Islamic Architecture and the Environment

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Course Description

This course proposes to study how Islamic architecture and urban planning coped with environmental constraints in various areas and different climates and turned them into constructive design tools. It examines the environmental strategies behind the design of selected examples ranging in scale from the region, to the city, the house, the garden, and the single architectural element. It explores the social, cultural, symbolic, and psychological dimensions of environmental design as they developed over time to enrich, modify, or even obscure their functional origins.

Topics Covered:

The Image of Paradise and its models: Koranic gardens, Dome of Heaven, Celestial Dome; Muqarnas
Movable Architecture: tents, yurts, and camps.
Shadow and Shading devices; Trees; Tiles; Colors
Wind catchers and other cooling techniques
Orientation and the city scape: streets, openings, houses.
Water Architecture: fountains, sabils, qanat, shadirwan, waterwheel, aqueducts, Hammams
Andalusian Examples: Madinat al-Zahra, Alhambra, Generalife
Chahar Bagh symbolism: Representation of garden in painting
Timurid, Mughal, Ottoman, and Persian Gardens
Representation of garden in painting (Nasuh, Persian, Mughal, Qajar)
Architecture and Travel: Caravanserai (Ottoman chimneys), Grand Hotels
The Courtyard House: Hasan Fathy's notion on Courtyard houses.
Contemporary indulgences: Diplomats' section in Riyadh, Hollywood's representations, Summer villas in the Mediterranean.
The city scape: streets, openings, houses
A Brief Introduction to the History and Ecology of the Islamic World

Reading

- Ernst J. Grube, "What is Islamic Architecture?" in G. Michell ed. Architecture of the Islamic World: Its History and Social Meaning. 11-14

Environment, Climate, and Architecture in the Islamic World

Historical Precedents

Movable Architecture: Tents, the dwelling of the nomad.

Rural and Urban Settlements in Arabia

Early Islamic Settlements

Mecca, Medina: The house of the Prophet at Medina.

The first garrison towns of Islam: Kufa, Basra, Fustat, Qayrawan

Readings

- Ralph Knowles, Energy and Form: An Ecological Approach to Urban Growth (MIT Press, 1974), 5-15
- Paul Oliver, Dwellings: The House Across the World (Austin, 1987), 113-24
- Encyclopedia of Islam, 2d edition, articles on Basra, Kufa, and Kairawan

Umayyad Settlements

Paradisial environment? Ideal environment? Or symbolic environment?

Pre Islamic prototypes:

- Byzantine, Greco-Roman, and Hellenistic prototypes.
- Mesopotamian, Parthian, and Sassanid prototypes.
- Levantine, Arabian, and South-Arabian influences.

The Image of Paradise and its models: Koranic gardens, Dome of Heaven

Readings

Medieval Links

Fustat Houses

Residential medieval architecture: Mamluk Qa'as: the spreading of the royal model.
Residences on the move: Caravansaries, the hostels of the great trading routes.
The Rab': A unique medieval urban residential types

Readings

• Hoag, chapter 9. Domestic Architecture of the Ayyubids and Mamluk

The Alhambra in Granada

The Islamic Versions of the Villa Urbana and Villa Rustica

Madinat al-Zahra
Granadine Villas

Readings

• Oleg Grabar, The Alhambra, 25-132


Water and The Islamic Garden
Water Architecture: fountains, sabils, qanat, shadirwan

Readings


Planned Royal Cities
Baghdad and Samarra as models
Cairo: royal residence of the Fatimid Caliphs
The Mughal Royal Palaces: Fatehpur Sikri
Isfahan: The Creation of the Safavid Capital

Readings
• Nezzar AlSayyad, Cities and Caliphs, 133-58.


• Donald Wilber, Persian Gardens and Garden Pavilions, 39-5
The Chahar Bagh
Timurid, Mughal, Ottoman, and Persian Gardens
Symbolism: Representation of Garden in Painting

Readings

- Elizabeth Moynihan, Paradise as a Garden in Persia and Mughal India, New York: Braziller, 1979.

Traditional Houses
Courtyard Houses
Iranian Houses and Pavilions.
Ottoman Residences and Pavilions
Adobe Architecture:
Earth: Building Materials and their Environmental Properties

Readings

- Tulay Artan, Architecture as a Theater of Life: Profile of the 18th Century Bosphorus. MIT, PhD (1988).

• Ronald Lewcock, The Old Walled City of San’a’, 55-85.


• Fredrich Ragquette, The Lebanese House during the 18th and 19th Centuries, chapters 2 and 4.


Environmental Responsiveness in Traditional Architecture

Shadow and Shading devices

Wind catchers and other cooling techniques

Orientation and the city scape: streets, openings, houses.

The Interplay of History, Culture, and the Climate in Traditional Architecture (Heschong)

Readings


• Coles and Jackson. A Windtower House in Dubai.


• Lisa Heschong, Thermal Delight in Architecture.


Revival of the Vernacular

H. Fathy, W. Wassif, N. Khalili

Hasan Fathy's conceptualization of the courtyard house.

Readings

- Hassan Fathy, Architecture for the Poor.


The Environmental Theme and Developing Countries

Contemporary examples: the environmental category in the Aga Khan Award for Architecture Students presentations of examples chosen from the Aga Khan Award projects

Readings


- Aga Khan Award for Architecture Publications and Monographs