or one by Ibn Abi Halajah al-Tilimsani
(1325-1375):

A badahanj, may our mansion never be
without its pleasant company!
As if it were an abject lover confronting
passion

In al-Ghuzuli’s Madali’ al-Badur, an anthol-
o gy of cultural history, a whole chapter is
devoted to the badahanj. This work as well
as the individual poems reflect the integra-
tion of this new feature of architecture into
the regional culture of the Arab world from
the eleventh to the fourteenth century.

As in the case of the philosophical text,
these examples show an awareness of the
functional and aesthetic aspects of architec-
ture far beyond the mere narrow builders’
circles and very much part of the discourse
of literati and intellectuals of their time. This
was a response to architectural innovation
These circles were conscious of architecture
and very ready to assimilate its forms and
spaces into their own experiential language.
How this aesthetisation of functional ele-
ments in turn influenced architecture is a
question which has not yet been suitably
investigated. One thing is sure though, that
the experience of and commentary on con-
sciously contrived space is a well attested
feature of high Islamic civilisation. One
should name the renowned garden poetry,
the na‘wriyat and rawdiyat of Andalusia, as
another example. In fact a search though the
vast literature of the classical Islamic world
would probably reveal a wider and richer
Defining an Art of Architecture

appreciation and qualitative discrimination of architecture than has been assumed to this point. It is in this realm that one of the bases for what was considered art in architecture is to be sought.

The fact that in Islamic architecture buildings talk is an important one. For the most part monumental buildings carry inscriptions which give the name and the date of the patron (and, at times, of the architect, builder or supervisor) and the date of the commissioning of the building. The use and choice of literature in inscriptions reveal the extent to which buildings had an impact on the environment and the imagination of the onlookers. The most commonly chosen were, of course, verses of the Qur'an. Though a handful may be most popular, their variety indicates that the effect of the inscription was always a factor in the choice, and, furthermore, that the message of the building, its iconography, was considered incomplete without one. In some cases, the contents of the inscriptions were drawn from the realm of belles lettres, at times especially composed for the building, as is the case with the poems of Ibn Zamrak on the Alhambra or in the poems in the palace of Mahmud of Ghazni. There, the imagery of the building is made explicit through poetic metaphor and allusion.

The third area for investigation lies within the vast literature of Islamic jurisprudence. Recent studies have attempted to extract general principles of planning for contemporary purposes from *hijab* manuals and *faiq* books. This literature can yield much more, for in it lies also the “archaeology” of thought about buildings and the processes of construction. A closer study of the juridical literature that concerns itself with buildings can yield a more precise vocabulary of description and of evaluation. Most important is the category of the books on buildings (*kitab al-binyan*). Confronted with rapidly urbanising societies in the eighth to the eleventh centuries, early Islamic jurists began to define what buildings and their components were in urban contexts, what their rights and appurtenances were and what were private and public domains. On these early works were based subsequent cases, manuals, and *waqfs*.

Just as the early jurists derived conceptions of urban fabric and buildings from the earliest examples of the Prophet and the Companions on the one hand and from the custom of the land on the other, so too, the early public buildings and the early settlements developed between these two poles. It is therefore imperative that key sections of the juridical literature be examined with the goal in mind to ascertain the beginning of the processes of definition of buildings and urban fabrics. In the reconstruction of that intellectual history will lie one of the bases for the articulation of a theory of Islamic architecture.

Fourthly, the realm of the history of science promises to contribute to the discourse on Islamic architecture. David King’s researches into the history of astronomy and in particular into the computation of the *qibla* are seminal, as they reveal the myriad problems of establishing the *qibla* for mosques, the participation of the scientific community, particularly of the astronomers in this and the complimentary use of folk astronomy and the traditions of the Companions. Underlying all major architectural schemes was then a sense of sacred directionality which needs to be factored into any discussion of Islamic architecture. The additional bonus of familiarity with the literature of Islamic science is the fact that one finds information about aspects of architecture in rather unexpected places. For example, instructions for the construction of a wind tower are found in an astronomical manual by Ibn al-Sarraj because it has to do with problems of winds and orientation. In general, geographical manuals are also aware of the environment and, in particular, those which describe the climate and buildings. (The leading geographer al-Muqaddasi came from a family of geometers). Connected to the concern for the description and the mastery of the environment is the development of agriculture and the appropriation of the landscape through the intensification of gardening practices and the installation of gardens. Thus the literature

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From Buzjani’s treatise on geometry for craftsmen. Source: Bibliothèque Nationale, Persane 169, fol. 199a.
produced about the garden, the rawdiyat and nawriyat mentioned above, fits into the same acute consciousness of the built and man-made environment.

Finally, within the realm of the history of science one should look at how geometry was viewed and developed and what its role was in the design of Islamic architecture. That geometry played a key role was already recognised by earlier scholars such as Creswell or Schoeder in their analysis of individual works of architecture. But attempts to see its direct impact on the nature of form, structure and decoration have only begun.

It is Bulatov's recent work that is the most promising. He has investigated the use of geometric harmony in the architecture of Central Asia from the ninth to the fifteenth century. According to the tenth century philosopher al-Farabi, the bases of architecture lie within the mathematical sciences and the beginning of architecture is the knowledge of hiyal, variously translated as skill, art or cunning when concerned with the manipulation of geometric forms. Geometry is thus the foundation for an architect's training. The architect had at his disposal four systems of proportion which he could mix as needed, although one system predominated. These were the square and its derivatives, the equilateral triangle and its derivatives, the half square and its derivatives, and the root of five rectangles and its derivatives. Each system was based on an integer, but varied and developed through the root of this integer in accordance with geometric principles. The system is comparable to scales in music and, in fact, al-Farabi states that the side of the square and the segment of the circle serve as a measuring instrument in architecture, just as syllogism serves logic, the strophe poetry and the foot metrics. The geometric basis of design was not, as in Western architecture, concerned with the repetition of similar or related forms. The Islamic system assured a harmony of all parts, from plan to elevation to decoration, and also served practically as working method. The geometric system was coupled with a programming and analytic process which probably occurred previous to and simultaneous with it. There seems to have been a theoretical layout of a building on a module without the given scale (which among other things was based on the express specifications of the patron). The set of plans of a sixteenth-century Bukharan architect show a variety of complex buildings which are laid out on modular graph paper. The intimate working knowledge of geometric principles is further documented in the architecture itself, where there is a familiarity of working with proportions, rotating figures and modules, and a harmonisation of all elements of the building. A good test case is the Madrasa Ghiyathiyya in Khargird. According to its inscription, the famous Qavam ad-Din Shirazi, who excelled in geometry (muhandasi), drawing (tarhi) and construction (mi'mari) had conceived its original design. In 846/1428-9, long after his death, his associate, Ghiyath ad-Din Shirazi actually built the madrasa.

Underpinning the plans and the buildings are the mathematical treatises from the ninth to the fifteenth century. Most have not been studied systematically for their interest and use to contemporary architects (muhandis). As an example one can take Abu'l Wafa' Burjani (940-998) who composed a treatise on what craftsmen should know of geometry. Accompanying the Persian translation of this work is an anonymous appendix on "An Introduction to Similar and Coincident Figures", which among other solutions gives several examples on complex figures in rotation and tiling patterns. The work of the fifteenth-century mathematician and astronomer Jamshid
Ghiyath al-Din al-Kashi, Mifah al-Hisab, sets aside part of his work to consider the nature of curved forms such as arches, domes and muqarnas and give formulas for the precise calculation of curves and their surfaces.\(^{25}\) We know of many more types from actual examples than are mentioned by al-Kashi, although his were certainly part of the archeological record. His observations are as much a summary of theoretical knowledge about geometrical figures as observations in the field and reveal an unbroken tradition of geometric thinking which began with al-Khorezmi, al-Kindi, al-Farabi, Buzjani, al-Baghdadi, the Banu Musa and others.

The muqarnas, though no one has yet understood exactly when and how it was generated, is, in my opinion, closely connected with the same density of geometric thinking. For whatever meaning could have been assigned to it initially and later on, its plan has most likely been derived from a theoretical interest in tracking the rotations of three-dimensional figures and in tiling patterns as well as in recording patterns in two and three dimensions.\(^{26}\)

The four major fields I have sketched out can be developed for their own sakes but, at this juncture, it is perhaps proper to ask how they can contribute immediately to the teaching of architecture in the Islamic world today. First, they activate the archeological and historical record and make the individual monuments more fully understood as representatives of artistic and intellectual history. Secondly, by providing this context the history of Islamic architecture need not remain a mere show-and-tell of pretty buildings or peasant huts but can continue to be developed as a history and theory architecture, related to but definitely at variance with the history and theory of architecture based on the sources of antiquity and the renaissance. And, as such, it will probably be more meaningful to the individual student in Tunis, Tehran or Cairo. Formal exercises based on remaining artifacts — buildings — most often based only on locally available examples, are thus put into a more complex and more exciting intellectual and artistic context. And it is then that the instructor and the students alike can fully understand what was considered art in the past and judge for themselves whether it is art for them.

Reference Notes

1 See, for instance, the comments of Françoise Choisy in La règle et le modèle (Paris, 1983), p. 31. Also see comments of Michael Maclure in The Hagariim (Cambridge, 1977), p. 105. Güler Necipoğlu-Kafadar in “’The Stulemanjive Complex in Istanbul’”, Muqarnas 3: p. 92, assumes that there is no theory of architecture but a clearly articulated and understood layers of meanings — functional, formal, connotative and literal.

2 Here one should note the pioneering effort of Nader Ardalan and Laleh Bakhtiar in A Sense of Unity (Chicago, 1974) to go beyond the deceptive mode of analysis. They, however, focussed on the immediately perceptible and immediately applicable in the tradition of Islamic architecture in Iran, without developing in full the intellectual underpinnings of that architecture as it was being created

3 See, however, Richard Ettinghausen’s pioneer essay on “Al-Ghazali on Beauty” Art and Thought (February 1948) where the theologian in his Kimiyai-ye ‘Adad (Alchemy of Happiness) comments that the beautiful work of an author, the beautiful poem of a poet, the beautiful painting of a painter or the building of an architect reveal also the inner beauty of these men’.


7 Here parenthetically one should note that the two other processes al-Maqdisi describes in detail are shipbuilding and weaving.
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8 For a detailed description of this literature see Franz Rosenthal, "Poetry and Architecture: The badirhan", *Journal of Arabic Literature* 8, pp. 5-19.


10 The basic record of inscriptions has been collected in *Répertoire d'épigraphe arabe*, Etienne Combe, Jean Sauvaget, Gaston Wiet, Janine Sourdel-Thouminie, eds 16 vols. There are also some interpretative studies on the use of inscriptions on buildings; see particularly Erica C. Dodd and Shereen Khairullah, *The Image of the Word* (Beirut, 1981), and also its review by Sheila Blair in *Arabica* 26 (1983). For the use of poetry on buildings see Oleg Grabar’s *The Alhambra* (London, 1978) and Alessio Bonfanti, *The Kufic Inscription in Persian in the Court of the Royal Palace of Mahrnaw II of Ghazna* (Rome, 1966).


12 For example, the attested, though no longer extant, book *Kitab al-Qada fi fiqirah*, by 'Abd Allah b. 'Abd al-Hakam b. Al-Layth b. Al-Miṣri b. 191 A H. Also noted *Kitab al-Jadid* by Isa b. Dinan d. 212 A H.; *Kitab al-Maṣāba* by Isa b. Musa al-Tayyib (?); d. 386 A H., extant in four copies in the National Library in Tunis as well as later commentaries by Ibn Mazah and Abu'Abd Allah al-Damghani d. 478 A H.


14 Now see David King’s collected works on Islamic Astronomy in the Variorum Reprint Series, *The qibla* had, at least in the early periods, a political meaning. This is a distillation when one notes the consensual orientation after the Abbasid revolution in mosques in Iraq which had previously been oriented according to the Damascus qibla Muhammad illawi is presently preparing an extensive study of this problem.


16 Here see the very challenging thesis of Andrew Watson on the major change in the use and development of new horticultural techniques in the Islamic world from the eighth to the twelfth century; *Agricultural Innovation in the Early Islamic World* (Cambridge, 1983). The ideas about the appropriation of land are from a paper of my student, D. Fairchild Ruggles.

17 Particularly noteworthy was Eric Schroeder’s analysis of the north dome of the mosque of Isfahan published in the *Survey of Persian Art*.

18 Ardalan and Bakhtiayar, as well as Keith Critchlow, and Essam el-Said, and Ayne Paksan have made significant observations from the monuments themselves but have not attempted to reconstruct the working and intellectual bases of architects who created these buildings.


20 The entire set of these plans has never been published nor can it be presently located. The partial presentation of them by N. B. Balkova “Arkitekturie chestekhi uzbekskogo mesta na XVII-XVII vv”. *Soobuchen* *nii Instituta Teorii i Istori* *ii Arkhitektury*, vpp 4, published in 1944 is still utilised by researchers.

21 We are best informed about the buildings which have been analysed by Bulatov and his colleagues in Central Asia.


23 A copy in Persian translation is found in the Bibliothèque Nationale, Paris, Persiane 169 Copies in Arabic are found in the Aya Sofia Library, Istanbul, n° 2253 & 2754 and in Leiden, n° 103.

24 See Bulatov’s appendix for a partial translation into Russian and explanation.

25 Al-Kashi’s work is available in an Arabic edition (Damascus, 1977) and in a Russian translation and commentary, trans. and ed. B. A. Rosenfeld and A. P. Yushkevitch (Moscow, 1956).

26 "The genesis of the *muqarnas* has not been studied, though Al-Kashi’s descriptions of it may indicate a chronology of development. For an attempt to establish a chronology see Yasser Tabbaa, "The *Muqarnas* Dome: Its Origin and Meaning", *Muqarnas* 3 (1985), pp. 61-74; for an analysis of the construction of a *muqarnas* and for an actual plan for one see Ulrich Harb *Ihwandische Stalakittengewölbe* (Berlin, 1978) from the late thirteenth-century palace at Takht-i Sulaiman."
Architecture as Art

Oleg Grabar

By choosing as one of their general “umbrella” themes for a seminar on architectural education in Islamic countries the topic “Architecture as Art”, the organisers have, it seems to me, implied several very different kinds of issues, each of which leads to its own set of questions pertinent both to the training of architects and to scholarly or critical thinking. There are intellectual or theoretical issues going back to Vitruvius on the nature of “beauty” in architecture and, at least since the Renaissance, there has been in the West a profuse discourse on the art of architecture. The questions here are primarily those of the aesthetics of the art of building.

There are moral issues such as whether it is appropriate to talk about art when the obvious problems facing future architects and planners are those of housing and of basic infrastructure. Or perhaps it is suggested that art can and should be brought into these essential but aesthetically irrelevant functions. What is involved here is the judgement of the ways for professional intervention in building. There are pedagogical issues, as the study of art has meant for the most part the study of the history of art, but perhaps philosophy is the more appropriate approach to architectural teaching than history.

There are epistemological issues dealing, for instance, with the appropriateness of the very concept of art within the traditional context of Islamic thought. Are we, as we do so often, introducing an inappropriate western concept? Should one first straighten out the social and cultural parameters of whatever it is one is trying to define?

I could easily go on, as the whole subject of “what is art” has been severely unhinged by the intellectual, social and pedagogical changes of the last hundred years. To some everything built is art, which also means that nothing is and that the category itself has become meaningless. To others, art is always in the past and what we are talking about is the relationship between history and today’s creativity. To others yet, a work of art is identified by its conformity to one of several sets of rules or canons. Within this termmological and conceptual confusion, I saw my task precisely as one of trying to clear the air for our overall objective of thinking about architectural education. To do so, I have taken two judgements as premises. One is that, whether we call their results art or not, we all make qualitative choices within whatever it is that we know of the built environment; we act and judge according to these choices; and we expect others to do the same, thus justifying the inclusion of the topic within education. The second premise is that, at this elementary stage of our knowledge of aesthetic theory within traditional Islam, we have no choice but to use a procedure which is not as yet culture bound, but it is possible to use examples which are culture bound and thus perhaps begin to know what to look for when we eventually turn toward the texts of the Muslim faith and of Islamic thought.

I shall first develop four largely unrelated series of observations and then propose a few themes for subsequent discussions.

1) At a recent seminar held in Dhaka on regionalism in architecture, one speaker, a Bangladeshi practicing architect, gave a rapid overview of the history (that is, the chronological sequence) of architectural remains within the boundaries of a new nation state. Non-Islamic, Buddhist, Hinduist or contemporary western monuments were included together with Islamic ones and in fact the brochure-manifesto issued by a local study group highlights a sequence of major architectural ensembles beginning with the earliest remaining one, a Buddhist stupa surrounded by living and educational quarters, and ending with Louis Kahn’s Assembly Hall. This sequence with its emphasis on the earliest and the latest was set up as the backbone of a permanent national tradition. Within the sequence, Mughal- or British-inspired buildings were criticised as inappropriate and intrusive within a linear tradition which thus became both a norm against which new buildings are to be judged and the treasure of built forms which strengthens national identity. The task of the historian or of the critic becomes then to extract from these “national” monuments principles of design or formal ideas which could be transferred to contemporary techniques and func-

Louis Kahn, Assembly Hall, Dhaka

Photo: R. Günay/AKAA
tions. For the historian, however, there is yet another consequence of this reading of the past. In the case of Bangladesh, it has given pre-eminence to a hitherto little known architecture of small mosques with, some larger exceptions notwithstanding, one to three heavy cupolas, because these mosques developed before the impact of Mughal architecture in the seventeenth century. Thus, a type of simple and effective but rather limited and austere brick architecture is highlighted which, in a richer architectural context like that of Egypt for instance, would be relegated to appendices.

In other words, the identification of works of architectural art is made less through real or alleged intrinsic values of a given building than through contemporary cultural and ideological decisions. Quite often, as in Iran immediately after World War II, in the Turkey of several decades ago (where the issue is in fact much more complicated), in Iraq and in Central Asian Soviet republics, the pre-Islamic past of a new nation was or is even preferred to the Islamic one. In short, architectural self-identification and the choice of characteristic works of architectural art are made by whatever is available (and the older the better) on a land defined by contemporary political boundaries and coloured by cultural and ideological decisions or tastes which may vary but which are always reflective of today’s needs, not of the past’s. With these examples, art is not the attribute of an object but the result of social and even political decisions about a national past.

2) Historical Ottoman presence is usually easy to recognise. From Hungary to Iraq or Algeria, a large or small stone mosque dominated by a single large dome, usually accompanied by an elongated, thin minaret, and at times preceded by a formal court indicates that, at least at some moment in history, the dominant political or cultural (as with Muhammad Ali’s mosque in Cairo) power in a given city or region was that of the Ottoman sultans. There is much academic discussion about the origins and early steps of this characteristic type of building, but it clearly was established by the second half of the fifteenth century and continued to be used until the nineteenth; in fact it is still today the model behind hundreds of new mosques throughout the Arab world and occasionally elsewhere. The Ottoman mosque obviously became a type, that is a standard form with numerous possible variations in size, quality, proportions and decoration. Although there is, to my knowledge, no systematic comparative study of the probably two hundred mosques belonging to this type, it is clear that a small number (the Süleymaniye in Istanbul, most emphatically the Selimiye in Edirne, Sultan Ahmet’s mosque also in Istanbul, to name but three of the best known ones) transformed the type into something else. To take only the example of the Selimiye, the inordinate diameter of the dome, the height of the minarets, the carefully studied economy of supports, the overwhelming inner space bathed in light coming through nearly diaphanous walls are but a few of the features which, in Edirne and under the expert direction of the ageing Sinan, transformed a type into a unique work of art. What this means is that all or some of the attributes of the type have been honed and stretched to a point where they cannot be imagined differently. But the result is that the Selimiye can be copied but not imitated. The type, on the other hand, precisely because it does not exist in reality but is assumed by a set of buildings, maintains its potential for replicability until such time as when all of its possible combinations have been transformed into works of art.

I do not know whether this happened or not, because so far neither the type nor its possible variants have been analysed together from all points of view ranging from statics...
to aesthetics. Where the problem lies for our purposes is in deciding whether it is the abstract type or its unique versions which are works of art. Or, rather, as the unique version cannot be replicated, only cloned, its value lies in itself, in its own appreciation, in whatever satisfaction it offers its user or observer, at best and most extremely in whatever symbolic meaning it may have as a culturally cherished treasure. The type, on the other hand, can be manipulated to meet continuously changing demands or technical opportunities, but it only exists in theory or as an imperfect form.

Or, to put it yet another way, the point of this set of observations is that any objective identification of a building as a work of art implies its non-replicability, whereas a subjective (national, cultural, personal, emotional) identification introduces into the argument or discourse about buildings other criteria than architectural ones and, therefore, restricts the appreciation or even understanding of the work of art to those who share or who have learnt those criteria.

3) The case of Ottoman mosques is a relatively rare example in Islamic architecture where type and work of art issued from it can be identified, at least hypothetically. But we can establish yet another series: Dome of the Rock, plan of Baghdad, Alhambra, Sultan-i, tomb of Tamerlane in Samarkand, Akbar's tomb in Sikandra, Taj Mahal, the palace of Fatehpur-Sikri. All of these monuments are acknowledged masterpieces of Islamic architecture.

Technologically or as carriers of decorative programmes, these buildings or ensembles are, for the most part, characteristic of their time, they belong to coherent stylistic sets. Yet they are all unique, even when it is possible to propose an ideological or thematic connection between some of them or between any one of them and some other monument, even if some were copied occasionally as when Awrangzeb copied the Taj Mahal, their forms are hardly alike and they never, or so it seems, created or were part of a tight typological system of forms and design. There are many explanations for this state of affairs, of which I would like to
single one out. It is that all of them, even the earliest two, were primarily responses to individual or dynastic need and vanities: in cultures other than Muslim ones, they would be considered primarily as secular buildings. Muslim culture permeated most of them, especially through inscriptions, with a uniquely Islamic tone, but they maintained an identity concretely associated with specific individuals or events: the point of these buildings was to express or commemorate the singularity of a person or of an event, not to meet the continuing need of a consistent cultural tradition. It is, therefore, relatively easy to explain these monuments within their time (even though the task of doing so has not always been carried out), but difficult to draw from them any diachronic principle, because their synchronic meaning predominates. They are masterpieces of architectural creativity, they are works of art, but it is difficult to see what significance they may have for the formation of culturally sensitive practitioners today.

4) The Masjid-i Jami of Isfahan has been praised in many books and articles as a masterpiece of Iranian Islamic architecture in the eleventh and twelfth centuries (the so-called Seljuq period). To a historian, however, it is an astounding hodge-podge of unrelated features from many centuries essentially covered up in the late seventeenth century with a veil of colourful tiles and it is almost impossible to know what the building really looked like at any time before late Safavid period, least of all in the twelfth century. In other words, either the initial judgement is wrong and it is a late Safavid building that is praised which may contain earlier elements such as the proportions of the court or the celebrated North dome or the praise is not addressed to a style or to a formal arrangement typical of a period but to the successful continuity of use of a mosque within an urban context. This second suggestion raises the intriguing possibility that the quality of use rather than of forms may be an appropriate criterion for the judgement of architecture, but the more immediately important point is that the acceptance of the early mosque of Isfahan as a major masterpiece of Islamic architecture was more or less independent of the knowledge anyone had of its history.

The point of this example is a fairly simple one and somewhat less the opposite of the previous one. It is that a building can be
considered to be aesthetically outstanding—there is some rapturous writing about it—even though nearly every one of the arguments for its time of construction and historical context are wrong. This is possible because the continuity of its history and use have given a diachronic value to the building which surpasses by far a history which is unknown and, when known, hardly remarkable.

The broader points made by these four series of observations on Islamic buildings are, on the whole, not peculiar to Islamic architecture. All countries, except for China and Japan, and most particularly newly formed ones like all the “nation-states” developed in nineteenth century Europe or in Latin America (and the problem is bound to occur sooner or later in Africa), have sought to identify their national architecture and have had to deal with more or less significant architectural remains from other cultural moments than the ones prevailing today, rejecting some and worshipping others.

Gothic architecture poses constantly the question of the relationship of a type of any one specific cathedral, although I am not aware of one Gothic cathedral that could be considered as the ultimate Gothic in the way the Selimiye is the ultimate Ottoman mosque. Series of unique masterpieces can be drawn from any tradition, especially in secular art, and Charters certainly leads to conclusions comparable to those of the Great Mosque in Isfahan.

To argue for the universality of the issues and of the paradoxes that these conclusions imply is, however, not necessarily to find explanations for them. The reason lies less in intellectual failure than in the more positive and fruitful fact that no valid answer can be given to the question of what makes some buildings works of art. It is a fruitful fact, because it acknowledges, like most of the examples given earlier, that architecture is inseparable from the people who use it or who talk about it. Thus, any formal masterpiece of the sixteenth or any other century can be turned into an atrocity, as happened with the restorations in and around the Mosque of Damascus or as was the case with the Mosque of Ibn Tulun and with several of Bukhara’s madrasas before relatively recent repairs which have turned architecture into museum pieces. Alternately, mediocre or inappropriate works of architecture can be transformed by ideological or national needs into active symbols of a country, of a place, or of a doctrine, if not always into works of art, as happened overtly in most totalitarian states regardless of the dominant ideology, and covertly almost everywhere else (consider, for instance, the Arc de Triomphe or Disneyland). Works of art, in other words, exist only in the eyes of the beholders and the attribute of art is bestowed on building for other reasons than their own initial quality and function.

For the purposes of our seminar about teaching, the propositions I would then make are three and I slightly exaggerate in order to stimulate discussion.

1) It is the complex mechanisms of political and ideological power and of social taste (at times of market economy) which in effect decide on whatever it is that will be called a work of art today. It is not necessary to see this process exclusively in negative terms as the imposition of the will and taste of boorish and unsophisticated leadership on cultivated elites or innately sensitive masses, even if such is frequently the case. For the decisions and the choices involved in the process are frequently quite genuine and reflect a kind of aspiration for contemporary authenticity which has simply not been sufficiently analysed and discussed to be criticised and rejected. The best the historian or the critic can do is to educate the public and the decision makers by making alternatives visible and accessible and by sharpening the visual, psychological and intellectual tools for understanding architecture. Or else, the historian or the critic is simply relegated to the role of observer and recorder.

2) Within the confines of an educational establishment, the role of the historian of art is twofold. He is the representative of the past empowered by his knowledge and competence to explain whatever has existed in the world or on any one land in order to protect that past and also to make it meaningful today. But he is also the champion of continuities, who can explain the distinctions between an inescapable universal civilisation and an infinite number of discrete cultures. Whether, in the manner of nineteenth-century historians in Europe and twentieth-century ones nearly everywhere else, he should also argue for the appropriate equilibrium between civilisation and cultures remains an open question, for it is perhaps no longer his role to choose models for the contemporary world, only to make them available for others to use.

3) What needs to be better articulated is, today as in the past, the relationship between buildings and society. But, in addition, one should begin to think about a relationship between new buildings and those buildings which could allow intellectuals or teachers to identify the processes whereby decisions are made about the quality of architecture.
Professor Grabar raised an important question: that of type, which is a set of general references, constants in history. Type can be imitated and modified only in the superstructure. The church type with a central plan, for instance, can be articulated in many ways, but, if one side is extended, another type emerges; the basilica. A model is something that can be copied exactly as it is. The problem is that today people build their own houses based on a model which is often a third-hand copy. They may not even know the original model. The result is often what I would call “garbage neighbourhoods”. Even if the model itself is a masterpiece, it can indirectly inspire such disasters.

The aims and objectives of a course in design are different. One has to deal with the environment, with the fabrics of the town more than with exceptional landmarks.

We have to reach a diffused quality in the environment. The Alhambra struck me, but it is the Albyacin quarter that should be our frame of reference. There, unity comes from a typology of roofs and facade colours even though all the houses are different. The real problem today is that everybody when building his own house tries to build an Alhambra in miniature. Can we conceive of a town made only of Alhambras? I don’t think type has anything to do with art (as a product of genius). Type is an important instrument in the making of architecture. The type of the Turkish mosque, or the church with the central plan, or functional categories such as railway stations or high schools are typologies a posteriori. There is a type a priori: a certain period of history in a certain cultural enclave, the manner of building houses has been so much a part of the consciousness of people that it was an unconscious act. Everybody knew how to build a house without a model.

I feel that neither Professor Grabar nor Professor Holod addressed the subject of architecture as art. Professor Holod seemed to tell us more about the geometric basis for certain kinds of built form but not when it is art and when it is construction. Professor Grabar spoke about the difficulty of discussing architecture, not as art, but as art history and based much of it on the problem of dating it. I venture to suggest that that isn’t the crux of the issue, whether it can be dated or not. I would think art represents, or at least tries to represent, if it represents anything, a kind of platonic ideal, which, by definition is not replicable, but exists in the tribal, racial or social consciousness of man.

Some things in life with a mythic basis, mythic forms, are perfect and don’t need to change; but that’s not true of architecture. The very basis of architecture changes because technology changes, habits change; so actually we have to find a way of reinventing the archetypes, the myth. In that sense, where is this insight which brings about art? It seems to me it doesn’t come from dates. In fact, I don’t think it has anything to do with dates. If we look at literature today, there’s a real truth which is different from an historical truth. Certainly when one reads Salman Rushdie, one sees that this truth about what Bombay or India was has nothing to do with the fact of dates; actually, he on purpose changes the date of Gandhi’s death, because it suits his story and enables him to reveal a greater truth.

It seems to me that this kind of insight is very important at this moment in Islamic history. We need students with the ability not only to create the typologies, the bread and butter of existence, but also to create the myth; because without the myth there is then no viability for the typologies. Therefore, in architecture education we need the typologies, and perhaps the geometry which generates them; but we also need the insight. Let us keep it in mind, that we need both.

What Mr Correa is talking is about being a poet. That is, the examples he gave are poetical answers to poetical statements. They are not the answers of historians or of history. History may be a useless discipline, but the point is that it is the profession I profess and I am not a poet. Had I been a poet, I would have written poetry, not history. In other words, what Mr Correa is proposing is the creation of philosophers and aestheticians, but that is a different field, a completely different enterprise with different techniques, for different purposes from those of history. History is dates. They may not have anything to do with architecture; but history, none the less, is dates and it is impossible to do history without accurate dates. It is possible that to do architecture without poetry is a sin; I’ll grant that.

But my point was that every school claims and every country claims that they are doing things because of their history, and therefore, in my opinion, let’s do the history right or else let us call it something else. Whether, in addition, there should be poetry of architecture is a different issue and I’m not competent to deal with it. History is dealing with time, explaining it, or interpreting it. Aesthetics is dealing with beauty and quality and poetry in a way to express beauty and quality. Perhaps all of them should be taught in schools, but they shouldn’t be confused.

My answer to Professor Correa is that, the six categories I outlined are not necessarily the only ones. I was only trying to show the kinds of sources that are charged with information that allow for a poetic analysis.

When dealing with the history of Western architecture, we constantly go back and forth between Vitruvius, Alberti and the like in an easy fashion. Now, neither Vitruvius, not Alberti, for that matter, are that poetic; yet we spend a lot of time dealing with them in theory courses. They are necessary in order to activate the poetic, the
astronomic, in fact the entire inheritance for it to begin to make sense, so that these buildings are not only the beautiful white whales that are beached somewhere on a shore.

Diba
In Western encyclopedias one sees that the three fundamental criteria for architectural art are utility, solidity and beauty. The emphasis in the case of beauty is on external form. The human social and economic content is downgraded in importance. In Islam the notion of art comprehends not only beauty of external form, but also, most importantly, the notion of the human and social content and the truth of the moral endeavour. This concept, expressed in Hegel’s aesthetics (objectivism/subjectivism), can often be found in the Qur’an where it is said that all things have their external truth (form), but that, in order to understand them, we must be able to penetrate inside them and observe the core, the content. We can only talk of a work of art, accept or reject a work of architecture if we use this synthetic approach, combining the exterior and the content, in which we appreciate both form and the sociological, cultural, economic and human values in a building. A building must be informed by the desire for justice to be art, to be beautiful.

I would like to hear the opinion of Professor Grabar on this subject.

Kostof
I think we are confusing things very badly. It seems to me there is first the question of absolute beauty versus relative beauty. Architecture students love to be told that there are certain ineluctable elements of architecture that beyond time and place will make a building beautiful. When one tells them that this may not be so, they are very disappointed. The opposite of this, of course, is relative beauty, which is to say that there is absolutely no purpose in comparing Chartres with the Friday Mosque in Isfahan because their entire frame of reference is so different that beauty, in that sense, is a cultural thing.

The second set of issues is what Professor Grabar was saying: time versus originality. Again, architecture students periodically love to think of themselves as creators of form. The notion that the history of architecture is the history of a very small handful of building types forever varied, seems terribly disappointing to them, as is also the notion that art is born of restriction, not of infinite freedom.

The third issue is the observer’s visual reaction, versus what Professor Holod was trying to tell us. We may like a building immensely without knowing that, beneath it all, there was an incredibly complicated, sophisticated set of issues discussed at a particular place by very sophisticated minds. We may still like it anyway. Or, we may be totally oblivious to both its beauty and its learnedness.

The fourth issue is something we never talk about in schools of architecture, which is condemning buildings—especially those that are being built today—but which are often loved by the public. We never understand this; we say: “that dreadful-building-around-the-corner”, and pretty soon it becomes part of the city’s skyline. We all panned the Transamerica Building in San Francisco; every class said what a horrible building it was and how it ruined the skyline; yet today it is a public monument. People love it; they have it on their T-shirts. So there is that aspect of elitism versus some innate thing.

Finally, let me answer Professor Diba’s question regarding beauty in art. The whole notion of inculcating beauty as part of the Vitruvian triad disappeared with the Bauhaus. The Bauhaus tried to tell us there was no such thing as beauty, that it is social consciousness that creates beauty, not some affected thing. In consequence, in the 1960s and 1970s, we became terrified, and in public, at least, we stopped talking about beauty. When you ask a student, “Why do you have a round window?” he mutters something about wind velocity, but what he really
wants to say is, "I love circles." Aalto once said that about the Baker House Dormitory at M.I.T. Once a student asked him at the end of a lecture, "But why is it S-shaped?" He replied, "Well, that makes V-shaped apartments and they look over the Charles River; the cost per foot is such-and-such." Then he stopped and said, "Now this is what you tell the client. However, I did it because I love S-curves." But we don’t talk about that anymore. Let us by no means frighten students about the necessity of talking about beauty, which is there in some form.

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**Mobasher Ali**

My question is addressed to Professor Grabar concerning the forces that determine the acceptability of architectural forms by the general public. In most cases architectural projects are evaluated by professional architects, whose opinions are highly valued by the designer of the project. The general public, however, seems to accept new forms rather arbitrarily or even indifferently without any analysis or evaluation. In one case, for example, plastics were used for low-cost housing in a rather conventional way and were totally rejected by the public. What might make these materials acceptable? Is it just a matter of time or the intervention of some outside forces?

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**Grabar**

I really don’t know the answer to that question, except that the technique of presentation of a building or of an idea has something to do with its acceptance. I know that I’ve felt at times the best friend of an architect is his photographer. Do masses reject works which are bad or accept what is good? I don’t think it can be predicted.

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**Serageldin**

I was fascinated by the presentations of Professors Grabar and Holod. They both have made telling points on the importance of history and the proper study of history. My question is not whether architects should be exposed to history, of course they should. The question is how should such history be presented and taught.

Obviously architects are not expected to become historians. There must be differences in both approach and content when presenting history to architecture students and to history students. I would be interested to know your views on these differences.

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**Holod**

I think the key thing here is to realise that the material which a historian presents to architects can indeed be made alive and validated in a variety of ways. First, it is important that the person who presents this material doesn’t talk through the top of his hat.

This is why I insist on the need to develop a much more sophisticated idea of what was the true design and thinking context in which a building was created. It is not enough to say: 'This is a building; here it has eternal harmony.' That is not what my real function is. It is to say, 'Look, at this time, in this place, here were architects. I know because I have been able to gather this-and-this kind of information and have seen that there was a sophisticated design intelligence that came about in these-and-these ways to create this building.' That is fascinating, and I don’t need to do it with every building, make elaborate chronologies, though it helps to know when these buildings were built and in what context. If we continue to treat architects as historical idiots — which happens very often — and say, "Oh well, they’re not interested in history anyway", then we’re not going to get anything back. Of course they’re interested in history. They’re going to deal with it in some other fashion, arrange it in some other way. My purpose in teaching architects is to present what I know about the historical context of a building in as rational and complete a form as possible.

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**El-Wakil**

I want to stress the importance of what Professor Holod has said in her presentation, which I believe is very crucial to architecture and education. I have seen many architects who have disregarded the past, not because they were trying to be innovative, but because they were incompetent in applying the geometry needed for the forms they wished to create. Many modern architects are incompetent to do descriptive and projective geometry.

I am now working with a staff of more than twenty-five architects of all ages, some of whom are from post-war generations and who have a very simplistic view of what classical architecture is. They look at it and wonder if the people that built it worked from drawings. There are some who actually
believe that somehow it all came about by accident as if there was some magic in it. Since there is no evidence and no proof, they think that those forms and those designs materialised through some sort of magical taboo or sorcery. They don’t realise that indeed there was a geometry. Today there is only one man who has been able to see this underlying geometry, and this is Eero Aarnio, who restored the Azem Palace Damascus. Today we find that restorers and historians have more knowledge than architects; and in order to get that knowledge, they have to work as restorers or historians. I believe that an architect has to work within a tradition and not disregard the element of time. Just because we use the word modern it doesn’t mean we have a tabula rasa and that everything that came before us is no longer of any value to us. If we are going to create modern architecture, be innovative, then we have to be as knowledgeable as possible. If we are to evaluate architecture correctly, we have to be able to integrate our knowledge into our designs.

Professor Grabar spoke about typologies and forms reaching their perfection at a certain point, marking the end of a cycle. Sometimes I know that I cannot achieve the perfection of an architect who worked in the twelfth or thirteenth century; but, as a craftsman, I can see the ingenuity that the architect used to solve a problem. Sometimes the same problem faced and solved earlier crops up again and we come to realise that we have not looked deeply enough into history. I had a problem with a building I was designing and couldn’t solve it properly until I saw how Sinan solved it. Now I realise that I should have looked carefully at Sinan’s work.

All this is very important with regard to architecture education, as was duly stressed by Professors Grabar and Holod. It is not enough to speak of some sacred geometry that deals with symbolism or mythology and neglect practical geometry. Many students come to training without knowing how to project two lines together. We are not dealing with literature, but with a craft that requires a technical know-how, without which there can be no art.

Abdelhalim

It seems to me that Professor Grabar dealt with the relationship between architecture and art, rather than rethinking architecture as art. The implications of this latter concept for the teaching of architecture are extremely important. It is the nature of the problems facing the Islamic and developing worlds that makes it crucial to think of architecture as art. In this time of chaotic changes in the nature and structure of our societies, our whole situation is ill-defined and the outlines of the problems we face are fuzzy. It is art that has the capacity to provide the definitions we need, to give form to the questions that we have not even been able to formulate. It is art that has the creative capacity to provide meaningful order to our environment.

In architectural education, we should contemplate the integration of design and craft, of school and community. Genuine groups of students and teachers could be formed that would overcome our problems of large numbers, deficient resources, and alienation.

I believe that in Islamic culture there is a model, a retrievable one, of architecture as art.

Lye

I would like to make two short statements. First, I’m wondering whether both Professors Grabar and Holod are using Western historical methods to analyse Islamic history, because in the West it isn’t so well-known. I raise this question because once I was telling a German architect, a friend of mine, how great the Germans were as historians because they analyse everything so beautifully and you say, “Thank God, they don’t have us analysing Chinese architecture, and if they do, they won’t have much left.” So I think this is an important question we should not try to evade.

Second, on the issue of teaching our students the history of architecture, we have to select only those aspects of history which are still relevant now, whatever they may be, which can be applied and used in the designing process.

Mouline

It is well known that the contribution of historians is important for understanding the architecture of the past. The historian enables us to fix a work of art or a building in temporal context. However, is the historical approach sufficient for defining and classifying a building as a work of art?

An easy answer to this question could be to say that, by definition, art historians study only works of art. However, the fundamental question in the theme developed by Professors Holod and Grabar was that of the status of architecture in art. In other words, what is it in a building or a work of architecture that makes it a work of art? Is it external criteria, having to do with the weight of history, and the consensus of a social judgement that establish an edifice as a work as art? Or, are the criteria internal ones, tied to its internal organisation and a closed composition an embodiment of formalisation that orders all the architectural elements into an aesthetic, plastic expression? Or, finally, is it the art historians who via their historical and critical discourses and by the studies that they devote to a building, raise it to the level of a work of art?

Furthermore, what is it in a building that makes it a work of art? Is it the building as a whole or only a certain part of it? What is the relationship between a building considered a work of art and the way it is “read”, for example, by a visitor passing by or by the users, when it is a matter of domestic architecture? Finally, if it is the aesthetic, plastic expression that determines whether a building is to be classified as art, how is this
articulated with other expressions and functions?

Ramos Galino

I would like to make two statements related to Mr Mouline's comments. The first one refers to the issue of the character of colonial architecture. Spanish architecture in Latin-America was very different from its contemporary counterpart in Spain, and we half assume it is ours. Hispano-Americans think of it as half theirs. It's a child of both.

The second one refers to external certitude and internal doubt, a point made by Professor Grabar. All schools of architecture, at this point, are in doubt about how to teach. It's pertinent to ask whether it is possible to teach an architect how to be an architect. Surely, the only thing possible is to learn how to become one. The teacher's mission is to grasp the path, but it must be walked by the student.

Grabar

The discussion has shown, first of all, the paucity of conceptual thinking about architecture as art or about the uses and values of architectural history and the poverty of the vocabulary dealing with both subjects. The absence of references to theoretical writing suggests that relatively little thought has been given to these topics since the advent of Modernism and that such thought as exists is not well-known nor accessible. The clarification and further elaboration of judgemental criteria, especially within the context of a contemporary and/or traditional Islamic thought, are clearly necessary for the continuing discourse of the Award.

On a more concrete level, two points seemed of particular relevance to our purposes of defining or analysing an appropriate architectural education. One is the contrast, if not opposition or confusion, between history and aesthetics. Dealing with and understanding the past in its own terms is an entirely different exercise from that of assessing a building or an ensemble as a beautiful work.

Different methods of analysis lead to different results and the training and competence of a historian are not those of an aesthete-cian. Are both needed in schools of architecture? How can they be integrated within a curriculum based on studios? Should it be an obligation for students or for instructors to become well versed in history, philosophy, or both?

The second point is the identification, at least by implication, of three "client-constituencies" for schools of architecture in an Islamic world. One is the ruling system, usually the government, which expects solutions to certain practical problems, but also conformity with ideological and not visual interpretations of the past. The second one is a society whose tastes vary from place to place but are conditioned by readings, images, memories, magazines, whose analysis remains to be made. The third one is the student body itself, as so many speakers used student reactions or actions as evidence for their arguments. What are the expectations for themselves and for their society of those young men and women who wish to become architects? The question is possibly worthy of a seminar.
With due respect to Professor Arkoun, my presentation is not so much about "ruptures" as it is about slow, progressive corrosion. My solutions are not so much to avoid the dangers of the present "ideologically charged" reality of the Muslim world, but more to suggest the vision of a destination that may take us forward to a genuine Islamic culture.

Let me begin with a personal position on culture and architecture:

It is usually stated that architecture is the concrete expression of a culture, thereby implying, however innocently, that culture somehow existed before as a cause and architecture emerged as its logical effect. At the risk of showing bias towards the powers of architecture, allow me to submit that in a vital civilization the situation is quite the contrary. Architecture is made to make culture possible. A house is made to assert existence, and its form is a declaration of a view of life. Tools are created, not merely used. And form is given, not merely executed. In this sense architecture becomes the stage as well as the choreographer of culture. Only when culture has deteriorated into conventions and habits does architecture become a formulated response to established stimuli with minor variations feigning originality.

When architecture is culture, earth becomes a garden and water, a bounded pool; emptiness becomes an inspired space and matter, the eloquent form. It is then that the shapes merge together as patterns and calligraphy becomes sacred. Wood is crafted into a seat for the Book, and stone into a mausoleum that defies mortality. Man seeks to transcend Time and for posterity he makes objects and records ideas that outlive him.

Among these gifts to the future, architecture is indeed precious. But, when culture is confused and civilization has faded, these gifts are mere antiquities, of interest only to the dedicated historian.

Today we face the question of whether Muslim cultures do exist and whether they can be considered expressive of an Islamic civilization. We face the perennial question of Islamicity of architecture. One asks: what kind of a person should be the architect of our future's heritage? And what is it that we can do towards his or her education?

It is unfortunate that we cannot begin answering these questions on a happy note, because the Muslim mind is in a state of amnesia and, in some sense, a cultural schizophrenia. However, any search for light has to begin with knowledge of darkness, and any plan for healing presupposes an honest assessment of pathology of the illness.

Firstly, we notice that the universal Islamic paradigm is absent from the collective affairs of the Muslim people. They show a monotheistic world view, and are perpetually talking of an umma. The fact remains that Islam is not an operative idea in their overall art of living. Far from being an umma (a commonwealth of people under one God) they are split into more than forty nation-states, that artificially territorialize their histories of Islam, fabricate national cultures and project heritage as it suits their myopic objectives.

In the environmental field, there have been some individual efforts to postulate a God-man-nature matrix and to extract an environmental ethic that could lead to a value base for Muslim architects, but these remain mostly the wishful thinking of ineffectual intellectuals. The contemporary Muslim epistemology, to coin a phrase, is indistinguishable from those of the secular systems of thought. Occasional attempts are made to Islamicate knowledge but, with a few exceptions, it is an exercise of gold-plating what is fundamentally not of gold.

Secondly, the Muslim psyche is acculturated to the extent that it shows a variety of social neuroses from grandiosity to cynical self-hate. The metropolises of the Muslim world today are psychiatric records of a people in a painful search for identity and a language of expression. From crude literal historicism to "Islamically" decorated international style, the Muslim city is an architectural masquerade. This transvestite architecture is the sickening cohort of a transvestite culture.

Thirdly, we find that Islamic intellectualism, though seemingly energised, is quite anemic. While educated Muslims abound, they represent neither a frame nor a movement of thought within which we may understand the contemporary reality and formulate a vision of the future. Instead, our Muslim intellectual comes in many clothes and visages: a socialist struggling for Islamic legitimacy, a political ideologue swinging a sword against perceived conspirators, a technocrat promising new horizons, and pamphleteer of official Islamisation programmes. In addition, there is the utopian, whose delusions and paranoia perpetually feed on one another. In this tragi-comedy of neo-Islamic theatre, the architect, by choice or by default, plays a visible role.

For Muslims of our epoch, neither ideology nor clear ethical philosophy have guided expression in the arts and literature. The vitalism of Iqbal and his views on the purposeful art failed to touch the Muslim intellectual and artist. Our architecture has remained separated from ideas and our art devoid of purpose. Muslim intellectualism dwells in an unreal world, and it is ridden with contradictions and prone to excessive looking back or fantastic daydreaming.

Fourthly, Muslims have adopted without much questioning the religion of science and technology in their pursuit of development. Of course, not being able to discard Islam from their socio-genetic make-up, they have tried to graft their new belief upon the old, feeling miserably behind, they are obsessed with catching-up. Given this emotional disposition, Muslims find preferential aid programmes and magically transferable technology extremely attractive. What is especially sad is that while the intellectual vitality of the West made it possible for an Aldous Huxley or a George Orwell, a Jules Verne or an H.G. Wells to paint evocatively opposing pictures of their future, the Muslim world produced only apologists, who kept convincing themselves that the Qur'an and science — and, implicitly, modern technology — are "miraculously compatible". It is this simplistic logic that set the stage for unquestioning declarations of faith in the technological future.
Among Muslims, there has not been a Jacques Ellul or a Herbert Marcuse who could warn them about the sweet enchantments of the machine. There has not been a Lewis Mumford or a Marshall McLuhan who could provide the historical matrix or stir the imagination about the limits of the possible. Among Muslims one does not even find technological optimists such as Buckminster Fuller or futurologists like Herman Kahn or Gerard O’Neil. One is amazed to note that, while the ecological movement was peaking in the West, the Muslim world was madly on its way to create its own environmental problems, with the excuse that those were inevitable by-products of advancement. Ironically, in the international call for appropriate technology, many Muslim technocrats saw a sinister plot to keep their countries perpetually underdeveloped.

The hunger for technology and its tools is insatiable and no serious attempt has been made by Muslims themselves to develop critical tools for assessment of its impact. There has been a passionate voice of a Hassan Fathy, but its reach was limited by the insensitivities of his time. There have also been sporadic groups and workshops that raised the flags of indigenousness, self-reliance, soft technology, mud buildings and an architecture rooted in the medieval cosmological framework of earth, water, air and fire. These are isolated glimmers in the otherwise spreading greyness of Ellul’s Technological Society. Sitting very close to the well-intentioned people, however, are the chauvinists of tradition and ethnicity. Between the tables and charts of the technophile and the rhetoric of the demagogue.

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Brass rod model of Sinan’s Şehzade Mosque, Istanbul, illustrating the wire models technique developed in the author’s “Structure and Form” workshops at Carleton University. Through careful control of light source, families of planes and volumes are recognised and photographically recorded. This technique makes it possible to see space and form simultaneously.

Photo: Courtesy of G. Haider
of tradition, a sincere voice calling for harmony among man and nature, technique and beauty, economics and ethics, and form and meaning, is drowned out and lost. Muslims are the loyal eunuchs in the technological harem, present, but banished from any creative engagement.

And, finally, the education, especially that of professionals, is primarily looked upon as manpower development and tied into the national statistics of economic planning. Some architectural institutions in the Muslim world have courses in Islam and its cultures but their content does not go beyond cursory theology and laundered history. History of Islamic art and architecture are usually survey courses devoid of critical discourse.

Much more serious, however, is the attitude that, like technology, education is also a purchasable, transferable, and a value-independent commodity. Repeatedly, we are told, that knowledge itself is not bad, it is the purpose for which it is used that makes it beneficial or harmful. Few are willing even to consider that perhaps the most significant values are hidden in what is defined as knowledge and the way it is established and imparted. The Muslim architects educated abroad, especially during the 1950s and 1960s, were taught the supremacy of technological system in building process and wonders of modern materials such as steel and plate glass. And we all see the type of architecture that resulted from that education. Muslims are still engaged in making poor copies of originals from the cultures where they were educated. They are at their worst when they slip into mindless eclecticism justified by lame symbolic excuses. A round high-rise building, because the circle represents unity and thus tawhid, and five columns because there are five pillars of Islamic religious practice. Heaven, have mercy and save us from such architecture! When the pursuit of novelty and modernity is served by eager technology and literal symbolism is justified by religious expressionism, cup cake-domed mosques, closely packed polyhedral university campuses, and a book-shaped institute for Qur’anic studies are not surprising.

Proposing historical casualities for our present predicaments does not help, nor does the relentless punching of our favourite bogey-man, the West. It is also futile to look for some deep philosophical inevitability in our situation. Muslims will have consciously to accept and purposefully to act to remove these conflicts and dysfunctions; otherwise, they will not recover from the superficiality of their culture and architecture.

The culture of Muslims will have to be understood as going beyond language. It must comprise ethnicity and customs, as the social expression of a people who have a convenant with a universal God, who seek to work within His Scheme, and whose creative arts are offerings to the Supreme Creator. Muslims must be cognizant of the rights of man on man, of man on nature as well as of nature on man and who are committed to justice, harmony and balance among these. In short, they are simultaneously ‘ibad-ar-Rahman (servants of the Beneficient) and khulafa ‘fi-l-ard (the vicegerents of God on earth).

It is my firm conviction that any serious revitalisation of Islamic culture that breaks out of the helpless acceptance of the present reality, will begin via a re-education, to the extent of re-formation of the Muslim intellectual. It is an issue of philosophy and dynamics of change. I would submit that a methodology and the results it produces cannot have contradictory value bases. Thus, no Islamic intellectual movement can begin, much less achieve its goals, unless it is rooted in a genuine Qur’anic view of existence and an internally consistent Islamic epistemology.

Muslims will have to first accept that neither science nor technology, not even art, is free of some attendant value. They will have to break the habit of purchasing solutions and then hunting for problems. They will have to stop reducing problems to their current levels of ignorance. And, they will have to resist the pervasive seduction of technology. Instead, they will have to formulate carefully an environmental and technological ethic and develop evaluative skills to make intelligent choices.

Turning to the issues of form, let me submit that if we define form as stable, unchanging structural relationships among entities, then Islam is quite formal in the domain of religious performances and social transactions. But beyond such socio-religious formalism, one can invoke almost complete freedom in sensory form. There is one Qur’an, with one internal content and structure, but it has been recorded in calligraphy and recited in many distinct forms. There is a stable pattern in how a mosque is used and there is a universality in the key stages, sequences and body positions of the daily prayers, but the mosque has taken many formal expressions. No doubt we could propose some primordial characteristics of the mosque and list a set of universal elements like the threshold, boundary, orientation, qibla wall and mihrab, but the fact remains that there is a wide architectonic and formal variation among this most common of the Islamic buildings. The Great Demak Mosque of Indonesia and the Green Mosque of Bursa, Turkey, were built in roughly the same period, but have totally different forms. The sixteenth-century Ottoman ensemble of the courtyard, mosque and graveyard, is quite different from the mosque-mausoleum relationship in Moghul India or Safavid Iran. A formal-taxonomic study of any major building type across Muslim history will be enough to substantiate our thesis that, while there might be a trans-cultural syntactic unity, there is no hard and fast formal vocabulary. The formal essence, instead, is embodied in formalism of the sharī’a, exegesis of the Qur’an, and a pursuit of meaning and elaborateness befitting the purpose of the building. In the cultures where esoteric versions of Islam were predominant, one might notice the expression of Islamic cosmology, paradisiacal images, numerology and special power of the sacred names and verses. Like in all great traditions of world architecture, a confluence of climate, context, site, technology, materials, crafts, and dictates of function had fundamental effects on the genesis of form.
From formal manifestations of religious ritual and the images and analogies used by the Qur'an, Muslims throughout history have drawn energy to reshape their indigenous forms and symbols to express their own spiritual aesthetic, their worldly vitality and their other-worldly anticipation of paradise. There is no reason why the same energy cannot be resuscitated to launch once again the formations and transformations that are compatible with our evolving understanding of the Qur'an, Islam, and our purpose in this life. To me it is abundantly clear that in the absence of such a dynamism we are condemned either to mindless mimicry of our ancestors or a shallow pursuit of modernity leading to abominable transmutations.

Enough has been said about the contemporary Muslim, temptations of technology and aimless progress that he confronts, and his longing for identity and purpose. I hope that my views on visions, however utopian, of a possible Islamic culture, a value-based technology, and a meaningfully eloquent form, are by now clear. Turning to the prescriptive realm of education, and speaking primarily to those who share my vocation, I hope to be allowed the luxury of a polemic designed to provoke a meaningful discussion.

1) Education towards the practice of an architecture worthy of being called Islamic cannot afford to ignore Islam in its comprehensive character and totality. Knowing the Islamic world view from within, and being a believing Muslim can be quite different from a mere intellectual understanding of Islam. An atheist, a polytheist, even an agnostic, however great his knowledge of Islam, cannot inspire the Muslim to become an Islamic architect. Scholarship by such outsiders will at best clone itself and keep producing an analytically impressive literature. Its special educational value may, however, lie in provocation of the believing and searching Muslim mind to seek out its deeper self and discover its real meaning, and this the Muslim of today needs very badly. Only an escape from the self-referential environment opens our eyes to the true nature of our own beliefs and only then can we, with full consciousness, confirm or reject Islam. The Muslim student needs to experience this occidental exile, this confrontation with secularism and doubt in the invigorating and free atmosphere of a university. Only then will he rediscover a vital and creative Islam. It is an arduous and risky journey, but the rewards make it worth undertaking.

From history comes an echo in the words of Juwaini of Nishapur, who, while laying out the requisites of knowledge, said:

A quick mind, zeal, poverty and a foreign land,
A professor's inspiration and of life a long span

2) A teacher teaches because he is knowledgeable, skillful, wise and in love with his vocation. While he may transmit information and explain away complex phenomena, his most lasting contribution is through his personal philosophy and his examples of work. Learning is an absorptive process, and the teacher cannot avoid the moral burden of his station, from which his beliefs are transmitted to his students. If he is excessively idealistic, he will breed utopians or
cynics. If he is excessively pragmatic, he will create protagonists of the status quo. If his biases are hardened, he will spark blind adherence or provoke equally blind rejection. If he is not actively learning, he cannot actively teach. And if he is not sincere about his own ideas, he cannot be convincing in their presentation. In an Islamic framework, teaching is beyond instruction and a teacher is a significant part of the education imparted. Teachers are the architects of tomorrow's history and in them lies the hope for significant qualitative shift in the architecture of the Muslim world.

3) I believe that criticism and journalism are extremely powerful tools for elucidation of design theories, of value clarification and, if one so desires, outright indoctrination. The most convenient way to banish any subject area or design theory is to take a collective vow of silence about it. Conversely, any myth can be raised to the level of inalienable truth and profound wisdom by repeated use of it as the reference for critique of the students' work and as a premise for developing written arguments. So, beware of your station of subtle authority as a critic, a writer and a publisher. Admit technology as a critical issue of culture and a significant determinant of the form of architecture beyond a mere feasibility check. Raise economics of architecture as a question of social justice and as an ethic of creative frugality and elegance. And ask every design to speak of its symbols and to reveal its structure of meaning. Question romantic pursuit of tradition as well as superficial modernity, and, of course, speak of function, climate and comfort with as much care as you reserve for the poetics of space and pursuit of paradise.

4) Believing, knowing, being and becoming are inseparable in the Islamic personality. Theory is interwoven with practice and belief with action. In education, content and method are inseparable. The best pedagogy is rooted in the arena of life. An education that does not enhance the art of living is only training for routine tasks or fruitless sophistry.

Let me now particularise my thoughts around a question: how would one initiate change in the teaching of technology within our broader objectives of realising a genuine architecture? I would start with bringing together a few thinkers, perhaps seven, each having bridged at least two separately recognised fields in their lives. Consider a designer-philosopher, a philosopher-theologian, a theologian-historian, a historian-scientist, a scientist-engineer, an engineer-politician, a politician-builder, and a builder-designer. It would be ideal if some of them have also bridged two cultures. I would challenge them with the following three questions and request from them a jointly written document:

1) What limits would Islam place on man's technological interventions in his environment?

2) Where do we locate technology within the secular circumference of contemporary reality and the religious centre of Islamic ideals?

3) How must technology be kept as an integrated fact of architecture and yet taught as a subject area worthy of being included in a university-level curriculum?

My own views on the first and second questions are implicit in what I have said earlier. On the third question I suggest that, for pedagogical objectives, technology be split into three realms. First is the realm of pure concepts that would be considered universal and para-architectural. This covers theories rooted in physics, thermodynamics, mathematics, and geometry. These I would teach in the classical style of lectures, demonstrations, and a generous measure of tactile laboratory experience.

The second realm is where technology and design could combine in a mutual quest. This is where technology should rise from the status of a subservient form-actualizer to that of an important form-determinant and, ultimately, as an inseparable aspect of architecture. My experience has convinced me of the value of two simultaneous approaches: first, a set of morphology workshops where relationships of energy, geometry, structure and architectural form are studied; second, studio lectures, along with the inclusion of technology as a critical issue in problem statements and an essential dimension in studio critiques.

The third realm is where technology offers the ultimate service to architecture in construction. This is where cultural intentions and technological imperatives, tools, techniques and crafts, seek harmony and equilibrium and become architecture. To me this is the real laboratory, the ultimate studio. This I would make an essential part of the curriculum, with no compromises. The studio would be extended to the city and the city brought into the classroom. The focus on direct experience of construction and craft would lead to appreciation of the inseparability of idea and building, and a revitalisation of values in architectural design.

Parallel to these three realms, I would require a colloquium, a pro-seminar on technology, culture and architecture. Here history would become an important source of lessons and much-needed confidence. Design theories would not be debated in the abstract but in the course of the study of real work, past or contemporary. Non-Islamic history, theory and design would be used as a reference for comparative analysis and healthy debate so that the universals of Islamic architecture can be identified as distinct from the regional specifics.

Finally, if I were allowed only one wish and one single chance to initiate change in architectural thought, I would initiate an "Islamic Weissenhoff". Of course, it would be different from its 1927 inspiration because the Islamic view of society, community, work and dwelling should be distinctly different from that of early twentieth-century Europe, the Werkbund and Modern Movement. But the merit is in the process of a symposium where the work is eloquent and the architect silent. I see no better way to test architectural ideas in a controlled manner, no better way to bring academics and professionals together, no better subject for theoretical analysis, no better technological workshop. Ultimately, an excellent way to teach is through discussions and publications. I sincerely believe that this is an
idea for which the time has come.

As the poet Saadi of Shiraz said, the reality of musk lies in its scent and not in the perfumer’s advice, which, unfortunately, I must confess, is all that I can offer at this stage.

Reference Notes

1. For a more detailed discussion of this issue see G. Haider, “Heritage and Harmony”, Inquiry, 2 (No 2: February, 1985)

2. Comparative study of authors such as Mohamed Arkoun, Nasib al-Attas, Ismail al-Faruqi, Fadur Rahman, Parvez Manzoor and Ziauddin Sardar is suggested.


5. Consider projects and groups such as Selseleh (Iran, 1975-78), cf. *Mimar 1* (1981); Ghelfin (Iran: 1977-83), cf. *Mimar 8* (1983); CRATerre (Grenoble, France); and individuals such as Cherif Zaouch from Tunisia and Rolf Blackstad from Spain.

6. Tabung Haji high-rise tower, Kuala Lumpur.

7. Negara Mosque, Kuala Lumpur or Faisal Mosque, Islamabad.


9. Proposal for Juma‘a al-Khiab (Institute of the Book), Riyadh, Saudi Arabia. The same architect has proposed a telecommunications tower that replicates a palm tree (al-nakhl) and a water tower that is a giant incense burner (al-nakkharah). In explaining his projects, he says, “The idea of form and function in the architecture of Islam is that form does not change according to the functional demands but instead adapts function.”


11. The phenomenological aspects of the ritual prayer and its possible correspondences with the form of the mosque are discussed in a recent undergraduate thesis: Noorzehan A. Mahadin, “The Beloved’s House”, School of Architecture, Carleton University, Ottawa, 1985.


15. The author has offered such workshops at school of Architecture, Carleton University, since 1975.


17. A 1927 architectural event of historic significance: A built exhibition of housing for workers in Stuttgart, Germany in which all the later greats of the “Modern Movement” participated. The need for such an event for the Muslim world has been proposed by the author at various meetings and is outlined in some detail in a TOKTEM-UNDP Report: *Fifty Days in Karachi*, 1981.
Technology Form and Culture in Architecture: Misconception and Myth

William Porter

My intent in this paper is to engage issues that touch on architectural education when three concepts — technology, form and culture — intersect. First I shall touch on some aspects of that intersection and the architectural significance of technology, and then I shall look at some issues for architectural education that seem to emerge. I will deal chiefly with architecture in the West and with examples where technology has been consciously incorporated into the architectural aesthetic. Because architecture in the West is so often used implicitly or explicitly to support various arguments about architecture in the Muslim world, I felt it essential to dispel certain misconceptions — that technology demands specific formal expression in architecture, or that its incorporation necessarily prohibits designs that are regionally and culturally appropriate — and to distinguish these misconceptions from myths that surround and project technology in architecture in the modern world. I believe that there are lessons for the education of architects in the Muslim world that can be drawn from this Western insider’s story, and I shall try to indicate some of those possibilities.

Issues at the Intersection

At the intersection of technology, form and culture are three apparent oppositions that will help to frame the rest of my discussion. These are: traditional versus modern technology, means versus ends, and centralisation versus regionalisation of the means of production. Traditional technologies are seldom codified, modern technologies always are. Procedures in traditional technologies can be described, but are not formulated as underlying sets of principles that lend themselves to a wide variety of applications. Theories underlie modern technologies that are independent of their applications. Traditional expertise is embedded in expert craftsmen; modern expertise in a compact body of theory expressed in mathematical, logical or procedural terminology. Traditional technology is thought somehow to

Great Mosque at Niono, Mali being resurfaced.

Photo L. Prusin/AKP
draw upon the wellsprings of indigenous culture; modern technology to be the emblem of a new science-based vision of society. Traditional technology can be guaranteed only through the perpetuation of an apprentice system that guarantees continuity of skilled craftsmen. Modern technology is passed on and improved on through industrial organisations and educational institutions.

In the caricatured sense that I have described them, there can be neither a "traditional" nor a "modern" technology today. Militating against a traditional technology are the decreased social and occupational stability of traditional societies, the depletion of craftsmen from them, the loss of expertise that has resulted from the first two, and the proven advantages of modern technologies when combined sensitively with traditional technologies over traditional technologies alone. Conscious use of vernacular technologies in this day and age that are ill-adapted to contemporary life-styles can only be read as an aggressive rejection of modern technology and all that it may be said to represent, and perhaps a naïve wish for a return to a more primitive and "ideal" condition, or a deliberate action with both of the above implications that is part of a larger program of social reform.

Wise heads in national and international organisations and in responsible architectural firms have long since observed the disruptive and damaging effects of the inappropriate introduction of industrialised building into poor countries, especially for housing. Conscious use of modern technology, in this limited sense, can easily be read as a rejection of past values and an effort at colonisation by ideas and cultures of the West. Technology establishes a relationship between means and ends, between the means of production and the product. It can also establish priority of the product over the means to produce it. Machines and people become a "standing reserve" to be used as part of the means of production. They become instrumental, useful, and efficient in relation to products and in relation to the processes of the industry of production.

Mumford says much the same thing when he calls the teams of human beings the machines for city building that have existed since ancient times. Nature itself can be caught up in this view of modern technology. The Rhine is no more than a factor in power production, the forest a source of lumber or paper; the land is stripped of its ores, leaving behind refuse heaps just like those left after clearing for new cities. Trees are destroyed without regard to their ecological function or their ability to ameliorate the climate, let alone their social or aesthetic function. Thus technology is a concept with ancient roots that can contain an interesting paradox: the more we master it, the more we reify, even deify it the more we place it above other societal objectives, for the means of production, including people, can become secondary to production itself.

When the technology of power, sources of energy, materials, and elements of construction were introduced beginning in the late eighteenth century, products could be divorced from the places they would be used
and people who would use them. Technological advances depended little on discoveries made locally in the course of application and much on scientific and engineering experiments that could be carried out anywhere. Examples abound, starting with the steam engines that fired the new industries.

With power in society distributed according to the size of the units of production, it is natural to expect that choices in design would reflect the interests of factory owners rather than the interests of ordinary people. Emphasis placed on the production of the product itself, rather than on the service to be rendered by it, meant that initial cost, rather than life-cycle cost, and expediency in the production and construction process, won out over considerations of maintenance and use. Businesses that specialised in housing eliminated regional differentiation or modification of the product, as a glance at almost any prefabricated housing project will exemplify. In any event, we have in schools architecture, engineering and the other environmental professions the dubious honor of housing what may be a fundamental contradiction: we are the agents for disseminating modern technology, and we are at the same time the chief advocates of regionalism and of locale-specific architecture!

Good building since the advent of modern construction technologies, and with increasing sophistication, has contained these oppositions, taking simultaneous account of traditional and modern techniques, engaging local enterprise in environmental improvement programmes and benefitting from the economies of centralisation without sacrificing regional specificity. Such possibilities rest in part on forces outside architecture, but they rest as well on architects' understanding that building functions as sign and symbol as well as to satisfy practical needs, and on architects' memory of good building of the past. The possibility of bad building, while it, too, depends on forces outside architecture, requires as well a naïve and compliant semantically inept profession. It is to these that architectural education and this seminar in particular can address them-

 Otto Wagner, Postal Savings Bank, Vienna, interior
 Source Art in America, May-June, 1979, p. 80
Before discussing the architectural significance of technology, I need to develop a few ideas about significance in architecture more generally.

**Architectural Significance of Technology**

Architecture is an internally ordered world. Its elements take on meaning in relation to one another and to the environment, both natural and architectural, in which they are located. Language has as its primary aim to convey meaning. It signifies things outside itself. Of course, its internal structure must be consistent enough to make clear its reference to external things. Architecture can signify, too. The orientation of a mosque toward Mecca, which can make its street facade very different from the orientation of the rest of the street, signifies the presence of that institution. Minarets may convey the idea of a connection between heaven and earth, or, like the towers at San Gimignano, between wealth and a particular individual or family! Buildings like the Pantheon or Hagia Sophia have successfully supported a variety of associations and uses. The fact that many architecturally distinguished buildings have sustained a variety of different uses and meanings over time underlines the point that the life of architectural form does not depend primarily on its association with a specific use or meaning.

There is a second important difference between the semantic roles of language and architecture: language is the result of centuries of usage, acceptance, and modification by many individuals, it is a collective product the form of which at any time cannot be thought of as consciously designed. Unlike language and unlike vernacular building, architecture at one extreme is a product of an individual and at the other of individuals working together, but at either extreme it is a product of a relatively small group of individuals acting in a relatively short period of time. Whereas structural analysis may be literally applied to language, it can only be philosophical or metaphorical when applied to architecture. Analysis of language may provide insight into the ways that architecture deals with the question of meaning, but it cannot explain how architecture does so or how it might do so.

Like language, architecture has the capacity to define new ideas and to convey new meanings, but it also accumulates bits and structures of older languages that have unpredictable connotations when reused. Most architects are aware of this, and it affects the aesthetic attitudes that many architects and their clients have toward technology, and that arguably have driven the making of architectural form. “Bricolage” is the term sometimes used to refer to these cultural artifacts that in their reuse cause surprise, delight, and add meaning to the buildings in which they are found. Bricolage, if generously interpreted to include both elements and structures, can provide the chief connections to the past and to cultures elsewhere. Palladio’s San Giorgio Maggiore in Venice superimposes a classical temple front on the profile of the side aisles in the first several feet of the facade. In so doing he expresses the volumetric nature of the interior of the building, but he also combines or, if you prefer, opposes a domestic scale and a civic non-secular scale in a single glance.

By rejecting the use of inherited architectural elements with their associated uses and meanings, the architect can demonstratively reject any past meanings and project a building that is intended to be entirely of its own time, without precedent, and embodying only the current and promised societal order. It is here that we turn back to questions of modernity in general and technology in particular. Otto Wagner, practising in Vienna just before the turn of the century, argued that the role of architecture was “to consecrate all that emerges, in the fulfillment of [practical] aims ... Art has the task of adapting the face of the city to contemporary humanity.” Schorske explains that:

*In his educational theory, Wagner declared war on the training of the memory, the faculty favored by historicism. He condemned the Italian journey, classic capstone of a Beaux Arts architectural education, on the ground that Italy’s models said too little to modern men. Let the architectural novitiate visit instead the metropolis and those places where modern luxury resides.*

His Postal Savings Bank Office was rich yet lean and elegant, expressive of the “uniformity of bureaucratic rationalism.” He utilised new materials in careful but unostentatious ways. In a program to design some thirty stations as chief architect of the railway project, itself a sign of modern technology, Wagner attempted to find a contemporary architectural language. His Unter Dobling Station, with its railroad trestle arch supporting the central part of the otherwise conservatively designed building, however, illustrates the problems of utilising technologically based forms in uncomfortable juxtapositions. Used in these ways they become little more than bricolage, borrowed bits of other vocabularies used for their capacity to signify rather than their capacity to establish a convincing internal order to the building. Ironically, Wagner’s railroad trestle corresponds precisely to some of the current historicist’s use under the banner of Post-Modernism of elements borrowed from architectures of other times.

Modernism harbours a great many elements of formal vocabularies from the past, mediated through the eighteenth and nineteenth centuries. The perfect geometries of Boulée and Ledoux, Durand’s classical language removed from its functional reference, the architecturally inarticulate Viollet-le-Duc’s struggle to raise the Gothic to a cult of structural necessity, the Beaux Arts quest for symmetrical perfection, and the neoclassical language drawn from antiquity — these and more are embedded in modernism, along with its manifesto-trumpeted admiration of the machine, of production, of materials, of nature, and even of the new society that fidelity to technology was supposed to make possible. It is tempting to label these formal elements merely an underlying bricolage, but I think they are much more in that they are, in the hands of good modern architects, re-shaped to contemporary notions of technology and cul-
ture. I have space and time to cite only a few other examples to illustrate these points, some drawn from the work of architectural pioneers earlier in this century.

Iakov Chernikhov in his teaching of the 1920s in the Soviet Union attempted "to establish the clear and precise basis for constructive concepts and principles, and to elucidate their essence, their logic, their rules and their laws." By setting the illumination of construction as part of the aesthetic task of the architect, Chernikhov projected modern technology into human perception through building. The indicators of a "constructive" building were that it should have, in volumetric and spatial terms, a precise cohesion between the parts; a functionally necessary basis for this cohesion; and the presence of a bearing or support, in order to exist in condition of stability and rest." The general structure should reflect "the building's function and purpose, and the spatial organization selected is not some appendage, like a decorative ornament in the old-style architecture but an integral part of the edifice." Chernikhov's "elements of form" are linear and planar elements on a plane, and elements in space: planes, surfaces of rotation, and volumes. His "constructive joints" derive from possibilities opened up by machine design, and even the illustrations are of objects possible to produce in the factory.

Classical aesthetics is explicitly rejected: "enforced symmetry of structure, the rhythm of simple repetition, and the combination of component elements on universally beautiful principles." He goes on to state the principles governing his approach, and these include free asymmetries, relation of the design to the impressions sought of the viewer, and expressive colour effects. These principles effectively break with the past.

Le Corbusier, inspired in part by environments like those of an ocean liner in which the design is determined in large part by forces that must be efficiently transferred to, translated ordinary human activities like dwelling metaphorically into describable systems of forces for which designs can be sought. From this came his "machine for living." The idea was not, of course, to shape the house as precisely as a ship would be shaped. "Living" implied the user's adaptation of a basic form that modern construction would provide. In his Dom-ino prototype, he expresses the possibilities opened up by innovations like the (then) relatively recent Hennelique column to beam connections that made the rigid frame possible and that eliminated the necessity of walls to resist overturn Le Corbusier sought a form that would lend itself to mass production, would permit flexibility for the occupant to utilise it like a piece of equipment, and would allow for a wide range of combinatorial possibilities to create varying urban patterns. His aim was to combine the advantage of a centralised modern construction industry with local building skills that could complete the building in a variety of ways dependent on local skills and use requirements. He pursued this interest in his Maison Citrohan, the name a take-off on the automobile company implying the possibility of mass production, and at Pessac, where he built 130 reinforced concrete frame houses that have been substantially altered by users, in keeping with his earlier thinking on Maison Dom-ino. There is a striking contrast between the non-place look of the bare frame produced, conceptually at least, in some distant factory and the highly place-specific look of the houses once altered, added to and adorned. His formulation of the "five points" for residential design, pilotis, free plan, free facade, long horizontal sliding window, and the roof garden that restored the ground were embodied in his project for the Stuttgart Weissenhofsiiedlung of 1927 and the Villa Savoye at Poissy, 1929-31. These could be thought to represent a transposition to architecture of the engineer's aesthetic and the products of the new modern construction technology that Le Corbusier had so long admired to at least the basic structural frame for living. In that transposition another important issue for modern architecture was dramatised: the opposition between freedom from place that modern technology implied and the locale-specific qualities that people bring to building and need in order to reinforce their own sense of identity.
There are many other examples that would display distinctive attitudes toward technology that formed a fundamental part of an architectural aesthetic. Mies Van der Rohe’s corner of the Alumni Hall at Illinois Institute of Technology demonstrates an insistence to emphasise the materials of the building’s making even though the actual structure lies behind the brick, mandatory for fire reasons. The truth of the condition is revealed by allowing the brick to pass under the steel corner elements, thus conveying their non-structural role. Louis Kahn in his library at the Phillips Exeter Academy in Exeter, New Hampshire, achieves a subtle and dynamic quality in the exterior elevations by allowing the brick columns to diminish in size as their load bearing requirements diminish, and he does the same with concrete columns at the British Art Center in New Haven, Connecticut.

The Centre Pompidou in Paris projects technology in a variety of ways that are much more complex. Severely functional to the point of exaggeration in its mechanical service systems, it does not pick up cornices, arcades or other features of building in the area.14 Transparent, flexible and apparently functional, in clear distinction from its museum predecessors in Paris, it utilises a compulsively simple scheme, a metric repetition of steel trusses and columns that do not vary in their dimension and that convey the sense of anonymous and non-specialised building — a warehouse (or supermarket) of culture. But because of the extraordinary spans and because of the architects’ wish to make these structural elements particularly expressive, columns, trusses and joints are all specially designed for this building and for this building only. Industrialisation and standardisation are here opposed to handcrafted, custom-built one-at-a-time objects. Through its structural exhibitionism it makes reference to Notre Dame and the Eiffel Tower, both visible from the front and public facade; but neither of those buildings contains the obvious references to other buildings nor the complex and culturally contemporary equally important oppositions contained in the Centre Pompidou. Apparently simple, but semantically complex, this is an artifact to be “deconstructed” by our critics of contemporary art.15

The grid is the last idea that I shall present as characteristic of how architects and artists have projected technology in modern times. The grid has been a much used figure of the avant-garde. “The absolute stasis of the grid, its lack of hierarchy, of center, of inflection, emphasizes not only its anti-referential character, but — more importantly — its hostility to narrative.”16 Krauss goes on to argue that the grid by virtue of its lack of reference emphasizes not only the originality of the art work itself, but also its own organisation and its materiality.17 By denying the possibility of signifying other architectures, times, cultures, and human events, the grid turned attention to the
means of the building's own making — its technology — which, in turn, could then signify modern technology in general.

The grid struck at the heart of historicism and of eclecticism, and at the symmetries, axes, hierarchies and other devices of formal organisation practiced by Beaux Arts and neo-classical architects. I say "struck" rather than "strikes" because, by now, the grid is so well established a figure in architecture and art that, when it is now used, it is often used demonstratively as in this case of Agnes Martin's paintings, and it is semantically much more complex than when it began to emerge earlier in this century.

Richard Meier, for example, in his Museum für Kunsthandwerk in Frankfurt, utilises the grid not only to provide internal organisation to his building, but to forge links with the surrounding site and even with the Villa Metzler, in order to incorporate it into the overall composition. Again in the spirit of the deconstructionists, the ideas of past and present, of difference and similarity, and of originary and repetition are presented simultaneously and with equal force utilising a figure, the grid, that was, in the hands of the early avant-garde, used to make a sharp break with the past, with other buildings, and with eclecticism.

Deep Understanding

It is not appropriate in architecture merely to teach the calculation of structures or mechanical systems and not the deep understanding espoused by Robert Maillart. He called for the student of engineering to have "experience in construction; scale model testing and development of design procedures; thorough training in rigorous analysis of structures; and free vision" against the background of his belief that efficiency could be one form of economy as well as beauty. "...Beautiful continuity' meant keeping all parts contributing to its conception, forming all with equal reverence, and shaping and reinforcing to use the whole [of the material] closer to its ultimate capacity."18

This is perhaps the most dominant criterion in good teaching of technical subjects, but one which is very difficult to achieve for most architecture students, and one which is best illustrated by bridges and other engineered structures. The structure of the Hajj Terminal Building in Jeddah, illustrating absolute fidelity to an idea of structure and aided by some of the most powerful computers in the world, gave rise to an extraordinarily powerful and evocative artifact, regardless of its presumed metaphor origins in the desert tent.

Nature Revealed Through Purity of Form

Structure in the hands of master architects has taken various forms. In the quest for clarity in displaying the distribution of forces and in holding spaces for use, the buildings have approached the perfection of form that nature herself does not achieve in the visible everyday world. Mies Van der Rohe's early...
scheme for a skyscraper, for example, stands as an extraordinary analogue to the crystalline structure of matter. Gordon Bunshaft’s new Jeddah National Bank building is a fine contemporary illustration of a search for geometrical perfection in another cultural context.

**Nature Revealed Through Distortion**

Structure is not the only source of inspiration for fidelity to the nature of things. Ralph Knowles allows the exterior envelope of the building to be shaped by the combination of sunlight position and the envelope’s needs for light and shade. And others in the name of energy have sought systematic transformations that would reveal through form the resolution of forces at the boundary between man and nature. One can imagine pure forms that are distorted by natural forces, like wind or sun, expressing nature, and that at the same time retain their identity, ideas like those of Sir D’Arcy Thompson given architectural expression.¹⁹

**The Idea of Nature, Pursued**

The idea of nature itself, as a source of energy and renewal of life, can inspire architectural solutions that themselves take on qualities that endure beyond their original inspiration. The Bagh-i Fin, the celebration of the water source at the low hills above Kashan in Iran, and Shah Jahan’s great Shalimar Bagh at Lahore, not to mention the Alhambra itself, illustrate past accomplishments of supreme beauty and inspiration that utilise the technology of exploiting water to build the formal elements and structure of a place.²⁰

**Recognition of the Semantic Dimension**

In architecture, even more than in engineering, it is important to understand meanings
inherent in the forms that are taken by construction and other architectural technologies. In one of the more productive analogues with language, Panofsky observes that "To perceive the relation of signification is to separate the idea of the concept to be expressed from the means of expression. And to perceive the relation of construction is to separate the idea of the function to be fulfilled from the means of fulfilling it." Caws observes that the practicing engineer as well as the architect "...may well be part bricoleur. He may order his materials and calculate some components of his forms as an engineer, but he will almost certainly allow elements of bricolage into his design..." In the teaching of technology, if students became more aware of and adept at handling their inheritance in technical fields, it would help considerably in raising their awareness of that idea in architecture more generally.

Vernacular Reformed

The Halawa house, with careful insertion of modern techniques, conveys the look, and to a large extent the reality, of traditional methods of building in a house for the rich. The juxtaposition of vernacular forms with an upper class contemporary life-style strengthens the image of both. The Nianing Agricultural School was the result of a research effort at UNESCO that in a short time created a whole method of construction patterned after vernacular building, but adapted to modern space requirements for schools and other building types. And at Mopti, by adding concrete as a building material to the traditional materials and methods, small but important changes became possible in shaping the building’s section, and in making entrances and openings without losing the qualities and forms of traditional building that permit it to fit gracefully into its setting.

Tectonics and Experience

Construction systems only qualify for architec tonic systems if, like Herzberger’s Centraal Beheer in Amsterdam, they are used so that construction and experienced spatial definition merge. Making this distinction evident in alternative examples would also help the architecture student to make the bridge between the technology of structure, for example, and the art of architecture. Herzberger’s Centraal Beheer and Louis Kahn’s Richards Medical Research Towers in Philadelphia represent a relatively conservative view of how environments are to be experienced and read, because their spatial, functional, and structural systems are essentially congruent. In those buildings, multiple and contradictory readings are not supported. Their architec tonic systems are neither universal enough to be decoupled from the particular activity and seen in their more general frame of reference, nor specific enough to suggest alternative use associations. Furthermore, the semantic dimension was simply not tapped beyond a not-so-crude brutalism that signified the presence of an aggressive and dominant technology.

Hardy Holzmann and Pfeiffer’s Columbus, Indiana, Occupational Health Center exemplifies a dialectical relationship among architec tonic systems, still in the modernist vein and tightly linked to the expression of modern technology and modes of production. Kalwill, McKinnell and Woods’ American Academy of Arts and Sciences building in Cambridge, Massachusetts and, quite possibly, the Larsen Ministry of Foreign Affairs building in Riyadh establish a powerful dialectic as well with vocabularies of the past.

Concluding Remarks

Many nations, caught up in the problems of their own development, may look to architecture to clarify their identity and express it to others. Many nations in the past have attempted this, with success ranging from the challenging and the beautiful in Chandi-
garh, the diplomatic quarter in Riyadh, and some of the recent planning for Baghdad, to the less obviously successful Algerian New Towns or King Khalid City in Saudi Arabia. Religion, too, may look to architecture to validate its claim on the lives and minds of the faithful and to exclude others And pri-
vate enterprise had made the same claims on the landscapes of our cities all over the globe by privatizing the skyline and even parts of cities’ public access systems. Architecture has the capacity to support these objectives, but its greater force comes, in my view, from deeper linkages to the cultures that underlie businesses, nations, and religions.

Technology is caught up in this problem of emerging identity. If buildings in non-industrialised countries resemble too closely buildings in industrialised countries of the West, or utilise processes of production associated with those countries, they do not carry a forceful local identity. Moreover, the emerging nations of the Muslim world are not emerging in the vanguard of the new industrialisation, they are emerging as new and distinctive cultures. Technology, as expressed in the Centre Pompidou or the Hajj Terminal structure, or celebrating the machine as Chernikhov did, or any other of the several examples I have cited may not represent the right approach for the people and the institutions of these nations. Indeed, I suspect that too obvious a use of technology as the primary source of formal expression in building may not be appropriate in most countries of the world today, possibly for different reasons in each. But the more important point I have tried to make is that the formal language of architects must be able to support complex readings specific to where each building is built, and the architect must be able to manipulate that formal language in knowing ways.

The aim of this paper was to discuss linkages among technology, form and culture in the architecture of the West, and to distinguish in that discussion between misconception and myth. The problems facing architectural educators in the teaching of architecture in the Muslim world are subtle indeed, but I believe their cause is not well served by transferring ideas from the West out of context, and especially by wrongly relegating technology to a secondary position because of its associations with already industrialised nations. I hope that I have been able to set forth some ideas that will stimulate thought and debate along these lines and that will lead to improved education for architects who will then be able to draw more fully upon the potentials of both modern and traditional technologies in the service of their societies.

References

2. Lewis Mumford, The City in History, Harcourt, Brace and World, 1961
3. I owe this analysis to Peter Caws as presented in his article “Significant Structures: Internal and External References” in VI, University of Pennsylvania Graduate School of Fine Arts, 1973
4. Otto Wagner, Die Baukunst unserer Zeit, p 76, quoted in Schorske, op. cit., p. 74
6. Ibid, p 91
7. I. Chernikhov, Construction of Architectural and Machine Forms, 1933
8. Ibid pp 58-64
9. Kandinsky also developed ideas of form from these elementary geometric properties in his Point, Line, Plane, and they have been picked from time to time by artists and thinkers throughout the twentieth-century in various fields associated with the environmental design arts, see, for example, K. Lynch, Image of the City. They lend themselves to the development of an anti-historicist and/or technologically oriented aesthetic
11. In Vers Une Architecture Le Corbusier wrote: “If we eliminate from our hearts and minds all dead concepts in regard to houses and look at the question from a critical and objective point of view, we shall arrive at the ‘House Machine’, the mass production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are useful.” Quoted by Frampton in his Modern Architecture: A Critical History, p 153
13. See P. Boudon, Postsc Le Corbusier (Paris 1969), for the story of how these units were altered by the users.
14. Drawn in part from “Plateau Beaubourg” in Essays in Architectural Criticism: Modern Architecture and Historical Change by Alan Colquhoun
15. “Deconstruction” is a term coined by Jacques Derrida and refers to a technique that literature has always been structured in terms of dichotomies: life and death, good and evil, chaste mankind and wanton nature, etc. He argues that in the past the first term carried more positive moral force than the second, but implies that in the contemporary mind the second term need not be disadvantaged.
17. “For those for whom art begins in a kind of origin purity, the grid was emblematic of the sheer disinterestedness of the work of art, its absolute presence, from which it derived the promise of its autonomy. While for those for whom the origins of art are not to be found in the idea of pure disinterest so much as in an empirically grounded unity, the grid’s power lies in its capacity to figure forth the material ground of the pictorial object.” Krauss, op. cit., p 158
19. A most eloquent and influential expression of how form and structure relate comes from Sir D’Arcy Wentworth Thompson. Thompson (in his book, On Growth and Form, 1917, revised 1942, and issued by Oxford University Press in 1961) who showed (first in 1917) “that in general no organic forms exist save such as are in conformity with physical and mathematical laws. ” He introduced the concept of “Force” as the “symbol for the magnitudes and directions of an action in reference to the symbol or diagram of a material thing” and argued that the form, then, of any portion of matter, whether it be living or dead, may in all cases alike be described as due to the action of force.” His attention was caught by Harold Edgerton’s photographs of splashes, and he noted that “There is nothing, then, to prevent a slow and lasting manifestation, in a viscous medium such as a protoplasmic organism, of phenomena which appear and disappear with evanescent rapidity.” In his chapter on “Form and Mechanical Efficiency” Thompson shows that man-made structures and the flow of forces within them illustrate the same forces that occur in organic structures, particularly in cylindrical forms of plants and bones in animals, and in the distribution of stresses more generally throughout the animal. And, re-introducing DesCartes’ “Method of Co-ordinates,” he develops his now well known illustrations of deformations that allow the comparison of forms and the identification of families of form or ‘types.’ Thompson’s ideas have been much used in the teaching or design and especially in the teaching of structures as an approach to understanding intuitively the links between natural and architectural form, and, by implication, between careful scientific inquiry and an insightful and penetrating process of design.
20. Nader Alchalan’s design for a new town near Shiraz and for an ecological garden-park (with Ian McHarg) in Tehran, and Kamran Diba’s gardens of Niavaran and Namaz Khan in Tehran are contemporary examples in this tradition.
22. Caws, op cit., p 43
Chadirji

I would like to respond to Professor Haidar's paper, by making a statement from a paper which I did in 1978 on regionalism and how to approach this problem with regard to modern architecture. It has to do with the relationship between faith and regionalism in architecture. What I said was that to achieve modern architecture, one necessary postulate is to exclude faith which I consider a regional constraint in the twentieth century. Regionalism and faith are not compatible with modernity. Therefore, a pre-condition for modernity is to transcend regionalism. This could be achieved by the regionalisation of internationalism which need not be contradictory to modernity; and it is according to these principles that I, as an architect, work and design.

I would also like to address several questions to Professor Porter.

1) What is the relationship between technology and art in architecture? Is it art that determines technology or technology that determines art?
2) Are the same technological values or cannons valid for all cultures?
3) Are art values relative or permanent?
4) What is the relationship between machine and technology?
5) What is the difference between engineers' aesthetics and architects' aesthetics? In other words, is there a difference between the two aesthetics? Why are they not appropriate in certain countries?
6) Lastly, what do you mean by dialectical relationships?

Porter

Let me try to answer these questions. The first question that you raised with regard to the relationship between technology and art seems to me is exemplified in each project and is impossible to generalise upon. I tried by citing several examples in the paper to illustrate the variety of ways in which technology and art could be joined through architecture. Therefore, if you look carefully at each example, there are aspects of technology that emerge through the artifact itself; for example, the use of the grid is one way to exemplify technology. The romanticising, if you like, of the machine, through Chernikov's work, was another way to illustrate technology through architecture. Technology in architecture does not appear in any kind of inevitable, simple and consistent way. It shows differently through aesthetic attitudes that are developed in a variety of ways in different works. I would encourage you to look again at the examples given in the paper as a way of discovering how technology and art are joined.

The same values in all projects? I think I have already addressed that to some extent. No, I don't think there is a consistent set of values that can be illustrated in all projects. I think the idea that technology is an eternal constant is perhaps one of the myths I was trying to dispel. I don't think there is a constant notion of technology that can be, or perhaps should be, expressed in all works. It comes out differently, depending on the action of very bright minds with different aesthetic attitudes. Technology is therefore revealed in a variety of different ways.

Your third question, are values permanent or temporary? I don't think I would put the question quite that way. The same values can show up in a variety of different works, but if they're permanent or temporary seems to me to be a false argument. It would take much too long to develop that as an idea just now, but I think it's a very important one, and deserves another paper entirely.

What's the relationship between machine and technology? I can only answer that contingently; that is, in relationship to specific works. I think Chernikov established a relationship between machine and technology; he chose to use it as a way to amplify the notion of technology. There's nothing permanent or enduring about the relationship between machine and technology, but Chernikov chose to use it as a means to project the notions of the Revolution, of the new aesthetics to contrast with and even to deny the classical and Beaux-Arts traditions that were very much in vogue before the Revolution itself.

The engineers' aesthetics and the architects' aesthetics, I've tried to argue, ought to be seen as the same in principle; that is, both using elements of the past. My argument in the paper was that, too often, engineers fail to acknowledge the cultural overlay on their own art. If they did acknowledge that in the teaching of technology to architects, instead of teaching it merely as a new science — the results of which are inevitable and logically derivable from a set of mathematical principles — they would go very far towards wedging the art of engineering to the art of architecture, and toward alerting students in architecture to the need to look for those very same things in their own field in architecture itself.
Are there values which are not appropriate to certain countries and why? I'm certainly not trying to argue that I would ever be in a position to make that decision. That's not the point I was trying to make. In my paper I argued that such decisions ought to be made by the people who are designing artifacts for those particular countries, whether from within or without. And I don't think it's a decision one can make a priori; I doubt if it is a matter for decision at all. It is instead a matter that must be carefully considered during the course of the creative process by the clients, designers and others who are involved in that process.

Finally, the dialectical relationship that I touched upon from time to time, was simply a label for the capacity of architectural form to hold more than one idea, and, specifically, to hold and make evident conflicting ideas in the same artifact at the same time.

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H. Pamir

After the paper given by Professor Haider I was a bit depressed, because of its very pessimistic tone ensuing from the generalities mentioned with regard to the countries where most of us study or work. Perhaps Professor Haider could suggest more optimistic alternatives which he thinks should be developed and fostered.

There was also mention about Islamic epistemology and Islamic technology. Could you please explain these concepts.

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Haider

The pessimism that might have been projected was totally unintended. Most of the content of my paper tries to make the point that Islam becomes a gameplay in most of the symposia that I have attended. In fact, our prior discussions confirmed my feelings, and anticipating that it would again happen, I began by taking account of what Muslim societies do when they begin Islamising their modes of action. Thus, in identifying the current state, the disfunctions and aberrations in Muslim society, I listed four or five points which apparently gave the impression that there is a widespread problem. However, I should have perhaps stated that the problem was not applicable to those present here whose attendance at this session attests to the fact that they must be doing something that has a positive value.

As far as Islamic epistemology is concerned, what is truth and untruth is a philosophical issue that has a lot to do with one's world view, Weltanschauung. I believe that if we looked at it that way — and I'm sure that in the history of Islamic thought Muslim philosophers must have dealt with the questions of what is knowledge and what is truth — we would be able to discern an Islamic epistemology.

With regard to Islamic technology, I am personally very doubtful as to whether there is such a thing as Islamic technology. However, I do believe that there is an Islamic viewpoint on the use and development of technology, which I think is rather different from the attitude that is taken by societies where production and profit is the prime operational mode.

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Arkoun

The paper presented by Professor Haider is not pessimistic. It shows the dominant realities in Muslim societies today. They are described with the strong faith in the possibility and the necessity for all Muslim intellectuals to contribute in a positive manner to the historical evaluation of our societies as they actually are: with their historical heritage (positive and negative), and their present social and political difficulties. When criticism is dictated by a strong faith in the positive future of our societies, it is optimistic, constructive, and, as such, should be always welcomed and encouraged.

However, I think that both Professors Haider and Porter should have considered three major historical actors in the contemporary history of the Muslim world:

1) The state is the principal, dominant actor, monopolising all the decision-making on all levels, be they social, cultural or political. It is the state that decides on the introduction of highly sophisticated technology in an archaic society, regardless of the real needs and expectations of that society.

2) The second actor is the people who make up the society. They have no decision-making power because the state continues to regard them as it did back in the colonial period. The people have no say as to whether technology — and what type of technology — will be imposed on them.

3) Western culture can be considered as the third actor, introduced into the Muslim world under the guise of modern technology.

All of these three actors have to be always taken into account when we are discussing the problems of and the reforms needed for improving architecture education in the Muslim world.

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Porter

The point that I'm interested in emphasising is that technology does not come whole into architecture; it comes mediated through form. Technology is not a creature to be coped with that is describable a priori; it emerges as a function of architectural form. It is seen through the artifacts that are made. This is why I stressed in my paper the need to develop some sophistication on the part of architects in the handling and manipulation of an architectural language. There is no simple, direct expression of technology in architecture; it is indirect, revealed through architectural form. Therefore, if the architect does not have a sophisticated architectural language, he unknowingly, naively, reveals technology at its worst or conceivably at its best. It's urgent that we understand architectural design as a language to be spoken, and spoken well, hence, the
Cultural and Social Contexts

exploration of the analogy between architecture and language.

That is where, I believe, we stand a chance to intervene in architectural education: to raise the level of understanding of what is being done when one uses an exposed I-beam connected boldly with a bolted connection which asserts itself aggressively at the point of entrance of a building. That's a different kind of statement than one which produces a slick machine skin that can only be made in, let's say, a highly industrialised country that is used to clad a particular building, and is perhaps destined for some modest social purpose in a frontier situation in a poor country. These are choices which by themselves look innocent enough, but, in fact, are deeply embedded in a language spoken in a particular society that has meaning. Therefore, technology appears through form, not by itself, not because it holds any original permanent state that is either to be revealed or not to be revealed. It is through an architectural language which is well-understood and well-handled, that we stand a chance of modulating our view of how technology can be seen and understood in a particular society, and it is through that understanding that we stand a chance of developing ways of intervening into the educational process.

Haider

I think the best way to bring the issue of technology into the realm of architecture is to make it a respectable subject in the architecture studio. I have strong faith in today's generation of young architecture students to respond in a very positive manner towards the introduction of technology into the curriculum. We, as professors of architecture, should start speaking about technology, structures, materials, climate and environ-

mental control systems not as mere feasibility checks as to whether this or that building is going to stand up or not, but as having philosophical and cultural import and the need to raise questions as to why a certain choice was made and not another.

There is today a widespread lack of critical evaluation of architecture being built in our countries. There are no critical publications or journals which would be devoted to the evaluation of architectural projects and buildings. Even in the West, in countries such as Canada where I teach, architects avoid the subject of technology because it is considered to belong to the realm of engineering rather than architecture. We love to theorise and speak of abstract architectural concepts and fail to see the significance of technology in an architectural work. Hence, we graduate students who are rather naive with regard to the use of materials, techniques and systems. We should change our thinking and attitudes about technology and perhaps after about 15-20 years will hear students speaking knowledgeably about the technology that goes in to producing architecture.

Diba

What Professor Haider presented in his paper is very true. However, I would like to stress the importance of the social and political environment in one's search for an identity and self-expression. For example, when the first school of architecture was established in Iran fifty years ago the dean was French. The study and design of traditional architecture were strongly discouraged, if not totally banned. Western architecture dominated the curriculum. We must, therefore, not forget the impact of the social and political context in which architectural education has to take place.
Djerbi

In the past, the apprentice architect learned from a master-builder who transmitted to him mastery of expression in a given style. Modern educational institutions must fulfill their tasks in very different conditions.

The number of architecture students in Tunisia is very large, and their socio-cultural profile very varied. There are no universally accepted cultural references. The cultural rupture that many, if not most, Islamic countries have experienced has destroyed the classical courses of instruction. All of these factors have contributed to the justification for adopting a new system of construction that would allow an approach to the architectural art that would be simple and at the level of the students involved.

Subjects must be taught in an expressive environment with which the students can communicate. There must be a bi-level approach.

At the theoretical level, the student should acquire basic knowledge of the morphology and typology of architecture and the different historical formulations of architecture.

At the practical level, the student should be taught to read space at a site, an example of architecture conceived as a perfect response to its physical and socio-cultural environment. In most cases, vernacular architecture would be a good subject of study in this regard.

Ahmad

We worry too much about the impact of modern technology on traditional form and forget the contributions of Muslim technology in the past, such as those during the classical age of Islam. If we realise that technology is not something new to our culture, which earlier contributed to its development, we will then be more objective in our attitudes towards it and will take measures to forestall any adverse effects arising from possible foreign values that may be imported with it.

At the other extreme is the infatuation with traditional forms produced by old, even obsolete technologies. These forms continue to be reproduced using modern materials and techniques even though they no longer have any functional justification. It is argued that the forms have important spiritual or symbolic significance, this attitude is equally damaging to the progress of thought since it hinders the search for new forms, new symbols and new ways of expression, and unduly limits our horizons.

Meer Mobashsher Ali

Regarding the social acceptability of forms, architectural form in most cases is criticised, evaluated and analysed by fellow architects. Designers seem to be primarily concerned about the comments and evaluation of their peer group of fellow architects. The general masses seem to accept or to be indifferent about architectural forms. What are the forces that determine this acceptance and passivity?

On another matter, plastics seem to have a future in low-cost housing. We tried plastic in low-cost housing in a rather conventional way, but the plastic was not accepted at all by the masses. What might make this material acceptable? Is it just time; or is some other element involved?

Keng Soon

Professor Haider’s paper dealing with the issues of the state of technology was truly enlightening. As a follow-up to this, though, I would have liked to hear Professor Porter explore the full range of technologies and their implications in terms of value in greater detail. It is vital, as Professor Haider stressed in his paper, that architects have more respect for technology because, generally, they tend to have misconceptions about what technology is, attributing to it a broad, generic form.
Technology and the modern state have a tendency to share the same corporate values. They both want total control and total predictability, justifying this on the grounds that efficiency is better achieved in the delivery system. This may be so at a certain stage of development in a society, but its danger lies in the risk that this may sap the vitality of that society.

On the other hand, technology can also have a decentralised form, so that it is more accessible and responsive to local demand, taste and flexibility. We need to look into a multiple-options technology which allows for more public participation and results in housing that is more economical, efficient and satisfying. John Habraken’s work in Holland, for example, has shown that there is a 15 per cent saving on building costs where the tenants themselves decide how they want their flats built before they move in. Whereas in the case of the centrally designed and controlled flats in Spain, there is a 10 per cent waste of materials incurred once the tenants have already moved in and only then can make changes. A multiple-options approach is to be encouraged because it liberates the profession; encourages a constructive dialogue with the public; develops skills; and brings about the satisfaction from having been involved in the development process.

Porter

I think your point, Mr Keng Soon, is very well taken that, in fact, in retrospect it would have been excellent to have a paper develop different aspects of technology. One paper can only do so much, and mine was focussed on architectural language. I did try to bring out the difference between decentralised and centralised technology in relation to, for example, Le Corbusier’s work. I would say that there are instances of highly decentralised technologies, for example, programmes of core housing that depend upon locally-made block, as contrasted with projects in developing countries where the architects responsible for the design of those projects have not understood the decentralised character of the technologies they are working with, and have designed those units as if they were from a centralised technology, handled by a highly organised crew, sent out from a large city, knowing to do nothing more than to repeat over and over again the same forms. The issue I feel I touched upon obliquely in the paper because it is tied to architectural language. It would be grand too have a more careful development of alternatives in the technology of construction, careful articulation of the different stages in the sorts of differences that you were talking about, such as between manufacturing and assembly, of implementation on the site and so forth, — of different stages, in other words, that might be amenable to different classes of design decision which would open up as Le Corbusier did in a very limited way with his Pessac housing. You raise an excellent point: the more one understands the technology of environmental control, the more subtly one can enter into it and adjust one’s design decisions to take advantage of the freedom that such greater understanding affords, and, in the end, create an architecture that is much more specific to particular places and people.
Architecture and Society

Ilhan Tekeli

Introduction

If one is asked to present a paper on the relationship between architecture and society, as I was for this seminar, the basic problem one faces is that of simplification. There are multi-dimensional and complex relations between architecture and society, but to know this is not enough. The main problem is to describe these complex relations in a manner simple enough to discuss basic determinants.

Keeping in mind the purpose of the seminar, I have chosen to attempt this simplification by examining this relationship on three different levels. First is the ideological level. On this level shall be considered the alternative sources of the ideologies related to architecture in a society and the social mechanisms which choose the ideology from these alternative sources. We can call this macro-level approach. The second will be the organisational mode of the building activities and architectural services in a society. These will be discussed on micro-level and the relations between the ideological choices and actual practice will be formulated. The third level will be an analysis of how architectural ideologies and skills are reproduced in a society. The emphasis in this part will be on the organisation of education. After discussing the relationship of architecture and society on these three levels, I shall round up my analysis by dwelling on the mutually determinant aspects of the three levels.

I would like to clarify another point in the introduction, the methodological issue. I was asked to take up the relations between architecture and society in this paper at a general level. However, my knowledge of this particular subject is limited to the Turkish experience and I do not have the means to generalise by making international comparisons. Thus, I tried to generalise, by interpreting my observations of the Turkish experience with the help of social science theories. A keen eye would, no doubt, detect the traces of the Turkish experience behind these generalisations.

Architectural Ideology, Sources and Choice Mechanisms

As the concept of “ideology” is used in a large variety of contexts, I would like to clarify, first of all what I mean by architectural ideology. What is the sum total of all the beliefs, values, tastes and ideas that make up the justifications behind the practice in a professional field and that form a philosophical basis for them. In such an ideology the opinions on the environment, society, men, history and culture seem to form an inter-related, systematic whole.

I would like to underline the word “seem” used in this definition. This is an image, and in reality ideologies host a great deal of internal conflicts and inconsistencies. Actually, had this not been so, there would have been no sense in our mentioning a professional ideology apart from the ideology of society — the latter would, automatically, have determined the former. On the other hand, when we talk about a separate professional ideology, we are also implicitly accepting that such an ideology has relative autonomy. Thus it is accepted that similar professional ideologies that are undergoing change can be channelled and moulded in the process to articulate quite different ideologies within a society.

Architects derive the values or tastes of their professional ideology from three different sources or references. The first is an approach involving a historical system of reference based on the values produced in the past, whereby architects either try to reproduce the values found in the buildings of the past or try to enrich these values by reinterpreting them. In this case one of the basic elements of their ideology is to achieve historical continuity in the living environment. A second approach takes off from regional or local values. Here a “contextual” design is essential, one that follows a thorough and close studying of the locality where a building is intended and its architectural values. The aim is to reproduce the local values, to enrich them through reinterpretation and in this way to contribute to the unique or specific development of each locality. In a third type of approach, the world practice and universalism are chosen as a reference system. The aim is to follow the universal developments, to assimilate their values and to contribute to this development. The built environment is to be a part of the contemporary world.

There is no doubt that to reduce the possible ideological frameworks of the architectural profession into three is a significant simplification. By studying the architectural practices of different countries at different periods, a large number of ideological frameworks can be found. Looking at world practice, we can also talk about how regionalism or historicism was defended in the name of modernity. But, underneath all these cross-bred ideological frameworks, it is possible to see traces of these three sources and their various articulations. In other words, the ideological frameworks of different periods or different groups are formulated with choices from these three sources.

Now, let us see what mechanisms are used in a society when ideology is derived from these sources. We find that three mechanisms with relative autonomy with respect to each other are involved in such choices. They can be listed as the political regime, the market mechanism and professional circles.

Let us consider one by one the choices made by these three mechanisms.

How do political regimes influence architectural ideology? First, it should be pointed out that not all political regimes strive to influence architectural ideology. We can say in general that totalitarian regimes do desire to formulate and control the architectural ideologies in their particular country within the framework of their political ideologies while, at the other end of the spectrum, pluralistic democracies leave such choices to the market mechanism or to professional circles. In pluralistic democracies, the only plausible justification for political interference in this respect would be that there has been an elimination of pluralistic characteristics through the workings of the market place. In such cases, the political regime has a reason for intervening in the incentives in order to rebuild plurality.
Totalitarian political regimes would claim that architectural ideology is determined within their monolithic ideological frameworks. Such an argument contains the assumption that there is an architectural ideology in a one-to-one correspondence for each political-ideological framework. To put it more clearly, what is being said is that there is a very close, determining relation which claims, on the one hand, that each political ideology has a specific architecture, and, on the other hand, that each architectural ideology is suitable for a different political regime.

Historical experience actually shows that there is not such a close relationship between political ideology and architectural ideology. For example, following the 1930s, neoclassicism was to become an element of the architectural ideologies accepted by fascist, socialist and democratic regimes. During the period between 1912 and the 1950s, all of the three different architectural movements that prevailed in Turkey took place under political regimes promoting nationalism, and all of them were politically directed.

The relations between political ideologies and architectural movements need to be considered as more flexible, having single to multiple correspondences. In each country, different historical experiences lived up to the point where a particular regime and political ideology is reached and the variations in their social structures change the contexts of architectural ideology which is formulated by choosing from the three possible sources of such an ideology. As a nationalistic ideology dominated by populism accepts a movement that emphasises local and regional values, in a country just getting over its war of independence, where nationalism is defined as self-assertion vir-à-vir the developed nations, contemporary architectural values may become predominant, while, in another country, where nationalism is seen as a dominance over others, refuge might be taken in historical values. So, three different sources of aesthetic values or their combinations are defended in the name of the same ideology, nationalism.
The assertion that architectural movements supported by political regimes are consistent with a monolithic political ideology is irrelevant. It is not feasible that architectural practice in a country as a whole, will be fully controlled by any such movement. The effectiveness of the tools available to a political ideology for such a control are limited. The limits on controls become especially evident in developing countries.

The tools which can be used by a political regime to enforce control over an architectural movement can be the following:

1) The state could require that in its buildings the architectural style favoured be implemented.

2) The state may try to use its influence over educational institutions to turn them into institutions where only its favoured movement is reproduced.

3) The state can exert aesthetic control by imposing the pertinent aesthetic control requirements for building permits.

Which of these tools will be utilised would depend on the type of the regime. The more a regime approaches totalitarianism, the more likely it is that all three tools will be simultaneously employed. As the system moves farther away from totalitarianism, only the first of the three becomes applicable. In such a case, among all buildings constructed, the ratio of the ones following the state-supported style becomes lower. Where public control over building practice is lower in accordance with the lower level of development of a country, the percentage of the buildings where architectural ideology is publicly controlled dwindles.

If other mechanisms for choosing are not used in the society, the market mechanism becomes the sole determinant of architecture. When there are other mechanisms, the market mechanism controls in all the areas of choice neglected by the others.

Choice through the mechanism differs from political choice since it is not a centrally-made but rather, an "emergent" choice, dependent or contingent, that is the end product of a set of choices made by various individuals in a society. The fact that it is an "emergent" choice does not automatically make it the same as a choice made by the people. First, the kind of choice arrived at in a market dominated by small entrepreneurs will be different from one that is under the dominance of monopoly capital but, whatever the case, what determines the choices is not the use value but the exchange value, and this leads to alienation, caused by the fact that it is not ultimately the users who control the choices that are made.

The fact that a choice is dependent or contingent does not necessarily mean that it is homogenous. According to the pattern of income distribution of a country, there might be a variation in an architectural taste or ideology according to different social strata. Simultaneous functioning of two contradictory processes generates this variation. Members of particular social strata have the tendency to move to higher ones by differentiating their housing consumption and architectural taste, leading to variations. The motives for variation simultaneously cause increases in the number of social strata. Meanwhile, members of the lower strata accept the consumption or taste norms of the people in the upper strata whom they choose as their reference group. This is a process that reduces variation. With these two processes both functioning parallel to the inequalities in the society, a differentiation of taste or ideology related to architecture emerges.

To say that these market choices are emergent does not mean that they cannot be directed either. The methods of interference may differ according to the circumstances of the market but, eventually, by creating new examples, by using the mass media, as in campaigns organised by the institutions of civil society, choices are continuously affected and undergo transformation.

This brings us to the third mechanism. Professional circles are the primary bases for change, whether we have political choice or selection via the market mechanism. The effectiveness of this community is closely related to its structure and its mode of organisation.

If professional communities were organised like the guilds of the pre-industrial societies, they would have the function of controlling and unifying a given architectural taste and practice. If, as seen in newly developing nations, architects are few in number and in a privileged social position, they either act parallel to the ideology of the rulers, or exercise a function which is oriented towards the taste of the upper strata of the society, striving to intensify this taste or to reinterpret it in an elitist way. As the number of architects increases in a society, and as there is more social differentiation among the architects, it is no longer possible to talk about a homogenous ideology in the professional circles. Different ideologies co-exist within the professional environment that conflict and compete with and that affect one another. The climate in professional circles then loses its serenity in terms of professional ideology and becomes turbulent.

Professional circles find their source of relative autonomy in choosing an architectural ideology in two different traditions. The first of these is the tradition of civil society. In Islamic societies its effect is either very limited or non-existent. The second tradition is the mission for which the intelligentsia deems itself responsible. No doubt this concept is based on the influence of the Enlightenment in the West, but it has also had tremendous influence in the developing countries. The architect, as an intellectual, feels that he has the right to choose the architectural ideology for society. Here, by mentioning the architect as intellectual, we are making a deliberate distinction between him and the architect who is a simple, professionally trained white collar worker. The activities of the latter, whether they are determined by the political process or the processes of the market, stay within the limits of the given ideology and do not extend to questioning it. Such an architect does not believe that he has a right to make choices for the professional ideology, his interest is in the means and excludes arguments about the goals.

The social consciousness of the intellectual is at a different, questioning level. He con-
tinuously re-evaluates his own activity sphere within other social activities and within the totality of the historical process and questions the prevailing professional ideology. He arrogates to himself the right to redefine it and to influence the society in the direction that he favours. For this reason, the ideology of intellectual architects in the under-developed countries carries strong utopian reformist tendencies, and depending on the social development of his country, an architect may show elitist characteristics or quite opposite populist qualities.

The Organisational Mode of Building and Architectural Activities in Society

In analysing the choices related to architectural ideology, our discussion remained at a macro level, and we did not go into the mechanisms through which these choices affect the actual practice. These influences may be clarified by studying how the building and architectural practices are organised in a society and by looking for the determinants at this level. In other words, the materialistic basis of the ideological level has to be analysed. In order to do so, this section will treat the following points:

1) How does the demand for construction take shape in a society?
2) How is the building sector organised?
3) What is the structure of the demand for architectural services that evolve from these and the organisational level of architectural services?

Now there are intermediary institutions between the architect and the user or the owner that define demand. Demand is formulated through much more complicated interactions, and these intermediary institutions have significant roles in the formulation of architectural ideology.

To facilitate discussion, let us study the demand for buildings in a society within three basic groups: public buildings, commercial buildings and housing.

Parallel to the development of a society, the functions of the state grow in magnitude and variety, which continuously creates new demands for buildings. These demands in the initial stages can be met by each individual institution but, eventually, the state feels the need to set up one or more specialised institutions in the field of building and construction. Then, the governmental sector formulates and organises its demands through these specialised agencies and starts to develop a bureaucracy of technicians.

This bureaucratic institution affects the architectural ideology of a country in various respects. The choices of the political regime are formulated or implemented through this institution. If the political choices are not clear, then the gap is filled by the choices of the professional circles.

In contemporary societies, international relations are highly developed and some public investments are financed by international sources. In most cases, such financial support carries certain technical prerequisites. The negotiations with international sources of funds are generally carried out by specialised bureaucratic institutions.

Thus, it is this bureaucratic organisation that formulates the demand and shapes its ideolo-
gical context. To a large extent, this is accomplished without reference to the user. It will be useful to study the organisation of demand born in business circles, which span a wide spectrum from industry to services by dividing them into two groups, large and small entrepreneurs. The big entrepreneur is in a position to finance his own building requirements. He would most probably have direct connection with the architect and state his demands. These demands would not be solely functional. He would require from the architect elements that would increase the prestige of his firm and symbolise its power. If the circumstances of the business circles of a society are oligopolistic, such prestige elements will be defined by the dominant architectural ideology of that particular society at that particular period. Related to this ideology, whether it is realised with regional, historical or universal architectural values, the fact that a prestige element is involved will mean that there will also be some alienation, because the user is not making his choice autonomously.

The case of the small entrepreneur is different. He would not be able to finance building construction by his means alone, whether the construction is situated in the commercial areas of the town centre or in the new business areas developed at the outskirts of the city. He would either buy a small building in a complex set up by some other entrepreneur or join a co-operative venture organised by several small entrepreneurs. In either case, the demand is formulated by someone else. In the first case, the entrepreneur setting up the building is constructing for an uncertain buyer. The predicted demand is a standardised demand assumed to prevail in the market. As far as the builder is concerned, it maximises the exchange value. In the second case, the formulation of the demand to a large extent will depend on the board of the co-operative and their choices will be loaded with populist values currently in vogue in their own circles.

The housing demands of the society should also be discussed in three groups as the demands of the upper, middle and lower-income groups. For the upper income groups, housing is not merely a shelter but a social status symbol. It is part of conspicuous consumption. The user would be in direct touch with the architect to formulate his demand. Depending on the development level of the architectural practice in that country, and also depending on the distribution of accumulated wealth, the architect chosen can even be a foreigner. In that case, the name of the architect can be a part of the conspicuous consumption norms. For these groups, the relevant architectural values will be influenced by the consumption norms of that circle.

The demand for the middle-income groups is not directly defined by the users themselves, but, to a large extent by the institutions that organise the housing construction activities oriented to these classes. Within the cities, with land prices reaching very high levels, middle classes generally have no chance of building individually. At best, they can afford a unit in an apartment building which is constructed by a housing entrepreneur. If a member of the middle classes moves away from the city to build a house, he cannot afford to pay alone the cost of providing the necessary urban services. Such a move becomes feasible only when there is public investment or when people are organised in big housing co-operatives. Thus, the housing demands of the middle classes are formulated either by an entrepreneur according to the available choices in the market, with an eye for maximising the exchange value, or it is directed by the state according to its public policies, or it is organised through co-operatives according to the relevant consumption norms of the middle classes.

In developing countries where rates of urbanisation are high, the needs of the low-income groups are met through squatter housing. For this segment, obtaining professional architectural services is out of the question. The user adjusts his demands to his limited resources. Employing some skilled labour and its guidance, the user builds his own house. This is not the type of house that is pre-designed, built and completed accordingly, to be occupied once it is finished. It is a house that continuously grows and develops with new additions while inhabited, depending on the saving opportunities of the family. The demand for such growth is determined by the saving opportunity and the use value.

Given how the demand of the different segments of the society develops for different types of buildings at the present level of societal development, it is quite impossible for the user to formulate his demand directly. The demands are determined by institutions that may claim to be acting in his best interest, but that are in reality completely alienated from it. The fact that such an alienation exists means that there is an existing control on behalf of ideologies or interests that prevail over those of the users.
The Organisational Mode of the Building Sector

When a demand for a building emerges in a society, the person making this demand chooses one of the available alternatives to realise it in construction. With the present state of the building sector, there are four available alternatives. The first is that the person demanding the building purchases the required services and materials and organises the construction himself. The second is engaging a small entrepreneur to carry out the project. The third alternative is contracting with a large, national contracting firm. The fourth alternative is to go for international bidding and give the commission to a foreign firm.

Which of these ways will be followed depends both on the scale of the building considered and on the development level of the country. Large governmental buildings, large commercial buildings and large housing complexes are generally undertaken by big contracting firms or foreign firms, depending on the development level of the country. Smaller governmental buildings, commercial buildings, and housing are generally realised by small entrepreneurs. In small commercial buildings and housing, the owner undertakes the construction by purchasing outside services.

In developing countries the prevailing type of construction enterprise is the small scale one. Generally groups with small capital or persons with technical know-how, with architects among them, enter this field. While important projects are realised by large firms, the greater part of the built urban environment is the work of such small entrepreneurs. In developing countries, many a successful businessman has a background as a building contractor at the initial stages of his capital accumulation process. Once such a person has managed to accumulate some capital, he then passes on to more profitable areas. The big contractors generally develop with public infrastructure commissions and later go for large building projects.

It will be useful to look further into the type of small entrepreneurship that is integrated with architecture. Such small entrepreneurs, who are not actually differentiated from the architects who produce housing — particularly for the middle and upper-middle income groups — form an interesting category. This group is widely seen in countries such as Turkey, and has created a new form of housing supply. They are even given a particular name in Turkish, yap-satçı, those who build and sell. This particular type of enterprise can be readily profitable for an architect with very limited initial capital. A plot of land in the high prestige sections of the city is taken from its owner in exchange for a given percentage — say about half — of the flats to be built on it, and construction starts. As construction proceeds, the flats are sold and with these sales, the building is completed. In this way the architect-entrepreneur gets a quite high profit compared to the capital he invests. An architect in this situation has two characteristics. First of all, he is an entrepreneur, producing housing for middle and upper-middle classes. Secondly, he is an architect, providing an architectural service. Which of these two roles will dominate? We can say in general that his entrepreneurial role will determine his architectural one. He would adapt his architectural skills to the values which are prevailing in the market and use them to maximise his profit.

If such a mode of high-profit enterprise becomes widespread in a society, any architectural firm that specialises only in design and does not accept the role of small entrepreneur would be hard-pressed to survive. These circumstances have the effect of pushing architectural firms towards becoming small entrepreneurs.

There is no use in adding to these examples and lengthening the analysis of the organisational mode of the building sector. We can, in short, say that the type of organisation in the sector to a large extent determines the quality of the architectural services demanded and the way they are organised.

The Organisational Mode of Architectural Services

This depends largely on the characteristics of the building demand of a particular country, on how the construction sector is organised and on the number of architects. The types of organisations can be listed as government offices, large private consultant firms, small architectural firms, inter-firm consortiums, architectural firms not differentiated from small construction enterprises and foreign consultant firms.

We have already seen that where the building demands of the public sector is organised through specialised institutions this tends to create state firms. Despite the fact that the managers of such agencies are technocrats and that they employ architects, in general, such firms do not actually produce projects. Their function is mostly limited to the formulation of the demand and the organisation of the bids for architectural services, to the control of services thus obtained and, lastly, to construction. For this reason, even though they are places employing a large number of people with technical training, no specialisation develops and no technical knowledge is accumulated since they do not make project design.

Architects employed in such offices very soon take on a bureaucratic identity. In most cases, a large part or all of their professional knowledge is unnecessary for carrying out their job. For promotion within the bureaucratic hierarchy, qualities other than his professional ones are relevant. This situation, the result of an organisation that is not producing anything itself, causes a perpetually movement of creative and successful people into the private sector. At the end of this shifting process, a bureaucratic structure emerges that is manned by people who are not particularly bright in a professional sense and who are in complete harmony with the political administration. This is a structure that is conservative with regard to change and innovation.

These unproductive institutions with their sterile structures nevertheless play significant roles in determining the organisational set-up.
of architecture in that country. The most important mechanism in this respect is the pattern of commissioning work. Different ways can be used, such as receiving bids from a number of national firms, competitions, and bidding among foreign firms. Each of these has a different effect on the organisation of architectural services. A choice between bids from national or foreign firms determines the fate of the organisation in the country. It determines whether the role of native architects will be that of merely low-paid intermediaries or real decision-makers. A choice between competition or domestic bidding would determine whether the work will go to the established firms or whether a new name by winning such a competition will have a chance to share the opportunities. In other words, the pattern of commissioning work becomes the indicator of the existence or non-existence of upward mobility within the professional circles.

Apart from all this, public offices, whether in the evaluation of proposals received or in the appointment of the jury members for competitions, determine the ideology that will be dominant in public buildings. It is no wonder that the choices made by these institutions, whose qualities we have seen above, will not be brilliant ones.

Before going on any further, a point needs to be raised to avoid misleading inferences. We should not for a moment think that these agencies are completely independent in commissioning work or in choosing architectural ideology. They obviously have a certain dependency on the public administration. But, apart from this, there are influences exerted by the professional architectural circles of a given country. It is difficult for them to act independently of the consensus of this environment. The influence of consensus is particularly high at periods when the architects as a group are organised and homogeneous. Such an organisation is easy when the number of architects is small and their social status is similar. As their numbers increase and their social status differentiates, to achieve such an organisational consensus becomes more difficult.

In developing countries, when the public offices themselves are not turned into productive units, the production of creative architectural services is undertaken by small firms. The commercial and public building demands are met and housing for the high and middle income-groups is designed by these small firms.

The production process in a small architectural office has the characteristics of the production process in an artisan shop, rather than one in a capitalistic enterprise. Such offices generally employ one or more salaried architects. In most of them, the only professional is the owner of the office. The quality of the work produced is determined by the labour of the owner. His capital is closer to the natural capital of the artisan, consisting of necessary tools, workspace, and the like rather than modern capital. In most of these offices, there is no capital accumulation. The division of labour of the capitalistic mode of production is absent. The rents due from the small number of architectural firms in a country or the fact that two to five people are working in such an office do not represent any important differences in their characteristics.

The most important characteristic of these small architectural firms is their very flexible structure, which can easily adapt to changing conditions. The pattern of public work distribution does not provide a steady flow of commissions for such firms. The work they can get from the free market is not regular, either. They have to adapt to an erratic flow of work. This adaptation can be achieved by increasing or reducing the number of persons employed according to the work load. This means that there exists a salaried group of people with very high job turnover rates. They are generally employed outside of the system laid down by labour laws, and student labour is predominantly used. Student labour resembles the apprentice labour of the artisan's shop. Students work for low wages. Forever mobile and dispersed, the salaried cadres of the architectural offices cannot organise and cannot take action to assert their rights. This fact makes it easy for those firms to adapt to irregular work flows at the expense of the interests of young architects.

For the firms that cannot adapt to this irregular flow by laying off personnel, there are other options. One of them is closing the firm down and going to work for the government, or moving back and forth between these two statuses. In countries where the number of architects is small, there may be the legal possibility for public servants to maintain their private practices. In such cases, working for the public sector becomes a means of finding work for the private office. The second option is to become a small building entrepreneur or contractor, as we have already mentioned. In such cases, for a while the role of architect and contractor are simultaneously played, and in due course, if sufficient capital accumulation is achieved, the person usually becomes a full-time contractor.

There are other interesting flexibilities in the adaptation of small offices to work conditions. In order to construct a building, an architect needs to purchase various engineering services. These are purchased from small firms in other spheres of engineering. When large projects are commissioned, depending on the requirements set forth by the administration, firms in various professional fields can form consortia, and thus, can be involved in quite a substantial amount of work. In a similar way, they can co-operate with foreign firms.

In developing countries, despite all these flexibilities, these firms cannot grow into large consulting firms on a permanent basis covering various disciplines where an internal career system prevails. This is impossible unless the international market is penetrated and a continuous project flow is thereby achieved. This is an opportunity rarely seen in the countries of the periphery.

Another work area open to architects in developing countries is to work as salaried employees in medium-sized or large contractual firms. In such an establishment, the architect works more as a construction manager or controller than as a designer. Where in a given country there is sufficiently developed
capital accumulation so that contractual firms manage to take on the characteristics of international firms with important commissions abroad, they cannot carry out such a function in the international market by collaborating with small engineering and architectural firms at home. They prefer to set up engineering and architectural units within their own system. In these circumstances the architect working in such a firm is no longer a construction manager but a designer, working for a salary.

We have thus seen the possible development of the organisation of architectural services in a developing country.

Knowing this organisation, we are able to deduce how the social status of the architect would undergo a transformation over time.

I will emphasise an evolutionary development that follows the number of architects in a country. During the initial phases of development, at a period when the number of architects educated locally or abroad is small, architects are likely to form a rather homogeneous social stratum. We can identify this stratum as upper-middle class. Within this group, which will be to a large extent made up of architects from the government offices and small office owners, there would not be significant differences in income levels. The ones working in the government bureaucracy would be enjoying excellent income conditions and they would be in a position to leave these posts at any moment to set up their own small firm. This characteristic gives them negotiating power and a privileged position within government bureaucracy. At this stage, architects have a prestigious position in society which sets them apart from other professions. They mostly come from families of the upper-income levels of the society. They have been through an education loaded with humanistic values. Their sphere of interest is wide and rich. They are within the progressive sections of the society as artists while they are also close to the business circles as members of a highly paid profession. At this point, since there is no stratification within the profession, architects can easily organise to defend their interest by coming together in professional organisations, chambers, associations, and the like. The basic conflict of this professional circle is with foreign firms and foreign architects. Should local architects fail to gain total control over the internal market, the most important projects will tend to go to foreign firms and architects. The local architects organise to protect this internal market and to try to influence the political decision-making mechanisms, and, if need be, they go into action.

This conflict with the outside enables the professional organisation to remain as an unfragmented, coherent whole that much resembles a guild. The existence and the success of such an organisation cannot, of course, be explained by the small number of architects alone. It can only exist if the country has a dominant nationalistic economic policy and the architects have a high level of knowledge and skills so that they can compete with foreigners.

If the numerical increase of the architects in that country is below the rate of growth of the domestic market, no change will occur in the social status of the architects or in their mode of organisation. However, in some cases, the number of architects increases faster and the architects enter the process of losing their privileges. Parallel to this the profession experiences an internal stratification. This stratification may be as follows: contractor-cum-bureaucrat owner, small bureau owner, salaried in the private sector, salaried in the public sector, salaried in a small architectural office. At this stage, the privileges of the government offices also go. The architectural community is no longer homogeneous. There is a large salaried labourer section. Internal conflicts gain in importance. In such a case, it is difficult for the professional organisation to maintain its unity. Parallel to the internal differentiation of the community, new professional organisations emerge, defending different interests, and inter-professional ideologies differentiate. Once this point is reached, in order to grasp the position of architects within the society, it becomes necessary to enter into special analyses for different groups. Among architects, while the segment which manages to stay in the upper-middle classes does manage to keep its old ideological position to a certain extent, the group that has turned into salaried workers gets closer to the political ideology of the working classes. The intellectual architects are open to utopian reformism. The conflict between mental and manual labour makes the architects' total identification with the working class impossible.

This new tendency brings a fresh critical approach to the existing architectural practice. However, the political milieu that is needed for this criticism to turn into a new and applied architectural movement never materialises.

This short analysis brings us to the point where the way in which architectural practice is organised in a country, in addition to and parallel to the stratification that it creates within the architectural community, also determines whether the professional ideology accepted in the professional circles is uniform or pluralistic.

The Organisation of the Reproduction of Architectural Ideology and Skills

How is this uniform or diversified ideology going to be reproduced? In developing nations, even if at the outset the people trained as architects are educated abroad, there comes a point in the process of development when every country establishes the institutions that reproduce architectural ideology and skills.

These are generally the architectural departments of universities or other similar institutions of higher education. Of course, the reproduction of architectural ideology and skills in a country is not solely limited to the educational institutions. It continues throughout the life of the architect, starting in school and continuing at the work place, in the professional organisation in which he participates, and so on. However, in this section I will concentrate on education which is the most significant of all
these stages. What interests me in this respect is not education per se, but the ways it is influenced by society.

First of all, let us take up the role of the educational institutions with respect to the determination of the architectural ideology within a society, a theme which we have already touched upon. It is clear that educational institutions will have significant functions in systematising the architectural ideology that is determined through social choices and in formulating this into a form that is transferable to the novice. Beyond that, we can hardly say that educational institutions have autonomy in determining the architectural ideology in a society. However, we can talk about a partial autonomy, as the institutions are also a part of the professional circle.

This relative autonomy would differ from society to society. In societies with totalitarian authority, the regime would demand that the architectural ideology of its own choice be reproduced in the universities. There is no space for any other doctrine, and whoever favours such is eliminated from academic circles. In societies where the choice of architectural ideology is left to the mutual interaction of the professional circles and the market forces, the university also retains some potential to affect this choice. In the practice of the developing countries, if the relation between the university and practice is broken, then the former would not take on any influential function in initiating new ventures. In such cases, the initiator is mostly the professional circles that are involved in implementation. We can say, in general, that the university follows the choices related to architectural ideology in the society, even though, now and then there are incompatibilities between the university and those choices. In the long run, the determining factor is development within the society.

It is generally said that the university must meet the demands arising from the social structure. It is desired that the demands of the economy in a country and the products of its educational system be compatible. This compatibility is sought at three points: the content of the education, the organisational texture of architectural practice towards which it is oriented, and the number of students trained. Now, let us discuss these matters of compatibility.

As far as the developing nations are concerned, the general principle that the educational system of a country should meet the existing demand, provide the skills required by this demand and adjust its context accordingly is inadequate on two counts.

The first of these shortcomings is due to the disparities that will exist between the demands and needs in that country. Whether it is oriented through the public sector or originates through the market mechanisms, the demand does not include all of the building activities of such a country. For example, such a demand leaves out problem areas such as squatters. Second, whether this stated demand does actually reflect the need towards which the society should be directed stands out as an important question. If we accept that utopian reformist elements have an important place in the architects’ ideology and, at the same time, the increasing stratification of the architectural community creates a strong critical trait that is directed towards the existing building practices and demand, then demand-orientation and need-orientation will stay in conflict in the educational programmes. A similar conflict will also emerge regarding orientation towards the technology level of the existing social system versus contemporary advanced technologies. If education adapts itself to the technology of that particular country, then people trained in such schools would, to a large extent lose their chance of competitiveness in the international market. On the other hand, if the international technological level is taken as an adaptation reference, then the graduates would be alienated from the practices of their own country.

These contradictions are peculiar to the developing countries. There is no doubt that the crisis lived in architectural education on a global basis and the changes of the paradigm will eventually be reflected in education in these countries and further complicate the choices related to the context of the education.

The second problem of adaptation that education will face is related to how architectural practice is organised.

As we have seen above, the level of knowledge and skills required by government bureaucracies is not very high, and does not bind the educational institutions. On the other hand, in these countries there are not as yet large firms with clear-cut specialisations. In that case, the educational system will mostly tend to train architects who will become the owners of small bureaus where everything can be undertaken by the owner. This means that the education has to provide the student with a wealth of knowledge on a great number of subjects. Such a situation naturally leads to shallowness in the education itself.

The third question of compatibility that we shall mention is related to magnitude. In a developing country, at a certain level of development, social demand for education tends to rise rapidly, and, in meeting this demand, educational facilities become inadequate while economic development falls short in creating jobs for the professionals that the educational system is turning out. At that point, the educational institutions are faced with an interesting pressure. The increasing demand for being educated forces these institutions to increase the number of students. However, the society would like to see this increase materialise without undertaking any new infrastructural investment because of limited resources. The educational institutions cannot ward off the pressure and, in most cases, they increase the number of students by relaxing their educational standards. This decision also means training more students than can be absorbed given the limits on income that is available for these professional groups. This increase cannot be realised as easily by all professions. Here, the decisive role is played, on the one hand, by the organisational level of the professional circle and, on the other, by the potential of the professional education to accommodate mass-education. For example, medical training would stand up to such pressures more successfully than architecture, which would have a better chance compared to education in economics.
The educational institutions under such pressures are faced with difficult choices. At this stage, both the number of educational institutions and the number of students attending each institution will increase. In such a case, the educational institutions face a choice in their strategy between quality and quantity. There is no doubt that in the long run those who have opted for quality will be at an advantage. For, when the supply of architects, and, hence, the competition, increases, quality skills will be needed in order to stay in the field.

We thus see that the developing countries face quite different problems compared to the developed ones in creating a harmony between the social structure and architectural education. The fact that the questions of compatibility are different accounts for the differences in the crisis faced in education.

**Conclusion**

We have discussed the sources and the choice mechanisms of architectural ideology in a developing society; we have seen how the ways in which the building and architectural services are organised influence the ways these choices are reflected in practice; and we have also touched upon the problems faced in the reproduction of this ideology. Though we have not focussed on a particular ideological context, we have attempted to construct an analytical framework that would show how architectural ideology is determined in a society, how it directs the practice and how it expands.

We have also seen how the sub-systems within the social system limit one another's performance. Each of these sub-systems influences the development of the other, and, with these interactions, each society experiences its transformation with respect to architecture. In the abstraction employed in relating architecture and society, we have only emphasised the sub-systems significant for architecture and have brought forward their interrelations.

With the approach we have chosen to take, issues relating to social structure had to be kept in the background. As a result, the kind of economic transformation experienced by the society, the type of political regime in power, the new economic functions created under these circumstances and the new social institutions emerging parallel to this transformation, the dynamic process in the social stratification, and the novelties introduced into the ways of life as a result of these changes were left out of the analysis. Lastly, although the contents of architectural ideologies have not been treated here, as they are beyond the scope of this treatment, I wish to signal their importance and relevance to the issues that I have attempted to address.
Architecture and Society

Ismail Serageldin

Overview

This paper addresses some familiar themes, but in a way which, I hope, will bring out some less familiar perspectives. Specifically, I shall try and view the relationship between architecture and society as an integrated, continuing process which is dynamic and fully interactive, rather than as a fragmented series of actions punctuated by occasional moments or periods of fusion or alienation.

I shall of course do so within the context of today's fast-changing Muslim world and society, and by way of prologue I shall review some key elements of that change process. Then I shall offer some general observations on architecture's function as a reflection of society, on its role in defining an image of progress, and its relationship to changing cultural identity.

Next I shall explore in further detail three issues arising from these observations. They concern the architect's role in: appreciating the past; understanding the present; and anticipating, and preparing for, the future. I will follow up these remarks by some general comments on the role of architects as such in this context: their links to planners and builders, their role as instruments of change and/or custodians of a heritage, and the correlates with respect to certification, registration, and professionalisation. And I shall end on a practical note by posing some questions on the education of architects, the key point of intervention if we are to capture the opportunity for making lasting changes in that profession.

Prologue: the Muslim World Today

The Muslim World today, to describe it in broad brush terms, remains basically a poor one, made up predominantly of poorer developing countries heavily weighted by the populations of South and South East Asia. It is a mostly rural world, although urbanisation is accelerating at a rate which is historically unprecedented. And, as we all know, it is being swept by truly immense currents of change which have generated tension and conflict in the ongoing and painful process to evolve a viable contemporary yet authentic sense of self-identity.

Let me fill in this broader picture with a working definition and a few details which focus on the challenge that has emerged in the area of the built environment, particularly housing.

To define the Muslim world is not so easy as one might think at first sight as a number of definitional choices can be made. I have simply chosen that self-styled group of forty four countries which sent representatives to the Islamic Conference. This excludes the huge Muslim minorities in India, China, and the Soviet Union (perhaps 200 million people in all) but includes such countries as Ethiopia (whose Muslim population still exceeds the total population of Iraq), and Lebanon. The definition is good enough, however, to illustrate the main point which I would like to make — that the Muslim world is extremely heterogeneous. It stretches from Morocco to Indonesia and, at the start of this decade, embraced over 800 million people. The nation states involved range in area from the 1,000 km² of Bahrain to the 2.5 million km² of Sudan, in population from the 200,000 in Qatar to close to 150 million in Indonesia, in per capita income from a miserable $100-140 annually in Chad, Bangladesh, and Ethiopia — the three poorest countries in the world — to the $20,000 plus annually enjoyed in Kuwait, the richest country in the world under such criteria. But if we look at the Muslim world as a whole, using averages and remembering that averages do hide great differences, we can see that the Muslim world so defined has a total area 4.5 times that of the United States and three times the latter's population but — and this is the key figure — only 6 percent of its annual per capita income, or probably now around $300-900.

This world is, on the whole, a poor world, weighted heavily by those demographically large countries, Bangladesh, Pakistan, Indonesia, Nigeria — half the total population in all — that rank in the lower middle-income or low-income countries of the World Bank's tables. Among the key concerns within such nations is to modernise the economic base while improving the general welfare of the citizenry. What the West did sequentially — first, the organisation of production, and only then worrying about the social welfare of the citizenry — these modernising societies must attempt to do concurrently: a very heavy burden on the way things are achieved and on the time they have to achieve them. To take shortcuts, technology transfers are inevitable, but these have translated in the minds of many into the idea that progress is synonymous with "westernisation", which has thus contributed to the societal and cultural cleavage that accelerated socio-economic development is wreaking in many Muslim countries today.

Let me briefly focus on one of the many challenges facing these societies and that has been of traditional concern to architects and planners. This is the challenge of shelter provision for the absolute poor — perhaps 800 million of them at the start of this decade, a circle of misery which unfortunately overlaps, perhaps by a third, with that represented by the Muslim world. These people, many of them children, are caught up in a condition of life so limited by malnutrition, disease, illiteracy, low life expectancy, and high infant mortality as to be beneath any rational definition of human decency. Half of them are found in South Asia, mainly in India and Bangladesh; another sixth in East and South East Asia, mainly Indonesia; and a good proportion of the rest in the Middle East and in sub-Saharan Africa. Only the poor of Latin America lie outside the Muslim world.

One simple set of statistics captures the essence of the social challenge of shelter provision to this group. In 1990, the number of poor households (at about 7 people per household) in the developing world as a whole was about 120 million — 40 million in urban areas, 80 million in rural areas. By the end of the century, however, given the immense surge in world population, and especially in the urban population, the number of poor households will have risen to 130
million, even under the most optimistic assumptions of development. But this overall rise conceals a dramatic drop in the number of poor rural households, from 80 million down to 56 million, and a startling rise in urban poor households, up from 40 million to 74 million. The Muslim world itself will be growing, from 500 million to 1,400 million by the end of the century. Many of the poor households will be crammed into the unprecedentedly large cities that will develop—the Jakarta, the Karachis, the Teherans, the Cairo's and the Lagos of the Muslim world. The basic fact about the social housing challenge is that, in the decades ahead, the Muslim world will be bigger, with more poorer people, and, especially, more poor urban households with immense needs for basic shelter—no less than 33 million new units required from 1980-2000, equivalent to the total stock of poor urban households in 1975.

This Muslim world which I have described is, therefore, a world which is still quite underdeveloped or backward. At best, it is 50 per cent to 74 per cent literate; it is therefore a world that still has far to go. We should not be lulled into thinking differently by the exciting new buildings and the fast-paced developments of the oil countries. In terms of life expectancy, they are in the 50- to 59-year range, still a long way off from the 70-year range of the developed countries. There is much to be done in terms of health. There are many claims on their resources and on their development. It is not surprising, therefore, as we all know, that these societies sometimes seem to be drifting without purpose, as they navigate the difficult waters of an unprecedented transition process and become affected by the currents of internationalisation and especially by the powerful influences of the Western industrial countries. They are, in fact, experiencing a crisis of self-identity. This very lack of purpose, the sense of being at the mercy of external forces, at being caught helplessly between an apparently vanishing past and an uncertain future, has in turn generated undercurrents of tension and indeed of open conflict which further stress the social fabric as they stress individual lives and individual communities. Although such forces have reached different levels of intensity and of impact in the differing regions and nations of the Muslim world, there are few if any nations which have not felt their influence. Change, rather than stability, is thus the key element in Muslim society, and even greater change can be anticipated in the generations ahead.

Architecture and Society: the Major Linkages

The Most Social of the Arts? Every society presents a multiplicity of facets to those of its own members who participate in it or to those members of other societies who perceive it. These multiple dimensions interact to create the complex reality that we call contemporary society. Among these facets are social, economic, cultural, political, institutional, religious and other dimensions. All of them interact in a set of visible and invisible transactions and networks between the multitudes of human beings that live in today's cities and the rural areas. It is largely this set of interactions and transactions that constitute the dynamic living reality of the contemporary city, where most growth is occurring and where most architectural practice takes place. Yet, the physical environment is but one dimension that has to interact with and reflect that dynamic, organic reality.

Architecture, then, is the means that the members of society employ to express that society in the physical world. Whether it is done by the medium of architects, or only builders, and whether it is explicit or implicit, the resulting buildings and urban fabric are by necessity a physical mirror of the less physical, including ideological, aspects that define that society's objective reality today, as well as its linkages backwards and forwards to its cultural heritage and its future aspirations.

There is indeed no art form that is as completely intertwined with a particular society as the form of its architectural expression: for it is art that is physically rooted in the geographic location of that society. For the members of that society — and this is to no way deny that the society may be far from an integrated entity — it reflects both their aspirations, their artistic sensibility, and their economic wealth; the level of advancement of their technology; and the elements of climate, topography, and the structure of their social organisation. Not only does the architecture of any people physically express all this, being the net result of all the contradictions that society embodies, but it also helps shape the vision of the society of itself. It is both a mirror of that society's activities and an instrument shaping the identity of the society.

Within this context, however, it is not clear to what extent the architectural profession, per se, is responsible for moulding taste, or merely for carrying it out. Frank Lloyd Wright said that the architecture of a society is far more dominated by the prevailing taste of its ruling commercial elite than by all the artistic theories of its architects and art historians. He may certainly be right. Others have echoed that concern. As Allsopp has stated: "The failure of modern architecture in recent years is only partly the fault of architects. The main burden of blame for inhumane architecture must rest upon clients who have failed to educate themselves for the great responsibilities they undertake." It is for this reason that the AKAAS has consciously underlined the collective responsibility of all involved in creating a building deserving of recognition.

It is undeniable that the taste of the governing elite is likely to dominate the pattern of buildings that give an area its easily identifiable character and that serve as landmarks and as exemplars of what the state's dominant elite promotes. Thus, Fascist Italy, Nazi Germany, and Soviet Russia all produced types of architecture that are distinguishable and recognisable. So did the idiosyncratic structures of less formalistic and statist societies that we find in different parts of the Middle East and North Africa. As Oleg Grabar has noted, the form of the cities in the Muslim world was largely de-
fined by the middle class, while the monuments were defined by the elite.  

This is not to say that artistic expression is totally constrained by societal reality. Without question artists—be they architects, painters or sculptors—play a role in defining, articulating and improving society's perception of itself and its perception of its aesthetic reality. As Hamilton once put it:

"The artist, whether his medium is verbal, pictorial, plastic, or musical, is the man equipped with radar to penetrate the cultural fogs of the age. Like the canaries that used to be taken down the mines or the white rabbits that once were carried aboard submarines, this race of mankind knows, before the rest, when the air is becoming poisonous or exhausted."  

However, architects are more constrained than other artists. They have to contend with clients and financing, and they have to contend with the need for their creations to function properly and to meet a rigorous set of codes and restrictions. They interact with society much more than other artists, and they cannot function in isolation. Hence, architecture is by far the most closely linked of the arts to the reality of society in its multiplicity of dimensions, be they economic, social, cultural, political, institutional or religious.

Architecture and the "Image of Progress". In the context of the architecture of the Muslim world, I would like to emphasise that a central part of the problem which we confront in our Muslim culture today is that most of the ruling elites of our societies have gone through a process of disassociation from their cultural roots. This has led to the dichotomisation of cultural perception, where the historic heritage—cultural, religious, spiritual—is identified with the past backwardness and poverty, while the image of "progress" in the future is borrowed from elsewhere, namely the West. The problem created by this externally borrowed "image of progress" is very severe. Given the linkages between architecture and society I have just described, it presents a major challenge
to architects. And it also poses a challenge for designers, sociologists and philosophers who have to articulate, for the Muslim societies of today, a vision of the future which is culturally authentic and yet incorporates all the progressive elements that societies in transition rightly aspire to. Unless and until architects and intellectuals generally succeed in providing the ruling elites of Muslim societies with an alternative image of progress, they will continue to pay lip service to the need for cultural authenticity while their actions will speak more loudly than their words as they hurry to adopt the most superficial aspects of Western culture.

**Architecture and Changing Cultural Identity.**

As we have seen, the architect is responsible by the variety of activities that he or she undertakes to help define this "image of progress" that a society, or at least its elite, holds of itself. The physical expression of that society today in most Third World countries is closely identified with the Manhattan skyline, and leaves little room for a more articulated and sensitive response that is more respectful of cultural continuity and more responsive to climatic and site requirements. But, unless architects can successfully convince the elites of their societies to replace their imported image of progress with a more coherent and effective one, there is going to be little chance to reverse that widespread degradation of the urbanistic character and architectural expression that are so prevalent throughout the Muslim world and more generally the Third World.

The task of defining such an alternative reality for a contemporary image of progress in the Third World, of which the Muslim world is a part, is not an easy one. The architects and urban planners who will cope with that task have to face up to the need to convince the "disassociated" decision-makers and the commercial elite of their societies of the superiority of the alternative that they present to the imported model. Only if this task can be done will the secondary effects of this new indigenous alternative reality be achieved. Namely, that the architectural expression of the whole society will be gradually affected. The lower middle classes aspire to have residences and to work in places that are comparable to those of the upper middle classes, and the upper middle classes to have residences and to work in places that are comparable to those of the prevailing elite. By changing the physical expression that the elite is identified with, architects can indeed change the perception of large segments of society as to what is desirable as an expression of modernity and of social status. It is unlikely that architects will be able to do this alone. A wide variety
of disciplines have to interact in order to ensure that the visionary efforts of imaginative, sensitive architects are not left in isolation, but that the intellectual underpinnings that deal with abstractions and ideas, as well as with the social, economic and institutional realities of any societal system, are coherent and pull in the same direction. Without that, inherent tension is likely to continue and ruptures of a cultural and intellectual kind, at the very least, are bound to continue.4 Architecture and urban planning would suffer in their inability to fulfill their assigned and noble mission of being the agents of progress rather than the servants of an elite.

Appreciating the Past

Preservation of the Heritage: What, Why, How, and For Whom? The preservation of tradition works at different levels, reflecting, if anything, differing contemporary functions and ideological needs (e.g., the need for legitimacy) by ascendant elites or their rivals. On one level, there is the effort to preserve the best examples of traditional buildings as exemplars, sources of contemporary inspiration and/or custodians of part of what its bearers regard as their contemporary cultural identity. Yet these buildings are also witnesses of the once-contemporary adaptations and visions of what is now a bygone era, but one that is an indelible part of our historical experience as a people.

Beyond the debate on why historic preservation should be considered in this day and age, there is without question a generalised commitment to the notion of the need to preserve part of our heritage. Even the most philistine of societies, riddled with consumerism as they are perceived to be by their elitist critics, have recognised the need to maintain the most excellent of their past heritage.

This is not a recent development. Examples can be given from centuries ago. Indeed, it is stated that one of the first recorded controversies in Europe about the preservation of historic monuments was the attempt to introduce further changes into the Great Mosque of Cordoba in the year 1523, when an attempt to build a high altar, sanctuary, and a Capella Major in the middle of the Arab monument roused the municipal council of Cordoba to appeal to King Charles V, noting that what they desired to destroy could never be replaced by anything of such perfection. In this instance, the central authorities represented by the royal council overruled the local municipal council and the work was done by Hernan Ruiz. It is claimed, however, that, with hindsight, the enlightened monarch would have supported the municipal council for when visiting Andalusia in 1526, he appeared very dissatisfied by what had happened to the mosque, stating to the canons, “Had I known what you desired to do, you would not have done it, for what you are doing here can be found everywhere and what you possessed previously exists nowhere.”5

On a different level, the preservation of individual buildings in contemporary society raises serious technical as well as functional and ideological problems. Technical problems have been discussed elsewhere and are not the concern of this paper. The functional problems raise different issues. Is it appropriate to turn a church into an auditorium, or a palace into a hotel, or into apartment buildings? Many such examples exist, generally under the heading of “adaptive reuse.” When these are done skillfully, they raise no questions, for the reuse of buildings has been practised on a large scale by previous societies over the centuries. On the other hand, when abused, they can cause tremendous concern. Yet, such adaptive reuse appears to be the only possibility of maintaining vitality for the buildings and avoiding the museum approach to important elements of an organic living city.

Elsewhere, this author has analysed the approach and economics of dealing with adaptive reuse.6 Whole seminars have been devoted to the subject7 and many learned treatises have dealt with its different aspects8 and, indeed, one is struck by the vast number of little noticed examples of such successful renovation and reuse found in any single country.9

The preservation of a single building, whether reused or not, is different from the preservation of the character of an area and, here, different sets of criteria and instruments come into play. Of these, the sense of urban space is a fundamental one, as is the question of scale, proportions, street alignments, fenestration, articulation of volumes, proportions and the relations between solids and voids, and, most of all, activities permitted in the public space and inter-relationship between the public and private domains.

This level of dealing with the historic past, the physical preservation and restoration of individual monuments and/or the conservation of historic areas and/or, more subtly, the protection of a desired urban character, underlines the types of skills that a practising architect should acquire at a time (the end of the twentieth century) and in a place (the Muslim world), where ferment and change are important. In such situations of change and ferment society at large seeks to anchor its headlong rush into the future in its past and the assertion of its own individualism, i.e., its identity as witnessed by the greatness of its exemplars. At the very least, where no “great” exemplars are found, society will seek to enhance the relevance of those “witnesses of that society’s past”, no matter how modest they may be, that provide an element of continuity for their evolving self-identity.

Decoding the Symbols of the Past. This means that the characteristics of regional identity are as important as the overwhelming national and international exemplars in defining the scope of what has to be preserved. But if the skills of architects in that society deal only in part with the physical preservation of building, space or urban character, they will prove inadequate. Architects must also acquire a level of sophistication in the ability to read the symbolic content of this heritage in a manner that enriches their ability to produce relevant buildings for today and tomorrow, and to guide the “authentification” efforts between the twin shoals of Kitsch and alien
inappropriateness. In this connection the observations of Frampton in introducing a series of essays by Colquhoun are relevant. Colquhoun, he states ... “argues that the architect, like the poet, cannot escape the modern demand to reconstruct an expressive language from the aesthetic range that society had adopted in the past. For Colquhoun, Barthes’ concept of a répétion différente is an inescapable destiny, the inevitable future prospect of a culture bricolé”.

This sophistication can only come through a strengthened educational process which engenders in future architects the critical sense required to decode the symbolic content of the past in a realistic, as opposed to an ideologically mystifying, fashion. This, of course, necessitates a broad knowledge of the methodology as well as the content of historical studies, a sense of the growth of societies as a process of successive attempts at totalisation and above all an ability to see the built environment of the past as it was perceived by contemporaries.

Understanding the Present

Societies in Transition. The societies of the Muslim world are inescapably societies in transition, however much some members of those societies may try to avoid this basic process by denying it, or by absolutising a past which exists only in their own minds as a counterweight to the present reality they deny and the future which they fear. The demographic, technical, economic, cultural, political and ideological components of this transition process are well known to all of us. Let me, if I may, focus on the process as a whole — for it is as a totality that it affects us — by linking it to an ever broader process of internationalisation.

Internationalisation. The city in the Muslim world has always been the cultural expression of the middle class — the bourgeoisie. Today, that city is inescapably part of the global village. A dichotomy has now emerged as a result of a particular perception of the Muslim bourgeoisie — a
bourgeoisie now comfortably supported in many instances by the proliferating state apparatus and further buttressed by external support — of the "image of progress" that I referred to earlier. It is this image, fostered in large part by the colonial experience, that has helped to strengthen the dichotomisation of which the visual evidence is so compelling. The interaction of the values of a Western-educated elite — living in glass and steel buildings and riding in air-conditioned automobiles — with the prevalent pattern of urban planning in Muslim under-developed countries is a sorely under-studied subject.

The results of this dichotomy in the urban fabric are all around us in Muslim cities: big roads, tall buildings, "hi-tech" manufactures and industry, mobility, cars, and more or less ostentatious wealth represent the "new". The traditional organic urban fabric with its patterns of narrow streets, its small buildings, its artisan workshops, its pedestrian environment and, above all, its visible poverty, represent the "old".

Furthermore, the systematic impact of the modern movement in architectural thinking throughout the twentieth century has helped enhance the trend towards internationalisation of the physical environment which one would have expected from the internationalisation of economic and financial transactions buttressed as they are by increased communications and interpersonal contacts since the Second World War.

With few notable exceptions, such as the Baghdad School, architectural education in the Muslim world has during the same period increasingly aligned itself with the internationalist (i.e. Western) movements, to the extent of rejecting or marginalising some of its most vital forces, as can be seen from the case of Hassan Fathy in Egypt.

Regionalism and Self-Identity. Drowning in a flood of Western technology and cultural imports that are frequently ill-matched to local conditions and insensitive to cultural traditions, Muslim societies are today struggling to create a cultural environment that provides them with a viable sense of self-identity and which is suited to regional and national conditions. Authenticity for an Indonesian will not be the same as authenticity for a Moroccan. Authenticity for a renascent Chinese Muslim community will be far different from that in a sub-Saharan Muslim community. Yet there is this fine thread of commonality of the nature of the search with variability of the conditions under which it is undertaken. This is part of the creative genius of the Muslim culture, whose hallmarks have always been unity with diversity. Contemporary "regionalism" must express itself in new and contemporary ways. This truism must be restated frequently in the face of a strong current that seeks refuge in perpetuating the myth that traditional vernacular architecture is enough. This "escape into the past" must be forced to recognise the scale and technology that increasingly link and undergird the urban built environment. Slavish copying of the past is not the answer. For those who would try, the dimensions of modern technology and its related infrastructural requirements will quickly remind them that the path of excellence requires creativity: "art must .. arise out of a subtly informed but nonetheless disjunctive reconciliation of those diverse values of which the modern world is compounded".  

Anticipating and Preparing for the Future

A Long-term Future. While only the unknown builders of the Pyramids, Stonehenge and a few other entities can effectively claim quasi-eternal qualities for their built structures, it nevertheless remains true that the work of all architects is (unfortunately) exceptionally long-lived. Today's materials and construction techniques can last centuries, and for better or for worse, architects' creations are there to stay subject to the forces of economics and societal choice — and, unhappily, military conflict. Yet architects have not responded on a large scale to that reality in either of the two rational ways that one would expect:

1) To design "temporary" buildings with the full expectation that they will be rebuilt or considerably changed within a few decades; or

2) To provide for considerable internal flexibility for the substantial reuse of these structures (This is done only in office and commercial buildings.)

Instead, architects have been building as if they were indeed following the slogan "buildings are forever".

A Timeless Continuity: Reading the Signs

To address this situation, architects must be masters of a wide range of skills and their deployment — a range far greater than architectural education currently prepares them for. First, architects must be able to decode the past so they can understand how their predecessors viewed their past, present, and future. Armed with this comparative knowledge, they must secondly attempt to read the signs and trends of the present. This is particularly tricky as, while buildings are for the long-term, current trends may prove ephemeral, and become so within the space of a few years. Third, architects must not only think of their single building, but of its relationship to the wider community. Fourth, and most significantly, they must pull all of this analysis together and design and implement a product which, over its lifetime, can justly win a place in the timeless continuity of world architecture, as have the great buildings of the past which, at the peak of excellence, to paraphrase the words of Ben Johnson on Shakespeare, are "not of an age, but for all time!".

The Role of the Architect in Society

It flows from the above that the role of the architect in societies in transition such as the Muslim world is currently undergoing is indeed a pivotal one, both in defining the society's sense of its own reality, as well as in refining its perceptions of its taste and its authentic cultural expression. Architects have much to gain and little to lose by defining their role in that fashion, but it is unlike-
Sydney Opera House
Photo Courtesy of I. Serageldin.

Only architects can create the unique structures that become landmarks and shape the collective image a society has of itself.

Mohamed Ali Mosque
Photo Courtesy of I. Serageldin

Jeddah Tower (SOM)
Photo Courtesy of Skidmore, Owings, Merrill
ly to succeed in the short term, given the vast array of vested interests and current intellectual (or anti-intellectual) ideas that stand in the way.

Among these distinctive ideas in vogue in some quarters today is the excessive romanticism and "mythification" of the vernacular, which far exceeds the dicta of masters such as Hassan Fathy, who recognised the vernacular as both a source of inspiration and of learning, but did not negate in any way the creative role of architects. Among those extremists are some who have excessively inflated the importance of folk architecture, that "architecture without architects" which permeates so much of the actual building structures of the world. From extreme positions, it has been argued that architects with their eclectic training and universal, "international" (in practice, Western industrial) ideas have fragmented that harmonious and peaceful environment with sordid and unsuitable structures. This is not so. There is much to learn from folk architecture but under no circumstances should we deduce ourselves into trying to maintain and copy previous solutions that may have been perfectly rational and functional for social and economic circumstances that prevailed in society at a certain point in time. We must acknowledge the need for important changes in architectural forms as facets of the physical expression of the changes wrought by economic and social development.

Great artists such as Hassan Fathy have understood this and have learned to use the idiom that is suitable to express their vision of a society without necessarily imposing, or exclusively copying, what has been done in a particular location and time. What, then, is or should be the relationship of the architect to others who impact on the built environment?

Architects, Builders, and Planners. The architect, in my judgement, is the sole person capable of creating those unique structures that become landmarks in an urban public environment that help identify and shape the collective image a society has of itself. Only the architect sets the tone for a new generation of buildings, and successfully reshapes a society's image of itself. The breakthrough innovative buildings are not produced without architects, they are produced as a result of the creative genius of a collectivity of individuals whose vocation is destined to become architecture.

At the same time, it is important to recognise that when architects have tried to build large numbers of houses, addressing those sets of buildings that constitute about 70 per cent of an average modern city's buildings, they have failed miserably. The blowing up of Pruitt-Igoe in the early 1970s, a celebrated symbol of urban failure, was, however, the condemnation of a social policy towards housing, of which the specific design of this public project was but a part. Given such a context, there is much to learn in the important warning of Fathy that architects should limit themselves to working for individual clients and should not try to uphold client-specific solutions in their designs.

Planners are those who design the skeleton that helps shape a city; whether it be in terms of its transportation networks or its basic infrastructure or setting the building codes, subdivisions regulations, and zoning ordinances that make an urban environment what it is. Planners help shape the overall structure of the city, but they seldom have a major impact on the individual building except in very special cases. They bring all the overall concerns of topology, economic base, social structure, levels of service, financial health and viability of a municipality, to bear on the problem of the physical environment. Beyond that, their role is, and should be, limited. It has long been the view of this writer that only a public-private partnership can make for a viable attack on the problems of the urban environment and the planner's domain, the public one, is to be limited to those aspects of the overall problems that cannot and should not be handled by private initiative. The planners should provide incentives for private initiative and by so doing hope to harness possibilities of entrepreneurial talent and energies for the better health of the community as a whole.

Most of the remaining cityscape is filled in by anonymous architecture that — although individually not distinguished — collectivity of individuals whose vocation is now's skeleton. It is the architect who provides the distinguished and distinguishing features. It is the architect who caps this collaboration between planners and non-architects by providing those buildings and those features that ultimately give an urban environment its landmarks and articulates its character. It is the architect who helps mould the major complexes in well-designed urban planning schemes and who keeps rejuvenating cityscapes with new generations of buildings and structures that modify and improve as well enrich, enhance and re-enforce the cultural identity of that environment.

A Dual Function. The architect, therefore, must emulate Janus and exhibit two faces reflecting a dual function. On the one hand, as an instrument of change and a forward-looking agent of the transformation of cultural identity, on the other hand as the keeper of existing identity, a preserver and extender of a heritage, and the molder and reinforcer of cultural authenticity. Just as architecture is inextricably entwined with society, so is the individual architect placed in a pivotal role in the society of which he or she is a member.

Certification, Registration and Professionalisation. Given the crucial dual function I have just mentioned, the reality of the role of the architect in today's society, limited as it becomes in relation to that of the many anonymous and the few well known builders, and circumscribed as it is by the work of the planners, is still sufficiently important in the broader context I have suggested to raise serious questions about qualifications and professionalism as they now exist. Professional associations have consistently sought to seek broad acceptance of the "professional" status of the occupations or practices they represent. That position was inevitably defended along the following lines:
The failure of Pruitt-Igoe was a condemnation of a whole social approach to the problem of mass housing, not just of the aesthetics of modern architecture.

1) The proper execution of the tasks in question requires particular qualifications (hence certification) in order to protect the interests of the public at large. Thus an architect/engineer's seal guarantees that the proposed structure is sound and will not collapse.

2) Monitoring of ethics in practice for any professional fraternity (or sorority) is best done by peers.

3) Recognition of outstanding achievements by a professional association is the best guarantor of raising and maintaining professional standards. Hence the UIA, RIBA, and AIA gold medals, for example, serve the dual purpose of recognising and rewarding the recipients as well as holding them up as exemplars to the rest of the membership.

Opponents of professional associations, especially in more advanced countries, however see them as a means of controlling entry into the market with a view to increasing the incomes of the members. The American Medical Association (AMA) is frequently attacked on these lines. So has FIDIC in many less developed countries.

In most of the Muslim world today, the problems of the architectural profession are somewhat different. They tend to fall into one or more of the following:

1) Architects impact on a very small part of the built environment. Charles Correa estimates that architects interact with only one per cent or less of the society at large.

2) Architects (and urban planners) tend to be subsumed under the broader professional grouping of engineering professions (e.g. Egypt, Saudi Arabia) where their concerns are seldom adequately reflected in the activities of the professional association.

3) The views of architects and urban planners are frequently considered to be matters of "taste", i.e. much more discardable than, say, the views of structural engineers. This leads to a demobilisation of the professionals and a reduction of the professionalism in the practice of architecture and planning.

With few exceptions, the relationship between Muslim societies and their architects (and planners) needs to be upgraded. A deeper respect for the real contributions of the profession(s) will be achieved only if we upgrade the quality of the performance of the professionals. This means that in addition to the "certification" function of architecture schools, there must be a genuine nurturing of real talent, to produce the type of notable performance that can properly address the awesome challenge of building in the Muslim world today.

Educating Architects

Education and Training. In the preceding discussion we have addressed the role of the architect in society on the level of those architects who will produce Architecture with a capital "A", who will interpret in physical terms the aspirations of their countrymen, preserve and reinterpret the best of their heritage, and help mould the taste of a society by defining its self-image and its future aspirations.

A tall order indeed. How many individuals have the innate ability to achieve this? How many such architects does a society need anyway? Are the skills and abilities required to perform this role teachable?

How about the thousands of architects who will simply spend their careers developing working drawings, reviewing specifications and bills of quantities and supervising construction projects? Are they not also needed by society? Do they require the same amount or type of training that the capital "A" Architects need, require or should get?

These are issues that cannot be dismissed lightly and they take on special urgency in the light of two broad-based realities:

1) In most less-developed countries (including most Muslim countries) the cost of university education is prohibitively expensive, causing a major drain on the national
budgets. Hence a more critical look at how expensive it is to train the large number of students who go through conventional architecture programmes deserves attention, with a view to reducing the aggregate (not the unit) cost.

2) Unlike the medical profession, where the role of allied health personnel (lab technicians, nurses, radiologists) is accepted and well developed, there are very few allied training programmes for the architectural profession. With the exception of draftsmen and quantity surveyors (not fully recognised in all countries) the schools mostly turn out large numbers of "architects" who have undergone basically the same "certification" and then let ability and fate sort them out into the different allied professional functions. Without necessarily falling into the faddish trap of calling for "barefoot architects", it seems reasonable to recognise the following:

1) The architectural profession should encourage the development of allied technicians and professionals and increasingly recognise these as successful "allied building professionals" rather than as failed "architects". Schools of Architecture should develop differentiated curricula to meet these different requirements.

2) Even among the fully certified professional architects, most of those practising are not going to function at the level of sensibility, imagination and forcefulness required to perform the role of Architect with a capital "A".

3) For this vast mass of "architects" it behoves schools to develop specific skill-imparting training programmes that will be less costly and more directly related to the requirements of the real market place.

4) To cope with the most gifted students, the academic programmes should try to identify talent early on and nurture this talent as much as possible, recognising that many of the qualities required for an imaginative, creative designer cannot be formally taught, but must be developed and nurtured — an approach that is didactically different from the conventional skill-imparting approach of standard teaching.

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*Hafisia, Tunis (new)*

*Hafisia, Tunis (old)*

*Hafisia, Tunis provides an excellent example of modern structures inserted sensitively into an old urban fabric*

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*Education for What? What would be the essence of the education and training programmes that should be developed for those future Architects with a capital "A"? Based on the interaction with society outlined in the preceding pages, I believe it should have the following characteristics:

1) An in-depth understanding of the history and culture of that society. An understanding that enables the Architect to read the message of past achievements with contemporary eyes and to appreciate the relevance of the past to a present reality as well as to fashioning a better future.

2) A broad exposure to the disciplines of sociology, economics, law and government that will enable the architect to relate better to the realities of the social problems his art and science are asked to cope with.

3) An extensive effort at enriching the myths, images and stimuli that the Architect can draw upon when confronting a design challenge, and the semantic attributes through which he interprets the specific problem at hand.*

*Some Educational Questions. In achieving this, questions emerge to be directed to the educators responsible for fashioning such a programme today:*

1) The balance between theory and application in the curriculum.

2) The role of studios and problem-solving in nurturing such talent.

3) The amount of field-work that a future architect should be exposed to both in terms of studying existing conditions and contemporary structures as well as major historic monuments and districts.

4) The extent of detailed, painstaking study of the visual elements of architecture and the arts as well as the solid technical ground-
ing required in building construction, materials, etc.

Designing a curriculum that responds to these challenges is not going to be easy. But the nurturing of talent is always more complex and demanding than the training of mediocrity to a minimum acceptable level of competence in a given discipline!

The education of the architect must therefore take into account the need for a depth of historical and cultural understanding that transcends much of what is today taught in schools. It also requires an ability to understand and decode fundamental aesthetic judgments that give relevance to the past exemplars in today’s and tomorrow’s world and to be able to sift the wheat from the chaff by recognizing that which is valuable and permanent from that which is discardable and changeable.

This final distinction requires a careful reassessment of the qualitative judgments that we exercise, both on the past buildings and the meanings that they carry for today. If we adopt some of the basic premises of the Modern Movement, looking towards function and proportion as opposed to stylistic detailing, we are led to one set of criteria for both appreciating and reading the historic heritage and hence in approaching both its preservation and its use as an inspiration for guiding contemporary work, which would in many ways be provocative and provide a deep and rich new source of both discipline and liberation for contemporary architects in the Muslim world. Such views of the proper understanding of the meaning and uses of history by the masters of the Modern Movement in contradistinction to the abuses and misuses of history by the postmodernists have been advanced by William Curtis.

On the other hand, no less an authority than Roger Scruton argues forcefully that this is a mistaken perspective and a mistaken reading of the essence of the buildings and that, in effect, only the painstaking study of architectural detail to the point of internalizing its rhythm and discipline enables our truly great architectural tradition to be fostered and maintained and be enriched with sufficient freedom to innovate. Surprisingly, that standpoint leads Scruton towards arguing for a curriculum that would emphasise aesthetic judgment and detailing to the point of, in effect, resembling the ‘Beaux Arts’ curriculum of the nineteenth century and the early part of the twentieth century. For myself, I lean towards the earlier interpretation espoused by Curtis and others, that would argue for a welding of the liberating premises of modernism with respect for, and insight gained from, the historical tradition thoroughly internalised by the practitioner to produce an artistic creation of relevance and impact. That is a difficult tightrope to walk. The difficulty lies in modernism’s own seductive and yet illusory dicta that would reduce to taxonomic features the art of architecture, confusing it with a reductionist science.

Yet, if I reject the excessive emphasis on the visual that Scruton proposes by defining architecture as primarily a visual exercise, I cannot at the same time reduce it to pure formalism. Architecture is in part a science, but it is also an art with its own traditions, so that its concern with image-making is at least as important as any solution it brings to practical problems. In essence, I hold that the reality of architecture as a discipline is as complex and as rich and as difficult to encompass within a simplified intellectual construct as is the society from which it sprang and the evolving nature of the culture of which it is both a part and a reflection. This is the reason that the proper education of architects remains as such an exciting and challenging subject. As Colquhoun has written:

"Architectural theory has been dominated for the last decade or so by various forms of determinism or populism, neither of which recognises architecture as constituting a cultural entity in its own right. But the raw materials of architecture, to a large extent, the architectural culture at any one moment in history. Unless these aspects of architectural creation... aspects which involve the transformation of an existing culture... are understood, we are not going to achieve an architecture by which cultural meanings can be carried."

Notes


2 Oleg Grabar, "Cities and Citizens" in Bernard Lewis, Islam and the Arab World (New York: Knopf), 1976, pp. 89-100


4 See I Serageldin, "Individual Identity, Group Dynamics and Islamic Resurgence" in A. E. H. De Souza, ed., Islamic Resurgence in the Arab World (New York: Praeger, 1982), pp. 54-66


7 e.g., AKP seminar, Designing in Islamic Cultures III, 1983


9 Barbara Lee Diamondstein, Buildings Reborn (New York: Harper and Row, 1973) provides a wealth of examples from the United States

11 Suggestive—but no more than suggestive—in this respect are the intellectual voyages of Jean-Paul Sartre in *Question de Methode* (trans. by Hazel Barnes as *Search for a Method*, New York: Knopf, 1963) and (at great length) in *Critique de la Raison Dialectique* (trans. by Alan Sheridan-Smith as *Critique of Dialectical Reason*, London: Verso/NLB, 1976).

12 The term “Bourgeoisie” is used somewhat more restrictively by some sociologists and political scientists, especially those in Europe, than I do here, particularly in connection with the Industrial Revolution and its aftermath in the countries of the West. I use the term in its original sense, that is, and as the root “burg” implies, relating to townspeople and the dominant urban commercial society. See I. Serageldin “Comments” in *Development and Urban Metamorphosis*, Vol. 1: Yemen at the Crossroads, Proceedings of AKAA seminar, Singapore: Concept Media for the AKAA, 1983, p. 60


14 Frampton, *op. cit.*, p. 9

15 Flexibility, however, has its own perils. It is possible to arrive at “the apparently paradoxical situation where as a result of making a building more “democratic”, and more sensitive to “feedback”, we impose on it an even greater inflexibility and turn it into a Gesamtkunstwerk of bureaucracy, infinitely more unpleasant than the Gesamtkunstwerk of the artist which Adolf Loos opposed with such vehemence.” Frampton, *op. cit.*, p. 3, citing Colquhoun

16 Jonson’s poem prefixed to the Folio edition of Shakespeare’s plays in 1623, ran: “Triumph, my Britain, thou hast one to show To whom all scenes of Europe homage owe He was not of an age, but for all time!” (quoted in Shakespeare, *William*, Encyclopaedia Britannica, 15th edition, vol 16 p 617)


19 See the excellent discussion of this point in Charles Correa, *The New Landscape* (Bombay: The Book Society of India, 1985), pp. 96-100


21 This anonymous architecture has been the subject of much interest. It has been most powerfully projected onto the public consciousness by Bernard Rudofsky, *Architecture without Architects* (New York: Doubleday & Co., 1964) Squatter settlements have also been saluted by many, see also Bernard Rudofsky’s *The Prodigious Builders* (New York: Harcourt Brace Jovanich, 1977), pp. 340-351. A recognition of that dynamic role of private individuals and, hence, a constriction of the public sector role is explored in I. Serageldin “Housing the poor: the role of the public sector” *op. cit.*

22 This whole process, and its relationship to the bureaucratisation of modern society, was inimitably explored by Max Weber in *Wirtschaft und Gesellschaft, Wirtschaftsgeschichte* and other works, but is too complex to explore in detail in the present context. Weber did not, on the other hand, neglect the role of creative individuals: see S. Eisenstadt, ed., *Max Weber on Charisma and Institution Building* (Chicago: University of Chicago Press, 1968)


24 Ismail Serageldin, “Towards a Model of the Design Process” Revised version of a paper presented at a private seminar sponsored by the Aga Khan Award for Architecture and held in Geneva, January 18-19, 1985


27 This view, espoused by writers such as Marc Girouard and David Watkin, is important in this context. See David Watkin, *Morality and Architecture* (Oxford University Press, 1977, reprinted by University of Chicago Press, Chicago, Illinois, 1984) in particular pp. 1-14

28 Cited in Frampton, *op. cit.*, p. 10
Saad

I have a question for Dr Serageldin. In your paper you mentioned that architecture and planning in developing Islamic countries are often influenced by political practices. However, when you spoke of Cairo, I had the feeling that you placed the blame on the architects and planners and thereby avoided the issue; but since you brought it up it would be interesting to hear your comments as to how we could make our students more aware of the political interferences that affect the field of architecture.

Serageldin

I wasn’t trying to avoid the issue of political interference. I simply said that although architects will never be able to build enough houses for five million people, it is the lack of vision and commitment on the part of architects and planners to influence decision-makers. This is something that cannot be taught, for it involves strength of character, a willingness to stand up, a willingness to be ostracised and pass up commissions. Many of our architectural schools in the Muslim world are not placing enough emphasis on building character. In fact, they are trying to fit people into particular modes, by imposing a particular curriculum, discouraging questions and criticism. The result is people who cannot cope with problems. Let me give you two examples.

Recently, in Cairo, the restoration of al-Hakim Mosque was being done in such a careless fashion that the head of the Antiquities Department and its entire advisory committee sent in their resignations to the Prime Minister. The result was that their actions generated enough interest to stop the project. A few years earlier, there was another famous case of the building of the Giza Pyramids Plateau. That project was stopped due to the outcry of a few activists and the support of the press.

So, here we have two salient examples of what responsible individuals can do to influence decision-makers. I find it strange that in both cases, neither the Chamber of Architects nor the engineering profession spoke up, but rather private citizens. This failure of the professional elite to influence decision-making is, I believe, attributable at least in part to the failure of our system of education which produces technicians, and not true professionals.

There is not enough of an outcry by the profession against this way of doing business. They’re all busy running after commissions; this is a fact of life. One of the few who did speak up was Hassan Fathy, who talked about self-help long before it became fashionable to talk about self-help. So what happens, Hassan Fathy, who spent most of his time working in Upper Egypt, who was very knowledgeable and who would have been the obvious choice for the rebuilding of the Nubian settlements was completely ignored. Instead of rebuilding Nubia, standard rows of concrete blocks were lined up one after the other as though it were a delivery system. Who can give us 20,000 units in eleven months? And why eleven months? Because somebody was speaking to the President who said he wanted it in eleven months. That’s how decisions are made.

Where were the architects, the teachers, the intellectuals protesting that this is no way to go about it, that it should have been done differently? I think this is the type of conscious awareness and responsibility that we as architects and educators should commit ourselves to.

Moreno

I am addressing my comments mainly to Dr Serageldin. He has spoken about a training programme for architects at distinct levels. I believe that this is impossible. Architecture, the architectonic phenomenon, is unique and therefore impossible to approach other than as such. Moreover, architecture students have very little similarity with bees. Simply changing their food will not make some of them queen bees and others workers.

Secondly, I cannot help echoing the tone of lament, related to the Islamic culture, which has remained in the atmosphere throughout the sessions. It has been said:

- There is no Islamic cultural corpus to transmit.
- There is a cultural “rupture” in Islam.
- There is a longing for a cultural secularisation.
- Islam hinders the objectivation of the concepts that would permit its transmission. That is, enumeration of deficiencies and forgetting what one posses.

This is not peculiar to the Islamic world. It is common among all humans. We do not value things until we lose them. Here, in Andalusia, this ancient part of Islam, we see with pain the “rupture” in the transformation of an architecture, which was able to respond to the most varied programmes and means, turned into a mechanical repetition which humiliates us, both in a “palace” transplanted to the Costa del Sol and in the “solemn” works of imported architects. But, there’s still hope. I mean that the crafts still exist, and that the solutions, tested throughout the centuries, can still be applied with purity. This also means that the “rupture” is only conceptual. The ability to create has been lost, but the crafts have been kept, and here is where we can find the ferment.

Dr El-Wakil told us of his surprise when he found colleagues who had difficulty to pass from the cube to the dome. This can be made by an unqualified worker either in Tunisia or in Algeria, even without a support. It used to be made also in Spain until recent times. Today we use a fibre-cement layer, barely adjustable and that it doesn’t isolate properly or resist the wind. It can be broken with a kick. But, it is easy to buy. Think about what this means in terms of loss of employment, cultural loss, or impact on the landscape. These are issues as much present in Spain as in many Islamic countries. There has also been talk about the existence
of such a corpus doctrinae in the West. I don't think that it is structured in that manner, but, in the case that it does exist, it is not the solution.

Last year, in Brussels, on occasion of the then approaching entry of Spain in the EC, it was stated that the training of the Spanish architect represented the model of the ideal architect that Europe needed. I presume we should feel proud of this. But, I think we are ashamed of the greater part of what is being built in Spain. This happens due to various reasons, but in regard to what interests us here, it is the loss of crafts and the partial use of technologies which represents the difference between capabilities and realities. We have heard about the tremendous effects of political and military colonialism in some of the Islamic countries. This is the consequence of an interested, technological colonialism. It is stupid to deny progress, but it is even more stupid to underestimate what is valuable. Technology must follow needs (including aesthetic ones); not create problems.

Let's think about architecture to make it be an art. Let it use the best techniques, but without rejecting it as a craft. A beautiful one, by the way, giving shelter to life. Let us train, then, professionals. Let us transmit the craft as time and place have decreed it. We shall, then, train honest and socially useful architects. Later, from their number, there will be many innovators and a few nice persons who will be worthy of the Aga Khan Award.

This is still possible in most countries of Islam. From Andalusia, where it is not possible anymore, we have the duty of brotherhood to advise you as I have done. We offer the attempt to restore our ancient heritage regarding what will be necessary to make it possible.

Padamsee

I must confess to a certain amount of alarm and despondency about what I have heard concerning the limited view of what an architect is and what he does. This limited view is curiously old fashioned; it is almost as if the intensive work by Turner, Saini, and others had not been done. Educating architects is a resource-consuming activity. If investments continue to be made in educating architects, then their training must enable them to fill a number of roles in society, not simply that of the builder of monuments. Architectural education could prepare students, for example, to work as both public and private sector architects, development architects, community architects, enabling architects and so forth. Perhaps Dr Serageldin could comment as to how he views this type of education.

Serageldin

That's a fascinating question and an easy one to answer. I think that the distinction is between nurturing and imparting skills. If you are saying that we are designing a curriculum that is going to specify someone as ideally suited for a particular task, then I grant that you will have many difficulties. But even that approach would not be insurmountable, since we see it, for example, in medical disciplines. There is first basic training for general practice, then there are the specialties. However, that is not the issue. The kinds of distinctions you mentioned involve educational choice: the individual who wants to work in the community or in public service. What is needed is to provide students with a broad liberal arts education which will give them an appreciation of the kinds of issues that they will have to deal with whether they are consultants, architects, or developers, or persons in a public building agency or those working in the community. It is not a matter of training idealised robots to cope with this job or that job; but to form enlightened citizens able to express and fulfill themselves to the fullest extent possible.

In response to the great need for manpower, we have homogenised the educational system to such a level that we are indeed cranking out people having a certified level of minimum achievement who are then left to fend for themselves as best they can through
connections, talent, ability, luck, or other means to find their way in society without ever developing the talents that some of them have. It is stifling for the profession as a whole, and counter-productive.

Mbahsher Ali

There is a lack of creativity in Islam today, lack of creativity in its architecture and in its schools of architecture. We no longer have the ability to create and adapt to all sorts of different situations; and it is precisely this adaptability which we were noted for. Today we find that culture has replaced creativeness and innovation, as is sadly the case in Andalusia.

Architecture is not only an art and a technique, but also a craft, and it is this craftsmanship that we have lost. We have to train architects to be craftsmen first and only then worry about making them technicians.

Serageldin

Architects should be encouraged to appreciate and understand the crafts of their respective countries, working in a manner that makes them more creative and ensures their continuity. We have today 15,000 architects in Egypt and 17,000 in Turkey among which few are the professional architects who do the creating, the elite so to speak, and the remaining vast majority who are the workers, the craftsmen.

I think there is something wrong with a system that treats these people as failed architects, instead of recognising them and giving them a sense of pride as extremely successful craftsmen. We should recognise the fact that the disciplines of building and design today have become complex and differentiated, requiring architects to fill a multiplicity of roles, all of which should be treated with respect.

Lolah

Architecture schools are centres of training, information and research. It is time to expand their programme of activities to include special proficiency courses for professional architects having already earned their degrees, and who are working in the public or private sectors.

The professor of architecture should not only be a theorist, but also an active practitioner constantly developing and increasing his experience in the field. Only then can he transfer his knowledge to the students effectively. It is important that architecture schools prepare students to enter the profession with practical experience as in the case of Syrian universities.

A presidential decree in 1976 made available to all full-time professors teaching at Syrian universities the opportunity to practice their profession at the universities themselves. Special offices were provided for studying all kinds of projects and problems which were brought in by the State. Both teachers and assistants are now working in these offices. Many contracts have been signed for the study of numerous important projects, as well as for consultative work in the field of socio-economic development.

This experience has been very positive and advantageous for the teachers and has helped them develop their experience and knowledge in the field. For the assistant as well, it gives him the means of training on actual projects and of acquiring practical experience before starting with his specialisation.

The student, too, has the opportunity to work on actual projects with the guidance of his professors. All in all, this experiment in Syria has proven to be successful and is now being perfected in order to avoid any possible adverse effects with regard to teaching architecture.

Mouline

Architecture is necessarily affected by technological, sociological and artistic factors and architectural activity is structured and ordered by cultural determinism that pervades human reality. Sociological determinism has great impact on both the artistic and technical aspects of architecture, and it informs architecture in its totality, with regard to its historical development, professional practice, social usage and institutionalisation as a profession.

As has been discussed, particularly by Professor Tekeli and Dr Serageldin, one is astonished to hear how much is censured of the architect: he has to be able to decode the past, understand the present and project the future. He needs the capacity to understand and express the desires of society. As an artist, he has to incorporate aesthetic and artistic values in his work, as a technician he should uphold local technologies while being open to new technologies. As a sociologist he should follow and even anticipate the evolution of social needs and social change.

In his work on the built environment, he should be able to harmonise the often conflicting demands and constraints imposed by a range of actors while realising an architecture that modifies the existing environment and brings to life an image of progress.

All this is too much for one person and an architect needs to be an angel or a genius to be able to fulfill all of these functions. And the qualities needed for such a role cannot be taught and cannot be incorporated in any curriculum.

It is possible to define architecture as a profession, legally and sociologically, but as a vocation it is difficult to do so. The practice of architects, their training and social role differ widely according to countries where they work, regimes they work under, the system of education and training they go through, the organisation of the profession in the country they work, even according to their rank and status within a given system.
Here, I am not referring to the architect's competence, because such a notion is meaningless unless it is defined in relation to the conditions prevailing and the problems outstanding in the social and professional milieu in which he operates.

I am sure that the case studies to be presented in the following session will illustrate the sociological variety in the exercise of the profession, and they will help to bring an understanding that to be an architect is far from having an universal function and that all research toward the improvement of architectural education in the Islamic world should be based on an analysis of the specific needs and conditions of particular countries and regions and not on some ideal curriculum designed to train an angel or a genius for an architect.
Current Islam Faces its Tradition

Mohammed Arkoun

The original version of this essay was published in French in Aspects d’Islam (Brussels: Facultés Universitaires, Saint Louis, 1985). An English translation appears for the first time in this volume, since this study sheds light on the concept of “rupture” introduced by the author and debated in this seminar.

“What is there to keep men from believing, now that the Good Way has become apparent to them, and from imploring the forgiveness of their Lord, except their refusal to admit that the traditional lot (sunnah) of the Ancients will reach them or that they will be put face to face with Torment?”
— Qur’an 18:55

“According to the tradition (sunnah) of the Messenger, We have sent before you, and you will find no change in Our Tradition”
— Qur’an 17:77

It is no simple matter to speak of Islam facing its Tradition in the difficult historical circumstances of Muslim societies since the 1950s. Leaving aside the difficulties of speaking adequately, without reductionism or the blind equation of the Tradition with a great scriptural religion, we, in fact, face four possible approaches, illustrated by four concurrent forms of discourse:

1) Current Islamic discourse, which tends to dominate all the others by its political power and great social and psychological scope. It is deeply rooted in the mythical dimension of the Tradition while unwittingly secularising the religious contents of that Tradition.

2) Classical Islamic discourse, which explains the Tradition in the period of its being formed and fixed in authentic texts.

3) Orientalist discourse, which applies to the forming and fixing stage a philological and historical critique, predominantly historicist and positivist which belongs to the nineteenth century.

4) The discourse of the sciences of man and society, which aims to rework the preceding three to emphasise in each instance those questions that are repressed as unthinkable or “unthought”, and, thus, to make possible a current critical revival of the problem of the Tradition and traditions in Islam.

To deal with both the thought and the unthought that have accumulated in Islamic Tradition for fourteen centuries, we will begin by examining the concepts of Islam and tradition. We will then describe the situation of the Tradition and traditions in the Islamic domain. Finally, we will strive on the basis of our findings to rethink the notion of Islamic Tradition in its totality.

I — The Concepts of Islam and Tradition

The debate about tradition is for the most part already open in the Qur’an: the whole Qur’anic message acts as an overturning “modernity” with respect to the beliefs and traditional practices allowed by “the fathers” or “the ancestors” (abs’ used sixty-three times; al-awwalun, “the ancients”, thirty-eight times). The preceding Arab tradition is entirely portrayed as belonging to the realm of ignorance, disorder, injustice, error, paganism, and oppression — in a word, “the darkness of the juhiliyya”. The Tradition — with a capital “T” because it is divine, unmodifiable by man, and the expression of Eternal Truth — after twenty years of struggle at Mecca and Madina, seeks to enter a hostile socio-cultural field and becomes, precisely, Islamic Tradition.

Must we, in consequence, designate the notion of Tradition from the beginning of Islam onwards with a capital “T” because it is the only “orthodox” expression of the only Tradition received by the Community? Or, is it appropriate to redefine Islam as one socio-historical process among others, which has resulted in the formation of a tradition termed “Islamic”, but always coincident with others, or modified by successive “innovations” or “modernities”?

The first approach corresponds to that of the current Islamic discourse of movements termed “Islamist”, but, more generally, to all reformist discourse (islah). According to this view, Islam is entirely contained in the Qur’an as the Prophetic tradition (hadith) has explained it. That this tradition was made the object of oral transmission and then written during the first three centuries Hijra, that it consequently results from a complex socio-historical process subject to criticism, is treated as having no effect at all on the absolute equation: Islam = Authentic Tradition. The sum total of beliefs, practices, institutions, ethics-juridical norms, and texts produced and recognised as Tradition by the community (usuma) only serve to show that Islam is defined and willed by God, according to this approach. The Tradition is thus the incarnation of the “religion of Truth” (din al-haqiq) in history; it is a force of sanctification and transcendentalisation (tanbih) of the space-time in which the life of the Community is enacted. In this way, the Caliph, the Sultan, and the Amir — although essentially secular — have become sacred to quite different degrees. A like conception explains why every Community member is treated as the immediate contemporary of all members past, present, and future. This approach grants authority to the spiritual ethos of the Tradition which nourishes the feeling of community identity, raises the hopes of believers, and assigns an eschatological and ontological finality to concrete historical behaviour, all the while refusing to integrate historicity with all of these effects. It is thus radically opposed to the “scientific” attitude that, in contrast, takes into account only “facts” (names, events, dates, textual statements and the like) that are verifiable according to the procedures of historical criticism.

The second approach consists of leaving open the concepts of Islam and tradition because they are subject to the incessant changes that history imposes. This is a matter of integrating, in analysis as in concrete practice, the spiritual ethos of Islamic Tradition with its historicity. This concern is new in Islamic thought; indeed, it goes beyond the criticism of chains of authorities and hadith texts as conceived and practised by the most prominent traditionists (muhadithun). How does religion achieve form, continuity, and consistency in a social body and in a more or less rapid social progress? This question arises as soon as we consider religion from the angle of the tradition that is its expression. From this perspective, Islam is never concluded; it must be redefined in each socio-cultural context and at
each historical phase. It comprises, nevertheless, the following stable constituent elements:

1) The Qur’anic corpus (mushaf);
2) The various texts of traditions and jurisprudence;
3) The five canonical obligations and the ritual of their performance;
4) The spiritual ethos common to all of the faithful and characteristic of the Tradition.

The stabilisation of these elements took time: this is what I call the socio-historical process of the formation of the Tradition. We will also see that, as a matter of fact, the semantic stabilisation of the Qur’an and the Prophetic traditions is impossible insofar as it is a matter of living tradition. By the latter I mean of texts by which the faithful live, producing history and being unerringly reproduced by it. One of the functions of the Tradition is to furnish the necessary referents in order to secure unanimity about certain readings of the sacred texts, which is to say that the unity of Islam ideally claimed by the believers occurs progressively in history on the basis of the four necessary referents enumerated above.

Theologically, one can oppose this approach to the famous verse “Today I have brought to perfection for you your religion and completed My favour; I have chosen for you Islam as your religion”. (Qur’an 5:3)

The reading of this verse — as of the whole Qur’an — depends on the role we accord historicity in deciphering the entire period of Revelation and prophetic action.

Let us reiterate that historicity here is not to be confused with the purely accidental circumstances of the Revelation that the classical exegetes designated by the name of asbab al-nuzul. If chronologically the Revelation is effectively brought to a close by the death of the Prophet, it is still the case that its exegesis, explanation, and translation into ritual and ethico-juridical norms continue into our day; it is by the work of the individual self on itself and under the pressure of history, that the Community brings about Islam as living Tradition.

Let us take a closer look at the notion of tradition. The arguments, discussions, and writing of the first two centuries of the Hijra, in order to assert the notion of Prophetic tradition (sunnat al-nabi) against local customs or even other traditions actually going back to the companions of the Prophet (sahaba) or the followers (tabi’un), put into circulation a technical vocabulary often muddled by inconsistent usage. One will recollect in particular the terms: sunna, khabar, ashar, sara, naqal, riwaya, hadith.

All these terms had a standard meaning in Arabic linguistic usage before Islam; they were worked into the new semantic context created by the Qur’an and the experience of Madina in order to designate specifically a tradition, at once religious and cultural, in the process of formation.

Sunna is used in the Qur’an in relation to God to designate the customary manner of acting towards peoples who lived in error when the prophets transmitted the Revelation. More generally, sunna designates the customary behaviour of a group; this is the sunna introduced by Muhammad only gradually and with difficulty gains recognition over local customs. In existing documentation, the first use of the expression sunna al-nabi appears only about 80/700 with the celebrated Caliph ‘Umar b. ‘Abd-al-‘Aziz (d. 99/717). Another step is taken by Shafi’i (d. 204/820), who pronounces the sunna, as the sum of authentic hadith, the second “objective” source (asli) of Religious Law (shari’a) after the Qur’an.

The notion of a textual body of traditions transmitted (naqal, riwaya) according to regulated procedures thus acquires a decisive importance, which culminates in the elaboration of the great and so-called authentic (al-sahih) texts of Bukhari (d. 256/870) and Muslim (d. 261/875) for the Sunnis, and of Kulayni (or al-Kulini) (d. 329/940) and Ibn Babuya (d. 381/991) for the Shi’ites. Khabar and ashar are more general terms for designating every statement or trace that conveys information.

Any bit of information, narrative, or news can be designated by khabar or ashar; this is why the two terms apply equally well to secular information from history and literature (adab) as to religious traditions that touch in particular the Qur’an and the hadith.

This indicates that the gathering of information about the Qur’an, the sira (biography of Muhammad), and the hadith was accomplished in a cultural climate in which secular objectives — such as poetry, political history, maghazi or military campaigns and economic facts — were as important as religious ones. The Umayyad and then the Abbasid state needed these akhbar (plural of khabar) in order to forge both an orthodoxy and a cultural tradition equally indispensable for consolidating the legitimacy and unity of “Islamic” power.

This official aspect of the forming and fixing of an Islamic Tradition is essential for understanding three consequences that are not equally addressed by Islamic thought: the splintering of the Tradition into Sunni and Shi’ite; the suppression, at least in theory, by the science of usul al-fiqh, of all local traditions deemed non-Islamic; and the weakness and discontinuity of a theology of the Tradition.

We shall return later to these three points. Let us again recall two important terms tied to the notion of tradition in Islam: namely bid’a, or innovation, and taqwil, or imitation. The latter involves scholastic reproduction of norms and teachings defined by the founding doctors of theologico-juridical schools, such as Malik b. Anas (d. 179/795); Abu Hanifa (d. 150/767); Shafi’i; and Ibn Hanbal (d. 241/855) for the Sunnis; Ja’far al-Sadiq (d. 148/765); and Ibn Babuya for the Shi’ites; and Ibn Ibad and Jabir b. Zayd al-Azdi (d. 103/721) for the Kharijites.

The more the Tradition is identified with the body of commandments and prohibitions (awamir and nawahi), defined in the Qur’an, the hadith, and the canonical corpus juris, the greater the barrier against “innovations” that can be “traditionalised”, that is, integrated into the system of the Tradition with the assistance of the methodology of
the usul al-fiqh. There has thus always been more or less live tension (it is very strong today) between sunna/bid’a and, correspondingly, taqlid/ijihad, that is, between submission to the authority of the Tradition and rational effort to recognize and promote “good innovation”, or bid’a hasana. This means that in a cultural context where attitude and historical criticism are weak, the scriptural Tradition becomes a force that sanctifies and mythologises the founding period in which all Truth is centered on the rules of conduct and human belief: that is what has in fact happened in Islam since the 3rd/9th to 5th/11th centuries. We shall consider how one might revive today a thinking process and a search that has been long neglected.

II — Tradition and Traditions in the Islamic Domain

Just as there is but one Islam — willed by God as the Religion for all men — likewise there can be but one Tradition faithfully expressing and perpetuating this Islam. Such is the constant claim of orthodoxy, whether Sunni, Shi’ite, or Kharajite.

Christianity and Judaism have likewise imposed the supremacy of the Scriptural Tradition, limiting or eliminating concurrent traditions that did not benefit from two essential supports, State and Scripture. Historically dated, each Tradition so constituted nevertheless claims a supra-historical character because of being rooted in Revelation and expressing the transcendence thereof.

Historical reality does not confirm this theological claim. At the Prophet’s death in 11/632, several alternative versions of tradition were possible in terms of the Qur’an, the Experience of Madina, and the socio-cultural conditions of Arabia and the surrounding countries. Three alternatives asserted claims in the course of the first century. Through bloody struggles and heated controversies there progressively emerged the three great orthodoxies: Sunni, Shi’ite, and Kharijite, each of which developed greater or lesser differences from the others. Heresiographic literature bears clear witness to the multiplicity of groups, communities and sects (mi'la, nihal, firqa) that appeared during the first five centuries of the Hijra. Even when the two great orthodoxies, Sunni and Shi’ite, have their separate triumphs, one with the Seljuks and the other with the Safavids, very long-lived local traditions managed to survive in the setting of religious brotherhoods.

It stands to reason that each orthodoxy denies to concurrent movements participation in the Authentic Tradition. The framework, traditionally accepted as theological although in reality exclusively polemistic, in which the battles of Sunnism against the “heresies” take place is determined by a very commonly cited hadith.

“The source of our subject”, writes Ibn ‘Arabi, for example, “is the tradition related by Ibn ‘Umar: The Messenger of God has said, ‘The children of Israel are divided into seventy-one sects: all of them will go to Hell except one. Those born of Jesus son of Mary number seventy-two: all will go to Hell except one. My Community itself will be divided into seventy-three sects: all will go to Hell except one’. They asked him, ‘What then is this unique (saved sect), O Messenger of God?’ He replied, ‘Islam, that is the Community (jama’at) of Muslims who will be like me and like you’.”

The underlying assumptions of this passage have in effect governed the three orthodox versions of Muslim opinion up to the present day. It is therefore a good idea to explain them in order to show that common assumptions have nevertheless produced systems of representation sufficiently at variance to render unthinkable the revitalisation of Islamic consciousness by a critical rereading of the three traditions.

The Organising Assumptions of Orthodoxy

These assumptions include the following:

1) The division among men is irreconcilable. Only one group, put three times in succession before the Divine Message, is capable of grasping it and remaining rigorously faithful to it.

2) Truth is one like the Divine Message and the group that grasps it. Thus, there can be but one True Religion and one Authentic Tradition expressing this Religion.

3) The Companions of the Prophet (“like me and like you”) are the first generation of a spiritual community that reproduces itself strictly within the Accepted Tradition. As a result, successive generations are rigorously “contemporary” regarding the Salvation promised to all.

4) In these conditions, being “contemporary” means:

- The existence of homogeneous and unvarying semantic field within which all transmitters and receivers actualise the Message and its fruition in the Tradition without possibility of disagreement.
- The unequivocal semantic character of “objective” texts, transmitted and adequately explained via the exegeses received in the Tradition.
- That any sort of actualisation of the Tradition issues from “objective” texts, in the most varying historical and social contexts, without these contexts in turn affecting the Tradition.
- That each statement of Tradition refers to a behaviour-Model ordered by God or already demonstrated by the Prophet during his apostolic life (whence the importance of the sira). There is perfect congruence between the statement and the concrete referents in expected conduct, just as there is direct congruence between each statement and the behaviour of each of the faithful, independent of time and place.
- That there is no doubt about the authenticity of the accounts that transmit the initial Message and their actualisation in Living Tradition; the companions — in the manner of Christ’s disciples — received a special charisma that shelters them from error or deviation when it comes to preserving the Message.
It is apparent that these postulates are not common only to Muslims; they are found to an equal degree among all peoples of the Book (ahd al-kitab), as a very orthodox work of Y. Congar testifies. How, then, do we explain the existence of theological and psychological schisms? This question brings us back to the constituent elements of any tradition and to the process of their being combined.

The Sunnis appeal to the sunnat al-nabi, while the Shi'ites speak of the sunnat al-bayt, or Tradition of the members of the family of Muhammad. While the former piously gather the hadith transmitted by the first three Caliphs, qualified by them as orthodox, the latter abide by the traditions by 'Ali, the fourth Caliph, and his descendants, all of whom are deemed to possess a particular charisma. Neither of them takes into account the actual political and psycho-cultural conditions within which is accomplished, over generations, the mythical and imaginary crystallising of such secular events as the succession of the Caliphs known as orthodox, the assassination of 'Ali and his son Husayn, the persecution of the Kharijites and Alids by the Umayyad Caliphs, of the Umayyad Caliphs by the Abbasid Caliphs and the like. The religious reading of secular events erases their political and social forces or transforms them into supports for mythical constructions that enrich the Tradition. In contrast, the Orientalists' historicist reading from the nineteenth century onwards displaces the symbols and myths to a domain of legend or popular exaggeration, in order to retain only those facts that are duly localised in concrete time and space.

We can nevertheless observe, in this connection, an essential difference between the Sunni and Shi'ite processes of producing the Tradition. The Sunnis have in actuality always been the side in power; they have accepted this political fait accompli whether it resulted from consultation (shura), as in the Caliphate of Madina, or from acts of force, as in the case of the Umayyads and Abbasids. The decisions of the Caliphs in office and their administrations helped in large part to nourish the tradition that is called Sunni by instituting the official corpus of the Qur'an (mushaf) under the Caliph 'Uthman, as well as the collective memory with its religious, juridical, and historiographic referents. This is why it is so difficult today to disentangle the religious contents of the Qur'an from the secular ones: all the forms of power that have appeared in Islam since 11/632 have exploited this confusion of jurisdiction in order to gain legitimacy. The process asserts itself still more strongly in the current powers born of military caste or the religious setting, as in Iran.

With the exception of the short reign of 'Ali (36/656-41/661), the Shi'ites were in the opposition and had to undergo frequent persecution until the advent of the Fatimids in the Maghrib (297/909) and the Buyids in Baghdad (334/945). They had time to develop a tragic vision, one inseparably religious and secular, of history. In his lifetime, Muhammad had explicitly entrusted to 'Ali and his descendants the charismatic power and the temporal charge to watch over, until the end of earthly history, the integrity of the revealed message. This meant integrity concerning the transmission of the texts and traditions (cf. the disputes about the mushaf and the compilation of the hadith); the exegesis of their contents in order to elaborate the law; and the rigorous application of the law by a just Guide (Imam). We can see that the split between Sunni and Shi'ite traditions can be correctly characterised neither in purely historical terms nor in exclusively theological ones. Only semiotic analysis, cultural anthropology, and the philosophy of the language can attain the ultimate goals of sorting out an opposition until now principally addressed by historicist history (offered by Orientalist science), or by dogmatic theology (offered by the believers in the two camps), or by a piestic phenomenology (offered by the work of Henri Corbin and certain followers). We will come back to the methodological and epistemological priority of semiotic analysis, both for uniting different points of view and for getting beyond the inherited interpretations of tradition.

Let us correct in advance any simplistic notion that our opposition is only between a Sunni tradition tied to official power and a Shi'ite tradition sworn to contest this fait accompli. It is impossible to reconstruct here a complete account of all the intellectual movements that for five centuries enriched the debate about Islamic tradition and all the problems connected with it. Let us only recall another significant schism that appeared very early, between the traditionalists dedicated to the collecting of authentic hadith and their literal interpretation (in particular the Ikhwanul Hitbi line) and the ahd al-ra'y, who allowed that reason might validate personal opinion (ra'y) in matters of legal qualification (ihat, in the Hanafite line). As for the Shi'ites, the Fatimid State, and later the Safavid State in Iran, involved an official use of the Tradition and the law, like that in the Sunni environment.

We are consequently entitled to say that beyond distinctions of circumstantial and ideological import, there are grounds for thorough study of the schism, anthropological in nature, between mythical and historiographic (or only historical at the particular stage that concerns us) consciousness; between mythical and logo-centric discourse; between symbol, sign and even cultural sign; between imagination and discursive reason; and between metaphorical and literal meaning.

Everything that has just been said concerns the phase of formation and stabilisation of the classical forms of the Tradition. What happened to this in the long period of what is termed taqlid, or the repetition of norms, values, and beliefs set by the Guides who founded schools (a 'imma mujahidin)? We can verify the previously noted existence of a solidarity between State, Scripture, and Orthodox Tradition sustained by the official culture. Indeed, each time a great power manages to take over, as in the cases of the Seljuks, Fatimids, and Safavids, and the first Ottomans, the Orthodox Tradition maintains supremacy over local traditions and checks the forces of innovation. The 'ulama keep watch on doctrinal rectitude, and the judicial administration applies the shari'a. When, on the other hand, central power
weakens (as with the Ottomans and their satellites from the eighteenth century on, and in Morocco and Iran), Maraboutic dynasties (roughly, dynasties based on saintly lineages) take the place of the failing State in regions that are generally only partially Islamised, as in the case of Maraboutism in North Africa. We then witness the revivification of very old local traditions covered by scraps of Islamic Tradition interpreted and adapted by the holy founder of the dynasty. The colonial phenomenon aggravates this evolution, freezing the diverse local traditions that have served as systems of security and refuges of identity until the recent period of national liberation.

It is important to understand that the Islam to which Islamist movements today appeal is characterised by a splintered, scholastic, static, and repetitive Tradition rather than by the dynamic and open Tradition, highly capable of integration, that corresponded to the golden age of the Caliphate State. Hence, Islam of the Maghrib is strictly Malikite, while Saudi Islam adheres to the Hanbulate tradition, and Turkish Islam to the Hanafite. This situation justifies the historical and theological reconstruction of Islamic Tradition in its totality, the conditions of which we will define further.

Let us underscore at the outset that there is a double action of nationalising the Tradition and appropriating it for the State. The new states in their quest for legitimacy rely on the Islamic heritage for consolidating their power and building national unity, in the sense of the positivist nationalisms of the nineteenth-century Europe and no longer of the umma of spiritual dimensions. This is a secularising of the Tradition without naming it as such. On the other hand, economic practices, political or juridical institutions, the educational system, and the official ideology (such as socialism) all get traditionalised, the whole overlaid with an "Islamic" appearance with the help of traditional vocabulary.

Such is the last historical embodiment of the Tradition. The outside observer speaks of a "resurgence of Islam", while it is mainly ideologically makeshift operations that are on the rise, aided by disparate elements retrieved from a past that is discontinuous, mythologised, or prescribed by the Western model of development. Muslim societies live in an era of institutional, industrial, agrarian, and cultural revolutions that in the West have been spread over nearly four centuries, but that are condensed in brief periods in Muslim societies. In this context of crisis and structural upheaval, the Tradition has an irreplaceable function of supplying stability, security, and legitimacy; but this contribution, vital for the whole social body, effectively shelters the Tradition from all critical analysis or objective evaluation. Today, we can less than ever open records that were closed in the third and fourth centuries on the subjects of the muhaf, the great collections of hadith, the Islamic corpus juris, usud al-din, usud al-fiqh, and exegesis.

III — Rethinking Islamic Tradition in Its Totality

Rethinking Islamic Tradition today is an intellectually urgent and necessary act, politically and culturally destabilising and psychologically and socially delicate. We are in fact obliged to uncover, much more clearly than did classic criticism, the ideological functions, semantic manipulations, cultural discontinuities, and intellectual inconsistencies that come together to delegitimise what over centuries we have been given to perceive and live as the authentic expression of Divine Will manifested in the Revelation. To rethink Islamic Tradition is to violate official prohibitions past and present, and the social censure that conspires to keep off limits the unthinkable questions that were asked at the early phase of Islam, but inquiry into which was closed off with the triumph of the official orthodoxy that was based on the classic texts.

But, how are we to rethink Tradition in positive terms that is, enabling it via constructive criticism to fulfill new functions in a socio-historical context radically changed in the last thirty years? Doubtless, we do not have to worry inordinately about the fate of the Tradition: it will always survive the most radical criticism and the most brutal revolution, because, as a mainspring of unity and continuity, it has over the centuries forged the collective sensibility and memory. That must not impede a constant effort to pass beyond reductionist theories and inappropriate analyses.

We cannot start from a theological definition, because Islamic thought, as we have seen, very quickly favoured a framework of polemics that was designed to uphold a kind of reflection that was exclusively preoccupied with deepening the faith. It is essential to create the possible conditions for a theology of the Tradition. We must therefore borrow current ways of thinking opened up by the sciences of man and society. This being first a matter of reading the Scriptures (Qur'an and hadith), we will begin by showing why it is advisable to base research on semiotics. We will then open the historical and sociological record, but from the perspective of a larger inquiry into the anthropology of tradition and modernity. On the basis of the information thus reunited, we may justifiably undertake inquiry on the new status of the theological attitude.

It goes without saying that such an itinerary cannot be followed to its end; it will be a matter, in this first effort, of establishing the necessity that Islamic thought must free itself from tradition-repetition and from tradition-constraints in order to recover and find a tradition that safeguards the richness suggested in the following definition: "Tradition carries with it more than ideas capable of logical form: it embodies a life that includes at the same time sentiments, thoughts, beliefs, aspirations, and actions. Individual and collective effort can draw from it indefinitely without exhausting it. Consequently, it implies the spiritual communion of souls that feel, think, and will in
the unity of a like patriotic or religious ideal; and by the same token, it is a condition of progress in so far as it permits some bits from the ingot of never-completely-coined truth to be passed from Implicit Living to Explicit Knowledge; for tradition — wellspring of unity, continuity, and fecundity, and at the same time beginning, anticipatory, and final — precedes every constructive synthesis and outlives every reflective analysis. 14

1. The priority of the semiotic approach

It is now well established that semiotic analysis requires an indispensable exercise of intellectual self-discipline, a quality all the more precious when it comes to reading texts that for generations have forged individual and collective sensibility and imagination. We learn to introduce a methodological distance vis-à-vis “sacred” texts (the quotation marks are an expression of this distance) without pronouncing any of those theological or historical judgments that immediately block communication. This is what Orientalist historical criticism on the subject of the Qur’an and the hadith has never understood, and it continues to be unaware of the semiotic and anthropological approach, as is attested by the recent work of G.H.A. Juynboll. 15

The text that are the point of departure and the inexhaustible source of the Tradition offer themselves as a perfectly defined cultural object, definitively closed on themselves since the community received them; halowed as the only collections that are complete, authentic, and transmitted according to an ideal chain of authorities (isnad) or witnesses of the Revealed Truth, invariably in the following sequence:

God

1) Muhammad — the Companions — the Followers — the scholar-initiators — the worthy receivers (the Sunni path)

2) Muhammad — the Imams — the receivers — the marji’i al-taqlid, or doctrinal authority (the Shi’ite path)

This cultural object has been turned into a living subject, historically active through the reading-participation of the believers. By the process of selection, of decontextualisation, of recontextualisation, of retrospective and prospective projection, of literal or esoteric interpretation, and of semantic or mythical amplification, the readings of believers indefinitely go on creating secondary cultural objects, while being removed from the initial object due to its linguistic, historical, or socio-cultural connection with a single space-and-time. The sum total of these operations constitutes living tradition. The empirical effectiveness of daily life bears on the cognitive aspects of the human condition. To paraphrase M. Blondel, Implicit Living expends effort in order to gain access to Explicit Knowledge. Thus, the unthought accumulates in living tradition.

How do we get back to the initial object in its genesis, its constituent parts and its own determining factors? This return to the source is a leitmotif of the Tradition, but it involves returning to the mythical founding age, a space-and-time transfigured by the traditional readings and modes of behaviour. Semiotics aspires to a summary criticism that at once goes beyond both the object that is read and all the second objects that are produced by the Tradition. How do the signs used in the texts signify? What linguistic mechanisms are used to produce this meaning and not another? For whom, and in what conditions, does this particular meaning arise?

These questions involve neither the revealed character of statements, nor their sacred charge, nor the results of their spiritual meaning for the believers. Instead, they concern the qualifications and functions of meaning as modalities of significance, the cognitive status of which must be established in a comprehensive approach to everything that has meaning.

It turns out that the texts we read are not preoccupied with distinguishing knowing from believing. Instead, they teach that it is first necessary to believe — to open one’s heart (in the Biblical and Qur’anic sense) — in order to gain access to perfect, complete, and totally true knowledge. “God taught Adam all the names.” By these names — collected, memorised, and assimilated — one enters “the Religion of Truth”. This definition, the keystone of later theological constructions, asserts a relationship of thought to language that modern linguistics compel us to reconsider.

We will take for granted the transfer brought about, in this regard, by recent semiotic research: what supports communication is not “true” knowledge that bears on objects — objective referents of words in the language — but, rather, the reciprocity of perspectives established between interlocutor-protagonists sharing the same framework of perception and of representations, or mental images to which the linguistic signs refer. Tradition takes form at just the moment when the members of a group (such as the first nucleus of believers, called mu’imman, around Muhammad at Mecca and then Medina) gain access, aided by a foundation-laying account, to a common frame of perception and representation. Semiotically speaking, all of the Tradition — and every tradition — functions as a foundation-laying account perpetually enriched by the significant experiences of the group or the community. 17

The oneness of Truth and the subsequent unequivocal nature of meaning as presented in the Qur’an do not have the same significance as in the theological systems constructed via the logical principles of Aristotelianism. In the latter, they nourish nostalgia for the Absolute, the One, Unity, Justice and Eternity in terms of dynamic utopia like the Platonic line. In the former they command a rigid system of beliefs and behaviours. Addressing a greater number, the Tradition tends to function like the former model, rejecting in the name of orthodoxy both the plurality of meanings put forth by the exegeses and the various schools and the potential meanings not yet made actual by new readings of the Scriptures. I have already shown how the modern treatment of metaphor, symbol, and myth authorise readings of the Qur’an quite different from all those bequeathed by the exegetic tradition. 18
2. The Historical and Sociological Approach

Just as the Tradition implies a relationship of thought to language, as we have seen, so it imposes a vision of history, with a framework and writing adapted to its expression. Transmitting the statements of the Qur'an and the hadith, testifying about the behaviour of the Prophet and the companions, selecting the significant facts and events for the religious memory of the community—these constitute acts that presuppose a certain use of history. One is preoccupied with chronology, biography, and circumstantial accounts in order to establish the authenticity of everything transmitted. Once the Tradition is constituted, all the discussions between the scholars and the schools fundamentally invoke "historical" arguments.

This constant concern for historical verification of the transmitted traditions today constitutes one of the subjects of pride and confidence often invoked by Muslims against Orientalist criticism. There is no going back on the authenticity of texts elaborated by witnesses and of scholars absolutely worthy of trust (thiqah). The Orientalists who cast doubt on these texts are either malevolent or misinformed about the seriousness of historical science in Islam.

Modern authors—even Muslims such as Taha Hussein—who have taken the greatest interest in the critical revival of religious and/or cultural Tradition, have not known how to move the debate towards previous studies framed in socio-cultural terms of knowledge in the first two centuries of the Hijra. It is not enough to recall that oral transmission then prevailed over written transmission. More fundamentally, it must be shown how, in the formation and function of the social imaginary, the dimension of the marvellous, the mythical, the symbolic, and the metaphorical prevailed over the rational categories and discursive procedures that would develop in relation to the invention of paper, the perfecting and diffusion of Arabic writing, and the expansion of Greek humanism. All cultural history of the Arab and Islamic domain must be reconsidered from this two-fold perspective of rivalry between oral and written, myths and logos, marvellous and empirical, and sacred and profane. Historically, the Tradition, as textual form and meaning, bears the stamp of this rivalry; that is what today makes a re-evaluation of form and meaning indispensable, since all the determining concepts assumed in the Implicit Living of the believers (sacred, marvellous, mythical, oral, written, imaginary, rational, and irrational) are in the process of passing over the Explicit Knowledge, thanks to the new explorations of the sciences of man and society.

Involved in the new and pressing inquiries of these sciences, certain Christian thinkers, within the limits allowed by doctrinal authority, venture toward a revision of the relations between Scripture, Revelation, and Tradition. Thus when Breton tries to put forth a theory of "scriptural space" in order to situate the Book within a universe of the written word, he goes so far as to recognise that, Jesus being "forever screened from the plenitude of actual experience, He henceforth exists for us only in a body of writing and in a Church that memorialises Him".

This position is new because it allows us to develop a common theory for what I prefer to call societies of the Book. The concept of a society of the Book permits us to place emphasis on two dimensions of the Tradition minimised or transfigured by the advent of dogmatic theology: the historicity of all cultural processes, and the practical forms of conduct by which the Book is incorporated into the social body: the sociology of reception, by ethno-culturally diverse groups, of the Tradition. The concept of reception is complementary to that of historicity; I use it here from the theoretical perspective defined by Hans R. Jauss, one of the leaders of the "School of Constance", in his work Pour une esthétique de la réception. The idea is that the literary work, or the work of art in general, exists and endures only with the active participation and continuous intervention, at multiple levels, of its successive publics. Now, that is a fortiori true in large degree of those literary and artistic works that are religious texts. In this sense, Tradition in societies of the Book is not just a "hoarded collection of testimony left to us by all those whom the Spirit of revelation has touched throughout history." It is a collective creation of all those who draw their identity from it and contribute to its production-reproduction.

The historical criticism applied by the philologist to this collective creation is an indispensable first stage, but it is never conclusive. In re-establishing the actual chronology of texts and facts, the correct attribution of works and testimonies, and the real derivation of notions, the philologist constructs a scientific object that, as such, does not exist in the mind of the agent-receivers of the Tradition. Like any composite in which authentic and apocryphal accounts, positive historical data and imaginary recreations and concrete and mythical space-and-time are co-mingled, the Tradition nourishes the ethical and spiritual ethos, but also the ideological pressures of the collective subject that is the community. It is thus necessary to expand philological criticism by anthropological analysis in order to make the scientific object coincide, on the one hand, with the actually experienced contents of the Tradition, and, on the other hand, with the psychological activity and psychic configuration of the collective subject.

It is, therefore, no longer just the relationships between Scripture, Revelation, and Tradition that must be redefined from a perspective that is more concerned with explanatory adequacy than with edification; it is also the presence of belief, affected in the substance and functions that "the witnesses touched by the spirit of revelation" have always recognised in it. Without radically challenging the dynamic potential of this spirit, we may say that it is always mediated by social agents—that is, the sum total of amplifications, misrepresentations, semantic
and textual manipulations, deviations, fabulations, mystifications and ideologies—that are inherent in the reception and reproduction of the Tradition.

Islamist movements, which have steadily gained importance since the 1930s, illustrate our theoretical propositions very clearly. All of them as a matter of fact lay claim to the most complete, authentic, and effective Tradition: that of the time of the foundation by the Prophet and his companions. In actuality, the discourse of these movements expresses a total historic rupture with Madi- nan Islam. It offers all forms of Messianic appeals addressed to populations that are culturally and economically dis inherits, politically oppressed, psychologically frustrated (due to factors like male-female relationships, children’s status, and patriarchal structures), and who are therefore ready to follow any movement that fosters mythically the expectation of Deliverance and the hope of Salvation. This explains why the ideology of Nasser, which opposed the Muslim Brothers, at the same time favoured the psychological and cultural conditions that encouraged their expansion. Despite its secularising orientation, Nasserism licensed the same fundamental themes common to all Islamist movements: antiquarianism, the Golden Age, Arab unity, nobility of the Arabs, anti-Imperialism, anti-Zionism and social justice. We encounter the same phe- menomenon in socialist Algeria and under the monarchy of Hassan II. The Iran-Iraq War forces Saddam Hussein, who presents himself as the great representative of the secular Ba’th, also to favour Islamism—that is, the language and behaviour of traditionalisation. The more Islam is transformed into an ideology of contestation and change, the farther one gets from the Tradition as spirit of Revelation, or even just as an ethical ethos that lays the foundation of a certain idea of the human individual.

How is modernity to be worked into such an evolution of the Tradition? Are there some forms and contents that fit more easily than do others the most widespread traditional forms of behaviour?

Let us first observe that it is not a question today of opposing modernity that is eternal- ly and totally positive and situated on the side of progress to a tradition rejected as archaic, obsolete, constraining and negative. Conversely, one cannot conform to the theology of the Tradition, which puts the latter on the side of the absolute, the transcendent, the sacred, and the revealed. The examination of current societies discloses three forces in competition:

1) Tradition in the general and archaic sense, present in all societies, and preceding the scriptural Tradition of the revealed religions.

2) Scriptural Tradition, which has occupied us to this point.

3) Modernity, which tends to sanation rupture with the preceding forces without totally bringing it about. In reality, the three forces nourish the dialectic of any society via a stronger accentuation of one over the others, according to the socio-cultural setting and the historical circumstances.

The Scriptural Tradition, at its beginnings in the three monotheistic religions, appeared as modernity par excellence, because it con- signed previous traditions to the darkness of ignorance and disorder (jahiliyya). Modernity is transformed into tradition with the accumulation over time of events, works, values, success and trials significant for the collective subject. Since the 1950s, change has been so rapid, so profound, and so general that tradition has disintegrated and slipped away. In the so-called backward or traditional societies, in contrast to industrial or post-industrial ones, the presence and effects of material modernity are more ob- vious than those of intellectual modernity. I shall not reiterate the differences between these two aspects of modernity; it will prove more illuminating to concentrate on the historical conditions of the production and repression of modernity in the West and in Islam.

The most prominent historians continue to present this essential question in a highly conformist manner. I cannot pass in review here all the authors most involved in this enterprise to show the inadequacy of their approach. The readers themselves can develop some idea of this by taking into account the following observations.

In the West, material modernity and intellectual or cognitive modernity have received varied emphasis, the one in relation to the other, according to historical circumstance (the Renaissance and the Reformation; the European Crise de la Conscience in the seventeenth and eighteenth centuries; the great French Revolution; the Industrial Re- volution and capitalism in the nineteenth and twentieth centuries; present-day high technology and the scientific movements of anthropology and sociology). It remains true that at all these stages, there is connection and integration of the whole society by a like process of development from within. Thus, the uniting of the nobility and clergy on the one hand, and of the merchant bourgeoisie on the other in the eighteenth century, and of the capitalist bourgeoisie and the pro- letariat from the nineteenth century on- wards, nourished the debates and produced the institutions and models of historic action that today define the two sides in the modern West: socialist-communist (with its socialist and communist variants) and liberal.

Without anywhere constituting a social class homogeneous and influential enough to play a decisive mediating role, the community of scientists, thinkers, and artists, within the crisis of models of development, tends to set intellectual modernity, as a cognitive project of the spirit, above all the ideological forma- tions that are enclosed within a national or community framework or even within the limits of a social class that still claims to incarnate the universal history of humanity. This new ambition of modernity, tied to the development of the community of scholars in the world, everywhere comes under the great historical and socio-cultural weight of each national context. Beyond the ideologi- cal cleavages that divide the contemporary world and favour, in particular, a negative perception of Islam, the most open-minded scholars continue to be prisoners of a linear,
polemical and even theological vision of the West. The linear vision that springs from an image of Greco-Roman antiquity separate from "the Muslim East" and traces a continuous evolution up to our day, while characterising as simple historical incident the role of Islam between the seventh and twelfth centuries. The polemical vision continues to perceive Islam first and foremost as an obstacle to reduce or shape in order to open up the imperial path of the West. The theological vision is due to Christian theology of the Revelation and the justification of the state of Israel that revive the old systems of reciprocal exclusion that have dominated the whole history of societies of the Book precisely since the appearance of Islam in the Mediterranean world.

In the grip of these visions that perpetuate and reinforce all sorts of collective phantasms, obsolete cultural schemes and epistemological barriers, cognitive modernity endeavors to reach a restored cognisance of what I have called Greco-Semitic space. I have pointed out that this space in actuality extends from the Indus to the Atlantic; that Islam is not to be cast back into a romantic, dreamy, Bedouin, intolerant, or falsely spiritual "Orient". On the contrary, it must be reintegrated as one of the historic factors that have contributed to the emergence of the cultural concept of the modern West. To be sure, Islam is tied to two types of civilisation already fully discerned by Ibn Khaldun: the city dwelling type, which prolongs the sedentary Yemenite, Mesopotamian, Iranian, Palestinian, Egyptian, and Mediterranean civilisations, and the nomadic type, already harshly judged in the Qur'an, which, throughout history, resists total integration into the former. The problem of the Western Sahara and the situation of the Tuaregs in the extreme south of the Algerian Sahara today illustrate an ecologically based opposition that still persists.

"Western" Islam is obviously that of the city, and, like Christianity, developed a functional solidarity between, State, Scripture (the Book), orthodoxy and a scholarly culture deeply penetrated by Greek thought.

The medieval Christian West did not simply collect disparate elements of this or that work or Arab thinker; one can speak of "Christian" reason in the same sense and from the same critical and historical perspectives as I have developed for Islamic reason.

The splitting of Greco-Semitic space into a modern West and an East devoted to Tradition, to traditionalisation, and to recurrence of archaic forms of behaviour begins with the Renaissance and the Reformation. As early as Petrarch the tradition-modernity relationship is reversed: contrary to the Christian vision (or the Islamic view of the jahiliyya), it is the fall of Rome that marks the passage to barbarity; the metaphor of darkness and light, as dear to Christianity as to Islam, in the sense that Revealed Truth equals light, and paganism darkness (zulmat al-jahiliyyah or al-Islam), is reversed with the humanists and scholars of the Renaissance. Luther, for his part, puts a check on doctrinal authority (the fuqaha and 'ulama of Islam) in prescribing free investigation even in the realm of the Scriptures, an attitude encouraged by Spinoza. (Ibn Rushd attempted this for Islam, but the scholastic "orthodoxy" eliminated his work). A series of developments that desymbolise and restrict the concept of existence then take place in this "modern" West: Descartes separates extension from thought and substance from the subject to make of the material universe a homogeneous continuum that may be explained mechanistically. To think is to classify, to devise, to describe, to exclude: that is the method. Hegel softens this mechanistic linearity by introducing the dialectic, but Marx makes political economy the key to all history, just as Freud reduces the structuring force of the individual psyche to the repression of fantasies Nietzsche, on his part, shatters value in going back to the roots of the Greco-Roman ethic.

The reader will kindly excuse such a summary presentation of some of the great moments or protagonists in what I have called intellectual modernity; my particular objective is to stress that Islamic Tradition as I have presented it has remained rigorously separate from the Western adventure of man since the sixteenth century, and, more importantly, from that which, in this adventure, involves the destiny of man as such. I also want to note that, far from recognising and rethinking the reasons for and consequences of this exit from a history involving mind and consciousness, Islamic thought since the nineteenth century has been exclusively preoccupied with the defensive justification of its tradition, with polemic against the colonial and imperialist West and with the mythologising of its own history.

I am not saying, however, that the modern West, as its dominant classes claim, has forged a model of historical consciousness and action respectful of all the dimensions of man. But modernity is engaged in changing dimensions, ambitions, and horizons while opening up a new space of intelligibility and historical action, where not only the traditional societies of the Book may be re-integrated in their totality, but also where historical totality, with all its cultural forms of expression in the world, may be explored and recapitulated by a cultural anthropology unrestricted to a single centre.

It is from this perspective that the project of a quest and re-examination of Islamic Tradition in its totality takes all its meaning, both for the Muslim Community and for contemporary thought engaged in exploring the universe, our planet and the human condition. The Tradition in its totality implies an exit from the framework of heresiographic thought set by the hadith cited above. All the familiar concepts of traditional theological discourse split apart and gain new dimensions, without losing their critical function concerning both scholastic traditions and provincial, ethnocentric, unitarian or positivist modernity. Among these concepts I shall cite religion and the religious in so far as they are tied to politics and to the secular world (din, dawla, dunya), the Revelation, the Book, the Scriptures, the sacred, the spiritual, the transcendent, and all the vocabulary of classical metaphysics,
ethics, law, psychology and political economy. What are the local traditions reduced to residue or relics by the Orthodox Tradition, and after that by unitarian modernity? How does Orthodox Tradition itself tend to become repressed as obsolete, inadequate and archaic by material modernity in the absence of an intellectual modernity capable of reconsidering it? What mutations has this same Orthodox Tradition inflicted on itself by eliminating the schools, works and thinkers that have come forth within Islam but that have been judged deviant or "heretic"—not by an entitled doctrinal tribunal but by the protagonists in a rivalry between professional categories, ethno-cultural groups or visions of the world?

These questions must first be answered historically, leaving aside any doctrinal judgement. That current Muslim societies cannot accept the critical discourse of the historian does not mean that he has constructed a scientific object as abstract as that of the Orientalist philologists tracking down apocryphal hadith. To examine the Tradition in its totality in the sense I indicate here is to grapple directly with the roots of evil that undermine those confessional societies that are closed in what they believe to be their traditions. I do not mean that religious reference alone explains the tragedies that are taking place in Lebanon, Nigeria, or elsewhere, but it remains true that the religious imagination is particularly promptly mobilised to carry on "holy" combat. The function of history and cultural anthropology is to lay bare the realities travestied by the manipulators of the religious imagination.

Is the notion we have just presented of the Tradition in its totality thinkable for a traditional theologian within the one framework of inherited theologies in each community based on the Bokh? What does theological attitude become in the context created by the joint pressures of present-day history and of the cognitive strategies imposed by the sciences of man and society, themselves the product of this history and the answers to its challenge?

3. The theological attitude

"Ways of living and transforming the world": this is the fine title of the first section of Initiation à la pratique de la théologie (Initiation to the Practice of Theology) recently published in France. This title and the whole book are the sign of an evolution that, like modernity, has taken place in the West but remains absent from Islam; an evolution limited, nevertheless, because the takeover by thought of the ways to live and transform the world remains strictly dependent on "the awareness of Faith (that) is tied to an institutional aggregate in the Church (scriptural canon, tradition, ministers) and around the university (diverse specialisations, centres of teaching, etc.)." If we go so far as to give the floor to a representative of Islam and one of Judaism (how do we choose? according to a criterion of orthodoxy or epistemological involvement with Tradition in its totality?) in order that they "give their interpretation of Christianity (and) not lock it up in its own declaration of unique meaning", we find that the evidence they provide will only juxtapose orthodoxies, without any attempts at the theological integration of their differences in terms of places (topoi) of a theology of the Tradition in its totality that would spring from the a prioris common to the three scriptural traditions. The task remains very significant because it allows one to establish what is newly thinkable and what remains unthinkable in the theological field most open at the present time.

Let us reflect on a precise example of a prioris common to Christianity and Islam: the historicity of the resurrection of Jesus on the one hand, and the divine authenticity of the Qur'an on the other. In the historicist context developed in the West since the nineteenth century, Christian theologians have not been able to avoid answering denials of the resurrection with historic-critical scholarship. Bernard Lauret's very clear restatement of the most recent arguments shows the limits of recourse to the University and the primacy given to the awareness of faith. The author first applies himself to saving something of the "historical probability" of the fact of the resurrection; he then passes to the examination of the functions and meanings of the idea of resurrection without explicitly acknowledging that he accepts the substitution of the idea of resurrection for the undemonstrable historical fact, in order not to give up totally the search for the coherence of the awareness of faith. Such an acknowledgement cannot only be demanded from every scientific scholar; it is particularly required of the theologian, who too easily takes advantage of the mystifying power of the invocation of faith. The psychologist and the psychoanalyst have shown us that under faith lie indistinct the most irrepresible compulsions of desire, the most complex contents of memory, the greatest phantasms of the imaginations, the most powerful impulses of the heart and the firmest demands of reason; and that the mastery of these different faculties depends on the forms of discipline of the spirit recognised and practised by each culture. No less does the theologian continue to presuppose in his discourse the existence and generalisation to all believers of a faith that is acquisience, and meet right, to the Act of God that shows itself in the Revelation. One can conceive that the theologian aims to substantiate this ideal faith with a conscientious pedagogy of all the obstacles to be overcome, but one cannot forgive him for the constraints and confusions that he continues to force on this same human spirit that he claims to lead toward the absolute.

I am not saying this to prove the position of Islam superior to the resurrection, but to open up a new field of reflection, where the traditional claims of Christianity and Islam will be transcended by the consideration of problems situated upstream from both the resurrection and the divine authenticity of the Qur'an. I have shown how the opponents of Mecca and Madina required proofs to establish this identity, just as from the time of the disciples, debates had taken place on the subject of the empty tomb and the resurrection. In the two cases, we are first confronted with a problem of the psychology of knowledge: how do we establish the frontier between empirical knowledge of natural occurrences and the mental
representation of occurrences called supernatural or divine? In the time of Jesus, as in that of Muhammad, rational intelligibility based on experience of the senses was already asserting its rights; but "the heart" stayed open to the marvellous and to mythical knowledge: it is advisable that one, as a historian, appraise first and foremost the interferences and ruptures between these two configurations of consciousness in the face of the sorts of knowledge that have been proposed. It is a historical fact that theological speculation in the three religions has acted as if the question of the psychology of knowledge — if indeed it could have been posed as radically as in our day10 — was resolved in the Revelation. We thus return to tradition and to the historical conditions of its formation. The whole theory of the 'ijaz, or divine origin of the Qur'an, attests to the surreptitious transformation of a serious problem of the mind raised in the two cases (resurrection and Qur'an) into apologist and didactic "solutions". Unlike Christian thought, current Islamic thought refuses to consider any question of historicity.

I believe that I can predict that these critical observations and their calls to a trans- traditional theological attitude will leave in different both the Christian authorities and the Muslim 'ulama. (It is clear that the rabbis are not exempt from my criticism.) I have already had many an occasion to verify the existence of this secret connivance, unacknowledged among the dogmatic traditions, that, in explicit terms, defend "irreducible authenticities". In this domain there is no point in waiting for the community of scholars harnested to tasks more "serious" and scientifically profitable. To state the matter clearly, religious thought is in quest of independent thinkers after having been, over the centuries, either the monopoly of zealous servants or the target of polemics aiming at other objectives.

It will be understood, I hope, that I am not excluding theology from the field of investigating man and society; but theology must submit to rules common to every cognitive undertaking. For this, on new grounds, it must again raise the whole question of the revealed. It is not just a matter of tolerating the co-existence of discourse that each tradition pronounces about itself; it is necessary to explain first and foremost the historical, psychological and anthropological conditions of the emergence and functioning of any tradition, and then of the three monotheistic traditions. It will at that point be possible to envisage a theology of relations between Scripture, Revelation, and Tradition in societies of the Book.

Reference Notes

1 See M. Arkoun, "L'Islam dans l'histoire", Maghreb: Macrek, 102 (1983), pp. 5-22

2 I distinguish necessary referents and usul: the first constitute the stable level of Islam and remain open to any exploration or critical analysis; they could not be the object of an orthodox or dogmatic discussion; the second, on the contrary, have long been studied by the two disciplines, usul al-din, or theology, and usul al-fiqh, or methodology-epistemology of law. The usul are subjective references in the sense that each school proposes definitions and uses for them


5 One will find in the Encyclopédie de l'Islam, s.v. hadith, the references to all the classic text editions. The most recent critical account is given by G. H. A. Juynboll, Muslim Tradition (Cambridge: Cambridge University Press, 1983)

6 Ibn 'Arabi, La profession de foi, R. Daladrière, tr. (Paris: Editions Orientales, 1978), p. 87. To this hadith, one should add all those that are habitually cited to combat the bid'a. See M. Tabbi, "Les Bida", Studia Islamica, 52 (1960), pp. 43-78

7 See M. Arkoun, "Pour un remembrement de la conscience islamique", in Pour une critique de la Raison islamique (Paris: Maisonneuve-Larose, 1984)

8 Y. Congar, La tradition et les traditions I: "Essai historique" and II: "Essai théologique" (Paris, Fayard, 1963)

9 The text by Muhammad is to have designated 'Alli as unifying cited and commended on by the Shii'as under the title, hadith ghadir khamat. See Encyclopédie de l'Islam, s.v.

10 The Kharijite line obviously must not be neglected, especially from the perspective of the Tradition in its totality, which I shall define below. Umayyad persecution hurt the Kharijites even more than the Shi'ites and had effects disastrous to knowledge about the currents of thought and the forces present in the first century A H. Fervent witnesses of the most decisive struggles, the Kharijites were pushed back by the Umayyads, and then by the Fatimids in the Maghrib, toward the furthest peripheries of the Empire. The small communities that still subsist (e.g. the Mozabites in Algeria) continue to bear witness to a sensibility and a store of knowledge rejected by the Sunni and Shi'ite powers. See Encyclopédie de l'Islam, s.v. Ibaditya


12 See A. Laroui, La crise des intellectuels arabes; traditionisme ou humanisme (Paris: Maspero, 1974)

13 Demographic pressure, secularisation, nationalisation, substitution of an economy of profit and productivity for the ethic of poverty and scorn for the world, the Western model of consumption, etc.

14 I cite this text for two reasons: first, I agree with the comments of Y. Congar on the pervasiveness of his vocabulary and approach to tradition faced with positivist criticism in the context of modernist crises very closely related to that which Islam is present undergoing; second, my objective is to use the example of Islam to work my way up to two levels of thought infrequently or never addressed until now: the elaborating of the concept of Tradition in its totality for the three revealed religions (ahl al-kitab), and the opening of the way to an anthropology of tradition and modernity.

15 Juynboll, op cit


17 See P. Ricoeur, Temps et récit (Paris: Seuil, 1983)

18 See my Lectures du Coran and Pour une critique de la Raison islamique

19 See B. Breton, Écriture et Résolution (Paris: Cerf, 1979), p. 155

20 See what I have said about this in "Autorité et pouvoir en Islam", in Pour une critique

21 Paris: Gallimard, 1978


23 In Christianity, modernity was employed for the first time around 480-500 to designate the passage from Roman antiquity to Christianity. See a good historical account of modernity in the West in H. R. Jauss, Pour une esthétique de la réception (Paris: Gallimard, 1978), pp. 158-209, and what I have said on the subject for Islam in L'Isam, hier, demain, 2nd ed. (Paris: Buchet- Chastel, 1982), pp. 120-137
24 Ibid


26 Semiotics seems to me to be at present the discipline that crosses most effectively the national, ideological, and traditional frontiers of discourse with the knowledge it conveys.


28 It would be necessary to emphasise even more all the scholarship and thought that have brought to fruition the most positive contributions of the great initiators of modernity I am thinking, for example, of the stimulating readings of Descartes by F Alquié.

29 By unitarian modernity I mean the historical and cultural process by which Western thought, from the thirteenth-fourteenth century on, has imposed a model both explanatory and historically active, which sanctions the dissociation of the subject from his body and asserts a set of propositions and concepts summed up in *classical metaphysics*: transcendent ontology; Prometheus time of Progress and Evolution and then Development; concrete space of productivity, legitimisation through secular reason, oppressive manipulation of groups with phantasmic constructions that allow the emergence of "great men": the state; the nation; democracy; universal; suffrage; secularisation and separation of powers; equality; liberty; fraternity; the Great Leap, and so on.

30 That is what I have tried to do in several essays in *Pour une critique*.

31 I distinguish ideological manipulation from semiotic manipulation: the former is tactical, strategic, cynical; it controls all the strategies of domination in international life and political gamesmanship in order to obtain or keep power in the national sphere; the latter is inherent in every exegesis: it designates the operations of selection that every speaker performs in the language.


33 *Initiation*, vol 1, p 12

34 Ibid

35 M Talbi's contribution on Islam is purely descriptive.

36 *Initiation*, vol 2, pp 378-407.

37 See M Arkoun, "Le problème de l'authenticité divine du Coran", in *Lectures du Coran, loc. cit*.

38 Concerning Islam, the Mu'tazilite School has gone fairly far in examining the question; see Marie Bernard, *Le problème de la connaissance d'après le Mughni du cadi 'Abd al-Jabban* (Algiers, 1982).
An Overview of Architecture Education in Islamic Countries

Suha Özkan

The formal education of architects in the Islamic world began only at the end of the nineteenth century and in the early decades of the present century. A highly structured system of apprenticeship had, of course, been developed much earlier, dating back to the establishment of palace organisation and central institutions of Islamic empires, but this overview will focus on the development of architectural training in schools. In the Middle East, the first institutions to train architects were established in Istanbul and Cairo, two important cultural centres of the time. In Istanbul, the School of Fine Arts, which later included architecture, was founded in 1883. But architectural education in the Ottoman Empire dates further back to the seventeenth century, if the training offered at the Military Academy of Engineering is taken into account.

Prior to the organisation of architectural education formally in schools, both Ottoman Turkey and Egypt relied on expatriate assistance in the training of architects. Though Ottoman Turkey was never colonised and Egypt retained political autonomy until almost the end of the nineteenth century, both countries came under the economic and technological subjection of the colonial powers. The colonial penetration in the economic sphere brought with it new functions, modes of production and services, and hence a need for new buildings, railroad stations, port terminals, multi-storey apartment buildings and office blocks.

There was no locally available expertise either for the design or for the construction of such buildings. The technical expertise required for the emerging needs of Turkey and Egypt could not be met by expatriate or colonial resources alone, forcing these countries to set up means for training architects within their educational systems.

The first known architect to be trained formally, in the western sense, was Mimar Vedad, son of Abdullahiit II's chief secretary. His desire to study architecture in Paris did not meet with immediate approval from his father, who considered architecture to be an inferior profession and would have preferred his son to study literature, which was then considered the most appropriate course of study for the elites, especially since it was a requisite to enter the ranks of powerful and influential bureaucrats. Mimar Vedad, after completing his studies at the Ecole des Beaux Arts in Paris, returned to Istanbul to open his private practice and then joined the Academy of Fine Arts as an instructor. He was not regarded favourably by the Muslim population of Istanbul, for public opinion did not regard the practice of architecture as a suitable profession for a Muslim. It was not until the realisation of the Central Post Office Building in Sirkeci (1908) that Vedad's talent was acknowledged by the elite and the Court.

At about that time, a section of the Royal School of Engineering was reorganised as a
School of Fine Arts. This was a major departure for the status of architecture, manifesting its separate professional and academic identity, having, until then, been conceived as part of military training. Due to the Ottomans' strong alliance in the military and educational fields with Germany, architectural education in Istanbul was begun along the lines of the German model, which was technology-oriented. However, thanks to the presence of Vedad Bey and several Italian expatriates in Istanbul, aesthetics, in a rigid academic sense, was fully incorporated in the curriculum.

Similarly, architectural education in Egypt evolved from the Germanic Technische Hochschule model, with a strong Swiss influence in Cairo University, where the training of architects was begun as early as 1880. As in the Ottoman case, architectural education was monitored by civil engineers, and architectural skills were conceived merely as a means to prettify sound buildings, which were the ultimate goal. The guiding force behind the new educational system was Newham, a professor and a prominent architect, whose influence in Egypt remained strong until the 1930s. Like Jachmund and Vallaury who taught in the Istanbul School of Fine Arts in the late 1800s, Newham, also an expatriate, had close connections with the Court.

It was a growing sense of national identity in Egypt in the 1920s and the 1930s, and similarly, a new spirit of nationalism in Turkey with the establishment of the Republic as a nation-state that resulted in the lessening of expatriate influence in the teaching and practice architecture in both countries. Thereafter, both Egypt and Turkey sought to meet their needs and solve their problems utilising national resources.

In the Turkey of the 1930s the first generation of graduates who began to disseminate architectural expertise were all educated in Istanbul. Similarly, in Egypt during the same years, the prominent national architect was Mustafa Pasha Fahmi, who was educated in Europe and held a "proper" degree in architecture, but who, more importantly, was the son of the Master Builder Mahmud
Fahmi. He was, therefore, equipped with credentials both to practice and to teach architecture. Although Mustafa Pasha Fahmi did not make any substantial change in the curriculum, he left his imprint both on architectural education and on architectural practice. His concern was to develop nationalism formally in architecture. His efforts, as in the case of Mehmet Vedad, Ahmet Kemalettin, Arif Hikmet Koynuoğlu, and Giulio Mongeri of Turkey, were genuine ones in a search for an authentic expression of Islamic character.

It would have been too much to expect from this generation of architects a mature idiom which could differentiate the abstract qualities of architecture from excessive stucco work, ornamentation and decoration. As they entered into a search, they were already laden with too many responsibilities with regard to all the problems facing the architectural establishment.

The years between the two World Wars were crucial both for Egypt and Turkey, as they witnessed a complete transformation in the organisation of architectural profession and allied institutions. A large group of Egyptian students went abroad to study architecture, many of them to Paris. As a result, the Beaux-Arts model of architectural education came to be favoured, reinforced by the strong cultural ties linking Egypt and France. At that time, not only did the School of Architecture at Cairo University come to be dominated by Beaux-Arts ateliers, but a new school that was established in Alexandria adopted the same model in the 1940s.

During the same period in Turkey, German influence became predominant owing to the political and cultural ties with that country. Ernst Egli, an uncompromising modernist, was placed in charge of the Academy of Fine Arts after Giulio Mongeri, an appointment that implied a major ideological shift away from the search for authentic Ottoman, Turkish, local and Islamic forms towards the creation of a new modern and contemporary image. While the new generation of architects assumed the task of creating this new image befitting the new nation-state, the termination of Mongeri’s chairmanship was soon followed by the closing of his and Vedad Bey’s studios in the Academy. The architectural objectives they professed were seen as “retrogressive”, and opposed to the desired “contemporary” and “progressive” objectives.

German influence became more explicit and dominant when the Department of Architecture in Istanbul Technical University was reorganised; “modernism”, in its truly Germanic sense, became the lingua franca of the Turkish architectural milieu. This attitude became so widespread that it was soon acknowledged as the official style. At times it was produced by local architects, but the leaders of the country did not hesitate to bring in Austro-Germans to obtain a more correct image of “contemporaneity”. The entire quarter of Ministries in the new capital, Ankara, was built in the Germanic style of New Monumentalism with low-rise, colonnaded buildings of locally cut stone.

Meanwhile in Egypt the School of Architecture at the newly established Alexandria University got a nephew of Mustafa Pasha Fahmi as its head. At the same time, the head of the Cairo University’s School of Architecture was another nephew, while the Government School of Design was headed by a third of his nephews. Until the early 1960s, Hassan, Mustafa and Shafique remained the most influential personalities in the fields of architectural education in Egypt. They controlled the curricula, which was designed in the most strict sense of the Beaux Arts.

Four of the schools mentioned above — two in Istanbul, one in Cairo and one in Alexandria — constituted the major schools of architecture in the Islamic world until the end of World War II. And all of these schools underwent transformation, as new members were added to their faculties. The Egyptian schools, starting cut with a mixture of the English and Swiss systems in their curricula and approach, in time adopted the Beaux-Arts system of ateliers, whereas the Academy in Istanbul, first organised as a German Hochschule, gradually grew to re-
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Istanbul Technical University, built as military barracks in the early nineteenth century
Photo S Özkan

semble a Beaux-Arts system due to contact with other studios of the fine arts.

The Technical University of Istanbul, firmly established on engineering grounds, began offering a new status for architects as "architect-engineers", implicitly stripping architecture of its fine arts aspects and defining its role more in the field of construction. Nevertheless, throughout the 1940s and 1950s, Istanbul Technical University remained a major asset in the country's development and became the most competitive school, offering the most prestigious professional qualifications in Turkey.

The fifth major school of architecture was founded in Iran. When Tehran University's Faculty of Arts charged André Godard to establish a department of architecture, Godard transplanted the Beaux-Arts model in Iran with an uncompromising application to teaching of the ideals of the Modern Movement.

Development plans following World War II, as well as rapid urbanisation and large-scale construction, demanded an ever-increasing number of architects. At the turn of the century, architects' expertise was needed only for public and prestige buildings, necessary for political and cultural purposes, but certainly not indispensable for ordinary building needs. After World War II, architects and civil engineers became fervent rivals.

Among the many reasons for this rivalry was the enormous influence of the Modern Movement, where architects themselves stripped down their profession to a minimum, making it possible for anyone with engineering skills to invade the professional territory that had essentially belonged to architects. The past definition of professional qualifications, which excluded unqualified practitioners, did not apply to engineers. By the 1950s, architects had begun to pursue and organise professional societies for the defence of their rights, and the distinction between architecture and engineering became the core of this struggle.

Charles Abrams, a renowned and respected scholar of the human habitat, following his United Nations mission to Turkey, suggested that changes in the urban environment, specifically in Turkey and in the Middle East at large, demanded new capabilities from technical experts. These went far beyond the received definition of "architect". The Middle East High Institute of Technology (now METU) was the first of a series of a new generation of universities to be opened in Turkey, Egypt, Lebanon and other countries of the Middle East, and to become an important reference point in architectural education in Turkey. It had among its initial aims to assist rural and regional development, to attempt to cope with the problem of the rapidly changing urban environment, and to develop local indigenous, intermediate techniques that would reduce to a minimum the requirements of technology in the process of urbanisation. Even though METU has become a recognised and alternative voice and a capable educational institution since then, to what extent it has realised its initial objectives remains questionable. The same can be said about the other schools with similar emphasis: the American University in Cairo and the American University of Beirut. All three universities have become notable institutions of higher education, but they have not performed the role that they were intended to play.

In the 1960s, architects were among the most sought-after professionals throughout the Islamic world. This was not because of their problem-solving capabilities to meet the urgent needs created by rapid urbanisation, but rather, they were asked to build in the urban centres where land had become a scarce commodity. Building high-rise blocks became a lucrative economic activity.

What were formerly less than ten schools of architecture multiplied and came to exceed sixty over the course of two decades as the need for architects increased in the developing world. To what extent the new architects were equipped with the expertise to cope with the merging problems of their societies
was the crucial issue of the profession and, therefore, of education, too.

Problematic issues, such as rapid and vast urbanisation, the informal housing sector, land speculation, rural development, and appropriate and/or intermediate technology, were never brought to the attention of architects in their education or in professional practice. Even when it was attempted to address these issues, the problems were defined in a fragmented fashion. The schools addressed themselves to the solution of problems at high technical levels. That which might have proved useful to society was either not requested from the schools by the society or was viewed as academically uninteresting.

The exogenous factors of the academic world have always dominated the schools of architecture in the Islamic world. The endogenous factors, where solutions were sought to the particular problems of a society, were seldom included in the academic promotion process that had a dominant influence on the realm of academic research. The knowledge gained through research was applied only negligibly in teaching. In the early 1950s, more than a dozen theses were submitted for academic promotion in Istanbul Technical University. All of these undertook to document and praise the vernacular architecture of various regions of Anatolia, and the resultant quality of the research, the documentation and the visual materials were excellent. There was only scant interpretation, but perhaps such was not then necessary. Yet, the influence of these impressive studies of architectural education in the same school is absolutely nil. They were produced for purposes of academic promotion, and never as sources of inquiry; the authors’ professional and teaching objectives, therefore, had little to do with these important contributions.

As this attitude toward competent, albeit ill-used, documentation was current in Istanbul, there also were genuine attempts to develop new expressions of cultural heritage. In this respect, the efforts of Hassan Fathy, Rifat Chadirji and Sedad Hakki Eldem are noteworthy. Fathy devoted his life to regenerate traditional forms using still-existing building practices and social interpretation. The forces of modernisation, however, exerted other pressures and, along with ever-increasing bureaucracy, dominated the community where Fathy worked. Fathy's struggle was received coolly, not only in academia, but also by those in the building professions prevalent in Egypt. The recognition of Fathy in the Western world, as opposed to the lack of recognition in his native Egypt, is probably the most dramatic example of how Islamic countries ignored the genuine, endogenous contributions to their architecture, and how they excluded such contributions from education.

Eldem, an outstanding member of the pioneering generation of architects in Turkey, has had a similar fate, but with some differences. Eldem and his contemporaries saw as their first priority the establishment of architecture as a legitimate, if not honoured, profession. During the early stages of Eldem’s career, Turkish society was undergoing enormous change, forging redefinitions of the manifold values of architecture and architectural expression. Eldem was dedicated to the development of expressions applicable and relevant to Turkey. His search for forms, constructional systems, and proportions was a path of devoted research that he would maintain for more than half a century. He founded the “Seminar of National Architecture”, which was probably the first of its kind to explore local resources rather than to import foreign canons that were developed elsewhere and for completely different social, political, economic, and most importantly, environmental circumstances. The Turkish academic system tolerated his seminar as a continuing effort, but there was no genuine attempt to encourage this approach to flourish, to become an alternative, to generate what could become “Turkish”. This was also reflected in Eldem’s own career. Given important commissions for public buildings, he strove to prove himself capable as a “contemporary architect” according to Western standards, and, as well, to adhere to the ideals of his teachings.
Chadirji's work shared with Eldem's "Seminar" a great affinity, yet he was even less compromising than the Turkish master. The school of thought he has come to represent, which he almost single-handedly founded, focussed on the development of an architecture at once Iraqi and, above all, contemporary. Chadirji rejected the nostalgia of a romanticised vernacular whose validity, especially in urban areas, was fading. He sought the development of an architectural identity and character with environmental and aesthetic significance, but with a contemporaneity that could re-insert architecture more realistically into the realm of Iraqi social and economic environments.

Looking back, it is painfully evident that Fathy was obliged to limit his oeuvre to the rural setting and to several private residences. Eldem was forced to apply a double standard with markedly different results in public buildings versus large residences. Chad- dirji in his teaching as well as in his practice was forced to change his mode of discourse from building to theory. These three dedicated architects and educators nevertheless marked the architectural scene and education from the 1950s to the 1980s, bringing into their teaching and practice a focus on endogenous sources for the contemporary environment and balancing the concern with exogenous sources.

The endogeneity and exogeneity of the sources of education have been the most crucial aspect of the teaching of architecture. Exogeneity, or seeking to meet the standards of the Western world, has been inevitable; to claim the opposite would be futile, as is indicated by several obvious factors:

- The world is, indeed, small. The influence of rapidly changing life-styles and, thus, environments, has escaped the limits of geographical, political and cultural boundaries. To seek exclusively that which is local is not only limiting, but impossible, and it establishes a dilemma at the psychological level that is, at best, discomforting.
- Schools of architecture like other educational institutions, strive to meet standards universally applicable, and competitive with other schools. This is a vital aspect for the existence of the schools.
- In the Islamic world, the clients who determine the milieu and structure of education are, almost exclusively, governmental, and necessarily have a vested interest in developing educational systems on international standards. Even when there exists a sensitivity to local issues, it would be asking too much to differentiate architecture from, say, the fields of medicine or engineering, where the highest, most progressive standards are called for at an international level.

Thus, the curricula of schools of architecture in the Islamic world have been developed with world-wide standards in mind. Be it the visual arts-based Beaux-Arts system, or the technology-oriented German system, or the Bauhaus-generated American system, the end product is a similar preoccupation with international educational norms, although the qualification standards have been set to address entirely different professional circumstances.

Today, no American architect is equipped with the intellectual or technical resources to cope with the long-term problems of the building boom in the Gulf; nor is any English architect capable of dealing with the problems of floods and cyclones in Bangladesh. No French architect is furnished with the technical know-how to solve the shelter problems resulting from drought and desertification in the Sahel, and no German architect can provide an immediate solution for the informal housing problems in the urban areas of Turkey, Pakistan and India, which affect more than half of their urban populations.

The transplantation of foreign models may provide technical expertise, a valid tool for use in the practice of architecture anywhere in the world, but does it provide the requisite expertise within a country? This pertinent question remains to be asked, if not answered.

Here, we do not intend to imply that architects in the Islamic world have been educated to serve as valid technicians everywhere in the world except in their own contexts. Nor are we saying that they are over-qualified to deal with the very simple problems of their day-to-day professional lives. We are simply trying to emphasise the fact that what is urgent and relevant for a specific country is often overlooked. Architects, therefore, even though they are much needed, become luxury products in their own societies. This is an injustice to this group of professionals who, intellectually and technically, are so very much concerned with the problems of their countries.

The curricula of schools of architecture in the Islamic world are not much different from those from which they were derived; in other words, the generic model has been maintained at the core of the system. In all schools of architecture, design forms the backbone of the curricula, but the time spent at and credit given to this course varies from school to school. The final product of education is primarily assessed by the competence developed in this realm.

Whether students are left to plunge into architectural design or filtered through a course of basic design depends on the model used to organise training in design. In almost all cases, design studios are organised in a progression from simpler to more complex problems to be solved by means of developing design skills.

There is an implicit universality of design values in architectural education. Put in abstract terms, design is a skill, a method of problem solving, and architects are called upon to exercise these skills. Design, the ultimate tool of architects to intervene in the environment, does not address issues related to what should be done, but develops expertise in how to do it. Therefore, the problem of generating endogenous factors in the design process does not have much to do with design itself, but with education as a whole.

With this in mind, we observe that fact-oriented courses in architecture schools are important to enable architects to ask the right questions in order to generate the right answers for the problems they will encounter. In all curricula are found the following categories of courses to complement architectural education.
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However, in how many schools do we find equipment courses that stress passive energy systems, the principles of solar heating, or natural ventilation systems? Furthermore, by the time architects graduate from schools of architecture, it would be considered a disgrace if they did not know the tenets of classical Egyptian, Greek, Roman, Gothic and Renaissance architecture. An architect who cannot carry on a detailed conversation on Wright's Failing Water House, Mies' Farnsworth House, the Sears Tower or the Seagram Building will not be taken seriously. But how many of them are aware of the internal and external forces that shaped the environment in which they have been living? The educational discourse does not orient prospective architects towards the expression of their own cultures. It is our belief that a sharper focus on support courses could serve to align the design courses so as to address the context relevant to each country and culture, and to their histories.

In considering this issue, we may look at the curricula in schools of architecture in Islamic countries. For example, in the Department of Architecture of King Abdulaziz University at Jeddah, architectural design and courses related to the development of graphic and architectural communication skills take up 42 per cent of the total credit hours. This ratio is 41 per cent in the Department of Architecture of Bangladesh University of Engineering and Technology; 45 per cent at the former Fine Arts Academy (presently Mimar Sinan University) in Istanbul; about half in Tehran University's Fine Arts School; 51 per cent at l'Ecole Nationale d'Architecture in Rabat, and 52 per cent at the University of Garyunis in Benghazi. Our survey of more than sixty schools of architecture in the Islamic world indicates that, usually, more than half of the teaching time is allocated to support courses. This ratio increases in Beaux-Arts based curricula with atelier systems, where the design studio becomes the melting pot for all related information. In the cases of Anglo-American or German-based models, the support courses have more autonomy than in the French system. Whichever model is considered, more than half of teaching time is devoted to informative areas sometimes with, but usually without, studios to emphasize the local, regional or cultural context.

Years ago, Dogan Kuban criticised the over-education of architects. In doing so, he wanted to stress the fact that architects were equipped with knowledge which had no use for what they were to encounter professionally. He called for a new prototype of architect who could handle problems of a simpler nature with professional competence. His idea reflected the important point that there are no longer any intermediary technical skills between architects and the building practice. The single-level qualification system produces architect-stereotypes, all of whom would like to design and build, whereas the complex and multi-faceted physical environment calls for different performances from architects or other qualified persons who can assume the responsibility for dealing with the physical environment.

Since the late 1970s we have found ourselves in the midst of an unending debate and continual redefinition of architecture. In reality, these redefinitions reflect what architects desire to become. The professional and institutional definition of "architect" is often far from being appropriate to what architects are actually qualified to do. But, they also reflect the reality of the confusion which we have been experiencing: Is the architect a "decision maker"? Or is he a "social engineer"? Or, possibly, an "agent for change"? More humbly, is he perhaps "an enabler"? Why cannot we be content with an architect who is a designer who designs projects for the building(s) to be built in the society where he is expected to do so? Because in the turmoil of the past two decades or so, the role of the architect has been invaded by many other interest groups. Architects all over the world, in their meetings and conventions, have been trying to redefine their role, instead of reclaiming the rights of their profession that they should historically have possessed. To regain what has been lost will require proper education and useful knowledge to solve the urgent problems of our societies and our time.
Architects can be expected to perform properly and meet their responsibilities only when they have secured their professional rights and privileges. Do our societies today offer these securities?

There is little evidence that they do. Even in societies where the number of architects exceed thousands, as in Egypt, Turkey and Pakistan, the security and professional rights of architects are not guaranteed. On the one hand, there is a regression from the existing rights for architects (as the case is in Turkey and Iran), and, on the other hand, in some countries architects even lack a basic recognition of professionals (as is the case of many African countries and in Bangladesh). In some countries the organisation of the profession is totally forbidden by governments. Today, the most advanced professional recognition of architects in the Middle East is only under the Union of Engineers and Architects. In other words, the "soundness" of the building is more important than anything else to be secured by governments on behalf of the society. As a result, the issue of the "quality of environment", for the protection of which the architect is qualified and expected to be responsible, remains totally meaningless.

It is well known that the strength of the professional organisation depends on its control over the quality of the education that is put forth. Weaker professional organisations end up with only loose control over acceptable levels of qualification. We must not forget the fact that the strength of the architect stems mainly from the strict control of the profession. RIBA and AIA are the major forces controlling educational organisation in the United Kingdom and the United States, and these organisations are more demanding than any other group with respect to who is accredited as an "architect" and who is not. In all of the educational organisations in our part of the world, there is no control mechanism over the qualification except that provided by the state. The state offers education as its responsibility but, who is to assess the quality of the product remains unanswered. The state, by definition, cannot disqualify what it offers and, therefore, there is a need to assess the standards of education. There seems to be a long road ahead of us before we see our governments consulting professional organisations on the qualifications of who is entitled to be recognised as an "architect", and who is not.

At this point, the problem arises as to what happens if some graduates are not equipped with the expertise that the profession demands. Let us take the case of the soundest profession in the world, including the Islamic world, which is law. Who is qualified to be a lawyer and who is not, is the right, responsibility, and the privilege of the bar. The same applies for the medical profession. What happens to those who cannot qualify is a crucial issue. In the field of law, there are multitudes of other professions, in and out of the bureaucracy, that provide a livelihood for those who do not — or do not want to — qualify for membership in the bar. Do we have such alternatives for the architectural profession? To be frank, absolutely not. The vital problem of qualification lies, in the final analysis, with the educational system, which needs to provide intermediate outputs who can efficiently function in society with adequate professional competence. A group of intermediary technicians skilled in the building arts, but who are not necessarily architects, is needed. Since this does not exist, we end up with a group of qualified people who do not want to deal with architecture whatsoever; they disqualify themselves. Statistics show this clearly. How many of the 15,000 Egyptians and 17,000 Turkish "qualified architects" are doing anything which, even tangentially, is related to architecture, to the environment, or even in the remotest sense to building? This, probably, is the saddest and most urgent problem on our hands, and one that merits our attention.
My case study deals with architectural education, or the education of architects, and I believe that some basic terms which are relevant to this discussion should be clarified now.

First, what is meant by architecture? Architecture is any shelter or enclosure, grand or mean, good or bad, erected at any time, for any social purpose, anywhere, and by any individual or group.

Second, what is meant by architect? Since, in contemporary production, the processes of building have been segmented into design and implementation and since performance task allocations have likewise been separated into designer, worker and manager, the term architect, for the purpose of my thesis, can be identified with the totality of building operations carried out by all the performers.

Finally, what is meant by education and architectural education specifically? Education in architecture, and for that matter education in general, can be viewed as the transmission of the values and accumulated knowledge of a particular society to an individual, so that the individual can learn the culture of that society, mould his behaviour in the ways approved by the adults in that society, and prepare himself for his eventual role in that society as a performer and/or recipient.

The object of education, therefore, is not only to transmit certain values and accumulated knowledge to prepare a performer for his future role in a given society, but also to prepare the recipient for his equally vital role in that society. The roles of performer and recipient are interdependent in that neither can function effectively without the other. Moreover, their interaction must be balanced in order for the consummation of the productive process itself to be effectual, which means that the quality of the end product should satisfy the needs and the values corresponding to those needs expected, or aspired to, by the recipient.

By these three definitions I have not limited the concept of the architect and his education and performance to that of the university graduate in architecture, who shall be referred to as the academic architect. By extension, architecture implemented under the supervision and according to the designs of academic architects shall be called academic architecture. In contradistinction to this I shall define the totality of building implementation as architecture in general, and shall further designate any architecture implemented by other professions according to the particular profession involved. For instance, buildings implemented by and according to the designs of engineers or master builders shall be referred to, respective-

A typical traditional Baghadi house whose integrity and sensitivity of design are still apparent, despite the poor maintenance by the present owners who use the house for storage only.

*Photo R Chadirji*
ly, as engineers' architecture and master builders' architecture.

Before I proceed with this case study, I would like to bring to your attention the fact that I have deliberately excluded from my definition the aspect of values. I am aware that this omission makes my definitions deficient in some ways, but believe it is justified in view of my intention to limit the present discussion to a single aspect of the production process: I shall consider only the mechanics of the production process or, in other words, the structural properties of what I refer to as the MDI, the mediated dialectical interaction, and shall attempt to relate this interaction to the education of architects in general. Any reference to values and value creation is made with this limitation in mind.

Architectural education as an academic activity began in Iraq in the early 1960s, roughly twenty-five years ago. Prior to this, students of architecture studied outside the country. Iraq's very first architects had therefore obtained their degrees abroad but returned to the country to practise in 1935. By 1955 we had some fifteen Iraqi architects in the country. Today, thirty years later, Iraq can boast more than one thousand architects; the majority of these professionals have been educated in Iraqi universities, but approximately one-third live and practise abroad. The total number of Iraqi architects will very likely be doubled within the next five or six years.

Until the early part of this century, architecture in general throughout Iraq was invariably of good quality. Today — despite the birth and tremendous growth, in the intervening years, of academic architecture as a profession — Iraq's architecture is almost always of poor quality.

How could such a situation have developed? Is it a situation unique to Iraq? Can there be an effective remedy for this situation based on a theoretical approach to the issues involved?

My presentation, which attempts to answer these questions, is in two parts. The first part tries to identify the composition of the building industry in Iraq and also presents a brief history of that industry. The second part describes and applies to contemporary realities the structural theory of architecture which, I believe, is necessary if the issues we face today in architecture and architectural education are to be properly understood.

Again, before I proceed further, I should pause to clarify what I mean by the structural theory of architecture.

Structuralism in architecture is the understanding of architecture as a social phenomenon or a social process whose end result is, invariably, a material entity which encloses or shelters a particular social activity. There is one fundamental premise to this approach, and the premise is that all styles of architecture derive from one common and definite structural system which underlies the entire social process that is architecture, regardless of period, style or geographic location. Structuralism therefore does not limit its observations to the morphology, or styles, of architecture, but rather seeks to understand style by first understanding the inherent structure, common to all styles, of the process of production. It also identifies the characteristics of man's role and consciousness in this process. Structuralism, as described by some of its advocates in some disciplines, may tend to eliminate the human factor by bringing to light the anonymous system of thought without a subject that is present in a particular social phenomenon. This is not my intention, nor is this the way in which I view structuralism in general.

As I see it, structuralism shows us that architecture as style, or style in architecture, cannot be genuinely understood if we limit our analysis to comparative and descriptive methodologies. Rather, structuralism contends that it is only by understanding the process of production as a mediated interaction between man and matter that the true characteristics of any style can be under-

Baghdad, a structure typical of the late 1970s.

Photo: R. Chadirji.
stood. If and when we understand the basic structural characteristics of production, then it will be possible to generate a scientific appraisal of architecture which will enable us to plan both for the education of its performers and for its production.

Iraq at the end of the last century was a poor country which had not really recovered from a devastating succession of wars and invasions that had spanned some six hundred years. Although it should be mentioned that no large-scale projects had been undertaken during that time, the country’s architectural traditions until the late nineteenth century remained live and effective nonetheless.

Generally speaking, this situation prevailed in Iraq until the First World War, at which point there were still no proper professional, or ‘academic’, architects in the country. In the early years of this century nearly all building activities were carried out under the control and direction of local craftsmen — stonemasons, carpenters or bricklayers, for example — who perpetuated the traditions and aesthetic values of their individual craft in their broader role as master builders. Building activities included the manufacture of materials, the design and selection of building elements, site management and coordination and, finally, the manufacture of the equipment itself. In this process the master builders also created new aesthetic values for their own satisfaction, and the quality of their work was consistently good.

However, another situation was developing during this same period: Iraqi engineers and foreign engineers within Iraq began to prepare designs, and foreign architects would sometimes, if only rarely, design major public buildings for Iraq. The work of these academically trained professionals was also almost always good.

During the First World War, architecture in Iraq entered a new phase. The British had arrived in the country at this point, and among them were some very capable
academic architects who resolved to couple their own talents with those of the Iraqi master builders. From 1920 to 1924 this combined effort produced, in most cases, an architecture of admirable quality. At the same time, British efforts that were not undertaken jointly did not always succeed.

In the 1920s modern technology introduced major innovations which would soon affect not only the use of materials and their manufacture, but also basic work methods. Gradually the role of the local master builders in the production process became sub-ordinate to the role of the academically trained newcomers — the British architects and both the Iraqi and British civil engineers — who were versed in the new technology. The skills of the traditional masters deteriorated correspondingly and the resulting change in their professional status was to bring about a loss of social status as well.

By the end of the 1930s, British architects were no longer foreign expatriates residing in the country but rather visiting consultants; Iraq had been producing its own civil engineers for some time; and Iraqi architects, recently graduated from various European universities, were returning home and beginning to play a vital role in the building process.

All these factors contributed to the development of a rupture in the Iraqi building industry in general which consequently polarised production, as a process, into two different camps, with the traditional master builders in one camp and the new academic professionals in the other.

Although they continued to be in direct contact with the processes involved in the manufacture of materials, Iraqi master builders were losing ground technically to the spreading influence of three basic developments. These were:

1. The introduction of new materials such as concrete and steel framing.
2. The introduction of new methods of design and calculation.
3. The importation of new design aesthetics.

*After World War I, local craftsmen implemented designs from the West in collaboration with, and under the supervision of, Iraqi civil engineers*

*Photo R. Chadirji.*

*Iron grillwork showing sensitive interpretation and excellent workmanship of the post-World War I era*

*Photo R. Chadirji.*
Unquestionably, these developments went beyond the master builders’ professional capabilities. Nevertheless, and this must be underlined, the greater part of building implemented in Iraq remained under the supervision and controlling influence of these traditional craftsmen.

The second camp was represented by the new academic professionals of whom I have already spoken. Of the members of this group as a whole, one can list three characteristics:

1. They were university graduates.
2. They used scientific methodologies in their designs and building procedures.
3. They were not only aware of the universal aesthetic values being generated at that time in the West, but also incorporated some of them into their designs.

However, their academic training in fact isolated these professionals to some degree from the building industry at large. As a result they did not keep completely abreast of new developments in the manufacture of building materials and in on-site implementation methods, and the more numerous the developments, the more isolated they became. This negative relationship grew more significant in the following decade, as we shall soon see.

The overall situation notwithstanding, and in spite of the fact that the entire production process at this time was constantly being subjected to new technologies, new social requirements and new aesthetic values, both camps managed to produce fairly good work during the years immediately preceding the Second World War.

From the outbreak of World War II until the Revolution of 1958, architecture and the building industry in Iraq deteriorated further. Many factors contributed to this general decline. I would like to mention a few which, in my opinion, pertain directly to the present discussion.

Factor 1: A steady increase in the importation of materials. This increase aggravated a situation already existing wherein new materials were routinely incorporated into pro-
duction without ever having been tried locally.

Factor 2: The rapid expansion of local industrialised manufacture of building materials such as bricks, concrete blocks and metal windows. This factor implies the introduction of new technology without local involvement.

Factor 3: The introduction of modern methods of site management and implementation. Again, this factor implies the introduction of new technology without Iraqi participation in the establishment of such technology. In other words, the rationale of this new technology was not locally oriented.

These three factors therefore subjected local production to new technologies and new methods of management which the local building capability was not yet ready to assimilate, and thereby created entirely new problems for the country as a whole to deal with in adapting itself to the environmental, social and even cultural transformations these factors engendered.

Factor 4: The increased isolation, as mentioned earlier, of academic architects from the bulk of building production. By their formal education, by the social status associated with this education, by their proven professional capabilities and by the steady increase in their number, academic architects in Iraq had become the country’s design elite. But their privileged status removed them even further from production realities overall. As they grew more and more isolated from the industry, production in general, which was now managed entirely by civil engineers or traditional master builders, itself became increasingly isolated from the professional influence of architects. It was a complex situation and one which could not be avoided because of the intrinsic characteristics of the status of the modern architect.

Factor 5: Despite the fact that local master builders still managed the greater part of production throughout the country, they were nevertheless becoming progressively illiterate in the sense that the scientific

House, Basra, 1930s. Local craftsmen were unable to assimilate new technologies and Western architectural features appropriately
Photo R Chadirji
methodologies being introduced by the new academic professionals were rendering the traditional masters’ skills relatively obsolete. As a result, the social and professional status of these local masters drastically declined.

Although this list is not exhaustive, the factors I have just mentioned and the effects of their interaction were decisive enough to bring about two major changes in Iraq’s building industry after World War II:

First, Iraq lost its own building technology, its know-how and its skills; it also lost its own aesthetic values. To its detriment, the country had become largely dependent on foreign technology and imported values.

The quality of the built environment in Iraq consequently became unsatisfactory. This was the second major change. The bulk of work produced now was banal, crude and sometimes vulgar.

Albeit that a few Iraqi academic architects — among them Mohamed Makiya, Qahtan Awni, Qahtan Madfai, Ellen Jawdat and Jaffar Alawi — produced some remarkable experimental work during this period (which did not fail to elicit official praise from various sources, including the academic milieu and the media), nevertheless, the entire body of this work constituted no more than an infinitesimal percentage of building production in general.

After the Revolution of 1958 and until the beginning of the Iraq-Iran War in 1980, one change in the country’s socio-political landscape proved a major deterrent in the course of events taking place during that period: I speak here of the politicisation of both the governmental administrative machinery and of the goals and strategies of Iraq’s social and economic planning. This politicisation made possible the promotion to decision-making positions of inefficient and unskilled personnel.

Combined with other political and economic factors, this development gave rise to the following socio-political trends in Iraq during the 1960s and 1970s:

1. Inappropriate distribution of the national capital investment consistently generated
extensive rural migrations into the country's urban centres.

These rural migrations into urban centres eventually required some kind of urbanised built environment to accommodate them. Neither the planning authorities nor the academic professionals were capable of dealing with this demand. As a result, rural builders who were migrants themselves took the situation into their own hands and imbued the cities with their own concept of urbanisation, leaning invariably on their own master builders or on other amateur builders who were relatives or friends and migrants as well.

2. Inappropriate planning for industrialisation made the country increasingly dependent on imported technology

3. A commitment to prestige projects required the importation of unnecessary technology.

4. Politicisation of the academic educational systems caused the quality of education in general to deteriorate.

The cumulative result of these various trends and developments was that, by 1980, Iraq was in a state of total aesthetic collapse. Every professional activity related to the built environment was affected. This situation prevailed in spite of the fact that, by the beginning of the present decade, Iraq had five institutions of higher education offering degrees in architecture and more than seven hundred practising architects.

At the same time, repercussions of the new clericalism which was sweeping the Middle East began to manifest themselves, but the extent to which architecture in Iraq was thereby affected has been minimal. However, the trend of employing selected features from traditional architecture is, in the case of Iraq, motivated nonetheless by political requirements. I must point out here that in the present discussion I shall not dwell on any questions related to traditionalism in architecture, to national or religious identification, to ethnic assimilation or other related contemporary issues.

Now, before proceeding to the second part of this presentation, I would like to raise a
few questions with regard to the situation of architecture in Iraq as it has been surveyed here.

1. How can an architecture collapse and a nation lose its aesthetic values as well as its technology within a period of fifty years?

2. If a nation loses its aesthetic values, can these be restored by external help — if so, how?

3. Is there a relation between technology and aesthetic values? If so, will a nation that generates its own technology be able to generate its own aesthetic values?

4. In a world of globalised production, can a nation isolate itself and generate its own technology? Is this isolationism desirable?

5. If aesthetic values can be generated unilaterally, what would be the relation between the universal values being created internationally and those being created locally?

In my opinion, these questions should lead us to a theoretical approach to answering them. I would like to explore this approach now, and at the same time apply it to present-day realities. However, in tackling these theoretical issues I shall, as stated earlier, deal primarily with the aspect of production and its relation to education and therefore leave aside, if only for the time being, the question of aesthetic values.

First, I will briefly describe what I call the dialectics of architecture, or the structural theory of architecture as a social phenomenon. Architecture as a social phenomenon cannot be explicitly understood unless we know and understand the inherent structure of its determinants, and the characteristics of the interaction between those determinants. This knowledge will help us comprehend the main characteristics of architecture as artefact, as the end result of the interaction of these determinants. I believe that if we do not have a theory for architecture which is based on structuralism as a concept, then our concept of architecture will continue to be limited merely to stylistic descriptions and comparative analysis.

Architecture as a structural problem can be analysed as follows:

Any object of architecture as artefact is a material substance which is the end result of a process of transformation from a raw state to a state of repose. In that state of repose, the artefact manifests itself to us as form. Form is no more than what we see and what we feel towards a material substance as artefact.

To be more explicit: Before raw matter becomes an artefact — that is, before we can perceive it as form — it must be processed. For example, a piece of wood is processed by a sculptor to become a piece of sculpture; wood and mud and stone are processed by a builder to become a house. A finished artefact is therefore the final phase of a process that is consummated and has come to a state of repose. This state of repose manifests itself to us as form as a result of what we see and of what we feel towards it as a material entity.

The function of this process of transforming raw matter into a finished product is to change the physical properties of certain selected materials with the intention of satisfying a definite human need.

Fundamental to this process is the interaction between two poles, with each pole acting as a determinant in the process. The process cannot be activated without the presence and active role of both determinants. The first determinant is social need, whether it be the need of the individual or of society at large. This determinant comprises both the utilitarian and the emotional or, to put it differently, the corporal and the spiritual.

The other determinant is social technology. Each of these determinants is composed of a set of constituents. The constituents of social need fall into three categories of functions, namely: the utilitarian, the symbolic and the aesthetic. On the other hand, the con-
stituents of social technology fall into four basic domains: man’s knowledge and skill, the availability of materials, the actual physical properties of the materials and, lastly, the social capability — both economic and political — of activating the other domains.

The intensity and quality of the role each determinant plays in the process of interaction are conditioned by a society’s emotional and socio-economic circumstances, which will also condition the complexity and intensity of the various constituents of which the two determinants are composed. The priorities and aspirations of an individual or a society at large will act as adaptive factors. I shall stress here that every interaction is mediated by the individual, whether acting alone or in a group, and that therefore the particular role of the individual is pre-eminent.

Furthermore, if the production of the form of an artefact is repeated; if, by this repetition, the form is socially established and becomes a preferred form; and if the form is then abstracted, that is, if it is wholly or even partly isolated from its own particular need, then and only then can it acquire the status of style.

From this it follows that the inherent quality of a style is conditioned by the quality of the interaction between the two determinants. From now on I shall refer to this interaction as the mediated dialectical interaction (MDI).

We could proceed from here and infer that, as long as man is conscious and clear about his own needs and preferences and about how to manipulate matter to satisfy them, the dialectical interaction will be sound. In this case, ‘sound’ means that the inter-relationship between the constituents of both determinants is a harmonious one, whether these constituents are inherent to the society, are foreign and already assimilated, or are capable of being assimilated by that society. In such a situation the end product itself is sound and balanced and possesses physical properties such that we assess the product to be, finally, of good quality. However, the reverse is also true. An MDI — or mediated dialectical interaction — which is imbalanced will produce an end product of inferior quality. The possibility thus exists of having superior and inferior quality. If we translate this phenomenon in terms of form, then we have superior and inferior styles.

Now, let’s consider present-day realities in the light of the theoretical structure I have just described and examine how this is related to architecture in general.

As mentioned earlier, contemporary Iraqi architecture, or most of what is being built in Iraq today, is crude, banal and vulgar. However, this was not the case only a half century ago.

What happened, therefore, to the performer? Or, to be more specifically pertinent to this case study, what happened to the education of the performer to allow for the bulk of his production to be vulgar and crude?

Why, at this particular time in history, is there a change in the quality of creative production, a change which is unprecedented in the history of all styles of all products of the Iraqi people?

The question should be more emphatic: Did a flaw occur somewhere in the MDI, the process whereby the artefact is conceived, produced and consumed? If so, what would be the factors responsible for creating this flaw, and how and why did it occur at this particular phase in the history of Iraqi culture?

I believe that, in fact, a flaw did develop and that the forces which created it are twofold. First, there are the universal factors which have already had an effect on most if not all cultures everywhere in our era. I am going to leave these out of the present discussion and mention only that universal factors are a consequence of the general progress of architecture in broad terms. This aspect of cultural development and its effect on architecture I have treated in two of my books, where I tackle the problem of the change that occurred in the mode of production during the early nineteenth century as one factor, and the globalisation of production, economics and culture in general and their impact on universal architecture as another. But here my concern is limited to the particular, or local, factors of disruption in the balance of the MDI.

1. The first local factor of disruption, which is related directly to the social technology determinant of the MDI, is the economic necessity of importing new building technologies. The pace at which these technologies have been introduced into Iraq has overwhelmed traditional indigenous technology and in fact, virtually obliterated it. One consequence of this situation is that the new contemporary national culture which is slowly emerging in Iraq is dependent on these imported technologies, to the extent that it finds itself not only incapable of absorbing and assimilating them, but also incapable of creating new appropriate technologies of its own.

2. The second local factor of disruption in the MDI is associated with the determinant of social need: Iraq’s social structure and social customs are changing at a rate and with a momentum such that the country cannot articulate the many and varied requirements that would constitute this determinant of social need; in other words, Iraq cannot articulate its preferences. This second factor alone has created unprecedented anarchy in virtually all the social institutions, and particularly in those involved with the official planning and private marketing of building types.

3. The third factor of disruption in the balance of the MDI is related both to social need and to social technology in that it is generated by the combination of imported social technology and new-life-styles. This is the factor of the introduction of new values. In the case of architecture, if new values — whether they are imported or created locally by contemporary Iraqi architects — are not adequately assimilated by the national culture as a whole, then the disruption and, indeed, complete disappearance of traditional indigenous values, or what is left of them, could occur. The creation of new values for the country could also be impeded.
These three factors indicate how, and to what extent, in the specific case of Iraq, the interaction between the two determinants of the MDI has become seriously flawed.

A few concluding remarks:

It is my opinion that for any architecture of excellence to be produced at any time, the culture which is to generate it must have an articulated social need. Secondly, this culture must have its own social technology — that is, its own scientific knowledge and production methodologies. Lastly, it must have its own values: the utilitarian, the symbolic and the aesthetic values of which I have spoken.

As we have seen in the first part of this presentation, the present situation of architecture in Iraq is a direct result of the fact that, over the past fifty years, Iraq not only lost its own technology but also lost the ability to articulate its own social need. Consequently its traditional values, and the new values which are emerging in Iraq today, are in a state of discord and confusion.

I believe that this situation can be remedied effectively if we understand that the preliminary step towards any architectural excellence is the achievement of a balanced interaction between the determinants of social technology and social need. In turn, a balanced MDI would enable the creation of new and sound values. Without the inherent presence of these new values, there cannot be a general architecture of worthy quality.

If we accept the thesis that the quality of architecture is determined by the quality of the mediated dialectical interaction which takes place during the critical phases of production, then we must realise that the education of both performers and recipients is a major constituent of the MDI and, as such, plays a crucial role in the production process. Furthermore, a sound under-
Architectural Education in the Kingdom of Saudi Arabia

Jamel Akbar

Introduction

The well known economic boom that the Kingdom of Saudi Arabia experienced in the 1970s and up to early 1980s was associated with many physical as well as cultural changes. These changes are the outcome of the overall development which was pursued by means of five-year plans. The first and second five-year plans resulted in building an entire new physical infrastructure which included various community facilities to meet Western standards. The third five-year plan (1980-85) focussed on such development projects as housing, water and distribution networks, medical facilities, and schools. In 1982, the annual construction volume accounted for SR 130 billion in government construction expenditure alone as compared to the first half of 1984 of only SR 13 billion.

The developmental programmes faced a shortage of designers, since the only school of design in Saudi Arabia was the Department of Architecture, which was established in 1967 within the College of Engineering of Riyadh University (presently King Saud University). Naturally, an excessive temporary need for designers and engineers arose. As a result, during peak periods of construction, the Kingdom established four schools of design: the College of Architecture and Planning at King Faisal University was founded in Dammam in 1975. In 1976 in the same region, the University of Petroleum and Minerals (Dahran) — 20 km from Dammam — established an Architectural Engineering programme. In 1976 the School of Environmental Design at King Abdul Aziz University in Jeddah accepted the first group of students. Finally, in 1983 a programme of Islamic Architecture was initiated at Umm Al-Qura University in Mecca.

Until 1978, when the first group of designers graduated from King Faisal University and were all appointed as teaching assistants, King Saud University provided the main, if not the only, supply of designers, graduating fewer than twenty architects per year. The majority of them have by now become decision-makers. Due to the severe shortage of Saudi architects during the peak periods of construction, most projects were designed, supervised and implemented by graduates from schools in other countries. Thus, to a large extent, the success or failure of architecture in the Kingdom may not relate to architects who have graduated from Saudi Schools, but, possibly, to decision-makers who were rarely architects.

Curricula

Certainly, establishing four schools within ten years in four different universities by different individuals or institutions should mean diversity of programmes, at least in their structure if not in their doctrines. However, although this may sound likely, since these programmes are very different in terms of length of study, distribution of courses, administration, nationality of faculty, and other factors, they are nevertheless very similar in content. To explain this statement we will first review the five schools in general with some statistical details of King Saud University, since it is the oldest, and King Faisal University, since it is the second oldest and the largest in size, and then comment on the content of the curricula of all schools.

King Saud University

The Department of Architecture was established in 1967 within the College of Engineering which was supervised by UNESCO from its foundation until it joined King Saud University in 1969. In 1975, the Department shifted to the semester system with a requirement of 211 credit hours for graduation, which was reduced later to 197 credits and even further reduced to 175 credits. From this total, 24 credits are devoted to general university requirements such as Islamic culture, Arabic and English language courses, while 27 credits are devoted to College distributional requirements such as mathematics and physics for architects, engineering economics, computer programming, and project management. Courses taught by the Department of Architecture take 124 credit hours, of which 53 per cent are design studios (66 credit hours) while courses on history and theory add up to ninety per cent (10 credit hours), planning 7 per cent (9 credit hours) and environmental control subjects 4 8 per cent. The rest are courses primarily serving other disciplines such as civil, mechanical and electrical engineering, and elective courses.

During the current academic year (1985-86), the Department has been proposing some changes in the curriculum, including doubling the courses on environmental control from 6 to 12 credits. It can be said that as a general pattern that has emerged over time the school is decreasing the number of required credit hours and increasing the emphasis on technical subjects, while history and theory courses account for 57 per cent of the overall load.

King Faisal University

The School of Architecture and Planning in Dammam was established in 1975. It is the largest school in the Kingdom, with 71 faculty members and 514 students in 1984. In 1985, the school graduated 92 architects, the largest group in the Kingdom to have graduated in any one year. In fall of 1986, the School offered 96 different courses. The curriculum was primarily developed by the first dean, Ahmed Farid Mustapha, who had been the head of the Department of Architecture at King Saud University. The first curriculum resembles to some extent the curriculum that King Saud University had at that time, but with more design emphasis. A total of 189 credits were required to graduate, of which 151 credits were offered by the Department of Architecture. Each student had to pass 10 design studios accounting for 50 credits, with 12 contact hours per week. An example indicating the orientation of the curriculum can be found in the manual of course descriptions from which the following passage is taken: “Most courses are taught in the context of the developed technology
of the Western world. However, considerable emphasis is placed upon the special characteristics of life in the Arab world. A quick review of the design courses syllabus indicates the westernisation of the studio in all aspects.

The school used to offer also a bachelor's degree in architecture with emphasis on either planning or landscaping, in which the student had to take some studios and courses. Fortunately, the school decided to ban these two programs, as they trained neither architects nor planners properly.

The major change in the curriculum took place in the fall of 1985 with the co-operation and advice of Rice University. Through observation, the College found that pre-requisites were only satisfied in a vertical fashion. That is, for example, students were allowed to take advanced design or graduation projects so long as they had passed the previous prerequisite design course, even if they had not taken or passed structure or history courses that they were supposed to have passed during their second year. In other words, the enforcement of the requirements did not take into account the complementary aspect of courses. On the other hand, each studio of the previous curricula emphasised some aspect of design such as structure, mechanical organisation or landscaping. These problems, coupled with the language difficulty of the students, resulted in a new curriculum.

The new curriculum, which consists of 162 credits, was mainly structured with a view to resolving the problems mentioned. In general, 48 credits, or 30 per cent of the course work, are devoted to design studios with 14 contact hours per week in each studio, while 12 credits, or 7 per cent, are history and theory courses.

The major characteristics of the new curriculum are:

1) Prior to entry into the programme, the student should be prepared in the basic sciences and in English, which is the language of instruction.

2) "The design sequence is the central organisational core of the curriculum and,
therefore, must be fully integrated with all technical and theoretical course work.\textsuperscript{7} To satisfy this concept of "integration", the design sequence is organised into three major components which are the "introductory", "intermediate" and "professional" programmes. Prior to advancement to the next component level, the student should be properly prepared in all theoretical and technical course work. According to those who established the new programme, "the direct alignment of theoretical and technical course work with the design sequence permits the integration of faculty and information in an explicit and direct manner."\textsuperscript{8} Fortunately, among the many positive aspects, the concept of "integration" allowed the administration to control firmly the student's performance through the three components: Introductory, Intermediate and Professional Programmes. However, difficulties are arising with regard to the "integration" of the course syllabi. At this stage it would be premature to assess the success of the "integration" concept as it leads to the involvement of faculties with different backgrounds.

\textbf{University of Petroleum and Minerals}

The School of Environmental Design was established during the 1980-1981 academic year by the College of Engineering and Sciences within this technical university. The school offers three degrees: Bachelor of Architecture, Bachelor of Architectural Engineering, and Bachelor of City Planning. The School's philosophy is stated in the manual: "In harmony with the nature of U.P M as a technological university, and in consideration of the present and future needs of Saudi Arabia in the environmental design professions, all the College programs introduce basic science courses and are heavily oriented towards the teaching of physical design principles and the application of advanced technology."\textsuperscript{9} Out of the 144 credits needed for graduation, in the Department of Architectural En-

\textit{Photo HOK/AKAA}
engineering, only 2 credits are for the history and theory of design, while 6 credits are devoted to two design studios and one course to socio-cultural issues. As for the Architecture Department, the major problem was that of fitting a professional programme into four years, since the first year is reserved to the University-required courses. This has resulted in offering design studios during the summer and has affected the course load distribution. For example, history and theory courses account for only 6 per cent of the total required courses.10

**King Abdul Aziz University**

The School of Environmental Design accepted students in the fall of 1976. It offers three degrees, Bachelor of Architecture, Bachelor of Landscape Architecture and Bachelor of City Planning. The curriculum has been primarily developed by Harvard University. It is a six-year programme of 180 credits in which students will spend three years in the general programme (84 credits) which covers the basic courses for the three departments. This programme, in which most courses are non-technical but rather artistic, historical and theoretical, diametrically opposite to that of the University of Petroleum and Minerals.11

**Umm Al-Qura University**

The School of al-Imara al-Islamiya was established in 1983 within a university that offers primarily programmes related to Shari’ah and Islamic culture. To summarise the philosophy of the programme according to its founder, “the school of al-Imara follows a methodology of teaching that unifies the whole curriculum into a series of ‘professional units’ of a semester’s length within which independent subjects are integrated with each other and with the studio projects. In each unit, social structure and specific injunctions of Islam pertaining to the shaping of the built environment become the

reference points that structure that particular unit. Two remedial units lead to six professional units followed with a teaching practice, that replicates a consultant’s office in full. The programme is concluded with the graduation unit at the end of which ijaza (a certificate of architecture) is given to the graduates.”

The major dispute raised among educators and professionals is one regarding the name “School of Islamic Architecture”. Are the other schools un-Islamic? Can architecture be divided into “Islamic” and “un-Islamic”?  

**Comments**

We shall not comment on the quality of the architect’s products, whether produced by graduates from Saudi universities or not, since it is a matter of value judgement as well as their appropriateness to the user or the environment. There are as many opinions as there are architects regarding any single building. On the other hand, one cannot judge any curriculum without fully investigating the course contents and the way they are taught. Two different professors, I would argue, may provide different information under the same course syllabus, especially if they are from different cultures. However, the unavoidable circumstances through which these schools have gone through, may be resulted in an inevitable shared product and phenomena.  

Politically speaking, other than infrequent advice from officials to adopt Islamic principles or to encourage Islamic architecture, the government has never intervened in curriculum contents or development. King Saud University’s curriculum was established by a student of Eduardo Catalano, who is a design-oriented professor. It was then improved by an Egyptian faculty member who was primarily educated in the West. The same person, Dr. Ahmed Farid Mustapha, established the curriculum of King Faisal University. One should expect, and it is indeed the case, that similarities exist between the two curricula.

As has been mentioned, the new curriculum of King Faisal University has been developed by advisors from, or through, Rice University in the United States, while that of King Abdul Aziz University has been developed by Harvard University. Given that the department at the University of Petroleum and Minerals is heavily influenced by...
Western technology, the curricula bear the marks of imported Western educational ideology.

The Issue of Western Faculty

The absence of Arabic reference materials for architectural instructions in general and modern architecture in particular has led to the adoption of English as the language of instruction in all schools, with the exception of King Saud University, where both English and Arabic are used. This led to the dependence on the English-speaking faculty. As to the quality of education, it is definitely affected by the language problem, which results in poor communications between teachers and students. Although all curricula contain intensive English courses, Saudi society has only recently accepted English as a second language. To realize the problems created by the language gap, all that is required is to attend a design jury in which students fail to transmit their design thoughts and, therefore, suffer academically. According to most faculty, the reverse is also true, and faculty may fail in transmitting their thoughts to their students due to language difficulties.

It is true that individuals from different cultures observe many traits in a society that are not perceived by its inhabitants. Yet, one cannot expect a significant contribution towards finding a solution to the emerging problems of a society from those who are not equipped linguistically to understand the culture. For them, observing a society is just like watching a silent movie. To give an example, a foreign faculty member who once asked me about the coloured flags on the roofs of houses said he was informed by other faculty members that the flags were hoisted advertising females available for marriage in each house. Each colour, he thought, denoted characteristics of the female such as age, stature, and so on. In fact, the flags simply represent the soccer teams supported by youngsters living in those houses. With foreign faculty coming from different countries and cultural backgrounds unified only by their common usage of English, the best and possibly the safest way of teaching design is to go international. Furthermore, the fact that financial capability needed for impressive adaptations of Western technology is also associated with status on the governmental, institutional, and individual level, courses have been laden with fascinating displays of architecture for students, regardless of their appropriateness. Yet these factors, the Western educational model, financial and technical capability, foreign faculty and references, and local admiration for Western architecture, have provided and will continue to provide the best climate for a student to create, import, experiment and implement new ideologies and designs for the society in question.

An important negative factor in all this is the insecure position of foreign faculty. There is no tenure. Most contracts are renewed on annual basis. Furthermore, every new administration is interested in improving the quality of faculty, leading to instability and discontinuity in all schools with the exception of King Saud University, which has 13 Saudi faculty members. Since most foreign faculty members are temporary and have no clear tradition within which they can operate, their main concern is teaching their students as best they can. This means lack of interest in research. The constant turnover among the foreign faculty also leads to a failure to devote attention to the basic problems that Saudi architects must face.

Problems of the Quality of Education

For various reasons, the previous administration of the School of Architecture at King Faisal University did not monitor the students’ academic performance. The situation became so bad that when the new administration implemented the new curriculum in the fall of 1984, it discovered that 120 students out of 514 were on probation, while 58 students were on probation for the third time. The new administration took serious measures that resulted in dismissing 30 students and controlling the students’ performance.

Government policy affected the quality of education by forbidding faculty to participate in most professional activities. Thus, the schools and both students and faculty, lost the chance of taking advantage of the opportunities offered for practical applications of architectural concepts during the periods of the construction boom. The quality of education may also be affected by a Royal Decree which allows a faculty member at the lecturer level with a masters degree to be promoted with only three years of teaching experience to the higher ranks. Among all university faculties, this exceptional standard for promotion affects architects, urban designers, landscape architects and dentists. 12

The Architect’s Mission

All curricula have the same theoretical underpinnings. As a graduate of King Saud University and a member of the Faculty of King Faisal University, and having examined the course descriptions of other schools, I would say that the discipline is a very noble one. Basically, it tells us that we should create a very good-beautiful-functional-economic environment. We assume that people often know little about building materials, technique, organisation of spaces, economy, climate, beauty and other such factors. We architects need to balance all factors and create new designs. The people may know what they want, but they do not know how to make it. This is, as architects, our task. Thus, our role is one of creativity. In some cases, students are advised to be inspired by the traditional Muslim built environment. In the past students borrowed ideas like having facades with arches and mashrabiyas. However, these days, this is considered superficial. When the traditional Muslim built environment is observed as a source of architectural inspiration, the physical or spatial environment is studied, that is, the end product of a process. The spirit or essence of Islamic architecture lies...
in floor plans, building techniques which reflect cultural factors and, above all, the appropriateness of the product to the harsh climate by using local materials and techniques to fit the users' needs. In short, the doctrine is to make a decision, and, possibly, a creative one, by dealing with as many factors as possible.

Despite its importance for architects, the search for cultural identity and expression is rarely raised — and possibly never raised in a technical university. The question of the relationship between architecture and other disciplines has also not been reconceptualised, with the exception of King Saud University, where the School of Architecture is starting to establish links with other departments on the campus.13

Furthermore, although the schools are located in different regions, questions of the generality or particularity of a technique of technology or of social life in relation to the different regions where the schools operate is not addressed. With the exception of the University of Petroleum and Minerals, which endorses modern Western technology, and Umm al-Qura University, which emphasises the Islamic legal system and traditional mud brick techniques, all schools produce uniform products. In general, the schools' slightly different directions are accidental and not planned.

What is the process behind a dead-end street? It was formed by group of residents when they originally settled, or it was developed gradually as space needed for circulation. In any case, it was recognised by Islamic law as private property which is owned by the abutting property owners. They control it and use it. For example, none of the owners may construct a door without the partners' consent. There are very well developed principles that clarify the responsibilities of the owner of the space and which affect the social environment. Thus, dead-end streets are a successful urban element common in Muslim cities.14

Now, when the student is taught about this space, he is taught about its morphological success without explaining the authority enjoyed by the inhabitants. Hence, when he designs a dead-end street, his design may not function as a traditional one, since he has studied the product without the process and, consequently, he will implement the form without handing the inhabitants the needed authority.

The attitude of society in traditional Muslim environments was to control the industry of building materials through the post of the muhassib, who never intervened in their assembly. This was the task of conventions. However, municipalities' attitude these days is often the reverse: they control the assembly of these materials in floor plans and facades through building permits and do not care much about their industrial quality.

Unfortunately, all curricula emphasise the product and rarely the process. No wonder we see domes and vaults of mud bricks using traditional techniques built in houses of rich people who can afford the highest technology. Those designers of such projects were brilliant in analysing the traditional environment as a product and using it in their designs, but not necessarily the process. This is what I call "Islamic renaissance".

The Need for Adaptability in Design in a Fast-changing Environment

Another important factor for architecture in all cultures is change. The design attitude in curricula is to have a static product, while observations inform us that the built environment is always changing and dynamic and, thus, may need a product that could accommodate such possible changes. We always see rooms transformed into shops, apartments into offices, walk-up apartments into schools, and the like. However, our students' products are so specific in function that it would be difficult to adapt to change. In Saudi Arabia, for example, cities are built within one decade. Logically, in such fast growing developments, we should expect most decisions to be hasty. A programme of a building that is prepared in a few weeks will after construction have to be changed. A site selected for a specific function will be discovered later not to be appropriate for it. To give one example, hotels have been transformed into clinics or even into hospitals in many Saudi cities. Yet, the curricula do not recognise the built environment as a dynamic entity. For example, our curricula lack courses on re-use and adaptability. Interestingly, a glance at a floor plan of the markets and dwellings of Tunis reveals that there is a series of connected cells, which have accommodated change. A study of the process that resulted in such physical organisation may enlighten us.

The Role of the Architect in Arab Tradition

The term m'nar, or architect, was rarely used in Arabic literature. Ibn Khaldun's description of "The Craft of Building", for example, is largely a technical one. He informs us about technical connections between materials and about relationships and possible conflicts between neighbours. He uses the term buna' which is a builder. A builder often does not create a new design, but, rather, follows the convention in his society and, possibly, improves existing models through consultation with the own-
ers. In other words, he copies and improves rather than creates a new design. Unfortunately, when this section, "The Craft of Building", was translated by Rosenthal, it was translated as "The Craft of Architecture", but the word "architecture" in Western thought connotes creativity. 15

To give another example from literature, al-Ya‘qubi (d.897) in describing the rebuilding of the Grand Mosque in Makkah relates that the Caliph al-Mahdi had brought the craftsman and muhandisin, or engineers, according to existing translations, (as-suura’ wa al-muhandisin), from each town. 16 He adds that the Ka’ba was at the side of the Mosque and al-Mahdi centralised it. His description suggests that al-Mahdi was the decision-maker and the craftsman followed his orders. Although some monuments in the Muslim world stand as witnesses to architectural creativity, it seems that the people who created buildings often were simply highly qualified in the technical sense. This is with respect to monuments. However, regarding the every-day environment, and the building of residential and commercial structures and the like, the builder, who might be the user, was always a technician who operated within well-known conventions and implemented a well developed model. 17

Furthermore, the term mi’mar, which means "architect" in current usage, is derived from the verb ‘umara. ‘Amr or ‘umr means "life", and the inhabitant of a house is called the ‘amir, while ma’mar means the large house facing pasture land and water. ‘Imara refers to what utilises a place and ‘umara is the fee for utilisation or erection. Finally, ‘amara means a community which is smaller than a tribe that depends on itself (alladhi yaquma binafshi). None of the above descriptions suggests creation, but, rather, inhabiting or utilisation by the inhabitants. In short, the function of the builder or the architect was to be a follower of a convention or a model as well as utilising his high technical ability. This is evident from many other investigations. Then, the question is, how was the concept of creation incorporated in the term mi’mar?

Regardless of the appropriateness of the nature of the traditional role of architect for Muslims, the doctrine in our schools, as explained previously and as is evident in all curricula, is to produce a decision-maker of good judgement, who would be termed an "architect" in modern Western civilisation. Every line drawn by a student in a studio is a decision, and, possibly, a creative one. This doctrine is different from the traditional Arab one, which is "copy-and-improve". In contrast, it is in a curriculum of modern architecture schools that the graduate gets more studio hours than technical subjects, which is contrary to his traditional role.

Modern Curricula: Problems and Prospects

With the exception of the architectural engineering curriculum of U P M, which is heavily influenced by modern Western technology, all curricula are designed to deliver as much information as possible from various disciplines, since the nature of our existing role is based on the Western model, which dictates that an architect should know about technology, art, sociology, history, interiors, and the like. The curricula have become crowded with subjects that should assure the delivery of good, well trained architects ready to serve society. However, society may reject such time-consuming training in the long run. As we have seen, the curricula of King Saud and King Faisal Universities were reduced over time. The six-year programme of King Abdul Aziz University decided not to admit any new students in the academic year 1985-86, since there were so few applicants. It seems to me that the only justification for the current distribution of courses in a curriculum is the desire to fit in as many courses as possible, according to their importance within the Western model, so as to fit a five-year period, since that is a common period of study needed to obtain a Western university degree. Wayne Drummond, who played a major role in developing the new curriculum of King Faisal University, while commenting on it, said that "the total 162 semester credit hours recommended is comparable to the 163 semester credit hours average for a five-year Bachelor of Architecture programme in the United States." 18 Two faculty members from the School of Environmental Design at U P M., speaking on the role of education in environmental design and Saudisation of the field, stated: "It is also important to recognise that Saudisation should not result in a cultural isolation of the Saudi professional, but rather equip him to engage as an equal among the international community of creative designers. In this respect, the curriculum, which was developed primarily from U S models, has been modified to meet the specific professional education needs of the Kingdom of Saudi Arabia." 19

Then, the questions are: do educators or does society decide the time length that it takes to train an architect? Within this limit, how do we decide on the nature of subjects to be taught? And, who makes that decision? Do we equip our graduates with more technical subjects and hand them to society to design according to the desires of users who may make bad decisions? Or, do we try to upgrade their value judgements so that they can create better designs, which may free them from society’s conventions? Do we leave them with little technical knowledge on the assumption that they can gain this in their future practice? Or, do we have to define the architect’s role in society and then teach them the needed subjects regardless of time limitations? And, where do history and theory subjects fit in the whole picture to explain architecture within the environment and historical context?

The Size of the Student Body

The existing situation in the Kingdom in terms of the number of persons studying architecture seems to be similar to that in the West after World War II. The current output of 130-150 graduates a year from the five schools added to the total existing graduates will cover the basic demand of the 7 million inhabitants by 1990. This is based on the Western standard of having 2 to 5
registered architects per 10,000. According to this standard, after 1990 there will be a surplus of architects. Would this surplus serve the built environment or not, and how will it affect the architect’s role?

A study has shown that 18 per cent of engineers within three years of starting practice will be holding primarily administrative posts, while 50 per cent of them after seven years of experience will hold technical and administrative posts. The study by implication demonstrates the need for management in the course work of architects. It also demonstrates that the role of some graduates who were prepared as designers became a managerial one, which is also true in other cultures. This managerial demand has resulted in adding management courses in some curricula. When the Government needed architects with management skills in the last fifteen years, the schools did not train them appropriately. Now some graduates will need managerial training, but not necessarily all of them. This raises another question. Do we have to graduate one type of architect with different emphasis depending on society’s demands? Or, do we follow other cultural models, leaving such issues to the professional organisations that are not yet established or functioning in our cultures?

Sexual Segregation and its Implications for Architecture

Finally, an issue that may be unique to Saudi Arabia is the life-style that separates the two sexes. One may argue that in such a society, where 50 per cent of the facilities are used exclusively or partially by women, designers may misunderstand the needs of female users and, thus, may not achieve the optimum result. Does this invite female designers to practice, or does it affect the curricula in general? The only existing Department of Design in the Kingdom for females is at King Faisal University, which will have its first group of graduates in Spring 1987.

Conclusion

In this paper, the arguments that I have been made may not be unique to the Kingdom of Saudi Arabia. It was attempted to give a comprehensive picture of the architectural undergraduate education, in general, with some critical remarks on a few issues. Many vital areas relating to this subject, such as social change, were not discussed. Post-graduate programmes in planning, landscaping and the undergraduate education in interior architecture for females were also not covered. We are just beginning to ask the important questions about architectural education in Saudi Arabia.

Reference Notes

1 For a summary of the situation in English, see D. Ackerknecht and H. Burges, “Environmental Design


4 Ibid., p 10

5 Ibid., pp 17-19


7 Ibid., p 698

8 Ibid., p 701

9 University of Petroleum and Minerals, Undergraduate Bulletin 1981-83, p 95

10 Ibid., pp 97, 98

11 King Abdul Aziz University, College of Engineering Bulletin 1403-1405H (Arabic version), pp 171-211

12 Decree No 2434 dated 11/A/1401H. The reason for this decree is the rarity of faculty members with doctrorate degrees in these fields

13 The School of Architecture at King Faisal University shares the campus with the College of Medicine, while the School of Environmental Design at U P M is within a university that has no humanities; Umm al- Qura University does not recognize art. The School of Environmental Design in Jeddah is basically related to the College of Engineering


17 Cf Akbar, op cit., p 319-337

18 H Bedawi and W Drummond, op cit., p 703

19 D Ackerknecht, op cit., p 450

20 Although this study does not include designers, the administrators’ role among architects is possibly higher than the engineers’ and often architects are considered as engineers in the Kingdom. M Al-Buraey and J Ghani, “Continuing Education in Management: a Growing Need of Saudi Engineers”, The Second Saudi Engineers Conference, Dhahran: U P M, 1985), vol II, p 1026
Architectural Education in Turkey in its Social Context: Underlying Concepts and Changes

Haluk Pamir*

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Introduction

Premises and Scope

Although this topic rightfully belongs to the field of historical inquiry, there has not yet appeared a single detailed historical treatment of the education of Ottoman and Turkish architects or the development of the profession in Turkey. Brief overviews, such as those by Sey and Tapan (1983), fall short of revealing the complex interrelationships between historical developments and the evolution of the architectural profession. This may be due to the fuzziness of the data available.

A case study of architectural education in Turkey focussing on any period cannot be meaningful unless it takes up the subject within a framework of diachronic relationships. The present study therefore attempts to examine some of the changes in architectural education, in terms of the space in which relations within and between two interrelated processes take place: professionalisation of architecture and architectural education as social production.

It should be noted that this space is a construct, and that the needs governing it and events taking place in it can be utilised to construct alternative future events (constructive alternativism), such as possible future directions of architectural education. This study attempts to develop such a theoretical construct with which to explain the shaping and development of architectural education in Turkey. In order to have a better constructive basis, a detailed examination of specific changes that have occurred at the Faculty of Architecture of the Middle East Technical University (METU) is presented, and the specific case of METU is compared to the shaping of architectural education in the country as a whole. Finally, it is attempted to anticipate future developments by utilising the methodology of constructive alternativism.

Conceptual Framework: Social Order and Control

In any social system, including organisations and informal groups, social control of the ways of approaching, organising and orienting toward transactions with the environment are effected through social status categories (power) and their contents (norms). Social systems are evaluated on the basis of their positions with regard to these dimensions of social order. Norms are thus the coding content of social order.

A norm is the content of a rule generated by the joint construal of the members of the social system or by the social system and its social environment. It guides behaviour to what is appropriate or inappropriate. The number of possible alternative normative orders and possible alternative attitudes in each norm is a function of the complexity of the social system at any given time.

On the other hand, the structure of social order is the organisation of social position dimensions. This is the categorisation component of the social system. Social status refers to the position on certain social space dimensions that have an evaluative connotation for the social structure. It provides a measure of the amount of control the system can impose on the social and physical environment, or, alternatively, a measure of the control that members of the system can impose on the system.

Formal or informal social systems of high status have more power to affect the course of environmental events, and they are expected to order the events for the whole population that is implicated in them.

At the operational level, constructions of differentiation and integration are the operational measures of such properties. Differentiation can be taken as either the measure of the number of dimensions or the distinctiveness of the elements which constitute the environmental context of social systems.

Integration is the connectedness among parts of the structure (power relations) or the level of conceptualisation or categorisation of the norms.

The construal space for constructing the development of architectural education in Turkey will not be using each and every parametric relationship between the dimension of norms, power relations, and properties of differentiation and integration, but only will refer to:

1) alternative norms of knowing architecture, architectural education and the environment; and the possible alternative attitudes in each norm as an expression of social differentiation;

2) the possibility of change or development between and within levels of salient norms as an expression of social integration; and

3) the environmental control potential of architects or their education in terms of the position of architects on the power relations scale.

It is also expected to observe the development of architectural education in:

1) higher levels of differentiation in the norms of architectural education and within alternatives of each norm;

2) having salient norms of architecture or architectural education which integrate architects, the public and the educators either within their own groups (lower level of integration) or among all those groups (higher level of integration); and

3) architects or architectural educators gaining concrete or potential control of the environment.

All in all it must be a change towards more complexity. This essay will attempt to evaluate the process of change in architectural education in the flow of linear time. A multi-dimensional, multi-modal study can be made through accepting different senses of time.
Sources of Multi-modal Architectural Services and their Organisation within an Integrated Educational System: 1300-1700

According to Erdenen (1966) the first appearance of architects within the formal order of a Turkish society is reflected in a document dating from 1329, concerning the organisation of the state services system of the Ottoman Turks (Erdenen, 1966b; Terzioglu, 1984). Architects were accepted as civil members of the order which were generally called kapikulu, and more specifically acemi oglanlar.

This small group (then about ten in number) called mimarin were in close relationship with the sultan; its members, like janissaries, were mostly boys of non-Muslim origin who were given training in Islamic religion and socialised into Turkish ways of behaving (devşirme) (Ortayli, 1976). Since the sultan was on the move most of the time conquering new territories, these corps had the chance of gaining experience and developing their own ideas through observing alternative types of buildings and by building for the sultan. There were no theoretical courses to interfere with their integrated practical education.

Similarly, the problem of serving the users versus serving the client was minimised since the sultan owned the land and the people so that the buildings reflected the culture of the state. Consequently, the problem of structure versus content did not apply to such building activity since all architectural behaviour was structural. It then seems that a young acemi oglan selected for his manual artistic abilities and serving the state was trained in the arts of construction technology, climatology and ornamentation, but devoid of any theoretical or social content.

However, this type of approach was not the case for the people or small principalities of Anatolia. People usually built for themselves and those who had a better sense of construction became ustas or kalfa (better man on the job) building more and better buildings for others including the local notables and lords (beys). Ustas or kalfas were specialised in one or two manual skills or materials. They were organised into guilds (loanca) through which their rights were protected (Erdenen, 1967; Kuhn, 1970). Some ustas or kalfas who became popular attracted the attention of a number of beys for whom they built numerous buildings. The guilds were integrated according to members' interests, although they served the needs of the people, as well. The education obtained in the guilds was a mixture of mainly manual skills (techniques) and professional ethics with sociocultural and religious content deriving mostly from the mystique of an heterodox sect.

The travelling mimars on the other hand were able to carry styles of one culture to another at different scales, acting as agents of acculturation, if they or their proposals were accepted by the courts. The architect of Sarca Medrese in Konya, for example, is Osman Muhammed from the city of Tus in Khorasan, and the Alaeddin Mosque also in Konya was built by Mehmet Halvan of Damascus (Kuhn, 1970). Their education was a combination of learning through practice and the protected formal learning from the elderly masters of the sultans' court, to which they were attached.

These kinds of normative professional differentiation of architectural service types were reflected in architects' learning or knowing styles. They learned and acted in the socio-geographical space without overpowering others. However this rich complexity, unintegrated as it was, was hard to control for a healthy development of Anatolian cities until, at least, the period of Mehmet II, when the central institutions of the Ottoman Empire were consolidated and the Palace School was established (Terzioglu, 1984; Sozen, 1977; Erdenen, 1966a).

After the mid-fifteenth century there were a number of new madrasas established in Istanbul. In 1526 a special one for architects was established in the Palace and architects were organised by the order of Süleiman the
Magnificent as a professional branch of janis-
sary corps: Hassa Mimarlar Ocağı. The
corps of imperial architects numbered eigh-
teen and their educational facilities were
placed in Dar-ı-lil-hendese (School of
Geometry) and Süleymaniye Medresesi,
where mathematics, geometry and applied
arts were taught. There were also some spe-
cialist schools (Necerari-i Mi'maran
Kârhaneleri) which produced items of dif-
ferent scales for janissaries in wood, includ-
ing architectural items, and the curricula in-
cluded courses in architecture and geometry.
Geometry was thus the integrative course
because of its use in construction, ornamenta-
tion and possibly planning. Both schools
accepted students from acemi oğlanlar while
each candidate was examined by one of the
headmasters or head-architects (Mimar Ağası)
on manual abilities (such as carving), art
(e.g. geometrical ornamentation) and tech-
niques of construction (e.g. stone masonry
and carpentry). If the candidate was found
able to continue, then Mimar Ağası showed
his approval by presenting him with books
about the trade, hand written by the Ağası
himself. Later he was introduced to the
Sheikh of the Oacak who gave religious clear-
ance and his blessing (Erdenen, 1966b).

The director of construction in each of the
Ottoman provinces was appointed by the
head of the Hassa Mimari Ocağı (Corps of
Imperial Architects). Imperial architects and
others appointed by them controlled urban
construction to assure safe and unobtrusive
buildings, and they had the right to demolish
those which were improperly built (Turan,
1963; Terzioğlu, 1984; Erdenen, 1966a). It is
understood from an imperial edict of 1572
that there still existed private practice and
builders belonging to various guilds, people
who were not satisfied with the services of
the private architects complained to the sul-
tan, requesting the provision of better ser-
sives. Süleyman the Magnificent in this edict
orders Sinan to educate more architects in
the Oacak and that they be sent to the pro-
vinces especially for the construction of the
public buildings. Probably as a consequence,
the capacity of the Oacak was increased and
number of imperial architects reached 40 in
1665 (Erdenen, 1966a).

It seems that during the late fifteenth, six-
teenth and seventeenth centuries educated
architects were high in the power scale.
Being educated by the best means, they were
highly sought both by the central government
and by the public (Ortaylı, 1982). Control of
student admissions by a selection process also
shows how seriously the Oacak took education
Although there was a normative differen-
tiation between giving architectural services
and creating a relative complexity,
both roles were well integrated right in the
heart of academia which was controlling the
code of ethics for architects and civic code of
construction in cities. Academic and pro-
fessional intervention in public life was at its
zenith.

Unintegrated Changes in Technical
and Architectural Education: Facing
Reinterpretation Problems of the
Effects of Modernity

It is still not clear to me how a society so
centrally controlled and so consciously closed
to new inputs from its environment (and one
in which no new normative differentiation or
new, untried alternative behaviours or atti-
udes were developed) could have solved the
problem of needed paradigm shifts for new
levels of integration without strong opposi-
tion and threats to its existence.

When the Ottoman Empire was defeated in
Europe and had to sign the treaties of Karlo-
witz (1699) and Passarowitz (1718), it begun
evaluating the reasons for Western military
power. The Ottomans thus developed an
intellectual curiosity regarding how Euro-
peans developed and established their
organisations and technology. Turkish obser-
vers of the time noted that it was the way of
understanding and organising technical
education that had played a major role in
Western European advancement.

As a consequence, technical schools were
opened in 1727 then in 1734, but without
success since the janissaries, who had by now
become a reactionary force, compelled them
to close (Doğan, 1985; Tekeli, 1980). With
these developments architects were also
threatened because of their links with the
Ocakes (Doğan, 1985).

Finally, however, the School of Naval En-
gineering (Mühendishane-i Bahr-i
Hümayun: 1773; re-organised, 1789) and the
School of Gunnery and Fortifications En-
gineering (Mühendishane-i Fınum-i Berri-i
Hümayun: 1792) were opened. The latter is
considered as he first institution of technical
training as one would understand it today.
The Naval Engineering School was separated
in 1830, and the School for Gunnery and
Engineering Fortifications was then named
Mühendishane-i Berri-i Hümayun and in
1847 was re-named Harbiye ve Mimarlık
(School of Gunnery and Fortifications).
Mimarlık meant design of fortifications but
was later dropped as a separate branch
These schools were, of course, all under the
influence of the military contexts in which
they were established. Some of the graduates
of Mimarlık opened private architectural
practices. Their competition in the market
with the Imperial architect was not successful
since they were not a part of the architectural
tradition (Bora, 1978).

In the meantime and especially after the
Tanzimat (Reorganisation: 1839) architec-
tural services in Istanbul and in other major
cities were rendered either by foreigners
coming from abroad, or by non-Muslims who
had architectural training in Europe (like
most members of the Balyan family), or by
Muslim and non-Muslim asas, most of
whom were copying from European books
on architecture and architectural orders
(Erdenen, 1966a; Erdenen, 1967; Tuğlaci,

Building for new institutions with their prece-
dent-breaking modern programmes were
thought to be difficult for Ottoman archi-
technicians. Both Turkish architects and archi-
etural education lost status in the social struc-
ture and their once powerful role in shaping
the environment of cities (Tekeli, 1980b; Ter-
zioğlu, 1984). Actually, the disintegration of
the old order's organisation led the way to a
normative differentiation of educational
institutions (from the Palace), and of their
professional and administrative extensions.
A further differentiation developed by allowing alternative educational courses.

In 1831 Mimarbaşı (Directorate of Architects) had lost its independence and was joined with Şehreminliği (Local Authority) to form Ebnīyeye-i Hasa (Organisation of Imperial Buildings). In this way architects lost the power of creating norms and controlling related behaviour and became keepers of buildings within a local authority system, with a diminished status.

In order to raise the status of architecture, an old teacher of the Ocaık, Hoca Seyid Abdülhalim Efendi, proposed in 1833 some scientific principles for architects to follow and teach. This was, of course, to fit with the technology-biased norms of the time (Batur, 1985; Dölken, 1985).

A few years later in 1839 when the new civil ministries were being formed, Ebnīyeye-i Hasa was attached to the Ministry of Commerce, and the following year, a group of civil intellectuals, on the basis of Seyid Abdülhalim Efendi's proposals, managed to obtain an order from the sultan to set up a school of architecture in Istanbul. Due to technical problems, such as the scarcity of academically trained teachers, the school could never be established in its ideal form. Much later, in 1881, Osman Hamdi Bey, the painter who started fully figurative Turkish painting, became the first director of the civil Sanayi-i Nefise Mektebi Alisi (The High School of Fine Arts), which was then attached to the School of Commerce, an extension of the Ministry of Commerce to which Ebnīyeye-i Hasa was also attached. One can argue that education, practice and control were once more integrated, but this time within a civil unit. Sanayi-i Nefise Mektebi-i Alisi consisted of four schools: painting, sculpture, calligraphy and architecture.

At about the same time it was also decided to have a civil school for training technical staff in civil services, and Hendese-i Müşir was opened, with civil students but with teachers and staff from the military School of Naval Engineering. Because in the early years it was difficult to attract students to such a civil engineering school, there were only thirteen students in the first graduating class in 1888.

It seems that about a hundred years ago the engineering and architecture disciplines were becoming differentiated as professions, but it took another twenty seven years to establish a civil engineering school: Mühendis Mekteb-i Alisi, attached to the Ministry of Public Works, began instruction in 1909 with foreign staff members. It was transformed in 1928 into an independent school which had, according to some sources, a two-year architecture course after the first three years. Later it lost its independence and came under the jurisdiction of the Ministry of Education, and finally, in 1944, it was reorganised as Istanbul Technical University.

The first consequence of this development was structural: both engineering and the arts and architecture came out of the control of the Palace and out of the medieval system of Ocaık, seeking new identities. Architecture was ideologically separated from engineering and related to arts. It was becoming a civil occupation, whereas engineering was established within a military context.

It can be said that while the Palace and the military sought modernity, they did not fully understand that it meant training critical universal minds. The Palace and its modernists simply aimed for a static, improved technological state to contribute to their military and organisational efficiency.

Architects of Turkish origin were few, probably because they were neither ready for this new profession nor brought up with a modern outlook, and architects from the minorities took up the profession. The latter group became powerful in shaping the physical environment and more or less stripped the new buildings of their old cultural (Islamic) content. I believe that they started an unidentified process towards modernity in schematic representation of content.

The complexity of the educational norms was increased, but the differentiation along norms was not considered. There seem to have been no alternative values or theories that were substantially affecting the architectural educational norms.

Turkish Architects' Self-defeating Search for a New Integration of Architecture within an Old Schema of Turco-Islamic Architecture in a Context of Turkish Nationalism

About the same year as Mühendis Mekteb-i Alisi was founded (1909), Sanayi-i Nefise Mektebi was able to take students via an entrance examination, establishing its salient fields of discourse and normative differentiation in the integration processes. This must have had a differentiation effect on student admission due to the high level of minority education. In that year there was only one Turk and 38 minority students who passed the exam. This might be due to the low status of the art schools among Turks.

As architect Koyunoğlu remembered, the contents of the courses then were abstract and oriented to foreign styles (Pehlivani and Birkan, 1977). The prevailing taste was either rococo or a highly eclectic one, reflecting imported tastes from Europe. Koyunoğlu called this style decoration architecture without a project. Mimar Kemaletti a leading figure of the next two decades was also trained at this school between the years 1909 and 1914.

High quality technical assistance on site was required by architects and engineers once they were in charge. As a response the Konukdor Mekteb-i Alisi (Higher School of Technicians) was established in 1911, educating technicians in construction. It later became Yıldız Technical School, then the State Academy of Engineering and Architecture, and finally, Yıldız University (1982), gradually abandoning its initial aims and orientation.

Due to World War I and the War of Independence, these three schools produced very few graduates. As a consequence, after the wars very few architects and engineers were left to face the new reconstruction and settlement problems (Eldem, 1983).

During 1920 Sanayi-i Nefise Mektebi Alisi was turned into an Academy of Fine Arts. Nothing much changed in terms of the school organisation or the curriculum of architecture since the teaching staff also remained
the same. The head of the architecture department was Vallaury, who had a Beaux-Arts training. However, from talks with Koyunoglu and Mutlu (Pehlivani and Birkan, 1977), we feel that there was never the Beaux-Arts training in its fullest and strictest sense; for example, the end of the year competitions never took place. The first formally educated Turkish architect Mimar Vedat (Tek) was a colleague of Vallaury (Ozkan and Yavuz, 1982). Later Vedat started the first course in architectural history. In the Muhendis Mektebi Alisi those who continued for the final two years in architecture — after the preliminary three in engineering — were educated by the German architect and researcher Jachmund, who had been appointed by the Imperial German Government to study Ottoman Architecture in Turkey, and his Turkish colleague Mimar Kemalettin, who had finished his postgraduate studies abroad. Although some writers argued that the German background of Jachmund had an effect on this school that has continued until the present day, it should be noted that Jachmund had his architectural training in France at the Ecole de Beaux Arts.

The idealistic-Orientalist (Orientalist-affective) approach of Vallaury and Jachmund in their monumental building was, of course, quite different from the nationalist/Islamic (Ottoman-affective or behavioural) approach of Kemalettin and Vedat in their domestic, human buildings. The two had by then joined forces to teach and design architecture in what would later be named the First National Architecture Movement. This kind of integration was a thematic one and could easily direct conceptualisations from research to practice.

The success of Mustafa Kemal in Anatolia against foreign forces also strengthened the nationalist spirit. After the War of Independence, both of these Turkish architects left...
their teaching positions in Istanbul and moved to the city of Ankara to participate in the building of the capital. Although they had a chance of raising and linking the status of architecture in general and of Turkish architecture in particular with the Republican forces, they met great difficulty in doing so. One reason was their lack of experience in large-scale urban design and planning, and the other was lack of status, most of whom were either killed or left the country during the war. Finally, the new government’s bureaucrats interfered so much with their designs that both were discouraged intellectually and left Ankara.

In 1927 Turkish architects founded the Türk Yüksek Mimarlar Derneği (The Association of Turkish Master Architects), which played a major role in preparing The Law on Architectural and Engineering Services. However, this legislation did not help Turkish architects since it took another thirty years to produce the necessary regulations. But, a second new law, "Tesvik-i Sanayi Kanunu," helped foreign architects. With this law it became possible to invite to Turkey foreign technicians, builders and architects who could be employed with a preferential pay scale.

Thus, a new wave of foreign architects arrived in Turkey. This was encouraged by another decree of the ministry of Education (1934), which made it possible to hire foreign experts in universities. Foreign architects also acting as teachers at the two schools of architecture upheld the status of teacher-designers and architecture. Between 1920-1931 Mongeri was the head of the Academy of Fine Arts, and Vedat Bey worked with him. The education at the Academy was based on the study of architectural classics and classical styles (Sayar, 1986). Sedad Hakkı Eldem remembers that as students they were using Vitruvius’ treatise when Le Corbusier’s Towards a New Architecture appeared (Eldem, 1983). This also explains why the young Turkish architects were not up to date and ready for the job expected of them.
Kemalism, Turkish Architecture and Architecture Education

The 1930s in Turkey was a period during which social, cultural and economic life was shaped directly by Kemalist principles. Kemalism engulfed the people and institutions and spread an euphoric mood. Architecture and urbanism were strong symbols reflecting the goals of Kemalism to establish a new Turkish Republic in the heart of Ankara. In order to evaluate new architecture, local Directorates of Construction were formed, beginning with Ankara in 1928. The status of architecture became higher than it ever had been through the construction of the national capital as well as regional ones. Increased use of functionalism safeguarded by the positivistic attitude of the new regime made it possible for foreign architects to finish off the First National Architecture Movement. As a consequence, Modernism became differentiated from academism or neo-revivalism.

The new orientation changed the system of higher education. The University of Istanbul replaced the old Dar-ul-Funun and the status of university education increased. At the Academy of Fine Arts Ernst Egli became the head of the Architecture Department and introduced students to modern functionalist architecture. Under his chairmanship required training in construction and structures was emphasised, an appropriate requirement since, due to the lack of artisans, architects had to calculate and design constructions very carefully. Egli also introduced a few electives such as city planning (Mutlu, 1986).

In 1937 the Architecture Department was fully opened at the Engineering School under the influence of Clemens Holzmeister. Though both Egli and Holzmeister were not regionalists and had no vernacular tendencies, they jointly supported young Turkish architects in their search for a more local or contextualist architecture. Egli supported his assistant Eldem's National Architecture Seminars. Bruno Taut, who became the Head at the Academy after Egli (1937), even asked his assistants to do their theses on Turkish architecture. Taut also wrote the first book for Turkish students, Architectural Knowledge, placing emphasis on aesthetic concepts.

Although Holzmeister and Bonatz insisted on a technical university in Ankara, the government seemed satisfied with the separation of the teaching-learning centres from construction. Of course, it did not mean that Turkish architects were cut off from practice. There were the first competitions for Rural Institutes (köy Enstrüklü), for People's Houses (Halkkevi) and for local government centres, in addition to ones for buildings both in Ankara and in the provinces. These opportunities created enough jobs for the architects of the 1930s.

Architects from Istanbul visiting sites in Anatolia for competitions or for the construction of their buildings met with popular architecture there. This new experience coupled with the reactions of Istanbul's elite against the modernism of Ankara was reformulated by a very conscious and modern personality, Sedad Hakki Eldem. His interest was not in reacting to modern architecture, but in explaining to others through design what he was searching for and how he understood the traditional development of civil spaces and forms in the Turkish architecture of the past. Since he was an effective teacher at the Academy, he found the means of organising his students for research and documentation of that tradition. Eldem and Emin Onat joined forces during the 1940s and offered a good example of how architects could use universities as a base and produce architecture for the large-scale programmes required by new demands, while still reflecting the symbolic values of place. Some criticised their work as being retrogressive, but others saw it as a timeless way of building.

During the first half of the 1940s, Eldem and Onat argued for a fully differentiated architectural education. Both the high quality of the first students in the Department of Architecture at I T U who studied under Onat, and the support of Holzmeister, who was very powerful in government circles, made it possible to develop a Faculty of Architecture. Onat and Holzmeister were joined by Paul Bonatz in 1946. Since the school had gradually emerged from engineering, the professors were keen to downplay the traditional techniques side of the courses and asked for lavish drawings and stylised elevations (Mutlu, 1986; Alpas, 1986).

After Egli left the Academy of Fine Arts without being able to complete his educational reforms, Bruno Taut established a modern approach to architecture, expecting contemporary principles of design and construction in student work. However, he was not looking for functional analysis and would insist that students focus on the external appearances rather than plan studies which "the architectural technicians ought to prepare for architects" (Mutlu, 1986). After Taut died in 1938 and Hans Poelzig was not able to take his chair, Eldem was appointed chairman. Turkicisation of the only true school of architecture of the time was completed.

Turkey did not enter World War II, but experienced a period of austerity with lack of funds and decreasing construction activity. The tight market led to a resentment against foreign architects some of whom, such as Taut, had senselessly played with traditional architecture and ridiculed regional styles, probably unconsciously. These two developments diminished the status of foreign architects and created differentiation possibilities among the Turkish and foreign groups since integration on architectural principles was impossible.

In 1944, the Turkish Association of Architects began publishing a bi-weekly journal, Mimarlık. It started with a survey of attitudes regarding National Architecture, trying to elicit positive support for this approach and denigrating foreign architects. This was successful. Surprisingly, the survey did not include any questions about education, and the respondents did not refer to education. During the same year the First Turkish Congress of Building met and, strangely enough, had no educational issue on its agenda. The main issue was a differentiation between those who had Masters degrees in architecture or engineering and those who did not. This was important since an acceptance of such a differentiation can be reflected in pay scales. It later affected the teaching pro-
grammes when schools of architecture decided to separate B. Arch. and M. Arch. programmes. Another request was to establish the separate responsibilities and rights of architects and engineers (Mimarlık, 1946).

While this tendency to create new categorial norms on the business side of technical disciplines was inevitable, there was still the need to keep out foreign architects. Action was taken in a number of ways. In 1944 the Association of Turkish Architects called for competition juries to be formed by Turks and demanded that competitions should be open to Turks only. The same organisation established an Institute of Turkish Architecture directed by Professor Saim Ülgen. It not only produced good examples of documented Turkish civil architecture, but, also reprinted old imperial edicts. Mimarlık continued attacks on foreign architects throughout the late forties, generally saying that they were good as educators, but should not interfere with building activity (Akaynak, 1946; Genç, 1946).

During all these years the academic circles remained the style-setters for practising architects. In the late 1940s, when the Union of International Architecture (U.I.A) was established, the first Turkish delegation to it consisted of a group of Turkish university faculty with Bonatz included (Kuruayazici, 1946).

Modernisation Brings Democratization and a New University to Regulate Attitudes and Strategies of Modernisation

1950 ended one-party rule and meant democratisation. The party that won the elections had a populist-rural base that gradually tried to mechanise and modernise the rural environment. For that purpose, it sought help from European and American industries and the accompanying mentality without any reference to the Turkish intelligentsia. The Turkish budget expanded with foreign aid, and comparatively large funds were channelled to the urbanisation processes. The government decided to invite thirty architects from Germany to cope with the increased work load. On this issue the Architects’ Association stood up and issued strong criticism. After a year, the Architects’ Association, which was turned into the Chamber of Architects in 1954, succeeded as a pressure group in changing the mind of the government, and no Turkish government ever again tried to commission so many foreign architects at once to work on projects. In contrast, universities did not openly defend the Association, which resulted in a rift between practitioners and academics. Democratisation and increased foreign relations brought Turkish architects closer to the international architectural scene. Yet, in the faculties of architecture only two styles were being discussed: international architecture versus organic architecture. In 1955 a better integration of Turkish architectural circles was achieved without any participation of university representatives. A further integration of architects with the community and business circles took place in 1956 when the Law of Reconstruction was passed. It explicitly stated that architectural projects could only be undertaken by architects, and a related regulation made it possible for private architects to bid for large-scale projects commissioned by the state. These decisions made the profession very attractive for the upper classes of Turkish society. The most capable young men applied for positions in faculties of architecture. Centres of learning therefore gained in importance. In 1959 the Ministry of Reconstruction and municipal authorities accepted that architectural projects could only be prepared by members of the Chamber of Turkish Architects. Since all graduates with architecture degrees could be registered with the Chamber, there was no quality control over who could join the profession. Universities lost influence by not demanding a professional practice examination that would be conducted by them or by the Chamber. One of the reasons for this could be the devotion of the staff of the universities purely to academic topics and their opposition to getting involved in sensitive matters.

The Conception of the Faculty of Architecture at M.E.T.U

The increased rate of urbanisation in the late 1940s and early 1950s exceeded the housing supply, and masses of people who settled around cities began developing a form of make-shift housing called gecekondu. This process created serious urban problems in Turkey, similar to the ones in other countries of the Middle East. In 1954 United Nations experts proposed to establish an advanced research institute in Ankara to deal with such issues and to train students from Turkey and Middle Eastern countries to cope with problems of urbanisation. The Middle East Technical Institute opened in Ankara on November 15, 1956, with 50 students of architecture and a staff of six. In spring 1957 the Institute became a University, and, apart from the Faculty of Architecture, a Faculty of Engineering with emphasis on mechanical engineering was added. The language of instruction was English. The first members of the staff came from several different countries of Europe and North America. The curriculum emphasised design and manual practice in summer, as well as frequent site visits to parts of Anatolia for a better understanding of settlement issues. This new school presented a clear alternative to the academic establishments of Istanbul. There was a normative differentiation of values in teaching architecture which had more long-lasting effects than were expected at the time of its foundation.

Creating a Potential for a “Homeless Mind” among Students of Architecture at METU:

The METU curriculum in architecture directly aimed at giving Turkish youth an evaluative, critical, de-localised and broad outlook to enable them to look at tradition without any prejudice. There was a basic design course that introduced new concepts and ways of seeing and understanding environments. The first year meant a real re-orientation with a view to organising the construal space of students. Then, the open jury sys-
tem, with literally everybody present and able to participate in heated arguments, enabled students to evaluate themselves as well as others in terms of conceptual frameworks and to develop their personalities and architectural values.

All students were organised to practice manually during the summer terms, constructing building components (1 year) and total buildings (2 years) such as village schools and village guest rooms (Özkan, 1975). The students, mostly from urban upper classes, learned about detailing and about different life-styles on site. During normal term-time these experiences were enhanced by frequent trips to various places in Anatolia for site surveys, history courses, and the like. This search for understanding traditional values in construction and society aimed at a better control potential for the students and the faculty.

Finally, integration of staff with educational status and the social system was established smoothly in the definitions of academic jobs. Educational backgrounds as well as rank were de-emphasised. About half a dozen foreign staff joined Turkish faculty each year, emphasising competition while promoting a single style of architecture and a universal mind within a humanistic context.

**Pluralistic Democracy, Planning and Scientific Mentality**

The military who assumed power in 1960 had a pragmatic mentality and tried to balance the possibility of a democratic and social pluralism and state planning with a mixed economy. As a consequence, the way was opened to all types of economic, social and intellectual development. The State Planning Organisation and Turkish Scientific and Technological Research Institute (TUBITAK) were established during the first two years of the 1960s. With a booming economy and a growth rate of 6 to 7 per cent, new industries and technologies developed. In this decade of pluralism professions tried to compete and to consolidate their status.

In 1961 the Chamber of Turkish architects increased its control of the profession and also of the environment by starting to monitor the appropriateness of individual project proposals, first in Ankara and then in three other major cities. This system was open to abuse, for a chamber could not and should not control the quality of its members during the practice of their profession. A quality control of the architects entering profession is the only acceptable means to ensure quality, and this calls for academic participation.

At the Tenth Annual Meeting of the Chamber of Architects (1964) there was no serious mention of professional education or its alternatives. However, within the profession, group differentiations had begun. A significant development was the opening of private schools of architecture in the major cities. However, these schools were not well equipped and students entering such schools were those who failed entrance examinations to state universities. A difference of quality emerged between the private and the public schools, and in the second half of the decade the Chamber of Turkish Architects declared graduates of private schools unqualified and rejected their candidacy for membership. In 1966 the Chamber was taken over by socially conscious architects. Differentiation within the profession continued during 1965, and an effective Association of Turkish Architects (Türk Mimarlar Derneği) was formed. In the same year leftist architects formed the Ideological Club of Socialist Architects (Toplumcu Mimarlar Fikir Kulübü). In 1966 the Union of the Students of Architectural Schools (Mimarlık Öğrenci Birligi) was founded and immediately organised talks with Cabinet ministers about student grants, summer practice and architectural awards. In 1967 there was a threat, mainly by white collar architects, to establish a separate union of architects to defend their economic rights, but it failed. White collar architects working in government offices were accepted as technical staff, which increased their material benefits (Güngör, 1985).

At the schools of architecture there developed more socially conscious architectural
attitudes in the form of new studio subject matters or theory courses. TÜBİTAK encouraged scientific research attitudes, especially in the form of design methods. University faculty members were divided on this issue. The liberalisation of education helped to develop a context where critical minds could flourish. Sedat Hakki Eldem even re-opened his course on National Architecture in 1960. All these new developments resulted in turning the second half of the decade into one long discussion on architectural education. It started off with an article in a 1966 issue of Mimarlık, asking deans of architecture faculties to discuss and present the role of art in architectural education. Deans generally tried to integrate their architectural education discourse via examples from abroad (Erin, 1966). Only the METU representative presented cases from his school and explained the basic design and summer practice courses.

On the Turkish UIA education committee of 1967 only one member was from the university. Academia was losing power over the profession.

A 1968 issue of Mimarlık was fully devoted to architectural design methods, and it was the ITU Faculty of Architecture that dominated the issue. ITU was made to seem the pillar of scientific architectural thinking in Turkey. During the same year a competition for the special student awards of the Chamber of Turkish Architects began. Jury members were from ITU and DGS, and five of the eight awards were won by METU students. In that period a number of METU graduates had impressive results at architectural competitions.

Changes at METU

With the practical results of new integration levels at METU, a number of programme differentiations were unavoidable. A new department of restoration and, with it, a masters’ programme in architectural restoration was opened in 1966. Two years later the Master in Architecture programme developed two options. The first one was by design and the second, by way of a written dissertation, through research on social, technological, cultural or organisational aspects of architecture.

These were the years of coming of age at METU’s Department of Architecture. The first graduates, including Doruk Pamir, Yıldırım Yavuz, Kemal Aran, Ahmet Gülçü, Güneş Aslanoğlu did their postgraduate work in the United States, before returning as graduate assistants to METU. Most of them were highly influenced by Louis Kahn, and on their return they had a profound influence on the students of the mid-1960s, emphasising a sense of order and light through conscious uses of geometry and materials.

At the beginning of this decade a new programme was established in architecture that continued until 1982 with very minor changes. What had been required subjects were dropped in the mid-1960s, and a wider selection of electives was offered by new tutors. These electives, especially those with a theoretical content, affected the level of student progressiveness at METU. The structural integration of the course developed around the following schema: design was 40.8 per cent of the total course (TC), the building science course (structures, construction and mechanical equipment) was 25.3 per cent, the history-theory courses were 12.6 per cent, general courses (mathematics, physics, English) were 12.6 per cent, and electives were 8.7 per cent.

There was a chance that those who wanted to have a different role than that of designer could do so by taking all of their electives and theory courses in one area. This happened and a significant number of graduates became planners with a social and economic focus, or philosophers, psychologists, computer scientists and the like.

The building of a new METU campus on barren land increased the belief in control over the environment. Architectural summer practice in rural areas enriched this sense of control. The success of graduates in finding jobs in Turkey and abroad proved their quality. However, by the 1970s this high sense of mission turned into a one-sided revolutionary force that tried to change or participate in changing everything from the university to the national administration. It was a great setback for the intellectual developments at METU, although it helped later to increase the appreciation of tolerance among the staff and students. But the spirit of the school was broken, and METU would never be the same again.

A Joint Reconsideration of Architectural Education

After the student movement of 1968-1969 that engulfed Turkish universities, it was the schools of architecture that seemed to question and want to change the existing situation the most. The new administrators at the Chamber of Architects were sympathetic towards students and asked the deans of schools to have a meeting to discuss possible changes in education. The deans were naturally more interested in fundamental changes in architectural education than current issues and demands. A fundamental issue which came out was dividing education into separate stages and different implications for each stage. METU and ITU proposed a two-year scientific or fundamental training in architectural subjects followed by a further two years of more professional training. DGS proposed seven (3+1+3) years of full training, first at the school on subjects pertaining to the construction of buildings, then one year training practice in professional offices and, finally, three years of specialisation at the university. Specialisation was taken as an extension of creativity. Another important contribution of this discussion to an understanding of the position of architectural education was the shared proposal for ordering architectural curricula in a way that would fit the architect’s joint labour with the engineers. A wider perspective was opened up by architect C. Bektaş. He proposed including in this programme the education of technicians and the public in joint action for a better environment.
The 1960s were important for Turkish development, not just for the freedom of thought and the emergence of alternatives in many fields, but also because teachers of architecture were trying jointly to reconsider the fundamentals of their trade. Students and professionals from the public and private sectors were not invited to participate in such a discussion. This discussion of education would not be conclusive since there was no participation or approval from the decision-makers of the society. However, it was a good start for restructuring thought on recent developments in academic architecture.

**Modernity in Architectural Education Spreads Across Different Systems of Schools in the 1970s**

The military intervention and the economic recession of the early seventies and, later, the mounting terrorism left a disheartened and demoralised group of educators and students in a rapidly changing educational context. The fiftieth anniversary of the founding of the Turkish Republic in 1973 was a major event in boosting the morale of the intellectuals in Turkey. Other positive events of the decade were the closure of private schools, which continued at much the same pace and with similar content but which were kept open as nationalised academies, and the establishment of a Building Research Institute (Yapı Araştırma Enstitüsü: YAE) in Ankara.

Economic recession, chaotic divisions and the resulting identity crisis of the moment forced some intellectuals to search for a holistic and historical identity. Historical research became popular in general and also among architectural theorists. Those encouraged by the YAE tried to find their identity first in design methods then, more specifically, in either the environmental social sciences (man-environment relations) or the environmental sciences.

In 1972 a permanent Education Committee of the Chamber of Architects was formed. This made it possible for Turkish architects to participate in and to respond to the proposals of the UIA, which asked the Turkish Chamber of Architects to organise architectural education research for the other UIA-related chambers of Europe and the Middle East (Minarlık, 1976a).

This new responsibility of the Chamber in educational affairs at an international level showed the UIA recognised that architectural education was carefully handled in Turkey and that it could be an organising force within its “Chapter Two” region, which comprises the Balkans, Eastern Europe and the Middle East. The reasons for the Chambers’ interest in education were twofold. Firstly, there was the realisation that reproduction of professional values was difficult during professional life and that most of it was structurally established during education. Secondly, the members of the Chambers’ Board of Directors were themselves very young and recent graduates. A meeting to present overviews of the situations in each country was held in Istanbul during October of 1977. Participants were from the Balkans and Eastern Europe with only one representative from Arab countries.

One of the keynote presentations was a paper by Professor Mustafa Pultar of METU (Minarlık, 1978b). He proposed that we should start an overview of the field by a differentiation of the study of the subjects, architecture and architectural product, and the study of technology and the conditions leading to it in a scientific manner, the architectural sciences. He emphasised that most of the problems in architectural thought would be easily solved if the two branches were provided with a high level of integration. That would mean that both areas would need to have their own theories, as well.

A group of theorists and architectural or environmental scientists mostly from METU (Mustafa Pultar, Mete Turan, Suha Özkan, Vaci IAmamoğlu, Yıldırım Yavuz, Mehmet Asatekin), including others from ITU (Yıldız Sey, Nigan Bayazit); and KTU (Erdem Aksoy, Kutsal Öztürk) who were trying to establish this theoretical differentiation attempted to arrange meetings throughout 1977 and 1978. The attempts were first supported by the Chamber of Turkish Architects, and the initial meeting in the summer of 1977 was actually a preparation for the UIA meeting. The second one in December 1977 was also significantly supported by the Chamber. However, since the Chamber’s interest was more on the professionalisation of architecture and the political significance of the relations between the profession and education, it stayed away from the following conferences as the meetings became more academically oriented and concerned with the theoretical and technological dimensions of architectural education.

The KTU December Seminar on Architectural Education was a presentation of facts and statistics about the profession and the content of education (Minarlık, 1976). However, in an important paper by Özkan and Turan, both from METU, it was proposed that architectural education needed more democratization and scientific orientation in order to move to a higher level of integration.

The second seminar was about post-graduate studies in architecture (Yavuz, et. al., 1977). By then, the Society of Building Science and Environmental Design was established at the Faculty of Architecture, METU, and it was the host for this seminar. The topic of building science was fully discussed, from the opening of a related department to a presentation of scientific decoration styles, and from new approaches in city planning to restoration of buildings through the scientific approach.

The third seminar was held at Ege University where the discussion dimensions were how and when to differentiate between specialists and generalists in an architectural curriculum, and the possible stages of passing on information about architecture as discussed by most of the architects, who wanted to separate and differentiate by identifying themselves as generalists and wanted to argue that the scientific information flow goes in both directions (Tuna, et. al., 1978).
It was said that architects engaged in learning while doing create the generic knowledge of the design act for the scientists, while the propagators of architectural science are more interested in establishing relevant civil institutions. There was an idea of a union of building science and local building science training in research centres throughout Anatolia. The first such centre was later founded in Ankara.

In the 1970s there were a number of empirical studies made on architectural education. A study by Özalp et al. (1972) of the contents of courses found that METU emphasised design more than other schools, and that structures and building science and city planning courses were emphasised at ITU.

Another study by Aktüre and Birkan (1976) showed that design (including drawing, and urban design) was the most emphasised course in the METU curriculum (49 per cent; ITU: 44 per cent; DGS: 40.5 per cent) ITU, on the other hand, emphasised engineering (22 per cent; METU: 17.5 per cent; DGS: 17 per cent) and city planning (ITU: 9.5 per cent; DGS: 5 per cent; METU: nil). DGS came out as emphasising interior decoration (3 per cent) but construction was also emphasised at METU (75 per cent; DGS: 14 per cent; ITU: 11 per cent). METU also provided an education in landscape design (3.5 per cent).

During that year there were no electives but 38 required courses in the programme at ITU. At METU and DGS, however, there were elective courses (9 and 8, respectively) besides the mandatory ones (18 and 26, respectively).

In 1978 the Department of Building Science and Environmental Design was opened at METU. In the autumn of 1979 the First National Conference of the Society of Building Science and Environmental Design was held at METU. Presentations were empirical or rational-observational studies, running from city planning to interiors. The Society also started publishing its bulletin and announced the winner of its First Award: Professor Sadi Sirel of ITU, whose main contribution was in the technology of lighting and the establishment of the first Turkish environmental control laboratory in lighting. KTU under the direction of Erdem Aksoy with support from UNESCO built a similar but multi-model and multi-dimensional laboratory in the 1970s. The Design Research Society (U.K.) and ITU held a meeting in Istanbul and in 1979 a seminar was held at KTU, Trabzon, on Human Sciences and Architecture, emphasising the theoretical basis and scientific implications of man-environment research. This concerned attack on the "artistic approach" establishment of the architectural scene was mostly confined to the universities. However, it was effectively supported by continuous theoretical and scientific contributions to METU Faculty of Architecture Journal, KTU Faculty of Architecture Bulletin and ITU Faculty of Architecture Bulletin. Most of these writings were not just pieces of theory but were based on serious field surveys or experiments (Paltar, 1978; Paltar, 1979).

During the 1970s some of the important local authorities in Turkey were monitored by plan-oriented councillors who were inclined to experiment with new settlement or re-settlement projects. For help they turned to planners and architects at universities. Experimental projects were taken up at an unprecedented scale in Istanbul, Ankara,Batman, Izmir, Antalya and elsewhere. The idea that emerged from the debates of the 1960s, especially those concerning social consciousness in design, participation and the strong belief in large-scale holistic planning, were all used in designing for construction on different scales. Influenced by this, teachers of architecture began introducing less theoretical and more realistic projects in their studios. Their experiences also encouraged those who supported the learning-by-doing approach, but without the social consciousness content. It was a pity that the two conceptual frameworks were not able to join forces.

The following categorical dimensions in the teaching contexts of architecture were prevalent at the end of the 1970s:

1) Scientific research and/or explanation of architectural and environmental phenomena versus intuitive uses of architectural traditions and resources.

2) Social consciousness in architectural design versus consciousness of architecture as art.

3) Theoretical approaches as the foundation of true architecture versus learning by pragmatic applications and practice.

4) Regional values of building versus universal traditional values of conceiving architecture.

These views were held by different groups from different faculties, possibly without sharing the same poles of the dimensions. Alternative educational systems among and within schools were established. This led to the academic differentiation within every faculty or department of architecture. The most differentiated faculty of architecture in terms of its programmes was at METU, where there were five departments with full programmes: architecture, building science and environmental design, restoration and conservation of historical monuments, industrial design, and city and regional planning. The department of landscape planning was at the proposal stage.

The status and means of promotion of the teaching staff is also an indicator of academic differentiation. At ITU assistants were only able to move up the academic ladder by way of producing a Ph.D. dissertation. DGS accepted both a Ph.D. and an evaluation of proficiency in the profession, which could be a professional achievement of high merit. At METU both of these and a study reflecting the person's ability to teach were required for promotion. The last was an integralisation acceptance of possible distinctions in profession, academic research and teaching.

The status of architecture was slowly declining in the second half of the 1970s, since there were fewer job opportunities due to large numbers of architecture graduates from the nationalised private schools and because of the economic crisis which adversely affected the construction sector. Architecture became less attractive for high-school graduates. Since there were no spe-
cial admission requirements for architecture, students who got the minimum qualifying points in the general university entrance examinations were eligible for entry. Some of them enrolled without any inclination for studying architecture. Since most males competed for medicine or electronic engineering, architectural education began serving a large female student population.

The Faculty of Architecture at METU: Constant and Sudden Changes

The tolerance for differentiation between staff and programmes depended on a tradition of constant changes, which were also rather sudden since most of the educational proposals were immediately put into effect. Only on the main B. Arch. Programme was there general consensus, so it could not be structurally changed. However, this programme also experimented with many new contents for most of the courses that it included.

During the seventies the department of architecture focussed more on the environment than building activity as its context.

Changes gained speed with young staff returning from abroad with a research-based scientific approach to man-environment studies. This group was responsible for the formation of the Department of Building Science and Environmental Design. It also created a happy medium of publications and architectural meetings, where others also found an outlet for presentations.

The architecture graduates of METU, who by the end of the 1970s reached 800, produced good architects who were socially accepted. Apart from D. Pamir, A. Gülşen, K. Aran we can count E. Sahinbaş, Z. Aldemir, O. Akça, Z. Tanalı and A. Buluş among the new architects.

However, some negative aspects of the system also started surfacing. There was isolation on the campus during times of terrorism. Following this there was a problem of empty studios most of the time since no one wanted to stay on an isolated campus.

At the beginning of the 1970s because of terrorism the summer practices in far provinces of Turkey and even field trips became difficult to handle since the students were sometimes attacked by villagers. Although these were resumed in the mid-1970s, the place of construction was the METU campus.

As part of a condemnation of imperialism, some people both on the left and on the right condemned also the use of English for teaching and research purposes. They argued that it alienated the system from its Turkish environment.

The theoretical conceptualisations of architecture used in Turkey at the time (new nationalism, regionalism, Miesianism) were neither fitting to this stage of development nor able to withstand the paradigm shift proposal of the scientific approach to architecture.

Although it is possible to say that the scientific approach had also originated abroad, the way Pultar and friends formulated it was totally fitting for the Turkish case and for developing the fundamental conceptual framework. It led to environmental design. Architectural quality was never discussed except analytically, that is, as in the experimental testing of the quality of rooms. Still, the practising architects continued without theoretical references. In the Turkish scene there was no formulated architectural or environmental theory until the 1970s.

The scientific approach in general did not fit the formal and informal public interest since there was no widespread popular respect for scientific endeavours, and scientific organisations were few.

People from the left first saw this as an opportunity to use science in order to develop a scientific class-consciousness. However, later they turned into the harshest critics, accusing scientists related to the movement of doing "science.

Developments in the 1980s and Centralisation of the Organisation of Architectural Education

In 1980 Turkey was in a dire situation. Terrorism claimed about twenty lives each day. Energy shortages were at a peak. No enjoyable academic life or experiences were left for the student. Opposing student groups from the left and the right clashed day and night. Student attendance was low and student strikes were a daily event. Architecture students were not able to visit the sites of their projects, no group work could be undertaken outside of the faculty, and liberal professors’ houses were bombarded by students from both sides. Despite this, for different reasons, about which people cannot agree, universities were seen as one of the sources of anarchy in the country.

After the military takeover in September 1980, universities were taken as one of the institutions to be reorganised by the new regime. Reorganisation was to be done by leaving out the differentiated parts and integrating at a lower level. A new control on higher education was set by the Higher Education Council (YÖK). The Council decided on the alternative programmes possible both at the graduate level (organised in departments around faculties) and post-graduate level (organised in departments around institutes). In architecture there was the possibility of just one department, and others had to be closed. Departments of building science and environmental design and departments of restoration were closed. Again, YÖK decided that post-graduate studies could be done in two types of institutes, one for basic and applied sciences, and one for the social sciences.

The Faculty of Architecture of ITU with all its departments became the Institute of Social Sciences, whereas METU’s Faculty of Architecture was joined to the Institute of Basic and Applied Sciences, a practice that was against the basic aim of integration. This involved a kind of differentiation based on central labelling of academic endeavours beforehand. However, in the turbulence of
the changes the faculties could review their curricula.

Another reductionist attitude prevalent during the first half of the decade was to restrict the development of architectural educators in academic life by making promotion possible only through one channel: that of writing Ph.D. dissertations. Designing buildings or being a good lecturer-critic have no rewards. Some of the staff from the Faculties of Architecture at METU, KITÜ, 9 Eylul and ITÜ departed for various reasons. This was the worst blow to these institutions since the great majority of those departing were of very high quality. Between 1981 and 1985, a total of 25 faculty members resigned from the Department of Architecture at METU: one professor, one associate Professor, 9 assistant professors, 10 instructors and 4 assistants. It meant a heavier teaching load for those who remained plus less time for academic research and output. This, coupled with increased number of students, might result in a decreased quality of graduates which, in turn, lessen the grip of architects on the environment in the long run.

One other reason for less academic output is the new venue of practice at the faculties. During the last few years of full economic liberalism, the construction industry re-emerged, especially with programmes in housing and public and local authority services, and it has become more profitable to produce projects than research.

As faculties struggled to redefine themselves there was no other body from which they could seek help, the Chamber of Turkish Architect’s included. With the construction sector booming, the status of especially good architects was rising, but the Chamber of
Turkish Architects was not accepted as the voice of architects by the new government or by its members for a variety of reasons. Generally, one could blame the excessively politicised approach that the Chamber brought to any and all issues it tackled. As a result, local authorities denied the right of the Chamber to evaluate projects proposed for construction in their own areas.

One of the positive aspects of this decade seems to be the Turkish construction capacity that is being used abroad. Good experience for those working abroad, job opportunities for graduates, plus knowledge of large-scale methods of construction can be expected to be brought to Turkish academia as a result.

Finally, one should mention the effects of the Aga Khan Award for Architecture and the publication of the periodical *Mimar* on the Turkish architectural scene and the education of architects in Turkey. *Mimar*, with its proper tone of evaluation and presentation, was informative and enlightening. Most people involved in this profession became aware of the first cycle of the Awards right after the awards were distributed. Since there was a representative selection of buildings from Turkey, people — apart from the losers — did not speculate about the results very much. The second cycle was effective with its conferences, especially in academic circles.

It was the Awards of the second cycle that really aroused the interest of the public, architects, lecturers, critics and students. This was mainly due to the comparison of the Turkish award-winning scheme with others that won. Now, during the third cycle Turks are more aware of the principles and protocols of the programme. It keeps offering new values from old lands or the reflection of old traditions on new people and buildings.

A number of student competitions organised by the Award were effective as well, one specially addressing Turkish students, others bringing into the studio new ways of thinking about traditional programmes.

The closure of some departments, including those of building science at METU, was significant at a time when the scientific approach to architecture was turning its attention to the study of subjects like the urban and rural vernacular, and disaster planning and design. This approach might have gained a content that could have won respect for its identification with the Turkish setting. It was also starting to establish international contacts and was receiving positive recognition from them. It might have become possible to establish links between the faculty of different universities through the Building Research Institute using concepts taken from such activity. Such possibilities could not be operationalised. A disintegration of previous relations took place while each faculty tried to re-identify itself.

There was a restructuring of educational orientations at the Faculty of Architecture of METU. After the 1981 reorganisation METU's system of education was also joined to the central system of YÖK. This was necessary in order to standardise and control individualistic tendencies. Other schools of architecture now are at Yildiz (formerly Technical School), ITU, Mimar Sinan (formerly DGS), Gazi (formerly Academy at Ankara), Ege, Karadeniz (formerly KTÜ), Dicle (formerly Dicle), Kayseri (newly formed) and Anadolu (formerly Academy at Eskisehir) Universities. Their total intake is about 800-1000 students each year, whereas METU's departments of architecture take 50-60 students each year. YÖK proposed a basic infrastructure for architectural education upon which each school was left free to establish its own programme. This area of freedom comprised about 37 per cent of the total teaching hours of an academic year and could filled through electives. YÖK's proposal compared with METU's programme reduced the share of building science courses drastically to 16 per cent (versus METU: 25.3 per cent) and theory and history to 3.8 per cent (versus METU: 12.6 per cent). Design was about 37 per cent, again less than what METU had in its programme (40.8 per cent). Staff at METU thought of this situation as a good opportunity to re-evaluate the educational system they had used for the previous twenty-six years. An assessment of the possibilities of the YÖK programme was also planned.

A seminar on Architectural Education was held at the department during the 1982-1983 academic year with the full participation of staff and a representative group of graduates. As data from Özkök and Yolal's 1979 survey of our graduates showed, 33.9 per cent of the graduates worked as designers; 11.88 per cent in employment such as construction managers in the building construction sector or site or building supervisors; 11.27 per cent at different universities all over the world teaching architecture or related subjects; and 10.9 per cent within the Turkish bureaucracy. Only 4.08 per cent became developers. The faculty invited well-established METU graduates from all of these areas and tried to elicit from them what kind of architect was required for each activity. Individual seminars were conducted under the themes of teaching architectural design, teaching building science, teaching theory and history of architecture, and teaching restoration of architecture.

The seminar proposed that the following be considered during the restructuring of the curriculum of the department of architecture. The points are given below with the operational consequences of the decisions.

1) YÖK limited the maximum years of training architects to four, but it is not quite possible to give a full professional education within this limit. Most professional training will be left to the employing persons or bodies. Therefore, a way should be found to have a type of graduate who can understand and approach most of the possible problems of the architectural environment with great enthusiasm and self-confidence.

2) The Turkish architectural context needs intellectual designers more than ever. Both the public and the private sectors' representatives were happy with our previous graduates who had the intellectual designer attitude, because they were quick to respond to any problem on site or at the office with great acumen of mind. Such graduates also learned more quickly and had better results in job training.
3) The first year of the course should be designed to expose students to as many dimensions of the architectural profession as possible, such as physics or mathematics, (to be formulated in building science and mathematics of architecture); social and cultural sciences or history (to be formulated in introduction to architecture); and drawing (formulated in surveying).

4) Reliability of design competence should be checked constantly and more design exercises should be given in one term for each class.

5) To link studio practice with theoretical outlooks towards Turkish building tradition and the universal context of architecture, it was decided to include theoretical elements within studio hours. Presentations during such hours would include lectures or architectural polemics by staff or visitors. This procedure was expected to culminate in two jointly-organised studios in the fourth year: Architectural Design VII and Professional Practice Studio.

6) Students first of all should develop an interest in and love for architecture or its topics. Then they should learn something about them and see what their personal capacities are for each topic, and, finally, they should be enabled to attempt to develop their capacities, which might lead them into certain jobs or post graduate education programmes. In this 1+2+1 system, electives should be reserved until the fourth year, when there should be fewer required courses.

7) Summer practice needed to be re-established, but manual relationships with basic and everyday construction practices and surveying (developed as first-year summer practice) should be differentiated from the experience of a more developed industrialised production of building (developed as second-year summer practice).

The first type of summer practice is being held at the Technical Teaching School under the supervision of the instructors and ustas; whereas the second type aims at arrangements with the construction firms employing industrialised building construction techniques.

8) The Department of Architecture at METU should keep its previous national and international contacts and also must open more frontiers and possibilities of communication with other new institutions. National, more frequent contact is being established with the building sector, local authorities and construction. The number of applied industry research projects increased nearly eightfold from 1981 to 1986. Frequent seminars with building materials and equipment firms were held. Internationally, students organised and produced a magazine of their own which was sent abroad and they also became active members of the Association of the European Schools of Architecture.

The new programme at the Department of Architecture increased the weight of design courses to 41.3 per cent and technical courses to 26.8 per cent. Theory and history courses were comparatively reduced (8 per cent) since theory and history were also employed in design courses.

Table 1 attempts to show the emphasis placed on different subject groups at different faculties of architecture. Only four faculties were considered. From the Table, it can be observed that METU and ITU emphasise design activity more than the curricula elsewhere do, contrary to the belief that since they are technical universities, design would not be highly emphasised.

On the other hand Mimar Sinan and 9 Eylül emphasised building science courses and did not leave any choice for students to elect courses according to their needs and interests.

Although it seems that after the establishment of YÖK faculties use similar curriculum structure, course contents can be very different.

**Possible Future for Architecture Education**

As trends in architectural education and its context show, Turkish architects have come a long way in their relations with the profession (Table 2). Organically organised by external forces, they were not able to develop conceptualisations that could embody building activity in theoretical frames. Later, as Turkish architects became detached from the military, the proposed behavioural styles were in a sense reactionary in relation to the exemplary work done by foreign architects. The liberation of Turkish architects from foreign architects took place and was won at the universities during the passage to democracy. This put faculties in an advantageous position, and they were able to control most architectural output during the 1950s. Further possibilities of democratisation then brought differentiation within and between the teaching and practising groups. Integrations were coming out of the “concrete”, “in-group” conceptualisation level and becoming “thematic”, “theoretical” understanding. A strong case for scientific research and building science developed, but without being able to integrate itself with practice. Recent historic-theoretical attitudes increased this alienation. Now, the possibilities are provided by the Housing Fund, the new wave of large scale planning by local authorities, the new level of semi-industrialised building construction, and the attractive contracts of the construction sector that are won abroad. These force the practitioners and educators to form new multi-modal and multi-dimensional integrations.

Since the paper is oriented towards the education of architects, two possible changes in its organisation will be considered.

Within a centrally organised system of education one could construct an elected Architecture Education Council of Turkey, which should be responsible for developing:

1) Educational norms and status for schools of architecture.
### Table 1  A Comparison of Salience of Course Groups Between Faculties and Within Changes at METU

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Courses</th>
<th>General Courses (Maths, physics, sociology, psychology)</th>
<th>Design (Arch., landscape)</th>
<th>Building Science (Structure, construction, env control)</th>
<th>History Theory</th>
<th>Electives</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>METU</td>
<td>cr</td>
<td>42</td>
<td>97</td>
<td>63</td>
<td>21</td>
<td>12</td>
<td>235</td>
</tr>
<tr>
<td>After YÖK</td>
<td>%</td>
<td>17 8</td>
<td>41 3</td>
<td>26 8</td>
<td>8</td>
<td>5</td>
<td>98 9</td>
</tr>
<tr>
<td>METU</td>
<td>cr</td>
<td>54</td>
<td>174</td>
<td>108</td>
<td>54</td>
<td>36</td>
<td>426</td>
</tr>
<tr>
<td>Before YÖK</td>
<td>%</td>
<td>12 6</td>
<td>40 8</td>
<td>25 3</td>
<td>12 6</td>
<td>8 4</td>
<td>99 7</td>
</tr>
<tr>
<td>ITU</td>
<td>cr</td>
<td>23</td>
<td>76</td>
<td>50</td>
<td>16</td>
<td>10</td>
<td>175</td>
</tr>
<tr>
<td>After YÖK</td>
<td>%</td>
<td>13</td>
<td>43</td>
<td>28</td>
<td>9</td>
<td>5</td>
<td>98</td>
</tr>
<tr>
<td>Mimar Sinan (OGSA)</td>
<td>cr</td>
<td>18</td>
<td>86</td>
<td>94</td>
<td>32</td>
<td>—</td>
<td>230</td>
</tr>
<tr>
<td>After YÖK</td>
<td>%</td>
<td>7</td>
<td>37</td>
<td>40 8</td>
<td>13 9</td>
<td>—</td>
<td>98 7</td>
</tr>
<tr>
<td>9 Eylül</td>
<td>cr</td>
<td>22</td>
<td>60</td>
<td>53</td>
<td>14</td>
<td>—</td>
<td>149</td>
</tr>
<tr>
<td>After YÖK</td>
<td>%</td>
<td>14</td>
<td>40</td>
<td>35 5</td>
<td>9</td>
<td>—</td>
<td>98 5</td>
</tr>
</tbody>
</table>

2) The terms of quality control at admission, during education and at graduation.
3) Controls for integrated effort in organising education for building sector services

Here funds would be coming from the central government.

Within a liberally organised system of education one could form a partially elected faculty board of trustees besides the Architecture Education Council, which would develop:

1) Separate attitudes regarding their norms.
2) Terms of quality control at admission, during education and at graduation.
3) Terms of relations with specific building sector services such as re-establishing building technician programmes and becoming shareholders in certain building sector investments.

Here funds would come from the universities, from research, from students and from Trustees.

These are also being proposed to YÖK as possible developments. Such developments can only take place within a democratic (participatory), scientific and theoretically integrated context where a number of possible future proposals compete for the service of architecture.
Table II  Changes in Architectural Education, Status of the Profession and their Social Context

<table>
<thead>
<tr>
<th>Periods</th>
<th>Changes by Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Changes in Structure</td>
</tr>
<tr>
<td></td>
<td>(Status of the profession and education)</td>
</tr>
<tr>
<td></td>
<td>(Power relations)</td>
</tr>
<tr>
<td></td>
<td>Changes in Content</td>
</tr>
<tr>
<td></td>
<td>(Norms used to integrate educational and professional values)</td>
</tr>
<tr>
<td></td>
<td>(Level of conceptualisation)</td>
</tr>
<tr>
<td>1300-1700</td>
<td>Architecture and its education centrally organised and approved within an authoritarian social system. Strict control of architecture and the environment through the palace organisation.</td>
</tr>
<tr>
<td>1700-1800</td>
<td>Decentralisation of palace services Undefinable control of architects or their education</td>
</tr>
<tr>
<td>1800-1900</td>
<td>Modernisation effects on architecture defining it as a 'civil' activity Foreign architectural styles and foreign architects were of high status.</td>
</tr>
<tr>
<td>1900-1920</td>
<td>Turkish architects not very effective, even within the Republic. The Association of Turkish Master Architects established to achieve a national identity and status for architects</td>
</tr>
<tr>
<td>1920-1930</td>
<td>Architecture through foreign architects gains status Turkish architects not integrated with society</td>
</tr>
<tr>
<td>1930-1950</td>
<td>Foreign architects design Ankara. Turks design Istanbul and the provinces, according to their status as accepted by the Republicans. Local directorates established. End of decade: Academy liberated from foreigners</td>
</tr>
<tr>
<td>1950-1960</td>
<td>Architects in the context of new democracy win over foreign architects, and form a Chamber of Architects. Profession and its education becomes attractive for upper middle classes.</td>
</tr>
<tr>
<td>1960-1970</td>
<td>Socio-political organisation of architects. Recognition of architects as builders. Education of architects most important as generalists</td>
</tr>
<tr>
<td>1970-1980</td>
<td>Modernity in architecture and specialised architectural education. Architects losing social effectiveness due to increased numbers. Historical research emphasised. Architects begin working with local authorities.</td>
</tr>
<tr>
<td>1980-1982/1982-1985</td>
<td>Across faculty integration increases Scientific and technological research develops. YÖK's central organisation is formed. Across faculty integration decreases Scientific and technological research decreases. Local authority planning and design projects create new possibilities of integration within the profession.</td>
</tr>
<tr>
<td>1985→</td>
<td>Searches for new organisations of the building activity. Searches for new organisations of the architectural services. Searches for new organisations in architecture education.</td>
</tr>
<tr>
<td>Periods</td>
<td>Changes By Differentiation</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------</td>
</tr>
<tr>
<td></td>
<td>Changes in Structure (groups differentiated)</td>
</tr>
<tr>
<td>1300-1700</td>
<td>a. Mimar başı, b. Usta-Kalfa, and c. Travelling architect</td>
</tr>
<tr>
<td>1700-1800</td>
<td>b. and c. still existing; but architecture underplayed against engineers</td>
</tr>
<tr>
<td>1800-1900</td>
<td>b. still existing plus foreigners from abroad; non Muslim architects trained in Europe and by Ustas. School of Engineering and School of Architecture differentiated</td>
</tr>
<tr>
<td>1900-1920</td>
<td>Education of technicians besides architects and engineers begins.</td>
</tr>
<tr>
<td>1920-1930</td>
<td>Differentiation of Turkish and foreign architects</td>
</tr>
<tr>
<td>1930-1950</td>
<td>Turkish staff and architects interested in 'Turkish Architectural Seminar'. Foreign functionalism.</td>
</tr>
<tr>
<td>1950-1960</td>
<td>METU formed as an alternative education</td>
</tr>
<tr>
<td>1960-1970</td>
<td>Politically motivated vs socially conscious vs other architects. Differentiated representation of architects. Faculties of architecture being differentiated along the same line</td>
</tr>
<tr>
<td>1970-1980</td>
<td>Scientific research vs intuitive uses of tradition. Social consciousness in design vs consciousness of architecture as art of society. Theoretical approaches vs pragmatic applications. Regional values of building vs universal values of conceiving architecture. Differentiated mind vs non-differentiated mind</td>
</tr>
<tr>
<td>1980-1982/1982-1985</td>
<td>Science creating multi-dimensional space/undirectional space. Highly differentiated programs/reduced number of programs.</td>
</tr>
<tr>
<td>1985-</td>
<td>A return to multi-dimensional space of conflicting tendencies and resolved tendencies in separate institutions.</td>
</tr>
</tbody>
</table>
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Architectural Education in Pakistan and Problems of the Architectural Profession

Kausar Bashir Ahmad

Introduction

This paper treats two related subjects, architectural education and the problems of the architectural profession in Pakistan. Although the Pakistani context has a number of distinctive features, many of the problems facing the field of architecture in Pakistan are duplicated elsewhere in the Muslim world.

As the relation between architecture and development is of crucial importance, it is imperative for architects to understand the real causes of under development. If architects accept society as it is without any critical analysis, then they become a part of the problem rather than the solution. In the case of Pakistani architects a relevant question is: how can development be carried out when most of the country’s very meagre resources are diverted towards expenses that do not further development?

The Pakistani environment is undergoing a steady deterioration. We must try to understand the causes of it before we try to improve it.

Instead of confronting the causes of our problems over the last thirty-eight years, architects have been pondering the needs and requirements of a very small segment of the population at the cost of the vast majority of the people. This alienation from the masses has been further accentuated by our desire to try to play the role of the architect in the West, which is totally out of context in Pakistan. This alienation has resulted in the subservience of the architectural profession to the needs and dictates of the upper class and has made architects oblivious of the fact that they carry out the policies of the latter. Many of these policies are detrimental to the needs of the nation and its people.

Zahir-ud Deen Khwaja in his Keynote Address to the National Workshop on Architectural Education held in 1984 summed up the evolution of the role of architects in Pakistan. Giving the example of public sector agencies where the architect was still in a sub-servient position to that of the engineer, he pointed out that a large number of inconsequential and mediocre buildings had been built since partition, which are both poor in design and equally poor in construction and implementation.

The background of this state of affairs is that “in the British colonial days, in this Sub-continent, traditionally, only the engineer was used for the purpose of carrying out various development projects. It was, therefore, natural that when, towards the latter part of the British rule, architects’ services were mobilised with the object of leaving architectural monuments in the Empire, the role of the architect was clearly sub-servient to that of the engineer.”

This practice has continued up to this day. Pakistan has not succeeded in creating an awareness of the role and importance of employing architects in responsible positions in independent architectural departments in the public sector. This issue is linked to the state of architectural education in the country. In Zahir-ud Deen Khwaja’s opinion, a government architect should be professionally competent and sensitive to the environment as well as to the needs of the community. His architectural training should prepare him to head independent agencies:

“In formulating any future policies on architectural education in Pakistan these two aspects of the training must be given the highest priority, namely: the architect’s role as a form-giver and designer, and secondly, his role as the co-ordinator both during the planning process as well as the building operation.”

According to another architect-educator, Arif Hasan, the role of our architects must be related to the needs of our society. These needs demand that the formal sector in building should be made appropriate and the informal viable. To achieve this, the architect’s education must help him to innovate professionally, to pressurise politically and to help the poor as enablers.

Arif Hasan believes that the transformation of perception is feasible. He suggests that “We must stress the cause rather than the effect, the sociology and economics of technology rather than its theory, climate and function rather than the form. And most important of all, it should bring the architecture student nearer to the building site and closer to the people and their culture.”

It is important to understand what Arif Hasan actually means by the formal and informal sectors. The components of the formal sector are capital, client (state or the rich), architect and contractor, strengthened by colonial occupation, imported and alien educational models and present communication revolution. This all has resulted in a methodology, technical vocabulary and aesthetic grammar that needs modification, in order to render them appropriate to our climate, technological limitations and economic reality. In his opinion, the role and training of architects should be devised with regard to the following parameters:

“The most important function of an architect is to create a comfortable architecture, comfortable in the widest sense of the word, and related to the economic constraints and technological limitations of the society in which he lives. We have failed to relate the technological revolution to our real needs, and failed to fully grasp the fact that our societies have changed overnight. As such we have failed to relate our work and thinking to growing urban needs.”

The components of the informal sector are the user, organised artisanal skill and a long tradition. The last two have been lost due to major social changes, new tools and technologies, and the growth of urban settlements.

Dr Pervaiz Vandal, a renowned educator, who headed the Department of Architecture at the Engineering University, Lahore, for a long time, has perceived the conflict of interests facing the profession. In a paper presented at a workshop on architectural education, he summated this problem:

“Because of the colonial background of the country, the sector which imitates the West has a higher status and is considered more modern, and therefore, desirable. This sector has official patronage in that almost all planning, economic and physical, has a strong bias in its favour.
“A ruling class brings forth a ruling culture embodying ruling aesthetics. In fact there is a perpetual conflict between those who want to maintain the status quo and those who want change.”

This change needs a concerted and co-ordinated effort in which education must play a pivotal role.

What Zahir-ud Deen Khwaja says on the question of the role of educational institutions in appropriately motivating the members of the profession and the students of architecture is significant. To quote from one of his recent lectures:

“Another area in which the architect could make a significant contribution towards the society is in the amelioration of the lot of his less fortunate fellow citizens. The treatment of Katebi Abadis and improvement of slum conditions in other parts of the city should be one of his chief concerns, if he is to be recognised as a socially responsive professional. A great deal could be achieved if teams of architects and students could work with missionary spirit to assist the dwellers of these areas to improve their living conditions on a self-help basis without regard to any questions of remuneration or profit for the architects. If we are to rebuild the image and prestige of the architect in society, this is the least we can do as a profession. Let us hope that our architectural institutions can instill this spirit of dedication in the minds of those who wish to become architects and that the experienced professionals will take up this challenge that faces our society today.”

General Issues in Architectural Education

One problem that Pakistan has had to face is defining the relation of education and religion. Soon after Independence in 1947, the most renowned academician and scholar of Pakistan, Dr I.H. Qureshi had a vision of the basic principles of a suitable education policy:

“The Muslim system of education provides a happy blending of secular and religious learning. This was possible because of the rational approach of Islam towards life. The Qur'an appeals to neither superstition nor to obscure speculation; on the contrary, it again and again lays emphasis on the rational faculty of man and his observation of Nature.”

After discussing the various aspects of the Western educational system that the British had introduced into the Subcontinent, he went on to say:

“It is now widely recognised that Pakistan requires a new educational system which may bring about a reconciliation between secular and religious knowledge and which may create a tradition of scholarship and research impregnated with the ideology of Islam. At present the Pakistani nation is trying to create a system of education which may be deeply rooted in her past and yet not be out of tune with the present world.”

However, what followed this excellent vision was full of fallacies. Despite numerous educational reforms, deterioration and retrogressive trends have appeared all around in the sphere of the overall academic system. Architectural education has shown some promise and potential despite the lack of supportive environment.

What modest achievements that have been realised have been mainly due to the efforts of a new breed of dedicated young architects, educated at home and abroad, who hold the cause of architectural education dear to their hearts.

Architectural Thought and Practice

It is heartening to note that, even within the meagre resources and means available, increasingly teams of students are involved in real, live projects where they can come face-to-face with the stark realities which the masses must endure every day. For example, at

Islamia College, Peshawar, an example of the Anglo-Indian style of the British Colonial period

Photo: Kamal Khan Mumtaz
the Department of Architecture in Karachi faculty and voluntary student teams are now actively engaged in public participation projects with communities and settlements of the rural and urban poor. The next step that is currently planned is that of setting up building clinics run by teams of advanced students for the benefit of the low-income urban families who require information and input in all matters related to their shelter and neighbourhoods.

This essentially brings us to the question of a cross-disciplinary approach for training architects. The wisdom of pursuing a linear education pattern leading to compartmentalised professions is increasingly doubted. Today’s architect needs to recognise man’s relationship to the environment and the need to educate others about the nature and importance of this relationship. This is urgent, because we are falling prey to a consumption-oriented life-style which, despite the humanistic tenets of our faith, is incompatible with a responsible attitude towards the environment. In Pakistan, where we are faced with the ever-increasing dilemma of how to formulate effective resource-producing policies and planning in contrast to the resource-consuming approach favoured by our planners, we constantly need to be vigilant.

**Special Problems of Admission Criteria and Selection**

For the student who wishes to study architecture, the general admission criteria are set by the rules framed for admission to the various branches of engineering at our engineering schools that happen to be the host of architecture and planning faculties.

It is common practice to allow students admission to study architecture on the basis of an intermediate science qualification with a pre-engineering group of subjects (not a pre-architecture group). That means students have backgrounds in subjects such as mathematics, physics and, above all, chemistry. There is no flexibility in admissions standards which could accommodate a genuinely
talented student who might have great ability in creative arts, fine arts, sociological studies or other subjects in the humanities.

Pure sciences and subjects like chemistry demand a linear and uni-directional thinking. They do not allow any room for ambiguous or peripheral concepts, or for any sort of lateral thinking. Architecture, in terms of its teaching and training, deals with multidimensional issues of human habitat, ones involving social, cultural, ethnic, anthropological and economic aspects in addition to technical considerations. While we have to safeguard the technological aspects of training of architects, how can we ignore the complexity of important roles that architects are expected to master? Our admission criteria must have a new dimension to accommodate the creative student, the one gifted in humanistic and social areas, by affecting basic changes in the admission requirements and by resorting to proper aptitude tests.

The current admission system for architectural studies is highly unsuitable and unjust, and it results in admitting students who either have no background for the study of architecture or no aptitude for it.

A blueprint for admission criteria could be developed on the following lines:

1) A wider spectrum of courses in the intermediate or equivalent examinations should be acceptable. In addition to physics and mathematics (but not chemistry), subjects such as statistics, economics, sociology and geography may be considered for basic admission requirements.

2) An aptitude test in drawing, English and general knowledge should be required.

3) First-year programmes could be redesigned, offering, in addition to basic design, a variety of compulsory courses. Thus, science students would be required to take social sciences and humanities and students lacking a science background would study science.

In Pakistan, students who receive education in unfavourable and substandard conditions in the rural and less developed areas have to compete with urban students. Obviously, the best of them hardly manage to get through the examinations, while average urban students manage to do fairly well. A quota system is thus required to provide the less privileged students of remote areas a fair chance for pursuing higher studies.

There is, understandably, stiff opposition to such a quota system in the urban areas. On the other hand the rural population, which, by far out-numbers the elite urban dwellers, is not willing to be denied the advantage provided through a quota system.

It must be admitted that the existing quota system based on merit also motivates students to try to gain admission into a professional college, not with the aim or acquiring knowledge but merely for the sake of obtaining a prestige degree. Thus, many students with no interest in architecture wind up being admitted into architectural schools.

**Emergence of Schools of Architecture**

At the time of Pakistan’s independence in 1947, there were only a handful of architects, at the most half a dozen. There was not yet a proper school of architecture in the country, except for the architectural section at the Mayo School of Arts (now known as the National College of Arts, Lahore), where students were trained to assist in architectural firms. Among the handful of architects were some Britishers who were in Pakistan to serve in the government or in semi-governmental departments, and others who had migrated from India. The number of architects grew slightly by the mid-1950s with more immigrants coming from India.

In 1954 the first foundation of architectural education was laid in Karachi. The Government School of Architecture run by the Pakistan Public Works Department (P W D) was pioneered by the late M. A. Mirza, then the senior architect of that department. He subsequently played an important role in advancing the profession in the country.

In the beginning of 1957 a meeting was held in Karachi to establish a professional institute under the chairmanship of M. A. Mirza. In October of 1957 the Institute of Architects, Pakistan (IAP), came into being with Mr Mirza as its first President. Its aims were to regulate healthy conduct and practice among architects, as well as to promote and disseminate knowledge of the art and science of architecture and to improve the built environment.

Members saw it as their responsibility to maintain high standards in the practice of the architectural profession as well as in the education and training of future generations of architects. The seeds for the assertion of the profession were sown.

About six months later, in a meeting with the Secretary of the Ministry of Public Works, rules were crafted for the appointment of consultants for design work for state projects by the IAP in consultation with the Chief Engineer of P. W. D. For the first time the government was made aware of the importance of the architect in society and his role and professional duties.

The Institute of Architects endeavoured to make its presence felt in various government agencies. It played a role in setting up undergraduate programmes in architecture in engineering universities. In 1962 the two engineering universities in East and West Pakistan embarked on undergraduate programmes in architecture for the first time.

In 1963 the IAP became a member of the Commonwealth Institute and in 1965 a member of the International Union of Architects (UIA). In May of 1969 IAP was officially registered as incorporated under the Company Act VII of 1931. By this time, there were several groups of graduates, which meant a substantial increase in the membership year by year. There were also a few graduates returning from studies abroad every year. It must be mentioned here that architects were not and are still not obliged to be members of IAP, although most in fact are.

IAP in the early 1960s formulated the Code of Professional Conduct, conditions of engagement and the scale of professional charges. Subsequently, rules and regulations for the conduct of architectural competitions were also formulated and published for the benefit of the public. It also helped to conduct archi-
tectural competitions for many important projects. By the end of 1969, the first draft of the Architect’s Registration Ordinance was prepared by IAP. The National Council of IAP was headed by Mazharul Islam between 1967 and 1969 in Dhaka in what was then East Pakistan. He initiated efforts for the first time to acquire legal protection for the architect and his profession. It was this Council of IAP that had undertaken the task of preparation of the draft and of promoting its enactment.

**Engineers’ Lobby**

While the number of architects in the country was increasing at a very slow pace, the dearth was being compensated for by civil engineers. A professional lobby of engineers lobbied strongly against the enactment of the above-mentioned ordinance. Engineers were widespread in most of the government departments, and some of them occupied very senior positions. They did not have a problem of professional assertion and identity, but the civil engineers among them, who had a free hand to pass themselves off as “architects”, realised they would lose their privileges with the enactment of the ordinance.

Towards the end of 1970, the country was plunged into a national political crisis. Nonetheless, IAP vigorously pursued the enactment, while the engineers’ lobby persisted in opposition. Meanwhile, the crisis in the country between Pakistan’s two wings deepened. Mazharul Islam, who was chiefly responsible for pursuing the enactment of the draft ordinance and who hailed from West Bengal, found that his pressure was no longer effective as the deepening crisis was followed by the final breakaway of East Pakistan. Thus, the draft ordinance was shelved by the Pakistani government, and nothing ever came of it.

The turbulent period was a critical moment in the country’s history. It was equally crucial and critical in the history of the profession of architecture in the country, which suffered a major setback. Who exactly was responsible for the setback is hard to tell. Perhaps, if the engineers’ lobby had not opposed the draft ordinance, the ordinance could have been enacted before the political crisis.

It is pertinent to mention that after the dust settled following the break-up of the two wings of Pakistan, engineers were organizing themselves on the basis of the first draft of the Architect’s Registration Ordinance. They formulated a draft of the Engineer’s Act, submitted it to the government for approval, and with little or no difficulty it was enacted. Less than five years after the first draft of the Architect’s Registration Act was shelved, the Pakistan Engineering Council came into being in 1975, by virtue of a law enacted by the parliament.

**Educational Upgrading**

By 1972 the Government School of Architecture in Karachi was merged into the present Dawood College of Engineering and Technology, where a Department of Architecture was established to conduct an undergraduate programme in architecture. The first batch of students graduated in 1977. Around this time the curriculum underwent a thorough revision in content, methodology of teaching and evaluation, to bring it in tune with the recent introduction of the semester system. It is pertinent to quote from the introduction to the revised course content and curriculum published by the Department of Architecture, Karachi at the time:

“Most of the important courses are research-oriented with emphasis on national development problems and solutions.

“A number of supporting courses from humanitarians (sic) and social sciences have been introduced which were previously lacking."

By the time East Pakistan broke away, there was one architect to one and a half million citizens, compared to one architect to twenty thousand or even fewer in advanced countries. It must be noted that the dearth of architects from the beginning had its effect on architectural education in that there was a serious lack of adequate teaching staff. This problem was further compounded by the government’s lack of recognition of architects, as a result of which remuneration for
teaching architects was set at a lower grade than other teaching professionals.

Even in such an atmosphere, the few teaching architects proved to be exceptionally dedicated to the teaching profession and to establishing the level and status of architectural education as second to that of no other discipline. A number of senior architects with busy practices contributed as visiting teachers and thesis advisors, sharing their rich experiences with students, which was admirable, given the demands placed on them in architectural firms.

Today the Department of Architecture at Dawood College is highly regarded by the students and staff of other disciplines in the College and its affiliated university. Given the circumstances, the heavy odds against the profession itself, coupled with the amorphous situation of higher education in the country, the Department is singled out for its overall high standards, its administration, and the impeccable conduct of its examinations. Graduates of this Department who pursued post-graduate programmes in renowned universities in the West have done remarkably well. The credit will, of course, go to the profession at large, but the eventual victory will be for the environment.

From 1977 onwards, about forty to eighty graduates were added to the profession each year from schools in the country, apart from a few graduates returning from abroad. In 1980 there were about 700 architects in practice in the country, a ratio of one to 100,000 people, a substantial improvement over the earlier figures. The increase in the number of architects produced a more vigorous climate for debate, discussion and exchange of opinions on issues affecting the profession, its members, and the physical environment.

More professional bodies emerged, representing various opinions among different groups of architects. Issues in the urban environment and in the national context relevant to architecture and town planning, the grievances of the profession and its members, their role and existing professional system came to the fore against a background of tremendous activity in the building industry throughout the country.
Engineers versus Architects and the Building Boom

The 1970s saw an unprecedented boom of building activity in the country at large, and in its wake the gross deficiencies in building procedures and in the built environment suddenly attracted the attention of the public mind. A number of buildings collapsed, and in one case many lives were lost. There was also a sudden increase in urban population due to migration from rural areas that proceeded at an unprecedented pace, and for which urban infrastructure and services were far too inadequate. Internationally, the focus on urban problems was increasingly sharpened, particularly in third-world countries. The Muslim world had also begun asserting itself in every sphere, even in architecture and the urban environment. Emphasis was on the positive expression of the rich cultural heritage of the past in the context of modern-day needs and civilisation. Public awareness of architecture and urban planning was finally achieved.

Architects and planners in Pakistan who were certainly in the front ranks of those safeguarding the environment, must have breathed a sigh of relief after struggling for all of their short history in this young country, and striving to assert themselves and their vital role in social development in the national context. In this atmosphere professional bodies were pressurised with ever greater demands by their members. Grievances within the professions surfaced with regard to education, licensing, and jobs for a number of graduates, while the urban environment was at the mercy of speculators and was rapidly deteriorating. There was a deep malaise concerning all aspects of the built environment. Since the number of architects had substantially increased from the early days, now there were problems of lack of employment, particularly in the public sector. The problem was not that the supply of architects far outstripped the demand. In both the private and public sectors work that ought to have been rightfully due to them was usurped by civil engineers. As mentioned earlier, civil engineers got into their profession essentially to fill a void created by a dearth of architects and town planners in the early days. Hence, engineers were now found to be in the dominant positions of the two professions. A few of them, who as a result of being long in the practise, have acquired the skills and expertise demanded of architects and planners, may deserve a license to practice the architectural profession. However a great number of civil engineers who were certainly underemployed were indiscriminately allowed to practice as architects by their senior colleagues who were in strong positions to influence the granting of such licenses. All over the country civil engineers gave themselves the titles of architects and planners.

It is the complexities of present-day civilisation that have demanded specialisation and distinguished the responsibilities of these two professions. In most countries this conflict has been resolved, but in the context of present-day needs, the longer it takes to resolve this conflict, the more the environment suffers. This is evident in Pakistan, and it is equally evident that civil engineers considerably delayed the acceptance of the vital role of the architect in the physical environment.

The amorphous condition of the built environment throughout the country is a testimony to the disastrous results. Any discerning observer could count the numerous buildings in every sector which have been designed by civil engineers. The most striking incriminating factor is the total disregard of the human element and social activity. It became imperative that professional architects, whose bid to take their rightful place had been thwarted by civil engineers almost a decade earlier, should now be called upon by the public to deal with the problems.

It is common knowledge that civil engineers far outnumber architects and town planners, perhaps by a factor of ten or more. By virtue of their long history in the Sub-continent, they have a very well established means to safeguard their interests, since they maintain close contact with all the branches of engineering, whose support is ensured for their causes. They have been legally protected, unlike the architects, and have enjoyed their rightful status since the time of independence and even before. Many of their members have been serving in high and influential positions in federal and provincial governments and their departments, thus offering them powerful connections. They were certainly not likely to readily give up their power and lucrative positions.

All this proved a great challenge for architects seeking to establish their identity and justify their role and in their struggle for legal protection for their rights as the rightful co-ordinators of the building team.

Architecture and National Development

In June of 1979 a three-day national seminar was organised jointly by the Department of Architecture at the present Dawood College of Engineering and Technology and IAP on the theme "Architecture and National Development". This was among the major seminars on architecture held in the country. Interestingly, this happened to occur about a decade after IAP had submitted the first draft of the Architect’s Registration Ordinance to the government, which was later shelved.

There certainly could not have been a more timely and more appropriate occasion than the 1979 seminar for the profession yet again to attract the public’s attention and to highlight the problems of the environment facing the nation, as well as problems facing the profession in terms of recognition and legal protection. A number of presentations were made in this seminar concerning architectural education and the long way it had come despite many adversities as well as the general unresponsiveness of the government to the need to upgrade of architecture education in the only institution in Sind Province, Dawood College, to a full-fledged Faculty of Architecture, and its indifference to the lack of funding and adequate teaching staff and to the problems of graduates and diploma holders. Papers were presented concerning the
role of the architect in national development in which attention was drawn to problems of housing for the large majority of the people, inappropriate solutions to these and their consequences resulting from the lack of architects and planners at decision-making levels in governmental building and planning departments. Emphasis was placed on the deterioration of the environment, its causes and probable solutions. All of these were clearly linked to the role of architects and town planners in social organisation and development: important decisions were being taken and policies being made that fell under the purview of architecture and town planning but that were being controlled by bureaucrats in connivance with speculators. Meanwhile, the profession itself was in a deplorable state, unable even to set a code of ethics.

It was in this seminar that the first call was made publicly since the first bid of IAP a decade earlier was thwarted and relegated to history, to have the word "architect" controlled by law and to have the Architect’s Registration Act passed in order to bring legality to the profession. This was essential for any improvement in the pathetic state of affairs. The seminar attracted a great deal of attention and received considerable coverage in the press, thus bringing vital issues to the attention of the public.

IAP had already begun taking steps to bring to the attention of the relevant authorities the need for controls and legislative safeguards regarding building activity, having identified the key problems. In early 1979, the then Governor of Sind promulgated the Sind Building Control Ordinance “to provide for regulation of the planning, construction, control and demolition of buildings and plots in the Province of Sind”. The ordinance also included licensing regulations.

The Aga Khan Award for Architecture

In late 1976, His Highness the Aga Khan announced his intention to create the Aga Khan Award for Architecture. Since its inception the Award has done more towards contributing to public awareness of the importance of architecture and the physical environment in the progress of civilisations than any other organisation. Its impact was felt world-wide, even though the Award is concerned with the Islamic world, its heritage and cultural traditions.

In October 1980 the first of the regular series presentations of the Aga Khan Awards for Architecture was held in Lahore, an event which was attended by distinguished architects and scholars from around the world. The presentation of the awards was followed by a seminar in Karachi, where, among other issues, the problems of urbanisation and the role of the architect in the rapidly changing physical environment were discussed. The then Governor of Sind, who had promulgated the Sind Building Control Ordinance 1979 mentioned earlier, was the chief guest. The IAP President chaired the session on the ordinance. On this very appropriate occasion, government’s attention was drawn by IAP participants to the crisis of the physical environment and other problems of the profession and architectural education. The participants pointed out the urgent need for legal safeguards for the profession. The then IAP president chairing the session stated that: “The internationally accepted role of the architect as the leader and co-ordinator of projects must be established by law; the role of architects, engineers and other related disciplines be clearly defined; and the practice of issuing architect’s licenses to non-architects and unqualified persons be stopped immediately.”

In Pakistan the Aga Khan Award for Architecture has made a very special contribution. It has done more than just reinforce IAP’s struggle for assertion, identity, recognition and statutory safeguards for the profession of architecture. It has reminded the government and the public of the practical value of architecture in the continuum of mankind’s progress. Even the engineers, particularly civil engineers, must have been impressed, while many government officials must have been embarrassed.

An Ordinance for the Profession

Following this event IAP spared no time in pursuing with the government the issue of establishing statutory control and regulation of the profession. The government was now more willing to acknowledge the vital role of architects. It formed a committee that included the IAP President to draft an ordinance.

Town planners soon expressed their desire to join the proposed Council of Architects. It was then agreed that membership in the proposed Council would be open to them for a period of ten years or until a separate council of town planners was constituted, whichever came first.

After the final vetting by the Law Ministry, the Ordinance for Pakistan Council of Architects and Town Planners was signed by the President of Pakistan and promulgated on March 7, 1983. If this proved a victory over the civil engineers, it was, above all a victory for the environment. It must be remembered that the rivalry and conflict between architects and civil engineers throughout the world is one of longstanding.

The professions of architecture and town planning now have tremendous responsibilities ahead: improving the environment through proper regulations and controls; ensuring proper facilities for architectural education and contributing to its advancement; setting up fully fledged faculties of architecture in the country; and ensuring that architects and town planners occupy their rightful positions in all agencies connected with the physical environment and planning.

New Developments

IAP, for its part, after achieving statutory protection, has moved on to the tasks of dealing with and facing up to the challenges that lie ahead. Recently, the architecture programme at the National College of Arts, Lahore has been upgraded. A Department of Architecture has been established at the Mehran University in Jamshoro. Thus, every
year from seventy-five to one hundred architectural students graduate after completing five-year degree courses.

As a result of the rapidly changing situation, IAP's activities have intensified. In the last two years, several competitions have been held, at least three seminars have been organised, a regular lecture series for the public has been instituted, building products exhibitions have been staged, and competitions have been held for students. A truly splendid idea was two brainstorming sessions that were held at Karachi and Lahore, hosted by the local chapters of IAP. Areas of concern were voiced and tabulated for the Institute to deal with in the next few years. An important workshop on architectural education was held in Lahore, organised by the Department of Architecture of the University of Engineering and Technology, while a seminar on "Architecture and Social Vision" was arranged by the National College of Arts in Lahore during 1984-85. IAP also had the honour to host in December of 1985 the UIA Region IV conference leading to the UIA World Congress in Brighton in 1987, which proved to be of great success by all standards.

The architectural and planning professions have achieved their present status against a background of adversity and great odds. This gives reason to hope that they will live up to the demands that they will face and that their victory will be vindicated by the enhancement and protection of the environment.

2) School was upgraded and merged with the then National College of Engineering and Technology (presently Dawood College of Engineering and Technology) in 1974 and was affiliated with the University of Karachi until 1978, that is until the establishment of the NED University of Engineering and Technology. Now the department is a part of Dawood College of Engineering and Technology along with four other departments (i.e. Electronics, Chemical, Metallurgical and Industrial Engineering and is affiliated with the NED University of Engineering and Technology for all academic purposes.)

3) Department of Architecture admits maximum 40 students on quota system. It offers a five-year full time course for the Bachelor of Architecture.

4) Student size is generally between 160 to 180 per semester.

5) Approved cadre strength for teaching faculty is ten while presently the Department is run by eight full-time teachers. Assistance is always sought from professional colleagues who contribute as visiting teachers and jury members, about fifteen per semester.

6) Present syllabus was devised in 1977, and is broadly based on that of the Department of Architecture, Middle East Technical University.

7) Average number of architects who qualify have been generally not more than 20 per year. With bigger intake, number is likely to increase to about 25 or 30 per year.

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**Educational Institutions**

1) Department of Architecture, Dawood College of Engineering and Technology, M.A. Jinnah Road, Karachi 0502.

**Basic Facts**

1) Government School of Architecture established in 1954, awarded a four-year diploma until 1972.

2) School was upgraded and merged with the then National College of Engineering and Technology (presently Dawood College of Engineering and Technology) in 1974 and was affiliated with the University of Karachi until 1978, that is until the establishment of the NED University of Engineering and Technology. Now the department is a part of Dawood College of Engineering and Technology along with four other departments (i.e. Electronics, Chemical, Metallurgical and Industrial Engineering and is affiliated with the NED University of Engineering and Technology for all academic purposes.)

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**Improvement Imperatives**

1) Need to upgrade the Department as an independent Faculty of Architecture and Town Planning with separate Departments of Architecture and Urban Planning and graduate programmes in planning, Restoration, Landscape Design, Industrial Design, etc.

2) Adequate representation of the Departments at Board of Studies for the Faculty of Architecture and Planning, separate from the Board of Studies for the Engineering disciplines.

3) Present administrative arrangement under the Ministry of Education is not unworkable, but architecture should not be treated as another branch of engineering. Separate administrative and academic set-up is essential.

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**Philosophy**

The starting point remains "The exploration of the artistic, social and humanistic dimensions of Technology," which has to be channelled towards the goal of national development and achievements of benefits for society at large.

While technical and professional competence remains a latent and forceful objective in the training of architects, we must also keep a long-term perspective of issues such as maxi-
misation of gains but no achievement of self-reliance and economic and social independence, effective use of local potential and resources, and public participation for problem-oriented training methodology for future architects.

II Department of Architecture, National College of Arts, The Mall, Lahore.

Basic Facts

1) Formerly known as the Mayo School of Arts, established in 1875, with Mr Lockwood Kipling as its first Principal.

2) Course in Architectural Draftsmanship, first time in the sub-continent, started as early as 1904.

3) Upgraded in 1958 into the National College of Arts with three new main faculties, namely the Department of Architecture, Fine Arts, and Design along with a Department of Academics were created to replace the previous craft-oriented academic structure.

4) Transferred from the Department of Industries to the Education Department in 1963 and directly under a Board of Governors.

5) National Diploma course in architecture is of five years duration, with first three years for intermediate level and the last two as the final level of the course. The first year fundamental course is common to three departments.

6) Admissions are done on quota system with an admission test.

Philosophy

The Department believes that architecture is essentially a subject of visual arts and not of engineering, although it makes use of scientific developments and innovations in so far as it is functionally adjustable.

The formulation of the course has been governed by a cognisance of the demands of a rapidly changing society. The increasing potential of modern man to alter the environment demands a correspondingly greater responsibility on the part of those concerned with the design of the visual environment to approach their task with a deeper understanding of human needs and resources. The increasing rapidity with which new materials and techniques are becoming available and the accelerating rate of change in our cultural patterns are continuously confronting us with unprecedented resources and needs. Nor can we expect to arrive at the optimum forms for our built environment through an empirical process of evolution. Thus the emphasis in the course is on methodology and the development of creative faculties rather than a mere knowledge of formulas and finite solutions. The curricula are conceived as an integral part of the large discipline of environmental design.

III Department of Architecture, University of Engineering and Technology, Lahore-31.

Basic Facts

1) In 1962, the West Pakistan University of Engineering and Technology, Lahore, along with one in East Pakistan at Dacca was created.

2) Under the Ordinance of 1962 two separate faculties of Engineering and Architecture and Town Planning were allowed at the University.

3) The initial course set-up was in line with that of the Royal Institute of British Architects.

4) Selection for admission on merit with allowance for quota seats.

5) Five-year course under semester system was begun in 1975.

IV Department of Architecture and Planning, Mehran University of Engineering and Technology, Jamshoro, Sind.

Note

1) The Department was established in 1980-81. The first group of B. Arch. degree holders should qualify later this year (1986). The Department follows entrance rules and teaching pattern modelled largely on those of the Department of Architecture Dawood College of Engineering and Technology, Karachi, in a five-year programme with an intake as per merit and general quota seats.

2) The Department has not as yet finally issued its teaching objectives in view of its present transition stage.
The Aga Khan Program for Islamic Architecture was established in 1979 at Harvard University and the Massachusetts Institute of Technology through generous gifts by His Highness the Aga Khan. Its goals are to improve education, encourage research, and develop information resources for historians of architecture and for architects and urbanists currently planning for and building in Islamic countries. The gift from the Aga Khan provided both endowed funds to support faculty, student aid and library development in perpetuity, and special-activity funds for a five-year term. His Highness chose to make a joint gift not only because of the richness of facilities and resources that Harvard and M.I.T. can collectively offer, but because they complement each other in the kinds of intellectual and practical services they can provide. Through the endowment, the gift enhanced those resources in Islamic studies by supporting library collections, by funding faculty through the Aga Khan professorships and its visiting-professor programs, and by allocating fellowship funds to ensure that doctoral students in both institutions would continue to be trained in Islamic art and architecture.

Activities supported by short-term funds included programs of academic and scholarly research, seminars, public lectures and colloquia, publications, and student travel grants. Their objective was to further achievements in architecture and urban design for Islamic societies, and in the world beyond, to promote the exchange of information and ideas among institutions, and to foster an atmosphere of concern for understanding, appreciating, and for preserving and restoring the Islamic architectural heritage.

In March 1985 His Highness the Aga Khan agreed to extend his sponsorship of the Aga Khan Program at Harvard University and the Massachusetts Institute of Technology for a further ten years to ensure the continuation of the Program. While it is intended to maintain or expand already established activities, new aspects are being introduced into the program in the second cycle. These include a new master's degree in architec-
ture (S.M. Arch. S.) specialisation, Design for Islamic Societies, at M.I.T., and the expansion of course offerings that provide comparable training at the Graduate School of Design at Harvard. In addition, a program is being initiated to develop special links with a selected number of institutions in the Islamic world.

Anticipating the expansion in professional studies that the new ten-year grant would support, in July 1984 I was appointed as Aga Khan Professor for Design in Islamic Societies in the Department of Architecture of M.I.T., and assumed the post in the spring semester of 1985.

The Graduate School of Design at Harvard University

Collaboration of the Graduate School of Design in the Aga Khan Program activities started in 1983-84 when funds from the Fine Arts visiting professor endowment were made available to the GSD to develop teaching materials. Documentation of a series of planning and urban design studies was started by François Vigier and Mona Serageldin with the view that they would be taught elsewhere. Two sites have been documented to date through the preparation of a monograph and extensive photographic coverage tied to base maps. The first, “Housing in Tunis”, was taught at the GSD (spring 1985) and at McGill University (fall 1985). The second, “Upgrading and Revitalisation in Cairo”, began to be taught in spring 1986. The Tunis monograph is being readied for publication, and the Cairo monograph has been finalised. It is expected that both monographs will be widely distributed to schools overseas.

The studios are based on sites that allow students to deal with a range of urban problems. In the spring of 1984 the seminar studied the problems involved in revitalising a traditional urban centre, using as the case study the old city of Cairo; in 1985 the studio developed a comprehensive housing programme for two contrasting, but typical sites in Tunis. The problem the students were given was to define and enforce minimum housing standards and at the same time provide sufficient housing for the target group within a price range that both the group and government could afford. Students created urban revitalisation and infill designs for Hafsa, a low-income quarter in the medina, and housing designs to be built and paid for by the inhabitants in Etchedam, the fastest growing “informal” fringe settlement in the Tunis area.

Starting with the new Aga Khan Program funding cycle, the GSD has become a formal participant in both pedagogical and outreach activities. Its role should be viewed as complementary to the professional studies program at M.I.T. The GSD’s activities thus focus on urban and regional development issues in Islamic countries, with a particular interest in their ecological aspects.

A longer-term commitment is being made to the preparation of teaching material as part of the GSD’s Professional Studies activities. Additional studio problems will be documented and prepared for publication at the rate of one every other year. A new series of four modular courses (a module equals half a semester) addressing the relationships between development and environmental quality in Cairo and moderate-income countries is being prepared under the supervision of Professor Forman (Ecology). The first module on the hierarchy of natural systems in arid and tropical environments will be taught in 1986-87. A short textbook will be written for each module, thereby increasing the availability of teaching material that the Aga Khan Program can provide to institutions in the Islamic and developing countries.

Massachusetts Institute of Technology

The two-year Design for Islamic Societies course at M.I.T. follows the pattern of the existing Advanced Studies in Architecture program, which combines the study and practice of the shaping of the built environ-

ment with research into the forces that mould it and into the design process itself. Other specialisations previously offered in the program, which the new one will now join, are: Design and Housing; Building Systems Design; Environmental Design and History, Theory, and Criticism.

The Design for Islamic Societies course is intended for post-professional architectural students who wish to deal philosophically, theoretically and practically with the problems that architecture and urban design face today in Islamic and other non-Western societies.

A brief summary of some of the subjects the course work deals with follows:

- Islamic and other non-Western philosophical and cultural values and their determinants, social customs, social organisation, and beliefs about the relationship of man to his environment with special emphasis on attitudes that differ markedly from Western views and on differences in attitudes and beliefs between Muslim and other non-Western societies.
- The history of monumental and vernacular architecture, urban forms, and rural patterns in Asia and Africa, with particular attention to those of Islamic cultures.
- Climate control and environment control of extreme temperatures and humidities, with emphasis on passive systems.
- The appropriate use of local building materials and the development of upgraded indigenous building technologies (incorporating recent scientific research) which may differ markedly from systems and processes known and used in other countries. This course includes practical workshops.
- New architectural and urban vocabularies and attitudes to design that take account of (1) regional and cultural identities, (2) differing social customs and types of organisation, and (3) practical, regional, economic and construction problems, and their possible solutions.
- Visitors are a necessary part of any professional training that involves problems of foreign cultures. The use of specialists
invited for brief visits to teach studios, provide input on particular subjects related to studios and workshops, take part in juries and seminars, and give public lectures is therefore particularly important for the Advanced Studies in Architecture (S.M. Arch. S.) program.

The Advanced Study Course as presently envisaged will include:

1) In common with other Advanced Studies courses, the first semester is devoted to orientation. Design for Islamic Societies students have three required courses: Methods of Inquiry (which is required of all S.M. Arch. S. students); an introductory lecture course on Design for Islamic Societies; and a workshop on the same topic. For those with a weak background in Islamic architectural history, a general survey course designed to make up the deficiency is strongly recommended. The few students who have had much prior training in that field are encouraged to begin more advanced courses, including historical courses offered at Harvard. Courses also exist in East and South Asian architectural history. Optional courses in other aspects of their training are also available at M.I.T. and Harvard.

2) In the second semester, the student has only two required courses. The major one is a studio in Design for Islamic Societies. It absorbs 12 hours a week (4 hours on 3 afternoons) of the students' time. The other course, in Economics, is required of all S.M. Arch.S. students. In the second semester the students are therefore free to take one or more optional courses from those available at M.I.T. and in the Department of Fine Arts and the Graduate School of Design at Harvard.

3) In the third semester, the student has only one required course, thesis preparation. In addition, students will be encouraged to take a special workshop in the design for Islamic cultures course, or, starting in 1987, the studio offered by the GSD at Harvard. They also must take a number of additional courses which they can choose from an array of options at M.I.T. and Harvard.
4) The fourth semester will be devoted entirely to completing research and the writing of a thesis. Some students may in addition wish to take optional courses during this semester.

The Work of the Fall Semester 1985 and the Spring Semester 1986

The three workshops of the Fall Semester were conceived, firstly, to familiarise the participants with Islamic urban and social fabrics, their ordering and organisation. Secondly, the relationship between traditional societies and cities and those cities or parts of cities which developed in Asia and Africa due to predominantly Western influence was considered. Parallel with this came the concerns of the future of old central areas in rapidly expanding cities; conservation and rehabilitation; accommodating modernisation (motor traffic, parking, new dominant building types); factors of social, regional and national identity; and the provision of housing and facilities for the urban poor. The old city of San’a’ served as a focus for many of these concerns.

The appropriate design of public buildings and spaces in the Asian and African city was discussed together with the relevance of monumentality. For this purpose the Capitol Complex (Sher-e-Banglanagar) in Bangladesh was used as a case study. Here the problems of the relationship of the new Kahn design to the familiar environments of the region or country, the provision of traditional amenities, acculturation and alienation, and housing were studied.

The design of the Capitol Complex was analysed with the above issues in mind. The students then developed a schematic design proposal to complete part or the whole of the Capitol Complex project and relate it to the adjacent areas and the city.

The workshop concluded with studies of differing attitudes to infill design in the context of existing environments. Staff and students worked closely together to pursue this programme breaking up for short periods of time to individually explore certain ideas. The workshop was therefore essentially issue-oriented and not solution-oriented.

The introductory lecture course in Design for Islamic Societies was concerned with appropriate architectural design for passive control of a variety of climates and the upgrading of traditional building materials and technology in a range of developing countries. This course was paralleled by a seminar series debating contemporary attitudes to architectural design in the West and in non-Western countries.

The studio of the spring semester 1986 is concerned with the design of a characteristic complex of buildings in an Islamic country which touches on all the architectural and urban issues confronting architects in traditional societies today. The project selected is the real one of the nucleus of the new Gulf University in Bahrain. To bring this problem more directly into the context of the contro-
Student work, AKP, MIT

 Courtesy M. El-Husseiny

verses facing the designers today the site
chosen includes a portion of one of the old-
est towns of Bahrain, which is urgently in
need of a catalyst for revitalisation and
which contains some fine old Bahraini archi-
tecture

Graduate Study in Art and Architectural
History

A Ph.D. program in Islamic art and archi-
tecture has long been offered in the Depart-
ment of Fine Arts at Harvard, but Program
activities have enriched it in a number of
ways.

The Program supports a comparable Ph.D.
program in the history of Islamic architec-
ture and urbanism at MIT. under the au-
spices of the History, Theory and Criticism
Program of the Department of Archi-
tecture.

The Program also sponsors a history of Isla-
mic architecture and urbanism component
in the professional program of the architec-
ture school at MIT
Background and Aims

The beginnings of CRATerre can be traced back to 1973. It was a period marked by the energy crisis prompting a group of students from the School of Architecture of Grenoble to start experimenting with simple, cheap building materials and energy-efficient techniques which would be suitable for producing low-cost housing. Their research led them to the age-old tradition of building with earth. The Dauphiné region itself, moreover, was noted for its long tradition of loam-earth construction, a real living laboratory encouraging still more thorough research. By 1976 a course on earth construction was being offered at the School of Architecture and a year later an “Earth Laboratory” was set up for the purpose of providing specialised training.

With the establishment of CRATerre in 1979, the team was able to accomplish the following:

1) Broaden the scope of its activities with the arrival of researchers working in various sectors of low-cost housing.
2) Develop a programme of scientific and technical research on earth construction.
3) Ensure the gradual development of specialised training programmes.
4) Assist operations by providing technical and architectural know-how for projects being carried out in the field in industrialised as well as developing countries.
5) Develop an international network for the dissemination of information and know-how for a large audience of decision-makers, technicians and consumers through publications, seminars and technical assistance.

Meanwhile, the ties between CRATerre and the School of Architecture were gradually strengthened, especially through the introduction, in 1984, of a post-graduate degree in Earth Architecture which is a two-year programme of advanced training in theory and practice and awarded upon completion of a paper. This type of specialised training is the only one of its kind in the world and is made possible through close collaboration with the University of Science, Technology and Medicine of Grenoble and the active participation of numerous international experts and organisations.

To date, the team has assisted with projects in more than 30 countries in Africa, Latin America and Europe at the request of government agencies, institutions and international organisations such as the World Bank, I L O., UNESCO, U N C H S -Habitat and private individuals. It maintains close relationships with professionals from many disciplines, including architecture, engineering, history, ethnology, archaeology and economics and collaborates with over 200 other associates the world over who are directly involved with earth construction and architecture (universities, vocational schools, research centres and experts).

Earth construction is both an art and a science. There are rules to be mastered, as well as knowledge to be acquired of when and how to apply the rules in individual cases. As a centre of research and application, CRATerre approaches the study of earth construction on both of these levels, the theoretical and the functional. It aims, in conjunction with the Earth Architecture Department of the School of Architecture of Grenoble, to define and produce, collect and disseminate the scientific and technical know-how needed for producing a new earth architecture of superior quality.

Research

Basic research on earth construction is carried out at the School of Architecture of Grenoble working in close collaboration with the four institutes concerned with earth construction at the University of Science, Technology and Medicine of Grenoble (U S T M G ) The research conducted is based strictly on scientific principles and methods. Earth, as the primary substance or matter of earth constructs, is studied first in its elemental form. It is then examined for the specific properties which allow it to be used as a building material. The rules of construction and building are then applied with regard to the structure, the form and the architecture of earth constructs. This step-by-step approach lays the groundwork necessary for producing an earth architecture of quality.

1) Earth as prime substance or matter is studied in its elemental form at the laboratories of the Dolomieu Institute of Geology and Mineralogy which are equipped for carrying out mineralogical and chemical analyses. Besides mastering the rules of construction and the art of building, the quality of earth architecture depends much on the choice of a good building earth whose mineralogical and chemical strength must first be determined. The presence of unstable clays and sulphates, for instance, has shown in many recent earth constructs that neglecting the mineralogical and chemical composition of an earth reduces considerably the resistance and durability of earth construction materials.

In some African traditions the durability of earth constructs such as the oba (ground mortar huts of the Mousgum tribe of North Cameroon), for example, is ensured by improving the quality of earths either by mixing them or by adding natural products of vegetable or animal origin. This contributes to stabilising the mineralogical and chemical structure of the earths, as well as improving their resistance against any erosion caused by running water. These traditional practices can now be explained and reproduced by means of modern scientific methods. This kind of scientific knowledge is indispensable for knowing how to select the best and most suitable earths and the optimal conditions needed for utilising them as compounds and building materials.

2) Earth as building material Research on earth building material and ways of producing it is conducted at the Scientific and Technical Institute of Grenoble (I S T G ) and the Institute of Interdisciplinary Research on Geology and Mechanics (I R G M ) The scientific process adopted aims at studying the material not only as an isolated laboratory sample, but in its specific function as a building material destined for a particular
purpose, such as a wall, for example. In addition, standards and rules are drawn up for the production and quality control of earth construction materials.

3) *Earth structures* built either reduced in scale or according to actual size are tested for durability at the facilities of the University Institute of Technology (I.U.T.). By testing the crush-resistance of walls and arches, vaulted and domed earth roofings, the structure’s organic relationship with the substance and the materials can be determined. At this point in the research process there is also the question of the mass effect of the materials which can contribute to the stability of a structure as well as provide thermal and acoustic insulation. The purpose for all this testing is to determine the rules governing the dimensions of earth structures in view of actual architectonic projects.

4) *Form and architecture* are studied in conjunction with the earth construction training programme at the School of Architecture as well as within the framework of research being carried out in the Department of Earth Architecture. The training programme consists of coursework in both theory and practice. Lectures and workshops are closely interconnected, allowing the student to apply his theoretical knowledge by testing out his designs with real earth materials. Projects are first conceived on paper and then constructed as mock-up models either reduced in scale or in actual dimensions. These workshops permit the student not only to develop a sensitivity for tangible form but also to learn some indispensable techniques for constructing with earth such as walls, openings and roofings. The research programme at the Department of Earth Architecture consists of extensive research studies on earth construction materials, the modes of production, construction techniques and their application as well as the traditional and modern practices of the art of earth construction.

An important distinction to be borne in mind with regard to the type of research that is being carried out is that it is not purely technical and abstract, but is approached in a contextual framework which takes into
account the manifold constraints governing architectural production. Specifically, these are the constraints imposed by historical developments, physical environment, social structures, cultural attitudes and customs, technology and the state of the economy. Consequently, this approach has led to the development of interdisciplinary research combining the technical sciences (architecture and construction, engineering, geotechnology and geology) with the social sciences (history, ethnology, sociology and economics), thus permitting a wider range of operable methods, resources and expertise for carrying out actual projects.

The methodology for this research developed as a result of working on actual earth construction projects such as the one that was undertaken on Mayotte Island (Comoro Islands), for example, which entailed a complete programme of earth constructed low-cost housing. The CRA Terre team in collaboration with the University and School of Architecture of Grenoble and several local partners (Mayotte Real Estate Company, Department of Infrastructure, Musada Co-operative) worked together on the plan and construction of earth-built low-cost housing units. Also engaged were local architects, contractors and craftsmen who benefitted from on-site training.

The success of the project was due to the long programme of research and analyses of the historical, ethnological socio-cultural development of Mayotte Island. Only a holistic approach of this type could ensure the integrity as well as the total integration of earth-constructed housing units into the long-term programme of the socio-economic, technological and cultural development of the island, providing thousands of new housing units and employment opportunities.

In summary, the research programme co-ordinated by the CRA Terre team within the framework of the Department of Earth Architecture is wide-ranging, scientifically grounded, holistic in its approach and constantly reviewed and up-dated in order to keep up with the latest developments in those aspects of human activity which could have direct bearing on earth construction. Close relations are maintained with collaborators and partners from all over the world for keeping abreast with new ideas and techniques, for advice and consultations, as well as for collaborating on many different projects. Priorities are always being set up for the type of research that is most in demand. To date, earth roofings, surface protection of walls, standards for quality control of materials, pathologies of earth architecture, training and the development of an information network have been the top priorities.

This is a vast programme of research aiming to establish a corpus of information covering all aspects of earth construction, including a review of earth architecture types as used in traditional and modern cultures, in rural and urban communities. Documented case studies have already been carried out in the United States, Mexico, Europe and the Middle East.

An integral part of the research programme has to do with feasibility studies. No project is proposed or undertaken without first investigating the situation in its entirety; that is, from the technical, economical and socio-cultural frames of reference. These studies have proven to be an invaluable source of information and have already been successfully applied in many important projects in France and Africa.

All this research is not, however, for the sole purpose of making analyses and data collecting, but is intended to assist in the training of experts by making available to them the acquired knowledge and technical know-how. In view of this, a technical dictionary now in preparation is soon to be published (for which several reference papers have already been published), and specialised courses of training are being offered on a regular basis, including seminars and post-graduate studies for those seeking proficiency in the field.

Application

The need for cheap housing in developing countries is enormous. Supposing that, at best, half of the already existing housing (mostly emergency-type dwellings) could be restored, no less than 400 million new housing units will still have to be built for the world’s needy people before the year 2000. This mind-boggling forecast has been confirmed by the United Nations as well as the International Union of Architects.

For Africa alone, it is estimated that over the next fifteen years 13.5 million new units will be needed for countries in twenty-three of which (representing 37 per cent of Africa’s population) the GNP per capita was less than 1,500 FF in 1979, and in sixteen of which (representing 27 per cent of Africa’s population) the annual GNP per capita ranged between 1,500 FF and 3,000 FF.

The magnitude of the problem, however, is much the same in other underdeveloped countries of Latin America, India, China and elsewhere.

This tremendous need has been caused by many diverse factors among which are:
- an unprecedented population explosion,
- rapid urban growth,
- an unequal distribution of resources,
- a shortage of cheap, modern building materials and compounds, and
- the misuse of an imported and too sophisticated technology which is neither economical nor energy-efficient and that does not necessarily solve the needs of individual communities.

The situation is further aggravated by an apparent lack of competency on the levels of management, decision-making and production.

The fact that the needed financial resources in underdeveloped countries are extremely limited, if not totally non-existent, makes the situation even more problematic and challenging for those of us who are concerned. In fact, members of the poorest urban population of Africa (15 per cent) cannot be expected to pay more than an average price of 88 FF or US$10 per square
metre of livable space for any type of long-term housing. Therefore, the average asking price of US$100 set by certain international organisations is to be considered much too high, ten times too high for poor countries. It is meant more for the middle classes or even the higher echelons of certain societies, but in no case for those which are the least solvent.

Major international organisations have conducted studies which show that in those countries where the people can only afford very cheap housing they have no other choice but to build with the materials locally available using traditional building techniques. In many of these countries earth building materials and earth construction techniques are the only possible resource and solution.

John Turner has said, “A material is not interesting in itself, but rather for what it can do for society.” Because of the easy accessibility of earth and the simplicity of techniques for employing it, we believe that earth construction can be a valid solution for solving the critical housing shortage for the world’s needy people. However, we are also very much aware of the fact that the quality and feasibility of earth constructed dwellings are largely dependent on the expertise, both professional and technical, of those who produce them. We are therefore deeply committed to making available the results of our research and work to those involved with earth constructed housing for the needy in informal rural communities, by encouraging self-help in the production of earth building materials as well as the construction of earth dwellings and, in the more formal urban communities, by encouraging the development and production of earth-constructed units within the means available and according to the specific needs of the community.

Our efforts aim at launching the production of housing by exploiting as much as possible the human and natural resources that are available locally with the purpose of consolidating conditions favourably for socio-economic, cultural, technological and political independence. In that sense, the development of local subsidiaries is meant to contribute in the promotion of jobs and specialised skills at the decision-making level as well as the professional/technical level.

In order to ensure the dynamics for promoting this type of self-centred local development, we are concentrating our efforts on training programmes (academic and professional) and the dissemination of information and technical know-how to the greatest number of decision-makers, technicians and consumers. Doubtless, at the core of any training programme is the need to prepare professionals to assume top-level and middle management positions which hold the key for the development of earth constructed housing. It is well known that in this sector very little has been done in the world, especially since there is a tremendous lack of qualified educators and an awesome void of specialised, fully integrated training programmes (in universities, schools of engineering and architecture and vocational training centres).

Dissemination of Knowledge

Being concerned with the communication and dissemination of basic knowledge and information for training and decision-making, for the planning and carrying out of earth-construction projects, the CRATerre team promotes an important programme of training and instructive research. Motivated by a desire to instruct and communicate, the team seeks to establish a world-wide “earth network” for the purpose of sharing experiences and co-ordinating research, training and application.

One important training activity is in the form of seminars and information meetings which are organised at the request of international and national organisations involved with low-cost housing. This type of activity
was carried out specifically for the CONESCAL and UNESCO seminars.

1) CONESCAL. The Regional Centre for School Building in Latin America ("Centro Regional de Construcciones Escolares para America Latina") organised in 1982 a two-week seminar in Mexico within the framework of a school building programme in which the application of earth construction was being envisaged. Two on-site preparation missions preceded the seminar which was intended for promoting a greater awareness and appreciation of the potentialities of earth as building material. The first week was devoted to theory and was followed by a week of practice with the building of a mock-up model constructed with adobe bricks. Thirty-four Mexican engineers and architects attended the seminar. The proceedings of the seminar, "Technology of Unbaked Earth Construction" ("Tecnologia de construcciones con tierra sin cocer") were published in collaboration with CONESCAL.

2) UNESCO. Another seminar within the framework of school building programmes for six Islamic countries (South Yemen, North Yemen, Somalia, Sudan, Mauritania and Djibouti) was held for one week at the School of Architecture of Grenoble in November 1984. It was preceded by a mission to aid in the planning of construction systems for projects to be carried out by the UNESCO team of architects. The seminar, which was attended by twelve architects and engineers representing the six countries participating, consisted of consciousness-raising sessions, the construction of a mock-up model, a visit to the scientific and technical laboratories of the University of Grenoble and visits to the Earth Village ("Village-Terre") on l'Isle d'Abeau and to the local producers of earth materials.

Curriculum. The coursework consists of two consecutive years of 480 hours each. Lectures, workshops and advanced training constitute the work for the first year; whereas the second year is devoted to research and the writing of a post-graduate paper.

The C.E.A.A. Terre under the responsibility of CRA Terre is the only training available in earth construction anywhere in the world. It is open to all architects, French and foreign, holding a degree in architecture or a diploma permitting them to begin the third university level (troisième cycle) and aims at establishing the candidate's competency on four levels:

1) decision-making
   - to identify and define local needs,
   - to ensure the technical and economic feasibility of using earth as building material,
   - to conceive and apply appropriate solutions for local conditions by exploiting the potentialities of earth for construction;

2) implementation
   - to set up local units for the production of earth building materials,
   - to train local personnel in the necessary technical skills;

3) planning
   - to establish programmes for earth constructed housing which would lead to architectural projects;
   - to ensure the necessary technical and architectural framework for conceiving projects appropriate to local needs, demands and means;

4) production
   - to organise and train building technicians,
   - to ensure the smooth running of technical operations,
   - to define the type of structures that are suitable for the operational development of projects, co-operatives and similar institutions,
   - to co-ordinate building sites and train for competency in this domain.

Manual. An instruction manual, Earth Construction Primer, published in 1984 under the auspices of U.N.C.H.S.-Habitat is used as textbook and contains all the essential theory of basic scientific principles, as well as giving practical information covering all stages of earth construction, from conception and planning to production and completion. It is published in English, but will soon appear in French, Spanish and Arabic. In addition, supplementary didactic materials and documentation are also made available to the teaching team and includes illustrations, slides and exercises for practical training.

The programme of training and research for the C.E.A.A. Terre is organised and coordinated by the CRA Terre team; however, it draws heavily on the expertise of professional national and international organisations, research centres, universities and individual specialists from around the world. They are invited regularly to CRA Terre for lectures in conjunction with the first year's course and cover various fields of research informing of the latest developments, experiments and projects.

Training

C.E.A.A. Terre. A certificate of specialisation in earth construction ("Certificat d'études approfondies en architecture de terre") created in 1984 considerably strengthened the ties and expanded the collaboration begun many years ago between the CRA Terre team and the School of Architecture of Grenoble. Other university institutes are also collaborating in the training programme by conducting supervised workshops in their laboratories.

The programme of specialised training leading to the C.E.A.A. Terre is intended for developing

- a process of scientific research on earth building materials and earth construction,
- research on the production of cheap housing in developing countries, and
- experts specialising in earth building materials and their architectonic possibilities.
Haider

My question is for Mr Houben with regard to earth construction. In your illustrations the bricks you showed were very red. Are all those bricks unburnt bricks?

Houben

Everything that has been built outside is just pure earth. We are using for our models partly fired bricks that are stronger than normal earth bricks; but the structure itself is weaker. This has been controlled scientifically under crushing devices, so that we are sure that when students are working on even one-to-one scale models in the training sessions, they are building structures that are weaker than those they will be building later outside. We are using fire bricks because otherwise we would have to stabilise the earth, make it of another material that can be used outside. However, the fire brick models are broken off every month or so and can be reused.

Diba

Regarding earth architecture there are certain problems that are as much psychological as technical.

I want at the outset to stress that earth architecture could give to a majority of homeless people shelter, a house and thus offer a response to a primary need and give dignity and decency to life.

However, in the area of earth architecture questions come up that I shall try to indicate here. These problems have been formulated by specialists and by people who live in earth constructions, in villages, and in many Iranian communities.

1) What is the resistance of the material (earth) vis-a-vis earthquakes and rainy weather? What is its cost relative to other materials? What is the ratio of quality-cost-conservation vis-a-vis different contexts in the world?

2) People living in earth housing sometimes would prefer not to live there. I cite the example of Abianeh that I visited four months ago. There is a factor of association of earth architecture with general misery. Most Western foreigners who visit earth constructions marvel at the spontaneity of these vernacular architectures, but the user/inhabitant does not always share this degree of enthusiasm.

The material (earth) should be compared in each country with the cost of other available material. The quality-price ratio should be studied before jumping to aesthetic considerations or other positive or negative evaluations.

If a material presents advantages in the sense of availability in a region, in adaptation to the culture and climate, if the quality-cost ratio is promising, then it may be useful in production and construction in a given country. Such study is indispensable.

Zaouche

I feel that Professor Diba’s comment expressed a certain negativity which I think is unwarranted coming especially from an Iranian, given the fact that Iran produced some of the most outstanding examples of vernacular earth architecture to be found anywhere in the world. His question can be answered as follows:

1) In earthquake-prone areas, the first thing to do is to reinforce the constructs structurally, as with pillars for example; and the fact that the walls are of earth is really of no consequence.

2) Earth constructions have proven to be weatherproof, highly durable in areas with heavy rainfall. What is needed is to cover the walls and roofs well with siding. In the Lyon region, for example, earth constructions have withstood bad weather conditions for many centuries.

3) Earthen vaults dating from the time of the pharaohs speak for themselves as to the negligible effects of time on earth architecture.

Houben

What we wanted to do at CRATerre was to have a place where people, architects or engineers, can be trained on a professional level for earth construction. It is also a place where decision-makers can be informed about the pros and cons of the material, stressing all the time that we don’t want to make a religion out of earth construction. This is one material out of many others, not necessarily the miracle solution to all problems; not at all. We make sure to give students from the very first day a rather disgusting picture of what to expect from the course so that those who want to drop out can still do so.

It happens quite often that when we do feasibility studies for big programmes like the Royal Bank, for example, and others, we are amazed at the results, that in this or that particular context a project should not be built with earth, but rather with another material, or only partially with earth, or only under certain circumstances. A careful preliminary study is absolutely necessary before any decisions can be made whether to use earth as the material for big projects. For example, there is the problem of seismic areas. The first rule, of course, is not to build with earth in an earthquake area. But there still remains the other problem that in many parts of the world people don’t have any other material but earth; so there’s nothing we can do, but use it as best we can. That is why we insist on telling students before they start the training programme that if they are expecting to hear all the nice and beautiful things about earth, they are in the wrong place. This is going to be earth, water and labour. It is true that in certain cases there is much to be admired; but this should not be the principle trait of the course. We must be realistic at all times.
El-Wakil

I would like to stress the educational aspect of the CRAtTer programme which I think is more important than whether we should build in earth, in bricks or in stone. What is important in such a programme is to assess the cognitive development of the students which is probably the most difficult aspect to acquire as a student of architecture. As architects we have been taught to conceive of a three-dimensional space by dissecting sections and planes which define space, but in no way teach the student to think in three dimensions. The problem with many students in architecture is that they go through life thinking they can conceive in three dimensions; but they will never do this unless they can see that the three-dimensional space is in its existential form. If we're speaking of how to educate architects, then I think it is important in an architectural programme to teach students to think in three dimensions and conceive space as a reality, and not as some abstraction in drawings.

Houben

We are indeed the students' professional evaluator, who follows them year by year to see how much progress they are making and, in fact, it’s tremendous. If you just explain on the blackboard how something works and then follow it up by an exercise, nothing comes out. But once you have been down to the workshop and start working with them, then they can come back and draw; and then return to the workshop to try it out and then come back again and make other tries. We have found that in fact most of the creativity happens in the workshop and not on paper. That comes later on, much later, in fact. It’s really very difficult to get them to perceive space.
Training Architects: Some Comments

Wolf Tochtermann

The training of architects is part of the UNESCO programme regarding housing. It was in 1970 that UNESCO organised, as its first activity in this domain, a meeting of experts in the training of architects. Internationally famous architects, teachers and practitioners advised the organisation about a programme that afterwards became quite successful. Certain parts of the report of this meeting, which was held at the Ecole Polytechnique Fédérale de Zurich (EPFZ) still seem to be of great relevance.

The architect should play a major role in society. He is able to contribute to great enterprises of our times, especially in general domains like human rights, development and the environment, which interest the entire human race and to which his own vision, his imagination and creative spirit can offer a valuable contribution.

The aim of architecture has always been to improve conditions of life; but should the profession see its competence limited purely to technical aspects of construction, it will stop doing work that is useful to society. If, on the other hand, it remains open to broader concerns, it could be brought to attack entirely new problems in areas that, at first sight, seem far removed from construction.

Just like society, the architectural profession will be called on to change considerably over the next ten years. Of course, architecture will not renounce its traditional concerns, but new methods will be adopted. This change in the manner of proceeding will involve tension between the profession and traditional practitioners.

Architects work less and less for people, and it is now society as a whole that is the customer. The training that they are given must teach them what their mission is in relation to the global environment.

During the meeting, the opinion was expressed that it is not possible to define for once and for all the responsibilities of the architect; these are determined by social, economic and cultural factors of a particular region or country at a particular time and therefore have to be continually restudied. This ongoing questioning of change should be reflected in the training programmes and in the policies of schools.

The experts noted that, among the numerous factors which influence the profession, some currently are of particular importance: differentiation of disciplines, the birth of regional ecology, the introduction of social sciences, the growing importance accorded not so much to the construction of buildings, but to the process of construction considered as a totality, and the evolution of the methodology of conception.

The Role and Responsibilities of the Architect

I do not need to remind anyone of the traditional role of the architect and the discussions that have been raised by the profession for several years. Some feel that it is a profession that has been shattered by a crisis the deep reasons for which are not really known. Others still think and affirm with much conviction that the architect is the conductor, the man of synthesis who co-ordinates from top to bottom the decisions taken or to be taken by the numerous contributors to the complex process of architectural and urbanistic conception. His image was for a long time that of a powerful artist whose creative capacities gave shape to our dwellings, towns, and our built environment as a whole and thus contributed to the happiness of his contemporaries. A high standing in the social hierarchy went hand in hand with this notion of the "monstre sacré".

This illusion still exists today within the minds of young students and exerts influence not only in industrialised countries, but also in many developing countries, where students expect their architectural faculties to give them the means that will enable them to occupy as quickly as possible a privileged place in their respective societies.

I do not think that there exists another profession the study which is sanctioned by a university-level diploma that asks itself so many questions about its role, its responsibilities and its future. It seems that architecture facilities, whether they be part of an Ecole des Beaux Arts or a polytechnical school, are far from being able to provide a satisfactory answer to these questions.

While a growing number of architects find themselves jobless, important discussions have developed over the last years on tendencies and doctrines, on functionalism, and post-modernism, on rationalism and regionalism, on structuralism and brutalism, on "high-tech" and in research on a better or new use of earth, wood or bamboo. But, despite constantly underlining the role and social commitment of the architect, one is surprised to note that the public at large hardly feels concerned about these debates within the profession and by the identity problems which architects must confront today.

Faced with a marked decline in private and public orders and the fact that, in many countries, a surprisingly small percentage of what is built volume results from the involvement of an architect, it is not surprising that many architects have a deep sense of frustration, despite the fact that many display an apparently encouraging confidence because they are convinced that they can still make a definitive contribution to the process of the conception of our built environment.

An architect used to be essentially at the disposal of an elite, and his commitment to society on the whole was traditionally weak. Architectural training has always been and still is the reflection of this state of affairs. However, it seems that many architects, especially in industrialised countries, are starting to take this into account. The interest shown, for example, in the programmes of rehabilitation and improvement of existing housing with the participation of the users, or in the study of traditional or vernacular architecture in nearly all regions of the world is perhaps significant. But, is this nostalgia or, quite simply, an alibi? Is there a will to undertake research in order to move away from what one has become used to calling "functionalist architecture" with the monotony and "visual" terror for which many criticise it? Is it a question of finding
more subtle concepts which adapt better to the different contexts and realities of different geo-cultural regions or a better knowledge of certain processes of architectural conception?

Whatever the case, a new philosophy of the profession largely still remains to be defined.

But what should concern us quite particularly is the danger of exportation to the developing countries not only concepts, theories and tendencies, but also the identity crisis of the profession.

The work field of the architect in developing countries is very different. However, it seems that he operates in practice the same way as his colleagues do in the industrialised countries. He is very rarely concerned with problems of survival, marginalisation, precarious housing, the informal economy, help for a population called clandestine, or even illegal, despite often representing the majority in urban centres with rapid growth.

These populations, which are often without even the simplest shelter and are exposed to unemployment, hunger, deprived of the most elementary civil rights, and subsisting in a state of illegality, should be, at least theoretically, the potential "clients" of the architect. But, as we all know, this is not the case. Today it is generally recognised that the traditional profile of the architect, as we know it, is perhaps not the most appropriate for developing countries with their cultural traditions, social differences and their peculiar problems. It should be remembered also that traditional built area — villages and towns — was, to a large extent, conceived and realised without help from professionals, but according to traditions that were often secular by the inhabitants themselves with the help of the community. What is, therefore, the situation which architects must or should confront in the context of developing countries? Today, realities are very different: a crude estimate indicates that the average demographic growth of developing countries is two percent, that of the urban population four percent, and that of urban slum populations is approximately
eight percent per year. Consequently, when one notes that forty percent of the urban population of the Third World lives in slum areas and that conditions of life in rural areas with sixty percent of the population of these countries are, in many cases, even more disastrous, we must recognize that a solution to these problems cannot be found except by professionals of a completely different profile from that which we know today. During the years to come, efforts must therefore be concentrated on satisfying the most essential needs of the poor populations and the inhabitants of "marginal" sections. Apart from shelter and the fight against hunger, it is above all work, education and health care which are lacking.

Architects called to work for development and in the service of men and women looking for shelter should above all bear in mind this reality. They should consequently abandon all references to the aesthetic canons that are theirs and take account of the fact that improvement in the conditions of life of slum inhabitants does not involve prestige activities.

The architect has always been, by his training and by the demands of his professional exercise, a specialist prepared to solve complex problems, capable of the synthesis of various givens and of innovation. No other profession that rests on a university education can boast of this indisputable quality. It is up to him today to offer this quality to the developing countries with their peculiarities and to study the elements that make the framework of their life.

He must develop a global view of the society for which he is working and perceive the environment in an open and realistic manner.

The administrative, educational and cultural structures and the heavy heritage of the colonial period in countries that achieved independence since 1960 have condemned to isolation a large portion of the local population and constitute a real obstacle to the perception of what has been realized and of the imagination of new forms of intervention that would not only be of advantage to a tiny few representing the elite of a given country, but to all those who are in need of help to achieve a decent life.

Faced with the complexity of this task, and the necessity of new modes of intervention, the profession at present lacks experience that is sufficiently representative and that could serve as a model.

Despite the evidence of problems and unachieved goals, very few attempts have been made to make architects participate in policy formulation and realistic programmes to improve instead of destroying "marginal" housing and to develop alternative solutions that do not consider housing as an unique and isolated function and that do not lack the necessary broad scope.

In order to do this, it seems that one must have, above all, a correct perception of the existing situation and not consider housing and slums and their inhabitants as potential or real parasites and antisocial elements without capacities and resources. The opposite is true, and one must facilitate human contacts, study the intellectual and manual capacities of the inhabitants and use them, while avoiding bureaucratic and paternalistic attitudes. In short, a true communication with them must be established.

The informal economy should also be studied, the importance of which must not be underestimated in the districts of precarious housing. Here again, one should not try to hide the existence of this sector but rather to reinforce it to make it more efficient, as it is vital for survival.

One should collaborate with the dwellers, and encourage them to participate by training them and by giving them necessary and adequate information in a language and in a way which is accessible for them. The participation experiences should be studied in order to draw conclusions from successes as well as from failures.

The architect's work would, therefore, not be limited to the production of projects and drawings. He will be led to step out of his usual field of work to take into account social problems. He could be called upon to carry out studies in collaboration with representatives of other disciplines, and a certain amount of action could follow on the practical level. One could make priority lists (hygiene, health, housing, work, and so on) and lists of possible improvements; conceive pamphlets to help the inhabitants; establish contacts between the authorities and the inhabitants; generate local meetings; start information campaigns and share experiences with similar operations in other towns or countries; organise exchanges among those who possess experiences of this kind, and so on.

The most important problem is usually in the political and legal area as well as in that of education. However, a certain change in attitude concerning the "marginal" clusters has been achieved, and maybe the International Year of Shelter for the Homeless, proclaimed by the United Nations in 1987, has allowed for progress to be made in these areas.

Many countries are now ready to look into the question of the homeless and badly housed, the very existence of which was often denied until now. The actions of reabsorption and outright elimination of the slums are less frequent and are giving way before improvement and restructuring programmes. New legislation is being imposed concerning the mechanisms of appropriating ground and the status of slum occupants. Some efforts are known in this area that indicate a certain awareness of realities and acceptance instead of rejection of marginal agglomerations.

Some countries have taken steps looking towards the introduction in primary education of courses dealing with questions related to housing, to human settlements and the framework of life. By all indications, the process of change will be slow and difficult for the inhabitants as well as for those who help them in their efforts, like architects, organisers, administrators, and politicians. The architect could play, with others, an important intermediary role between the population and the responsible authorities. It is essential that this contact be established, in order to avoid the inhabitants being considered marginal, illegal or clandestine, and,
The Teaching of Architecture

One might have thought that the end of the sixties would have provoked a profound disruption in the structures of teaching and a radical challenge to the contents of the programmes of study and the pedagogical methods used up till then, but, by all indications, the strongly criticised structures were reconfirmed, and one notes that virtually no real valid solutions to fundamental architectural teaching problems were found. The situation remains confused in most of the industrialised countries and even more so in the developing ones.

Generally speaking, the very rapid increase in the volume of knowledge over the last twenty years has considerably enriched architectural teaching, which has been expanded in theories, methods and new concepts. New subjects and new disciplines have been introduced such as urban sociology, urban geography, new technologies of industrialised construction, computer-assisted conception, and the economy of construction.

However teaching architecture and urbanism, like any other teaching, cannot any longer be limited to a simple transmission of the knowledge that is needed to train a professional once and for all for his career. Knowledge evolves very rapidly, and updating it continuously becomes an imperative for the architect who wishes to maintain his creative powers throughout his professional career.

Consequently, numerous educational institutions have added to their programmes new disciplines which, in some cases, have considerably enlarged the options offered by school.

Despite this abundant choice, one appreciates that the students can hardly take advantage of this richness and that serious gaps very often persist. The scientific discoveries and technological innovations of the last decades have hardly been integrated in instruction, and technical and scientific subjects still play nowadays a secondary role and remain inaccessible not only to students but also to many professional architects.

Indeed, a compilation of subjects and disciplines does not automatically lead to a coherent education or to the training of a professional who would be able to solve the problems he will face later on. The components of this education, which, moreover, are often strongly personalised ones, do not enable the student to set up a programme the content of which corresponds to a precise progression and the professional’s special profile. The student will, of course, have learned many things, but he will have difficulties tying them together to serve a useful end.

Claude Schmidt, Professor at the Pedagogical Department of the School of Architecture in Paris, writes in a text devoted to architects’ training:

“Around a core of well structured disciplines, presented as a body of knowledge, seminars giving teachers the chance to present their personal philosophy have multiplied for the last ten years. There are, of course, according to the schools more or fewer teachers who, modestly, force themselves to provide their students with a rationalist training, teaching them how to measure, calculate, and analyse, explaining things to them objectively, treating as hypothesis that which is contingent and as established facts that which should be considered as such, inculcating in them thus the sense of reality and the willingness to challenge pre-conceived ideas, and to admit temporary ignorance that characterise a true scientific spirit. However, these teachers are often powerless when faced with their colleagues’ murky and pretentious discourse, that tends, despite its variations, to ward off the profession’s anxieties.

“In some cases, one thinks to have the remedy in the reality of the site, in operational practice, or in contact with the user and inhabitant. These experiences are certainly useful and need to be encouraged for they enable us to perceive the reality of the exercise of the profession, because they facilitate the comprehension of the mechanisms of the construction. However, the knowledge thus acquired can only remain superficial if it is not backed up by the theoretical explanation, reflection and a solid methodology of conception that should constitute the base for any architecture instruction”

Much has been said on the interdisciplinary work of the architect and on the necessity of preparing him for collaboration with the representatives of other disciplines. In reality, creation is a collective act, but in the absence of other contributors, the collective work practised in the schools of architecture does not produce convincing results, for the teams that are set up are not multi-disciplinary and, consequently, cannot “simulate” any process of creation close to reality.

The schools still have too much of a tendency to turn the project and the architectural conception into the central pivot of education and to mould students, at all costs, into concept-architects. A diversified educational programme, as required today, admits other progressions that lead to other professional profiles in industrialised countries, as well as in developing ones. Such an education would enable architects subsequently to assume positions with which they are traditionally not entrusted. Production, industrialisation, management, administration, planification, research and, of
course, teaching are the fields that the architect could usefully undertake, if actually prepared for the work facing him. It should not be very difficult to uncover, during their studies, the different interests and abilities of students in order to offer them as a result a coherent programme with all the subjects that they randomly select from the long list of subjects proposed by the educational institution.

In addition, it is necessary to know completely the chosen subjects and to learn their special languages — and not the jargon that is so easy to pick up and that has long dominated the architectural discourse.

The architect’s personality can only be educated through a sound knowledge and not via attitudes, gibb discourse and indifference to the real content of the subjects.

A good school, with a solid pedagogy, is in a position to give a training that is useful to all architects, not just the best ones. But the school in its real sense is rare. “There is no school, there are only professors giving courses” says the teacher of an important school of architecture in France.

To make a teacher of architecture, it is also indispensable to develop a pertinent pedagogy, or, in other terms, a teaching aptitude. One must be trained for teaching and one must recognise that teaching architecture nowadays is a highly complex field that requires as much dedication as any other part of architecture. However, the pedagogical thought does not seem to be essential in architectural education institutions and the full-time teacher is considered as a rather marginal colleague who has not been able to divide his professional time between research, teaching and practice.

However, when one looks at the state of the schools of architecture in some countries — I mean their physical state — one is allowed to presume that architect training is not seen as a priority. Pedagogical deficiencies are often combined with totally inadequate facilities in the schools and faculties of architecture. One finds insufficient space, inappropriate buildings, antiquated or non-existent equipment, ridiculous financing compared with official goals, overcrowded institutions, lack of balance in geographical representation, insufficient or non-existent libraries and laboratories and many failures in diversification of institutions. Moreover, there is practically no definition of the content of fundamental or applied research, true and useful, that should be a part of any advanced education. But, here, too, totally inadequate credits impede the development of solid architectural research that would allow students participation and train them to do research.

If the situation of the industrialised world is not encouraging, that of the developing countries is often desperate. Many of the latter still have to send their students, at a high cost, to the schools of the industrialised countries, where they get an education that has nothing to do with the reality that I have tried to describe above. So-called “Third World” or tropical architecture modules in the Western schools are doubtless products of good intentions and are often directed by teachers with a certain experience of working in one or several developing countries. However, there is no doubt that this teaching cannot provide the foreign student with the wherewithal needed to practice in an environment very different from that where the training takes place. Work in the context of economic and social development is difficult and means a great risk of disillusionment if the vision of architecture is based on the ill-suited one of the industrialised countries.

The fascination of a liberal profession and the prospect of contributing to the conception of the built environment usually disappear very quickly when the architect is faced with the harsh reality of the professional life that rarely offers the expected satisfactions and the social status equal to the aspirations of the young professional.

It is crucial, therefore, that future architects be able to study, if not in their own countries, at least in the region they belong to, so that they can assimilate the particularities of their environment, and consequently, more easily find answers to the local problems of planning and construction. But, it is impor-
The Department of Architecture of the Bangladesh University of Engineering and Technology is the only institution imparting formal education and training in architecture. The school started in 1961 with only one foreign teacher and six students. By 1966 six local teachers took over the department, all of them having been educated in the U.S.A. Today there are twenty-two teachers and 250 students in the department. Most of the senior teachers have post graduate degrees from West European countries. While in the 1950s there were hardly any local architects, in the 1980s architecture is a well established profession. About one half of our graduates work abroad, mostly in Western countries but, in recent times, also in Middle Eastern countries.

Bangladesh seems to be an ideal case for study in this seminar. The region was once part of Pakistan, which was essentially a religious state, Islam being the major bond between the two geographically separated regions. All efforts were made for Islamisation of the culture. Its impact was felt in architecture also. It came to be painfully realised that the imposition of myths and symbols does not give rise to good architecture or fulfil the hopes and aspirations of the people. As an example, it may be mentioned that the Sheraton Hotel at Dhaka, where the last regional seminar was held, is a straightforward curtain wall framed structure with added precast concrete arches. The arches are not intrinsic to the structure or its form but were appended to give a local flavour to an imported form. Worse examples can be given where the architects are less capable. Preconceived forms and trite motifs could in all cases be avoided. Bangladesh does have a unique way of life that is both regional and Islamic. Functionalism, if true and intensive, might bring out the features that need to be properly interpreted in architecture. Functionalism, not romanticism or symbolism, deserves more attention and care by architects.

Typical layout and forms of the Muslim world are dominated by hot-arid climatic influence. Bangladesh, having geographical continuity with hot-arid North India, has always been influenced by its architecture, but climate-wise, it is nearer to Malaysia or Indonesia. Distinctly identifiable Islamic forms or articulations for hot and humid regions are yet to emerge. In general, while clearly outlined architectural principles that are based on specifics of Western or Christian architecture have been meticulously recorded, no such principles based on Islamic or Oriental architecture have yet been recorded for the use of students of architecture in the Muslim world.

Research in architecture in the Muslim world is lacking. Research on various aspects of functionalism in the comprehensive sense of the term is essential to bring out the spirit, value and determinants of architecture in the Muslim world. The initiative should come from educational institutions.

In the Muslim world the character of built form was formerly dominated by a pedestrian scale. Today, even in a poor country like Bangladesh, the scale is linked to the use of automobiles. Students think, imagine and design in terms of automobiles. Though humbler modes of transport are very common, they hardly get due consideration. Hence, the built forms display inherent Western influence.

In last quarter of a century the curriculum in the School of Architecture in Bangladesh has undergone many changes. The curriculum has gradually turned towards teaching more and more skills and techniques. Presently less than 4 per cent of the courses are devoted to humanities subjects. The five year course has three architectural history courses. Only half of one course deals with the architectural history of the region. With the advancement of technology it is gradually becoming difficult give all the materials that one would like to in five years time. The range of topics that deserves attention is vast. A student has to know about house wiring and computers, thatched roof and system building, cost estimating and CPM.
It is difficult to find capable teachers in non-architectural subjects. It is almost impossible to find anthropologists or sociologists who would teach the courses the way an architect would like them to. The teacher may be very well versed in his own subject, but he often fails to make it worthwhile for architects. Even with an extensive curriculum, 150 credit hours, the desired educational targets are not being achieved.

In the Muslim world very little attention is given to conservation. Not only structures but a large number of old areas need to be conserved. An organised effort to do so might also increase society’s awareness of the need for conservation. Conservation courses might be successfully included in the curricula in architecture schools.

In Bangladesh the cultural scene is dominated by poets, literary types and artists. Architects, who seem presently indifferent, should take an interest in the cultural activities of society and try to take leadership roles in the cultural scene.

Technology and materials in Bangladesh are not highly developed. Most buildings are hand made with locally available materials. There is practically no standardisation or mass production. This gives the architect an opportunity to give shape to his creative impulses, and the evolution of a style in a short period of time is possible. Louis Kahn’s famous work at Dhaka is an example of this. He used brick as the load bearing element, relying on the local system, which naturally gave rise to arches and circles. He did not have to import or implant any form or motif. Massive forms laid out in strong symmetry with repetitive arches and circles makes his work very attractive. In the history of the region one sees that the Turks and Afghans, when they were its rulers, did not build big establishments. Local craftsmen executed all their works, and architecture became creative and local. The same cannot be said about Mughal and colonial architecture in what is now Bangladesh, which was imported and imposed.

Architecture in the Muslim world cannot flourish in its traditional glory unless the spirit of Islam is inculcated in the society in general and among architecture students in particular. However, the current image of a person devoted to Islamic principles is that of a conservative fundamentalist. Architectural education is truly liberal and secular, and architecture students mostly come from the affluent and sophisticated urban class. Among them, faith is generally lacking. This means a dilemma for the profession and for the culture.
The objective of architectural education could be thought of as training architects capable of producing meaningful architecture.

In order to assess the problems of architectural education it is essential to start by visualising the state of architecture that we would ideally like to attain in a given society. We need to define what is good architecture in that particular context and to compare the ideal with the architecture that is actually produced. If there is a discrepancy, this might be due to conditions of practice or to architectural education, or both. If architectural education is at fault, one needs to determine the reasons for its inadequacy.

The Current State of Architecture in Egypt

In Egypt one sees a rather simple dichotomy — architecture versus no architecture. There is architecture, in the sense that buildings have concepts, character, and language or, in the words of the practitioners, they have “something to say”.

Generally speaking, there are very few new buildings in Egypt that could be classified as architecture. This is true at all levels and includes structures designed by the four groups of “architectural designers”, which comprise formally trained architects, common builders and owners who do not use architects, civil engineers and expatriate architects.

Looking at the buildings currently produced by Egyptian architects, we find that with rare exceptions they try to reach the maximum size building envelope that is legal at the cheapest cost. They ignore the functional and aesthetic needs of the people and lack any concept or language. Very few have architectural values.

If we look at common buildings produced in urban areas without architects, which amount to up to 60 per cent of all building activity, we find that they resemble in many ways the first group. The architects have set the standards and values that the common persons follow. It is interesting to note that at the beginning of this century the relation between the two sectors was the same, but, of course, then architecture was different. Both periods show clearly the disruption of the Islamic and vernacular traditions, together with their languages. This could be traced to the French and British domination of Egypt, when tradition and culture were defeated by new, Western images (not the reality) of culture, and Egyptians imitated the new buildings and did not look within themselves or at their own environment.

The third group responsible for building designs is civil engineers. This may sound strange, but, as the laws of Egypt require only a qualified engineer to be responsible for buildings, many civil engineers actually design buildings. Those of them who have large offices sometimes appoint junior architects to assist them. The types of buildings that are produced are, frankly, close to what architects are producing today.

Looking at the work of expatriate architects in Egypt, we find that most of it looks transplanted and out of context, aggravating the state of “no architecture”.

Some Factors Affecting the Practice of Architecture

The current state of “no architecture” in Egypt is partly due to factors affecting the practising architect.

Building laws and the difficult economic conditions certainly have a major impact, as they drive landlords and architects to attempt investments at the expense of maintaining standards. There is a universal lack of any sense or awareness of the meaning or value of architecture. Society does not distinguish between good and worthless architecture. In some quarters even talking about architectural values is considered a luxury. According to a survey made by the Supreme Council of Culture in 1980, the word “architecture” does not appear in any educational text used at any stage of education. There is a paucity of good examples of architecture for the public and even for architects or students of architecture to see.

The number of registered architects is about 16,000. They increase at the rate of over 1000 architects each year. The numbers are fairly high. The competition between architects is not in excellence but in fees, which have reached levels where the mere production of safe buildings is imperilled. Due to the above-mentioned forces and conditions, most architects, irrespective of their education, do not or cannot attempt to produce architecture, even if they are motivated to do so.

The Capabilities of Newly Graduated Architects

What are the concepts and capabilities of newly-graduated architects? There is no doubt that architectural graduates understand, in varying degrees, the technicalities of building. However, they are not aware of concepts and values. Their ideas about architecture are disturbed and so are their ideas about their role in society. They are not prepared for the forces that act upon them. In such conditions, they become just what society expects and wants them to be, just building engineers.

This current status of architects has roots in the early stages of architectural education in Egypt. At the beginning of the nineteenth century, there were no pure architectural schools in Egypt. Consequently, most architectural work was done by foreign architects.

The first Egyptian engineering school that covered architecture was established in Cairo in 1820 under the name of “Mohandeskhanah”. It was followed by another school, also in Cairo, in 1834. The training programmes in both these schools were seasonal.

In 1839 the School of Works was established, and the other engineering schools became affiliated with it. The organisation of that School of Works followed a system
similar to that of the Paris Polytechnique, but this school was closed from 1854 to 1858 and from 1861 to 1866.

A new "Mohandeskhana" school was established in Abbassia, Cairo, in 1866. It was transferred to another location in Cairo in 1868 before finally settling in Giza in 1905, in what is now the location of Cairo University. By then its name had changed to the "School of Irrigation and Architecture", but it was also given other names. In 1935 it became the Faculty of Engineering, which included a Department of Architecture.

Thus, architecture was originally conceived of as a branch of the very powerful and respectable profession of civil engineering without roots in art or "architecture" as we would define it now. It was seen as merely that part of civil engineering that dealt with buildings, which were traditionally less important than the construction of canals, dams and roads, which were the life and soul of Egypt's agricultural society. Even in 1960 Cairo University architectural education started with a general preparatory year and a first and second year of joint study with civil engineering. Tying architecture with the faculties of engineering is still the pattern in the departments of architecture that were set up in Alexandria in 1941, in Ain Shams in 1950, in Assiut in 1957, in al-Azhar in 1964, in Shubra in 1975 and in Matara in 1980.

The long association with the faculties of engineering has forced most of the departments to adopt the same methods of teaching, exams and, in many cases, courses as the engineering departments. This has encouraged the conception of architecture as a profession based on technology and engineering. Even the schools established within the Faculties of Fine Arts in Cairo and Alexandria, surprisingly, fell in line with the others and sought the title of "Architect Engineers" and the acceptance of the Syndicate of Engineers.

The Engineers' Syndicate is still governed by the powerful civil engineering section, which holds the majority of leading seats in its board. Laws and conditions of practice are, of course, biased in their favour.
We cannot look at the problem of architectural education in Egypt without taking into consideration these factors.

Elements of Architectural Education

The main elements in architectural education are the teachers, the curricula and the students.

The Teachers

Teachers are important, not only because they are responsible for teaching, but, also, because they are responsible for developing the curricula. Unfortunately, they are responsible for creating the major part of the problems of architectural education.

The number of architects in the nine schools of architecture in Egypt is about 200. Almost all of them had their higher education in the USA, the U.K. or France. The average staff/student ratio is 1/18. Thus, there is no shortage of staff.

At Cairo University twenty years ago in 1965 there were thirteen staff members; four teaching architectural design, three history and theory, two building, three planning and one services.

In 1985 the staff had increased to thirty-one. Two had Beaux Arts qualifications and twenty-six others had Ph.D’s in the following specialisations: theory and history (2), planning (4), housing (2), environmental control (4), construction and technology (4), specific building types (6) and design methods (4).

The increase in the numbers and specialisations of the staff has resulted in adding the following subjects in the Department of Architecture: environmental control, design methods and computers, operations research, urban planning, housing, landscape architecture and statistics.

Those additions were made in 1969, encouraging the conception of architecture as a profession largely based on and associated with science and technology.

This has influenced all of the other schools, which have developed in the same direction — including the two fine arts departments.

This shift, together with the previously mentioned increase in the number of subjects taught, has had the following consequences. The teaching time devoted to each subject has been reduced, forcing the curriculum to be cramped and condensed. Thus, the students have virtually no time to digest, to develop, to observe or even to think. In fact, they have no time to learn. Education favours the more specialised subjects like building, technology, engineering (see the graph). Very little emphasis is given to the humanities, the social sciences, art or culture even in the two architectural fine arts departments. More seriously, a state of frag-
mentation has been created, aggravating the difficulties of co-ordination and integration of the courses. Each subject in each year has become an independent island with its own methods and objectives. Accordingly, the students take the subjects as unrelated fields of knowledge, thereby losing any chance of understanding the wholeness of architecture. Certain general topics have been discarded, like the role of architecture in society, the responsibilities of the architect and understanding of the total environment or the local environment.

If we look in some detail at how the main architectural subjects are taught we find the following pattern.

The theory of architecture is usually combined with or taken as a part of the history of architecture in the twentieth century. Sometimes it covers types of buildings. It gives information and is not intended to stimulate thought, student involvement or appreciation.

In all Egyptian Schools architecture architectural is taught in the “Beaux Arts” tradition of studio work. But, with the reduced time allocated for it and with the large numbers of students, it has become impossible to maintain the direct relation between the teacher and the student that is basic to that system. With the increase in the number of students and staff, the teaching of architectural design has become a team endeavor. That is, in each year, say, four to six staff members teach the subject. Since they have various backgrounds, attitudes and capabilities, the consensus usually favours teaching neutral, passive architectural design. This means design on a module, with no special features or individual expression but only the logical and functional tradition. No specific approaches are endorsed. The products are uniform and characterless.

It must be mentioned here that it has always been thought that, because the teachers of architectural design have had their higher education in other countries and have been affected by other cultures, they would transfer the architecture and concepts of those foreign societies. There is no evidence of this, simply because in those countries they were studying subjects other than architecture.

The staff members teaching architecture mostly have their Ph.D’s in a variety of specialisations not directly related to architecture. When they teach, they fall back on their undergraduate education and on their own practices.

**Students**

When we think of education we think of teachers and methods, but when we talk of learning, we must consider the student. One should recall the wise comments that learning depends on the individual, his capabilities, motivations and aspirations and that the amount and rate of learning depend both on the environment the individual lives in and the characteristics of the individual.

What are the characteristics of the individuals admitted to schools of architecture?

Admissions to all universities are constrained by the total grades that the student gets in the Egyptian General Certificate of Secondary Education. Faculties of Engineering usually take the students with the highest grades from within the scientific and math sections. After the general preparatory year, students with the highest total grades are admitted to the departments of architecture.

As all tests in secondary education and in the preparatory year in engineering test the ability to retrieve information and not learning or understanding methods or motivations (and this is a general problem of education in Egypt), it is students who are best in assimilating information who are admitted to architectural departments. Of course, this comment does not mean that retrieving information is the only ability they have. Whether this ability is usually associated with the required characteristics of architects is something that calls for investigation together with attempts to define those characteristics.

**Conclusions and Suggestions**

What can be done about the problems related to architectural education?

It has become clear in the case of Egypt that those problems cannot be treated in isolation from external problems.

In 1980 the Committee on Architecture within the Egyptian Supreme Council of Culture reached the conclusion that it was essential to develop a general awareness and appreciation of architectural values in society as a whole as a prerequisite for any improvement in the quality of architecture.

This requires the existence of examples of good architecture for the public, the students and the architects to see.

Thus, proposals were made for measures such as awards, competitions, publicity and introduction of architecture in primary education.

This could be accompanied by appropriate changes in building laws and the organisation of the profession.

The value of “learning” and the motivation to learn have to be developed very early on in general education, instead of just inculcating awareness of the importance of passing tests and motivating students to obtain a certificate. Students must be exposed to the humanities and culture.

Admission systems to architectural departments must be rethought.

Regarding the problems of architectural education proper, it seems logical to divide them into what could be done in the short and in the long terms.

In the short term we might undertake:

1) Reorienting the teachers of architecture so that they appreciate the problems of architectural education. This could be done through seminars and other mechanisms.

2) Reducing the number of the subjects and the general course load in a way that would allow the students to digest, to think, to observe and, thus, to learn.
3) Relating architectural courses to the environment.

4) Attempting to co-ordinate and integrate subjects so as to create a feeling of the wholeness of architecture.

5) Reorienting courses on the theory of architecture away from history to help the student appreciate the different approaches and languages and critical theoretical problems.

6) Using the study of architectural design to encourage the student to experiment with different approaches and to develop his own capabilities.

In the long term we might undertake the study of:

1) The association of departments of architecture with the faculties of engineering.

2) The type of teachers engaged in architecture education, including the issue of whether the specialised Ph.D. is the right, or at least a sufficient, qualification.

3) More balanced and integrated curricula.

In closing, I feel compelled to ask: are these truly the problems and constraints? Or, do we have to revise the objectives of architectural education from the mere qualification of architects to the rebuilding of individuals in the contexts of their environments so that they look at architecture as a way of enriching their lives and a source of pleasure?
India

B.V. Doshi

Due to the unique role that the architect plays in society, a comprehensive approach is absolutely necessary in the study of architecture. Architecture is associated with the entire spectrum of human activities. Architects need to be educated to become sensitive, concerned human beings fully aware of the complex relationship among natural phenomena, human activities and man-made institutions.

The architect’s choices have vast implications for societies. For example, the choice of an appropriate level of technology of construction, which relies heavily on traditional building crafts, can greatly help the economy of a region. With regard to material resources, the training of an architect can encourage him to use optimally any building materials drawn from non-replenishable resources. Unless the architect has some general training in the local vernacular tradition, he cannot interpret social institutions in terms of the built environment, and the opportunity to bring people together and create a cohesive community spirit will be lost.

Architecture can embody certain deeply rooted symbolic, aesthetic associations of the community. The training of an architect needs to include a proper understanding of the symbolic and aesthetic associations of people and their architecture. Only then can an architect create built forms with which the community will wholeheartedly identify and which will become worthy of being regarded as the community’s heritage over time.

Today most architectural practise is concentrated in urban areas. The major occupation of most architects is to serve the needs of the estate developers and, in isolated instances, to design institutions and public buildings. Concern for the environment is lacking in most projects due to a lack of initiative and foresight as well as the architect’s self-imposed limitations in designing for a particular task. As a result, problems concerning the needs of communities in the urban areas remain unsolved and the effectiveness of the architect as a participating professional member of a community becomes negligible. In the rural areas, due to a total lack of architects’ participation, problems are usually handled by others, and, as a result, the environment is changing without any cohesive plan. The cause of this total failure to participate in the urban and rural development is rooted in the professional and educational spheres. If the educational process would have inculcated an awareness of developmental issues, at least the graduates might have participated in the activities of the community. But, unfortunately, this is not happening.

The more than twenty schools of architecture now existing in India base their teaching on a curriculum formulated many years ago. The curriculum neither emphasises the excellence required of a technical graduate, despite the fact that there are too many technical courses, nor does it encourage social commitment by the professional.

There are degree courses of five years’ duration, diploma courses of two years’ duration and certificate courses of one year’s duration. In spite of this diversity, the choice of the student and the needs of the community are not really addressed. This has resulted from the pattern of starting courses based on available job opportunities and developing skills in limited specialised areas. The curriculum is rigid and denies students the chance to reorient their studies over time. For example, the engineering graduate undergoing the five-year course cannot opt for a new branch after the first year. As a result, he has to either give up or continue, even if he has no keen interest. The diploma student, on the other hand, cannot switch to join a degree course if he so desires. Such is also the case of students in certificate level courses. This stratification has not only taken away the initiative to improve, but has also created bottlenecks in employment.

A solution to this state of affairs could be found if all technical education were considered as multi-disciplinary, consisting of allied components, with the core courses conducted in common. Then, the entering students in engineering, technology, architecture and planning could begin together, taking common courses for three years. The programmes for each discipline would differ in the final year, when required courses for practical training would replace others. Advantages of such an integration for the student are several:

1) It would allow students a choice to change to another allied discipline after three years.

2) If for any reason a student is unable to continue, he or she can opt out after three years and still hope to continue in the future.

3) Programmes of short and long duration could be adjusted among various institutions, thus reducing unnecessary expenditure in replicated plant and equipment costs.

4) Well organised research and feedback could be maintained in all allied fields, providing a good basis for the modification of teaching methods and the curriculum.
5) The performance of the students will be improved due to the variety of choices.

6) Interdisciplinary education would develop greater interaction among various disciplines and would create flexibility, allowing the development of courses oriented towards actual problems.

This plan envisages co-operation and co-ordination among research centres, training institutions and organisations involved in building. Their combined efforts would not only help to raise standards, but also prevent waste of limited resources. The Table below explains the general scheme of such an approach to technical education. The Centre for Environmental Planning and Technology at Ahmedabad has been set up on the basis of such an approach. Over the years, beginning with a School of Architecture, a range of schools have been established which offer courses in planning, advanced structural design, building construction and supervision as well as mid-career refresher courses on interior and landscape design taught in the evenings.

These units have been, in the recent past, complemented by a Visual Art Centre, School of Fine Arts and a Community Science Centre for popularising science and technology. A wood workshop, ceramic workshop, a material testing laboratory as well as a metal workshop aid the faculty and students to shape their ideas in the medium of their choice.

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### Centre for Environmental Planning and Technology (CEPT)

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<th>Intake After Highschool Graduation</th>
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<td>Award of Degree or Equivalent</td>
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School of Advanced Studies
In Iran for fifty years architecture education was influenced by foreign doctrines and, especially, by the Beaux-Arts system of Paris. This education did not at all fit the cultural and economic needs of Iran. It had the following traits:

1) Total failure to adapt to Iran’s culture, economy and climate.

2) An admiring stance vis-à-vis the Occident and the modern architecture movement (Gropius, Le Corbusier, Van der Rohe and Wright).

3) Education being directed to producing elite artists.

4) Elaboration of luxury projects far from Iranian social realities.

This was colonialism via the medium of cultural importation.

The new programmes are primarily centered on Iran and its problems. Both the physical and socio-economic parameters of the environment are analysed. Traditional and contemporary culture is defined. The history of Iranian art and civilisation is undertaken in conjunction with the general history of world art. Study is directed to the cultural patrimony via examination of fine traditional buildings and settings and cities that embody harmony with their environments.

Geometry, forms and composition are analysed visually, culturally and socially. Study trips to places of artistic and cultural interest are taken. Historians and social scientists contribute to the analysis of architecture and its spiritual, philosophical, religious and social significance. This is accompanied by the study of exact sciences, technical plans, technical design, design following models, descriptive and spatial geometry, modelling, photography, and others. Special importance is accorded to architectural space.

Iran needs an architecture that is faithful to its roots but also one that is adapted to modern needs and that offers a new and original expression suited to the Iranian milieu. This involves a transition from imported architecture to adapted architecture that must be reflected in education.
Architecture Schools

The three schools of architecture are supervised by the Ministry of Sciences and Culture. To enter these schools an admission examination and high school diploma are required. Since 1979, after the Islamic Revolution, a committee composed of ten professors and graduates studies and elaborates the new programme of architecture teaching in Iran.

1. Tehran University
   Faculty of Fine Arts
   Department of Architecture

It is the oldest school of architecture in Iran. Its first dean was Mr. André Godard, who inaugurated architecture studies in Iran based on the Beaux-Arts model. Little attention was paid to the country and its cultural patrimony. The general trend in design was towards Modern Movement.

None of the Iranian architects of this period was able to present and express an appropriate architecture adapted to the culture and the physical environment of the country. In 1968, after the cultural changes that occurred in France and Europe, and after rejecting the Beaux-Arts model, new programmes were conceived, based on different trends and schools of thought in Europe and the U.S.A. The result was not satisfactory either, because these programmes were still not appropriate to the needs of the country.

In 1979 the Islamic government created the Committee of Architecture of the Cultural Revolution. Now the study cycle is six years leading to a master's degree. The new programme is essentially based on Islamic prescription and looks to international trends in architecture teaching. The study of the heritage (art and Islamic civilisation), physical and social environment (influence of climate upon architecture), and Islamic traditions are among the new courses in the design teaching process. This programme is elaborated at the Ministry of Sciences and Culture and sent to all schools of Architecture as an official and obligatory programme. It is still too soon to evaluate the results of this new programme.

2. Beheshti University
   Faculty of Architecture and Urbanism

The Faculty of Architecture was created around 1960. The master's degree takes five years to study. The programmes are based on foreign curricula and are not appropriate to the social and physical environment of Iran.

After the Islamic Revolution of 1979, the new unified programme of architecture started in 1982, but it is too soon to estimate the results of this new programme.

3. University of Sciences and Technology
   Faculty of Architecture

The school was established around 1965. The course of study for a B.A. in architecture is four years. Initially this school aimed at the technical, scientific and constructive aspects of architecture. This aim was not achieved and the same deficiencies (in the social and cultural fields) of the two other schools were apparent. In 1982, the new unified architecture programme started.
Architecture Education in Syria

Aladine Lolah

The first faculty of engineering in Syria was founded in Aleppo in 1946. Teaching in this faculty was at that time very general, and was aimed at educating the engineer architecturally and civilly. The number of students in this faculty was very limited, and in 1957 there were no more than 150 students. In 1958, 200 students were admitted. Basic subjects were taught in the first year, after which there was a choice of two courses. 85 per cent of the students chose the civil engineering section, whereas only 15 per cent of the students chose the architectural section.

In 1982 these two sections became independent faculties, along with two other sections, electronics and mechanics. In 1967 an architectural section was founded at the University of Damascus. This section in 1982 became an architectural faculty. Two other architectural faculties were founded, one in Homs in 1980, and the other in Latakia in 1984.

The number of students in the four architectural faculties in Syria has reached 2200, with 85 per cent enrolled in the two faculties at Damascus and Aleppo, and the rest in Homs and Latakia.

On the basis of its history each faculty has managed to keep its own personality with regard to its administrative status, its detailed programme and the level of its architectural projects, despite the fact that teaching programmes are unified in all architectural faculties in Syria.

The student-faculty ratio is 20 to 1. Many assistants were recently sent all over the world to obtain doctorates in different architectural specialities and ancillary studies so that they could continue their research in the areas required by the architectural faculties. This is part of a carefully designed programme for preparation and improvement of senior teaching staff over the next ten years.

The training period for obtaining the title of architect in the architectural faculties is five years. The academic year is based on a semester system, and the tenth semester is devoted to the preparation of diploma projects.

Students who have secondary school diplomas in the sciences must meet following conditions to be admitted into architecture faculties:

1) The level of the secondary school diploma must be at least "good".

2) The students must participate in a technical architectural competition. The test consists of an architectural subject drawn on the exam paper which the student should complete, improve, enlarge and modify in order to prove his artistic talent. (The majority of students train for this in architectural offices or in some architectural faculties).

A common unified programme is worked out for architectural education. Architecture and ancillary subjects (architectural details, construction, theory, descriptive geometry, design, sculpture and model-making) make up approximately 60 per cent of the curriculum.

Ten hours a week are devoted each year to architecture courses until the last year, when 12 hours are required. Urbanism and related projects are taught in the fourth and fifth years, averaging 10 hours a week, as well as urban sociology, averaging 4 hours a week.

Added to this are the ancillary and technical subjects such as reinforced concrete; metallic construction; electrical, sanitary and mechanical installations; and other subjects necessary in training architects.

As to the course contents in architecture, a student in the first year completes several exercises in architectural design and learns the methods of composition of space. At the end of the semester, he applies these exercises to a real project, such as the Arab-Islamic dwelling, in order to study its components, to extract its artistic values and to deduce its concepts and principles of composition.

The second semester is devoted to simple architectural compositions and architectural creation. These are applied in the study of various architectural projects and in various sketches. The themes of these projects often concern housing.

At the end of the year, the student takes an examination in architecture which accounts for 30 per cent of the final grade, while 70 per cent is based on the student's practical work over the year.

The student in the second, third and fourth years submits five projects and eight sketches, and in the final year two projects and four sketches. The topics of the projects are chosen every year according to a general order importance. The architectural projects are realistic with regard to the programme, the site, their relationship to development and their compliance with the urban regulations in effect in Syrian cities. Teachers direct the students' attention to Arab-Islamic architectural identity in the study of these projects, and try to respect the setting and the environment with awareness of belonging to our century, and to translate everything into architectural masses and volumes that realise the maximum of adaptation and comfort and that faithfully reflect the life of the society. These orientations have given satisfactory results in terms of form and function.

During the last few years, the Architecture Faculty at the University of Aleppo has accorded great importance to the problems of the preservation of the Islamic patrimony and the rehabilitation of the historic urban area of the Arab-Islamic city, and has reviewed certain historical monuments with a view to possibly reusing them.

The symposium on the Preservation of the Old City of Aleppo held in 1983, when I had the honour of presiding over the scientific commission, was able to attract attention and thus to awaken awareness in this area. For the first time, students participated with their final projects, one of which was concerned with the rehabilitation of suqs in Aleppo and the reuse of a khan. Other projects presented at this symposium dealt with popular housing near the old town of Aleppo. These projects have been inspired by the values of Arab-Islamic architecture. The same orientation in urbanism and related projects is maintained in order to recover the Arab-Islamic socio-cultural values. The students of architectural theory prepare stu-
Architecture Education in Syria

B. Tayara, Department of Architecture, University of Damascus

Photo: B. Tayara/AKAA

dies and analytic research on Islamic architecture within the old city. This has developed their artistic abilities in making them discover the organic, aesthetic and human values of our ancestors’ architecture. The same is repeated in the area of architectural history, where a great part of the programme devoted to Islamic architecture and the Muslim city.

In the architectural faculties of Aleppo and Damascus advanced architectural studies were started in 1984-85. A diploma in advanced architectural studies is awarded to superior students at the post-graduate level. The programme lasts a full year and covers the following subjects:

1) Architecture (8 hours a week)
2) Urbanism (4 hours a week)
3) Environment and climate (2 hours a week)
4) Urban sociology (2 hours a week)
5) Programming and computers (2 hours a week).

The subjects are covered in depth. They include seminar courses on Islamic architecture; the Islamic city and the analysis of its structure; factors contributing to the transformation of the Islamic-Arab city; and those that have facilitated contemporary urbanism.

Students at this level prepare a study under the help of a supervisor of research and present it to a jury at the end of the academic year. Among those projects have been the following:

2) The problem of rural housing in Syria and how to improve it.
3) The problem of teaching in Syria and the architecture of schools.
4) The evolution of the architecture of the city of Aleppo since the beginning of the century.

Beginning in the academic year 1986-87, a diploma in urbanism will be given. These will be followed by a master’s degree in architecture beginning in 1986-87, and a doctorate beginning in 1987-88.

The architectural faculties have sent some professors to French and American universities for a duration of one year each. They collaborate in scientific research with their colleagues and also give lectures that are of interest both to Syrian and to their host universities. Consequently, good relationships were created and consolidated with scientific institutions and research centres in Europe and America. One could mention here the remarkable relationship between the Institut d’Urbanisme in Paris, the University of Paris XII at Creteil, where I personally have collaborated with colleagues and, in particular, with Professor Claude Chaline, Director of the Institute, in order to organise a seminar on the Islamic Era (the problems of Arab-Islamic cities) for third-year students at this Institute. This seminar is still going on. There are also links with the University of Washington in Seattle, U S A: the School of Architecture in Lyon, and Weimar University in East Germany. At present, we are trying to work out cultural agreements with several other Eastern and Western universities.

In 1976 a presidential decree enabled all professors to teach and at the same time exercise their profession full time in the university. Offices have been set up in Syrian universities to study the projects and the problems transmitted by the state. All teachers and assistants in all specialisations work in these offices. Several contracts have been signed with the state to study many important architectural projects, either urban or industrial, and to offer consulting on socio-economic development.

This experience has been very positive and fruitful for teachers, and particularly to assistants, as it gives them the means to train in actual projects and to obtain practical knowledge prior to embarking on their specialisations. This is also useful for the students who can have training in actual projects working with their teachers. This programme is at present being improved so that it can be better administered and possible negative effects on teaching can be prevented.
Teaching of architecture at the ITAUT has drastically changed over the last ten years when an attempt was made to adapt the curriculum to the cultural and socio-economic situation of Tunisia.

In 1975-76 young Tunisian teachers came to the school, trained either at the ITAUT itself or in European schools, but very conscious of the problems of the third world. In collaboration with French cooperants working in Tunisia, this new generation of teachers started by looking into the problems of bibliographic and iconographic references used in classes and studios. These references were, of course, the same as those used in French schools. Without changing the nature of courses or the structure of teaching, the pedagogical team opened the school to its environment by choosing exercises that related to expressive references from the traditional context.

Popular habitations, of course, with all their economic, social and cultural components, are a subject of great interest, so much so that sociologists, historians, engineers and architects launched with their students a campaign of systematic analysis, where all details were compiled to constitute reference documents for teaching and research.

This spontaneous effort was then included in the pedagogical area. Each year, at the beginning of the second half of the year, first and second-year students (around 160) are sent in three groups to do a week’s fieldwork. During this trip the students observe models of vernacular architecture and produce a reference document which enables them fifteen days after the trip to carry out a project where they try to make a synthesis of the parameters which they have deciphered.

This teaching, done early in the students’ study, enables the student to discover by reading an environment which is culturally close to him, the different components of architectural space, as well as physical, sociological, economic and cultural phenomena which articulate the organisation of human institutions. Reading this open book enables us, as teachers, to sensitise the student to issues that would take up several theory courses.
The interest of this exercise is in the appropriation of the architectural heritage by the student, who will pursue his studies using his knowledge of these references. Teaching in general uses, in contrast, the international cultural context, where the influence of occidental values shows up in the smallest details of every-day life.

This new approach has enabled the students from modest popular habitats of rural origin to become integrated in the pedagogical system and also to express themselves in a vocabulary which is familiar to them. Starting from this basis, it is easy to develop theory to enable them to master their conceptual approaches.

The process enabled the majority of the students to choose a thesis pertaining directly to the architectural patrimony in urban or rural areas of Tunisia. These theses document different subjects, like the Arab Islamic architectural vocabulary, the organization of the urban space of medinas, the layout of rural space or regional technologies and modes of construction.

As far as the student’s personal research carried out in the sixth year is concerned, these theses are formulated in two phases. One is analytic and shows the parameters which the student arrived at in the reading of the cultural heritage. This analysis includes information relating to the anthropological, sociological, economic and technological areas, but also aesthetic and cultural ones. The descriptive documents include writing, designs and photographs. These documents are the basic material for the second working phase, which is based on theoretical thinking on the subject and which involves attempting to order a space or an architectural project where the student uses his know-how and his capacity to synthesise different elements relating to his level of knowledge.

In the last five years, 90 per cent of the diploma material has been taught in this way. This enables us to hope that the new generation of architects trained by the ITAAUT during this period will be better prepared to embark on operational work and to manage the transition from the traditional to the modern.
Looking Ahead

Workshop 1

Islamic Culture, Modernity and Architecture

Professor Arkoun focussed the discussion around three general points: What should be the spirit or philosophy of teaching in the schools of architecture? How should the curricula be reshaped in order to introduce these new ideas? Finally, how can this be implemented?

Among the many new ideas and approaches presented regarding the spirit or philosophy of teaching in schools of architecture were the following salient ones:

On the relationship between religion and Islamic culture:

1) Some felt that it was indeed possible to speak of Islamic culture, without elaborating further on the concept.

2) Others raised the question of the problem of speaking of an Islamic culture in Egypt, for example, rather than an Egyptian culture which is shared by the Egyptian Christian community.

3) Each cultural context must be examined individually, it was felt, and any concrete conclusions on the topic must be based on concrete cultural and historical situations

On the relationship between faith and culture:

1) Faith appeared as a supreme reference to which there is no acceptable objection, and this creates a methodological and psychological difficulty for further critical analysis.

2) The question of what is sacred was also raised. Is it an eternal substance, or can it be submitted to what philosophers call change or historicity?

On modernity, it was noted that many concepts have been used as empty bags in which one may put what one wants, needs or imagines according to one’s experience and culture. Relevant concepts are: tradition, traditional values, Islamic heritage, Islamic revolt, cultural roots, cultural identity and westernisation, and technology: new technology, international technology, appropriate technology, applied technology and human-oriented technology.

For architects, modernity refers to the modernist movement in architecture, regardless of the other levels of thought to which historians of science and of ideas give greater consideration. This underlines the split between architectural education and the general history of thought. This situation has not yet received a relevant solution in the curricula.

On this point, no consensus was reached in the group. It was noted that there is a tension between the need to discuss theoretical problems while, at the same time, there was a recognition of the pressing nature of the
practical problems faced in schools of architecture today. Some asked whether the search for practical solutions to practical problems should take priority over theoretical discussions. Is it safe to adopt practical, immediate solutions outside an agreed theoretical endeavour to improve the efficiency of teaching and practising architecture?

On curriculum design and implementation, Professor Arkoun pointed out that the main problem to be addressed was how to provide young architectural students with a cultural awareness of what Islam represents in their own society. It was generally agreed that a theological culture as seen, for example, through such disciplines as history, sociology or anthropology, could have a place in the curricula of schools of architecture, because there are now daily references made to religion, God, Revelation, divine law, teachings of the Prophet, and so forth in all Muslim societies.

In relation to curriculum development there were comments concerning:

1) The philosophical base should complement the technical base.
2) The issue of teaching craft was raised.
3) Buildings, for example, can be seen as artifacts and as tradition, but also as laboratories of craft activities for the acquisition of knowledge in several fields. It was pointed out that a similar movement existed in the West, for example, with the Arts and Crafts Movement of William Morris, in the late nineteenth century.
The discussion was wide-ranging. It was hampered by a lack of a common vocabulary and working concepts through which to carry out positive explorations. It became evident that even such apparently simple words as "religion", "culture", "technology", and even "Islamic tradition" were interpreted so differently that they became fragmented reflecting many different views as to their precise definition and connotations as conceptual tools of discourse.

Finally, the discussion ended on a positive note. It was felt that had there been sufficient time, there could have been strong agreement on many of the complex issues outlined above. This points out, of course, the necessity to continue discussions of this nature. Until such concepts are worked out much more precisely, it will be difficult to make more concrete recommendations regarding curriculum development and implementation. Therefore it was proposed to recommend the establishment of some sort of association of architects and other intellectuals committed to following up the ideas and projects discussed in the seminar.

An added comment from Professor Arkoun:

The discussion carried out in the group could be considered as a model for free seminars which should take place within the schools of architecture. This could be considered as a follow up of our Seminar and could be generalised as studio exercise included in the curricula, taking into account the new ideas, demands and needs formulated during the last ten years in several seminars organised by the AKAA. A network of relations amongst the schools of architecture in the Islamic world could be organised to exchange information and experiences which would improve the teaching. The proposals and initiatives arising from these different seminars could contribute to promote a general trend favouring education in architecture which could be strengthened and applied throughout the Islamic world. Then, teaching, practising and research in the Islamic world could contribute positively to the evolution of contemporary architecture and urbanism. We must ask how to conceptualise today's social needs as well as what is needed in each society.

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**Workshop 2**

**Architecture and Art**

The workshop was lively, exciting, full of information and ideas. It would be quite impossible to summarise or to record all that was said in an open friendly, rarely very argumentative, discussion. On the whole, the workshop avoided very theoretical and abstract philosophical or aesthetic considerations and concentrated on the actual task of teaching. It was helped by the presentation of student work from architecture schools in Tehran (Diba), Tunis (Djerbi), and Rome (Petruccioli) and by more informal information on the situation in Rabat (Mouline), Hong Kong (Lye), Dacca (Mohabash Ali), and Spain (Ramos Guerra).

The results of the workshop can be summed up under two categories:

**General Observations on the state of teaching (it being clear that our sample was hardly scientific, as the workshop had no representative from the three countries with the largest numbers of students), and issues for further discussion and thinking.**

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**General Observations**

1) The teaching staff in many institutions, themselves often quite new, tends to be young and energetic. Although usually trained abroad, at least in part, it is a staff which deliberately and vigorously leads students to examine and understand their own country. Methods for doing so vary, but the result is an awareness of one's surroundings which was almost absent ten years ago.

2) Teachers of architecture face many problems: a secondary education system which encourages passivity and, as a result, does not prepare students for the creative imagination required in architecture schools; lack of flexibility and at times antagonism and misunderstanding on the part of the bureaucracies of ministries; and, most importantly, a constant questioning of one's own objectives. But, as put by one participant, "internal doubt is better than external certitude." Furthermore, as said by another participant, "you don't teach architecture, you learn it", as the student is already an architect in his own mind.

3) The workshop identified three components in the teaching process: design; aspirations of society; and what was called the acknowledgement and perhaps the making of "myths", to the disagreement of some with respect to the word itself: that is, of the explicit or implicit operative dreams, ideals, visions, memories, monuments of the society or its appropriate segment. This last component was the central concern, and included in "myths" are history, ideology, identity, and at times, more fundamental cultural expression.

4) We were reminded of the fact that very different futures await architecture students today. Any programme must bear in mind this variety of expected responsibilities as well as learn better the background of its students.

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**Problems and Issues**

1) Much discussion was devoted to the web of feelings, emotions, and ideas encompassed by the word "myth". The Steering Committee has more than once been confronted with it and it seems clear that a further elaboration of the concept and of whatever it is that it means would be a fruitful endeavour. Many of the queries underlying both the notion of Art and the uses of history are part and parcel of the complex of myths which affect most Muslim cultures and influence their architecture.

2) A second concept that emerged from our discussions was that of "appropriate criticism" of architecture. What is meant by this
Looking Ahead

is that the ways in which contemporary architecture in Islamic countries is discussed seemed to us to lack categories of judgement which are clear and generally understood. Often we think we know what we mean, but adjectives such as "mind-boggling" or "Fathy-esque" are not categories of judgements, but merely paraphrases of emotions or immediate reactions. Part of the problem lies in architectural criticism in general, which, several speakers argued, has not reached the level of sophistication found in literary criticism. But appropriate criticism also means the identification in Islamic history, as well as in contemporary Muslim sensitivities, of terms, concepts, issues, and judgements through which an acceptable consensus of evaluation could be developed.

3) A third point to have emerged, although perhaps not as fully expressed, was that regional, and in some cases clearly national, issues may well at this time have taken precedence over pan-Islamic ones. This is not a new issue, but its full implications still need to be worked out.

4) On a more concrete level, much discussion took place around the ways in which proper expertise can be brought into studio teaching. It was agreed that design instructors, who form the backbone of the training of architects, cannot be expected to act as historians, sociologists, philosophers, religious leaders, psychologists, economists, or whatever else may be needed for a given project. In fact, it was argued by some that such expectations are quite harmful, because they foster uniformed answers. Alternative options were the availability of a staff

Student work on Fatehpur Sikri.

Courtesy of A. Petraccioli
with needed competencies (an expensive option hardly likely to be approved by academic administrations), the use of other faculties (possible in some cases only, but also fraught with bureaucratic dangers), a programme of courses in appropriate fields (possible, but requires a staff attuned to the needs of architects), a programme of visiting lectures (runs the risk of being shunned by students and carries no follow-up). We did not come to an agreement on which would be the preferred solution, and in a way each institution will have to find its own best solution. It is important to emphasise, however, that the problem is a real one which has to be resolved if the new training of architects is to achieve its expected results. In a deeper sense, the point here is that architects alone cannot resolve the complex problem of training the architects of the future. But, even though history is the main subject needed anywhere, it is not enough and much more thought must be given to what ancillary help is needed, at least for a while.

5) Although perhaps biased by the specific combination of its participants and noting once again the absence of participants from the largest countries and institutions, the workshop seemed to feel that the directions taken by the schools were the right ones and that the primary needs were in intellectual and pedagogical research more than in building up an infrastructure, in the development of people rather than things.

Workshop 3
Technology, Form and Culture

The aspects discussed by the workshop with regard to technology and its implications for architecture education are briefly the following:

1) Technology seems to get second-rate treatment; it should not be taught as a service course.

2) Students should be exposed to the full range of technologies available, including both the traditional and the modern. Design oriented research can overcome the lack of information on traditional technology.

3) Assessments of technology should be part of design courses.

4) Students can learn by doing (model making and testing). In 60 per cent of architecture schools in Islamic countries some 40 per cent of the time is devoted to studios. The technology used relates to obsolete materials or to materials that are not local. The gap between theory (classroom), design (studio) and experience can be bridged by using local craftsmen.

5) Each locality/situation requires individual study.

6) History/design/technology should be connected in order to teach students how form evolves.

7) Special training courses for teachers of architecture should be provided.

The workshop proposed the establishment of a pilot summer school in a selected institution within a particular region.

Teachers should be selected from the host school as well as other schools in the region. The content of the course should include the relationship of form and structure, how to teach it and ways of introducing such a course into existing administrative institutions.

Material for the course should be drawn from experience, both within and outside the region and should include both theory and practice.

If the pilot programme were successful, it could be repeated in other institutions.

Workshop 4
Architecture and Society

The workshop was concerned with the role the architect should and can play in society. It was stated that the architect is in fact only at the service of a small portion of society
and that many problems related to the built environment in its broad sense are generally not considered by the profession.

The workshop agreed that the role of architects can be broadly defined as one which calls for an active involvement in all aspects of everyday environment. It was regretted, however, that existing programmes in architecture education are exclusively focussed on architectural design, and thus help to perpetuate a limited role for architects.

In order to provide a differentiated set of skills for the future architect to meet diversified challenges, diversity and flexibility are called for in architectural education. This can be achieved through intervention at both institutional and curriculum levels.

At the institutional level it is recommended to introduce the notion of diversity with each institution seeking excellence in research and training in certain specific areas, rather than having a rigid and compartmentalised system in which all institutions in one country are reduced to imitating and replicating each other’s activities. In a differentiated system the achievement of one institution could be utilised by others through a system of networking, emphasising feedback.

At the curriculum level new courses should be introduced which provide training for students to be able to address particular needs of the societies and cultures in which they will be practising, including local economic and technological constraints.

Amongst these are courses on measuring and interpreting social change and concomitant changing demands on space and forms which then would help the architect to view building activity as a process within a continuum. Also needed are courses focusing on community development and shelter provision, taking into consideration local technology, self-help, participation, local labour and financing through generating economic activity in the process. Courses are needed to remedy the unfortunate lack of technological training of architects, whose input is essential to develop and utilise new technologies particularly for local settlements. It is proposed to introduce laboratory training in building materials that are economically and climatically appropriate. Finally, in order for architects to be able to control and direct building activities in a coherent fashion, it is essential that they be trained in managerial skills.

While different programmes of architecture are proposed to develop particular strength in one of these areas, it is strongly felt that all training programmes include adequate consideration of architectural heritage and values. In this context architectural history is not to be treated in terms of aesthetics but in relation to social, economic and political conditions under which modes of operating such as conventions, decision making processes and responsibility are developed and disseminated. As in any branch of higher education, applied and theoretical research is essential in order to achieve these goals, and intellectual autonomy of higher education is essential for successful research. It is therefore proposed to establish research projects on the relation of society to architecture and related design technology. In this context cross-cultural research should be encouraged with the frameworks defined jointly by practising architects, teachers and social scientists working in Islamic countries. Cross-cultural and interregional components of such projects will best be achieved through regional workshops and pilot projects. In order to disseminate the results to the profession as well as to schools and decision makers it is proposed to establish a periodical on architecture, education and society in the Islamic world, reporting on the projects and their findings. The findings can be published in an international language in order to reach a maximum number of teachers.
Haider

In the workshop on “Technology, Form and Culture” the question of values was raised more than once, but constraints of time forced us back to more “pragmatic” issues. We did not have time to discuss perhaps the most important technology because of its far-reaching effects and easy transferability: that of information, computers and even robotics.

Professor Mahdi Elmandjra writes in one of his papers the following: “The Report of the 1985 Annual Conference of the Grandes Ecoles in France states that ‘the basis of the professional engineer of tomorrow will be that of technician, financier, organiser, psychologist, economist and philosopher.’ In the United States the latest concern of academics is the lack of philosophers to deal with the paradigms and algorithms needed for research work on artificial intelligence.”

In this regard, I would like to reiterate the recommendations put forth by the workshop on Islamic Culture, Modernity and Architecture and elaborated upon by Professor Abdelhalim that serious discussions should continue on the more fundamental issues of philosophy and values as they relate to man’s potential for further technological advancements. As an architect and educator I am both fascinated and very concerned about the power of the new machines. While one is tempted to keep up with the latest, and perhaps rightly so, I believe that only a philosophical house-cleaning will prepare us to deal creatively with the latest developments in the field of electronics.

tural education today, but, a more implicit, and hidden aspects of these problems were not fully explored. I believe that the situation is much more serious and grave than most presentations have shown. In the light of this I want to comment on the conclusion of the workshops:

1) I fully support the proposal of Professor Arkoun to create a group to continue on the development of ideas and concepts initiated in the seminar. As well, I am in support of the proposal “Technology Workshop” calling for summer workshops which will coordinate among several schools.

2) I believe that the existing situation cannot be remedied through reform. A basic re-structuring is required, and a radical outlook should be taken. A new vision of architectural education is needed, not reform.

3) I question the wisdom of linking the proposed ideas to present educational institutions. I believe that a truly independent effort can be the only way to have some measure of success. Then let this independent group work in a real context of building activities.

Abdelhalim

Our discussions throughout the seminar were either diagnostic, defining the ills as well as the potentials of architectural education in the Islamic world today, or prescriptive, attempting to outline visions, solutions, or raising questions about the solution. I feel that the diagnostic discussion showed the explicit aspects of the problems in architec-

ology. Traditional technologies have developed an architecture and craft to be admired by all, whether they are large monuments or humble abodes. When only traditional technology existed, when there was not this amazing opportunity to multiply things by the millions, when man wasn’t motivated by greed, there was a natural harmony in society.

Modern technology has distorted this heritage not because it cannot produce objects of quality, but because it is not motivated to do so, but is exclusively oriented towards making profits in the shortest possible time. This extreme mercantile attitude has degraded the whole of the cultural gains of the previous centuries.

It is really the spirit behind technology, high technology, that should be reconsidered. I do not really believe that anything concrete could be achieved through governmental channels; they are too big and have responsibilities that are beyond their means, especially in the third world and Islamic countries. Only through individual and private foundations can we help to reorient this potential because today we have much more potential than when we only had traditional technology. I can only see hope coming from private individuals and foundations such as the Aga Khan Award, which we must congratulate for all its efforts.

Architectural schools should prepare future architects to stop the nuisance imposed on society by an architecture which does not respond to harmonious criteria and which attacks human beings by forcing them to live in a degrading environment.

A balanced environment is therapeutic. Like music or art, it improves the morale. Architecture should maintain environmental balance and even enhance it. It is one of these rare disciplines where man working with nature becomes the creator in space; his work like a mountain imposes itself on nature, magnifying it or degrading it.

Zaouch

We are all witnessing a degradation of architecture in our countries and in the West. What are we to do? How can we redress all this? Education is the key to begin mending the twisted learning of our time. The problem, I think, lies in the misuse of tech-
Mobasher Ali

In order to get something done the first step is to create an awareness of what it is that has to be done. This, I believe, the seminar has achieved. The next step would be to prepare the necessary materials for implementing the goals set out in our workshop discussions. Therefore propose that the following steps be taken:

1) Publication of a journal for educational institutions;

2) Preparation of relevant materials by different study groups outlining the principles and theory of design found in Muslim architecture for the purpose of developing evaluation criteria;

3) Collection and dissemination of information on indigenous material and technology.

D. Pamir

One of the major dilemmas that we confront in the third-world universities is what we may call "entrapment" of knowledge. Most of the time ideas that are generated tend to be confined to these institutions as theoretical exercises, never reaching society to be tested in reality. Along with further supporting academic activities, the Aga Khan Program can contribute towards ideas or projects of value to be actually realised and demonstrated.

Saad

Educated persons are equipped to solve new problems in new ways, while trained persons and artisans adapt inherited solutions to new problems. Education precedes training or there is no quality. Without technology, architecture remains as liberal arts. With technology alone, it is a craft. With both, involving the whole person and focussed on people, it is both an art and a profession.

There has been an over-emphasis on the quantity and not on the quality of graduating students during the past few decades. The large expansion of new programmes and increased enrollments are a response by academic institutions to the demand by the profession for the development of a large labour pool. This growth boom is ending — if it has not already ended — and we must now pay particular attention to achieving and maintaining quality in our universities. Small and inefficient programmes will be vulnerable to elimination. Extremely innovative programmes will be necessary to survive the challenge facing the future educational system.

I wish to dwell on five points:

1) Goals and objectives: Architectural education should impart a skill, not a capacity for passing examinations. We ought to define the social role of the architect, his relationship to other professionals, to industry, and to clients and, thus, to the community at large. Once we identify these essential spheres, the route to take to prepare the graduates will become clearer. Graduates should be prepared to meet the demands of the local professional practice. We should constantly look for methods that can evaluate our educational objectives with some degree of clarity and reliability.

2) School and educational system: One needs a school of a size and status sufficient to justify a range of expertise among staff, good quality staff and adequate space, equipment and facilities. The educational system should help to meet the goals of a better architectural education. Generalised goals can be summarised as follows:

- To develop a responsive curriculum which will allow graduates to enter any of the several realms of contemporary practice.
- To increase the opportunities for applied research afforded by the school’s resource associations.
- To develop flexibility within the school to allow for the pursuit of individual interests.
- To develop curricular association with other disciplines to facilitate a mutual understanding of the necessity of interdependence in the approach to environmental problems.
- To ensure that the school offers challenges to the students while at the same time meeting accreditation standards.

The personality, the feel of school is as important as the curriculum. We need change in the direction of self-directed study. This means a shift from learning to understanding.

A curriculum should also reinforce the linkage between school education and real life by increasing the period of practical training. A curriculum must also be adapted to local physical, societal and cultural conditions.

The course of study in the field of architecture currently tries to crowd too much learning from books into too short a span of experience. The amount and the scope of technical information made available to students is beyond reproach. The value of lectures, as a method of acquiring expertise, even when integrated with studio design work, seems to be open to question (John Carter, “What Can Be Done about Architectural Education?” The Architectural Journal, 14 April 1976, pp. 743-761).

3) Students: Are we preparing students for the profession? We have a responsibility to society, to clients and to the future. How can we prepare students for this responsibility? We must realise that many students do not so much choose architecture as their discipline as fall into it by chance. Students enter the programme with particular qualities. We need to ask whether the curriculum addresses individual characteristics or ignores them. Admission procedures must recognise individual qualities of students.

4) Teaching Staff: The quality of a professional programme is dependent on the work and prestige of the educators. We should be concerned about the ability of current educators to establish or maintain positions of influence within and, especially, outside of the professional programme. Current problems include the lack of a traditional scholastic focus in refereed journals; the interdisciplinary and collaborative nature of the architectural profession, which does not generate new knowledge but de-
pends on the output of other disciplines; the small size of the programmes compared to other university units, which means that the constituency lacks institutional clout, and the diversity of practice, which reduces the consumer value of work.

Teaching staff should be of high calibre and they should be allowed to practice their professions outside universities. More experimentation, innovation, publication and critical evaluation is necessary for the improvement of the basic qualifications of teachers, and part of this is surely advanced training. Post-doctoral courses for educators should be encouraged. There is also a need for teacher-training workshops, honours’ programmes, travelling fellowships and visiting lectureships. Priority must be given to the amount and quality of research or creative performance that is essential to the growth of a programme. A programme that is flexible, imaginative, innovative and engaged in conducting significant research is necessary to build the self-confidence of the teaching staff.

5) Facilities and equipment The school should maintain its own library, including slides cross-referenced by a computerised catalogue system, and audio-visual equipment. A model-making workshop, a photo lab, an art-form studio, an environmental control lab, and a planning workshop are useful in any school of architecture. Facilities should complement the programme and the student should maximise the use of such available facilities during design and planning problems. Full-time librarians, technicians and assistants should help the teachers and students with research and lecture/presentation preparation.

How does the architect influence the environment and thus the quality of life? The quality of education has a strong impact on the quality of the profession, environment and life. The architect can either help create a balance between natural, built and social environments or contribute to the deterioration process of an environment already under stress.

Traditions and customs are valuable in this respect. Some how, the opportunity for “emphasis of difference” must be provided. Travel as an extension of experience and independent study as an extension of instruction are proposed as devices of the greatest significance educationally, environmentally and professionally.

There are many architecture schools without a leading trend, ideology or pattern. Both teachers and students seem to be fascinated by the glamour of recent Western styles. In the absence of a clear definition of the architect we need, or what kind of environment we want to live in, more graduates will continue to be frustrated, misled and, to a great extent, professionally sterile.

I tend to agree with Carter about recovering the idea of de-schooling architecture education. De-schooling architecture education should be developed parallel to the present educational route. Carter concluded that in the schools there should be growing attention to the real world outside; in practice there should be a lowering of barriers between architects, contractors and the materials industry; and among students there should be an abandonment of the belief in the mystique and social exclusiveness of the professional man. De-schooling architecture education attempts to acknowledge the old apprenticeship form of training. There is no ready-made recipe for the proposed de-schooling architecture education. The old idea is genuine but will require joint efforts to redefine it.

Lolah

I would like to make the following recommendations and begin by pointing out that it is necessary:

1) to modify architecture education programmes so that they include Islamic architecture and Islamic cities;

2) to make use of the artistic and cultural values of that architecture in order to define a characteristic identity of contemporary architecture;

3) to guide the students’ work and projects towards the theme of the patrimony of architecture;

4) to emphasise the need to rehabilitate this patrimony;

5) to revise and re-utilise certain historic Islamic monuments in order to satisfy vital contemporary needs.

We must also create a high-level commission of architects, thinkers and urbanists from the universities in the Islamic world to carry out an in-depth study of the principles and concepts of Islamic architecture, to analyse its components and to highlight its characteristic features in order to offer visions and orientations that could assist the revival of a contemporary architecture with its roots in the past, but avoiding all forms of imitation.

This applies just as much to Islamic cities, where a study should be made defining their principles and urban criteria, explaining the nature and the structure of the Islamic city, its space and time-related characteristics, eventually deducing principles and new concepts for the definition of the contemporary urban setting.

We need to exchange experiences, publications and research among the architectural faculties in the Islamic world, and to encourage creativity in Islamic architecture by organising competitions to reward the best projects of architecture and urbanism.

We need to encourage and support Arab-Islamic and foreign research centres that assist the realisation of these goals and support the improvement of Islamic architecture to create a contemporary urban environment.

We also need to set an annual work plan in which the universities in the Islamic world would take part to study topics of common interest in contemporary Islamic architecture and urbanism, and to publish and distribute the results.

We must start scientific journals at the national level by publishing academic projects and research by students, so that these can be exchanged among the countries of the Islamic world in order to harmonise
intellectual approaches in the domains of Islamic architecture and urbanism.

Djerbi

The need for reference materials and theoretical studies related to Islamic architecture has already been mentioned. There are at present in the Islamic world many architectural schools which are revising their programmes and their methodologies to open up to their own environments. However, they are still handicapped by the lack of scientific elaboration of structured theories that could serve the educational endeavor.

I would like to recommend that parallel to the current Aga Khan Award for Architecture, a similar award be designated for theoretical research to stimulate professors and researchers to produce reference works on Islamic architecture and structure new instruction. Such an award could have very positive effects for the practice of architecture, because it would make it possible to train future architects on the basis of truly established knowledge and not just based on an intuitive and empirical approach.

Moreno

I would like to thank the Aga Khan Award for Architecture in the name of my Spanish colleagues and my own, for inviting us to attend this seminar, and for choosing to celebrate it in Granada.

I fully agree with the conclusions and would like to congratulate us all for what I understand as a justified demythification of technology. I would also like to insist on the preservation and improvement of the crafts. Their existence is adequately valued only when one faces the impotence created by their disappearance. Theory can be learned, technology can be bought, but the crafts, once they are lost, are impossible to recover because the social structure which supported the apprenticeships on which they depend disappears also. The work of the architect is performed with the help of crafts. The problem of building shelter according to local conditions is often solved with methods which have been tested throughout the centuries.

Technology is a good thing when it solves problems, but not when it causes them, or when it solves the ones previously originated in a fictional way. The automobile industry is a good example of the latter, with the new models put out every year.

I think that a very valuable contribution of this seminar, if not the best, would be to encourage Islamic countries to re-evaluate positively their cultural heritage of vernacular architecture that is still alive and therefore still able to generate a valid architecture.

I would like to suggest to this seminar, as I will suggest to the High Council of Spanish Architecture Schools, an undertaking that will show the problems caused by the lack of professionals in construction, using as an example the Alhambra quarter of Granada, which you have seen and which is part of our common cultural heritage.

Ruiz

I would like to stress the following points:

1) Technology is an irreversible fact that is to be accepted and incorporated into new designs. This is not contradictory to the traditional values of Islamic architecture, but, rather, should be considered a challenge that Islamic schools of architecture must confront positively.

2) The history of Islamic architecture in the world and the specific architectural history of individual countries and of vernacular architecture must be mastered by students, because their work will also be part of an historical matrix.

3) Architecture must be taken out of its ghetto. It is time to introduce architecture education at every school level, primary and secondary. Otherwise, society, which finances construction, will not demand quality architecture, and buildings will not be constructed in accordance with architectural standards.

4) Schools of architecture should encourage the study of the constant formal values in the
history of Islamic architecture as a source of inspiration.

5) It is imperative that crafts be preserved, at least at a compatible level with the implantation of technology, subsidised and protected by the state. Once the crafts disappear, as they have in Spain, it will be more difficult to recover them than it would have been to preserve them in the first place.

Diba

What I want to propose is the creation of a centre for research and documentation which would help bridge the gap between philosophical concepts and Islamic culture within the framework of architecture. This would be possible only with a multi-disciplinary group of specialists which would have to include historians, architects and artists who would work together to create a theory of architecture in the Islamic world. The findings of the centre could be published for wider dissemination and used as teaching materials.

El-Wakil

To speak of the number of students we have to cope with in architecture courses, as Professor Abdelhalim has mentioned, is, I think, of secondary importance to the problem of adapting our training programmes to the particular economic needs of each country. It is irrelevant to give figures. Do we really need thousands of architects in Egypt? They can no longer find jobs.

Unemployment has become a universal problem today; there is the problem of jobless youth in Europe. It is a major concern for us in the Third World and should be thoroughly investigated. Many of the educated people in third-world countries are forced to take jobs as ushers in hotels or as tourist guides. I believe this problem is relevant to our discussions on education and needs to be seriously considered.

It has been calculated that 30 million housing units will be needed by the year 2000. There is yet another statistic stating that 95 per cent of the built environment is done without architects; that is, the 30 million housing units will be built by contractors hired by the government, and perhaps only one architect will be involved, greatly diminishing the chances for employment for other architects. Since most of the built environment will be done by the people, then we need to find ways to train the people and reorient our architecture programmes.

Porter

I would like to make a brief comment on that question. We noted in our workshop that there was a great disparity between the effective demand of society for building and architectural skills, and the needs of society for building in order to meet its social obligations.

This translates into a proposition that perhaps the wrong jobs are available and not enough of them, and that there ought to be more jobs of different types using architectural skills to deal with a much wider range of problems in society. Now this poses a dilemma for the architectural education establishment. On the one hand, it could decide that, given the lack of effective demand for its graduates, the obvious thing to do is to close down most of the schools and merely fill those jobs where demand remains. The other approach, and the one that I feel has emerged from this and other conferences, is to conceptualise society's needs in ways that we think are just, right, and that deal with real problems, and then to redeploy the teaching enterprise in such a way as to produce skills to meet those needs.

Schools have the double obligation both to reconceptualise demand which would correspond to society's real needs and to train people who can meet those needs. Now, this means that indeed we may be producing students for whom there are no jobs at the outset. But on the other hand, there is, I think, a dynamic which is set into motion by training people with greater social awareness, with highly developed skills and who demand to work on problems that they regard as urgent. The dynamic will be set into motion because those jobs will be created somehow. It will take a lot of work on our part, as well as on the part of others, to persuade bureaucrats, industrialists, and leaders in all fields, to deal with these problems and to create a part of that demand.

Barrada

It has been implicit in our discussions that the objective of architectural education is to qualify architects capable of producing "architecture" (in whatever way it is defined). That is, architects are means. It is important to introduce the notion that architects are individuals or are ends in themselves: to have the knowledge and values not only to be a "good" architect but to have the pleasure of being an architect or being a person who can use architectural education in a pleasurable way as part of a "whole" approach to life whatever he actually practices.

Ahmad

Islam is the religion of rationalism and sound common sense, independent of any local factors, sound for all mankind at all times. But it certainly came with a mission to modify existing socio-cultural situations in specific locations. Hence, any attempt to study the effect of Islam must start by understanding cultures prior to their contact with, and influence by, the new faith. This applies to architecture as it does to any other aspect of life.

Islam should be taken in its entirety, since Ibrahim and Adam, and not confined to the Muhammadan message. The notion implicit in many (mainly Arab) writings that nothing of consequence existed before Muhammad...
is naive and must be dismissed in any serious discussion.

In our case it is the "Arab-Muslim" context or framework within which local (Arabian, Egyptian, Sudanese, Maghribi, Yemeni, or desert, coastal, highland, Mediterranean) architectures evolve out of different perception patterns, aesthetic values, materials, technologies. This variety and heterogeneity must be regarded as an asset in developing local architectures with identity and spirit, and in rejecting standard anonymous styles as well as standard, often redundant, elements from traditional Arab-Muslim design.

Difficulties arise from the clichés and faulty notions from which Arab scholars as well as foreigners suffer when the relevant issues are discussed, both those who are biased in favour of the culture and those against it. Our curricula have to be reviewed with this in mind. There are some misinterpretations of the faith. Issues like polygamy, veiling of women and segregation of sexes, which do have a reflection in house design, are not basic to the faith. Monogamy and mixing of sexes are actually basic. Individuality, as a concept basic to the Muslim, seems not to be properly understood in the established salafi thought and has sometimes been fought for no good reason. Development is inhibited by views of "aesthetics" as "standards" with the resultant imposition of certain forms in our built environment, even where they are not only irrelevant but often give a physical expression conflicting with intended spirit, as in the case of certain static façades and spaces used in airports and stadia. It is inhibited also by the supposed prohibition of some visual arts, seriously restricting the scope of the designer. The distorted image of the Arab and the Muslim in European thought (violence, over-sensuality, inefficiency and apathy towards work) has had a prominent role in this state of affairs. So has an obsession with the past at the expense of a better understanding of the present and the future, and an obsession with form at the expense of content. Some issues have been over-emphasised, like the Arabs' basic contribution to medieval technology. Still others have not been duly recognised; the visions of al-Farabi have not yet taken their place alongside those of Howard's, Wright's and Le Corbusier's.

It seems that for a creative architecture to re-emerge, architectural education has to be steered first towards an understanding of our cultures before the Muhammadan message, then understanding the essence of Islam as a dominant modifying factor, and playing down the clichés, being aware, without undue exaggeration, of our contribution to the various fields of knowledge and recognising the rich variety of local cultures and subcultures so vital to genuine design, while never losing sight for a moment, of present day realities.

Norberg-Schulz

It has been a rewarding and inspiring experience to find so many people dedicated to the task of improving man's condition in life, to experience the spirit of collaboration present at this seminar and, last but not least, to understand more fully the noble activities carried out by the Aga Khan Award for Architecture. In contribution, in order that this spirit may prosper, I would like to offer a few suggestions.

I am convinced that the field of architecture and the community would greatly profit from getting a coherent theoretical basis. Such a basis is today lacking, a fact that has also come out in this seminar. Practice, history, criticism and teaching can only reach beyond mere improvisation, if a theoretical tool (method), common to all of us, becomes available. I seriously believe that it is possible to work out such a tool, that is, to show that the field of architecture does indeed have a general structure. This structure is rooted in life itself, the personal functions of orientation, identification and memory, as well as in the social functions of meeting, agreement and withdrawal. In turn, these functions determine the structure of architecture, which are spatial organisation (orientation), built form (identification), and type (memory), all of which become manifest on the environmental levels of city (meeting), institution (agreement) and house (withdrawal). This outline of the general structure is related in everyday life to a particular local/temporal situation, that is, to a place.

Life "takes place", a basic fact that is the starting point of architecture. We cannot separate life and place. (See my book: The Concept of Dwelling, New York, 1985.) Thus, to teach architecture means to make the student understand the general structure of the field, as well as the local/temporal situation. Only with this basis will the architect be able to fulfill the purpose of architecture, which is to help man dwell in a certain place.

Human identity is rooted in places, and therefore we all say: "I am a Roman", "I am a New Yorker ..., etc." As the art of place, architecture brings forth the world as what it is. It expresses and communicates a certain life which "takes place"; architecture may, therefore, be considered a language. As a language, architecture tells man where he is, how he is and what he is. The language of architecture, however, is not a "code" based on mere convention or habit, as is maintained by semioticians; it has an existential basis. Therefore, architecture education ought to be based on learning the language of architecture, just as human development depends to a great extent on learning one's mother tongue.
How to achieve a built environment for the contemporary needs of Muslim peoples and how to anticipate tomorrow’s development needs in design and building while respecting the heritage of the past and the cultural traditions of communities facing the challenge of modernisation? This has been a pivotal question posed by the Aga Khan Award at its inception ten years ago when it embarked on a search for architecture appropriate to the twentieth century. In the course of its search the Award has identified exemplary buildings that combine culturally sensitive form with appropriately utilitarian design, buildings which meet contemporary demands for space and function while achieving an impressive cultural fit. But this search has also revealed how rare and few such new buildings are, and how widespread the lack of regard is for socio-cultural requirements and socio-economic conditions.

On the one hand the newly built environment suffers from uncritical and unimaginative copying of alien models, from associating prestige with “hi-tech” appearance regardless of whether such constructions are serviceable, from neglect of local materials, crafts and technology in favour of imported materials and techniques even if they are economically and climatically inappropriate, and not least from a lack of knowledge of history and culture which often results in confused and banal interpretations. (See for instance, the examples provided by Rifat Chadirji in his case study on Iraq.) On the other hand the heritage of the past is being rapidly destroyed due to population pressures on old urban centres, the lack of initiative and resources to implement schemes of adaptive re-use, reckless or unscientific intervention, and haphazard building practices both by developers and by the informal sector. (These issues were examined at length in the proceedings of the ninth Award Seminar: The Expanding Metropolis: Coping with the Urban Growth of Cairo.)

This state of affairs points to the urgent need to stem the tide of destruction taking its toll on the cultural heritage and to take positive action toward setting a course for improving the environment where people live and work.

It is with this sense of urgency that the Award has addressed the issue of education, because, in the words of His Highness the Aga Khan, “the education of architects is the key to the profession’s competence; its attitude toward its role and responsibilities; and especially to its social, cultural and environmental sensibility.” If architects are the primary agents who help to shape the built environment, then it is essential that they be prepared to take on their tasks with a heightened awareness of the vast array of the problems that the profession is facing and of issues that the profession should be addressing but has not yet done so.

Some of the crucial issues around which the thematique of this seminar was developed were as follows:

- Are the existing institutions of training capable of meeting the rising demand for architectural services in Islamic countries? Both the integration of the rapidly developing countries into the world economy and, particularly, the economic resurgence in the wake of the oil boom have led to a sharply increased demand for building for a variety of new functions. This, in turn, has resulted in dependence on expatriate professional services, pointing to the inadequacy of existing institutions in many countries.

Do schools provide architecture students with the necessary background, tools and intellectual apparatus to relate design to the cultural system for which it is intended? Beginning with the post-colonial era and reinforced by the economic resurgence, there has been an intensified search for cultural identity throughout the Islamic world. This search, however, has been impeded by the disrupted traditions of building as well as confusion in categories of definition. As such, the architect has to take on the intellectual burden of differentiating between Islamic, national, regional and local identity in order to achieve proper expression.

- Does architecture education provide a sufficiently broad overview of the chal-
The concern with teaching history properly was echoed by Oleg Grabar who identified several approaches and methodologies in the history of art and architecture, emphasizing nevertheless the fact that interpretation of art is not free from culturally (and even politically) based value judgments. Renata Holod’s strong recommendation to develop a theory of Islamic architecture based on original sources, if followed, could in fact serve as the best means to understand the inspiration and aesthetic values associated with the traditions of building and to interpret them with a vision less clouded with received notions and biases.

The interrelated consideration of history, building tradition and aesthetics bring to mind the central issue of how to articulate the relationship between Islamic societies on the one hand and architectural thought and practice on the other. Many participants repeatedly returned to the question of “what is Islamic?” Christian Norberg-Schulz approached the issue by positing that an Islamic environment has a distinctive atmosphere that can be readily perceived as being different from, for instance, that of a Western European town, and then proceeded to enumerate common elements in the conception and composition of built forms throughout the Islamic world. The fact that his arguments were supported by examples drawn from historical buildings pointed once more to the crucial importance of defining Islam in the contemporary world, and articulating the relationship between Islam and modernity to gain a clearer picture of what could be meant by “Islamic architecture” in today’s built environment.

These issues were taken up at the outset in a profound and thought-provoking essay by Mohammed Arkoun who centred his argument around the concept of “rupture”, a notion that lends itself so readily to explain the relationship between religious beliefs and societal values yet one which is often misused in facile interpretations. The fundamental rupture in the history of Islam, as Arkoun points out, has occurred when interpretation was banned and autonomy of reason eliminated with the imposition of rigid “orthodox” teaching in the eleventh century. The Islamic tradition has thus “mutilated itself” by replacing intellectual debate with ideological dogma and the constraints that have been imposed after this rupture have “dominated” cultural life in Muslim societies until today. Hence the issue is fundamentally not the seeming disparity between religion and modernity, or Islam and secularism, but one which stems from the ideological rigidity that does not allow meaningful consideration of contemporary values, requirements and needs. The fact that the rupture still obstructs the sight of reality can be demonstrated by the fact that what is commonly subscribed as Islamic thought remains highly ideological and dogmatic while societies are secularising and modernising. Thus, according to Arkoun, free and open intellectual debate is a prerequisite for discovering what is truly Islamic and that means have to be found to teach Islam in architectural schools in a modern way.

In addressing a different topic, that of technology, Gulzar Haider frankly assessed the “current state of malaise” in Muslim cultures and called for a re-invigoration of Islamic thought and culture. Again on the same topic of technology, form and culture William Porter pointed to the strong but subtle links among these three elements. In as much as technology is international and perhaps value-free, its utilisation for particular uses may not be, and haphazard adoption of inappropriate technologies may be damaging in several respects.

Treatments of the theme, architecture and society, brought the focus on current issues facing the profession. In presenting an overview of the harsh social and economic realities, Ismail Serageldin enumerated important areas of concern such as providing shelter for the poor, problems of illiteracy and maintenance of public health. He described the role of the client as being equally important to that of the architect in determining architectural taste, which ought to be a collective effort, and emphasised the intrinsic strength of architecture as a process that reflects the political, economic and cultural
choices of each society where it takes place. In terms of education, he proposed educational programmes for the allied professions, such as technicians, so as to provide trained support for the profession.

While taking into account political regimes and market forces as sources and determinants of architectural ideology, Ilhan Tekeli singled out professional circles as primary agents effecting change. In this context he reminded the audience of the crucial role of educational institutions in the shaping and transmitting of ideology. He also pointed to the demand for different types of buildings by different social groups: upper-income groups seeking status symbols while the middle-income groups relying on the entrepreneur to determine the building type. The lower-income groups are usually left with squatter settlements in the building of which there is no architectural intervention. With regard to architectural practice, Tekeli defined the role of the architect according to the categories of organizations to which he or she belongs. Given that large, state-owned firms are controlled more by bureaucrats than by professional architects and that foreign firms are not much better since the architect is reduced to a minor functional role rather than being employed as a creative designer, the freedom to make a positive contribution is denied to the majority of professionals even while their services are desperately needed. It is only the self-employed architects and those working in small firms who are able to practise freely and imaginatively, but then how many of them can and do prestigious projects or lucrative commissions for the sake of devoting themselves to social problems?

The case studies included in the second section of this volume provide a closer look at particular problems of architectural education and practise. Suha Ozkan's overview sums up the background of the current state of dependency on Western educational models with particular reference to Turkey and Egypt where first modern schools of architecture in the Islamic world were established. Saudi Arabia's more recent experience on the other hand illustrates how rapid development also leads to foreign dependency in teaching materials and personnel. Pakistan's case provides a vivid picture of yet another widely shared experience, that of the search for identity—a national expression in architecture—beginning with the dawn of the post-colonial era. Both the case studies on Pakistan and on Turkey shed light on an important point, that of the establishment of the profession in its own right as a result of a process of differentiation. The fact that architects have had to fight for recognition and still have to defend their rights in most countries of the Islamic world explains how little influence they could have had in resisting the forces of destruction that have played upon the environment. The protracted struggle of Pakistani architects against domination by engineers as well as the steps taken by Turkish architects to organise the profession and increase its influence provide a lesson for the future on how to inculcate a sense of public responsibility to the next generation of architects in countries where the profession has not yet achieved full recognition.

On the other hand, the sad picture depicting the erosion of a national architectural tradition in the case study on Iraq must also be borne in mind. The sobering thought offered by Chadirji is that architects themselves can cause great harm if they are not intellectually well equipped.

The case studies on the Aga Khan Program and on CRA/Terre reported two different types of search for appropriate architecture for Islamic cultures and developing countries: the former having established curricula and methods for training architects for practice in the Islamic world and the latter providing a means for building cheaply but effectively using earth as the chief material. Collectively these case studies illustrate the enormous tasks that befell teachers and practising architects and demonstrate once more the urgency with which these tasks must be assumed in order to achieve a transformation of architectural attitudes.

In summing up what we have learned, it may be useful to consider the key issues of the seminar under three categories: theoretical concepts, the role of the architect in society and methods related to architecture education. In the debate on theoretical and philosophical issues the need for a common understanding of such basic terms as "Islamic architecture" clearly pointed to the fact that basic research tools and definitions are still lacking. Research is mainly done in the West and is virtually non-existent in Islamic countries. Therefore, the problem remains as to how much research could be encouraged at institutions in the Islamic countries so as to achieve critical analysis without which there can be no architectural excellence.

Furthermore, the very concept of Islam in the context of traditional societies and of modernity ought to be a subject of continuing debate within academic institutions. Unfortunately, in many Muslim countries the subject of Islam has by default been appropriated by obscurantists and ideologically mullahs, because the intellectuals have failed to do their homework. It is time that we began to address ourselves to the very basic questions in order to have a rational and clearer understanding of Islam itself, without which we will not be psychologically prepared to meet the challenges and problems arising from the confrontation of modernity with tradition.

This brings us to the question of the architect’s role in society. Will we continue to see him as a prima donna, a mythmaker; or should we expand our view of the proper role of the architect as a professional whose responsibilities include all problems related to the environment?

With regard to methodologies and techniques of teaching architecture, the central issue to be resolved is the question of which models to use, Western or Islamic? It is generally agreed that a critical examination or re-examination of Western models is needed. But in order to do this, we still are in need of the fundamental tools that can be obtained only through basic research and documentation and which would enable us to work out alternative methods and techniques.
It has been suggested many times at the international seminars of the Award that more interaction was needed between individual regions. With this purpose in mind, two regional seminars were organised at Dacca and Fatehpur Sikri where architects and educators came together to share and exchange ideas and to discuss mutual problems and concerns. A significant outcome of these seminars was a greater awareness for the need to turn to traditional models in architectural programmes, such as reviving the master-and-apprentice technique, and thereby effecting a return to one’s own roots and cultural heritage instead of adapting foreign models as is now generally the case. Also emphasised was the importance of learning by doing and of the multi-disciplinary approach in the training of architects so as to prepare them in the various skills demanded of the true professional.

This brings us back to an important point made at the outset by Spiro Kostof and elaborated on by Mohammed Arkoun and others: that Islamic architecture is a term which does not refer to a particular style but to a variety of traditions, styles and even forms that are rooted in the cultures of particular areas, nations and regions, and are informed by materials, crafts and technologies indigenous to each of these geographic areas. Certainly in the great imperial centres of yore the high culture of Islam found its own expression in monumental architecture as it did in the arts and thence exported these forms throughout imperial domains. But building by the people for the people remained by and large faithful to local custom throughout history until colonial enterprise was established and commerce and industry integrated the world economy. As the experience of the regional seminars has indicated, a return to indigenous means and methods does not imply a renewed search for an abstract notion of Islamic forms. And it prompts us once more to consider the distinction between the two equally important tasks that lie ahead: to interpret and take example from great achievements of Islamic architecture of the past, and to address the needs of Muslim peoples, taking into consideration the particular constraints of the region in which they live.
In closing this seminar today, I would like to begin by expressing the thanks and gratitude of all the members who were present at this seminar, my wife's and my own gratitude to His Majesty King Juan Carlos and Her Majesty Queen Sofia for having accepted to open our seminar. We also thank the President of the Junta of Andalusia, the Mayor of Granada and the many other officials who have helped this seminar to take place. As I have said before, I think it is important that the profession meet from time to time with the highest authority in the land. These seminars give us an occasion not only to meet the highest authority in the land, but also to share with them some of our concerns about the built environment with which we are dealing.

In this particular case I would like to express a very deep gratitude to the King and Queen who accepted to be with us the day before their official visit to Britain, a particularly generous gesture on their part.

In the past ten years, the Award for Architecture has asked itself a whole series of questions, perhaps the most important one among which being: What has been the cause of the gradual erosion of the cultural environment which we have all perceived occurring in the Islamic world? As time has passed, we have come to be more and more aware of the difficulties that architects have been facing in exercising their professions. What can be done to encourage more questions to be raised about this issue, to probe yet more deeply into the question of the environment, and to develop, hopefully, solutions for reversing this erosion. Answers to the questions we have been posing proved to be so evasive in the last ten years that their pursuit became the primary reason for holding this seminar.

From the presentations of the delegates during the last four days, it is evident that professors and educators in the architectural field do have a number of very fundamental concerns about the way in which their faculties are functioning, about their relationship with their students as well as their relationship with the societies in which they operate. My impression is that the analyses made by various delegates with respect to the problems under consideration have been largely shared by others, and I think a great many of the ideas that have been proposed by the Workshops are equally shared.

There is, however, great concern about how much can really be implemented. I think this latter problem of constraint is perhaps one which is generic to universities in the developing world and not one which is specific to schools of architecture. I hope that the reasons underlying the more general difficulties experienced by universities in the developing world in their attempts to deal with the sort of issues which we have been discussing would be identified at a future seminar. Particularly relevant are the questions: What is the relationship between decision-making at a university and a given school? How can a number of people get together to improve that decision-making process? For if such decision-making processes fail, then the whole debate that we have been having during the last four days was really discussing a lost cause.

The Award has consistently sought to avoid becoming a school. I am extremely concerned that this should never be allowed to happen. On the other hand, I do think that one of the key roles the Award could play is to become a forum for thought, for exchange of ideas, for sharing of concerns, and, perhaps, for developing solutions to some of the problems which we are dealing with. I have been genuinely excited by the results of our Workshops that have come forward with a number of creative ideas which I hope would be implemented in the years ahead, in some, if not all, of the teaching institutions, both in the Islamic world and elsewhere.

Because I think education is so fundamental to all the thoughts that have been shared amongst us during the last four days, I am proposing that the Award renew its seminar on education. It should be renewed in approximately two years' time to give us an occasion to discuss once again the issues as we perceive them at that time, to measure the progress that has been made, to review the extent to which the suggestions of the Workshops have been implemented and to
see what lessons have been learnt from those Workshops.

I would also like to emphasise that there is a great variety in the Islamic world today. It would be wrong for us to expect every institution to follow a common pattern or find the miracle solution to the problems that we have been discussing. We should have the intellectual courage to push forward diversity of thought rather than to try to fit every idea into a given concept, because there can be hundreds of different solutions to the problems we are talking about, such as the relationships between architecture and faith, architecture and technology, architecture and society. I think that the proceedings of this seminar have shown that educators are well aware of the problems, but I am not sure whether they have succeeded in communicating that awareness to the public. If that is indeed the case, then, perhaps, both the Award and schools of architecture should do more in communicating these concerns to the public so that our space of freedom of thought and debate is not restricted to the seminars, but becomes part of our everyday lives and of the people with whom architects are working.

In closing this seminar, I would like, therefore, to thank you for an extremely interesting series of discussions, and to invite you, with a forerunning of two years, to a seminar which I would like to see the Award organise on education in architecture. Perhaps by that time the Award can be made to become a continuing forum of thought and debate on this particular issue, if this idea is to be embraced by future delegates. I think that this issue is so fundamental to the future of the built environment that it is perhaps the one single area of concern which the Award should become permanently involved with as an ongoing theme.

Thank you very much indeed for accepting to be present and I hope that we will all be fortunate to meet in two years' time.