

COMPREHENSIVE ENVIRONMENTAL DESIGN (CED) STUDIO IN TWO ARCHITECTURE SCHOOLS IN KARACHI: EVOLUTION, PROCESS AND IMPACTS

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Abstract

Since 1979, a studio module was introduced in the final year studies of Bachelor of Architecture programme at the Dawood College of Engineering and Technology, Karachi which was the only architecture school in the city at that time. A key objective of this studio module was to sensitize the 'architects in making' about context of the built environment, the process through which it was shaped and the forces that contributed in its shaping. The students were assigned to study a micro urban area for in-depth investigation and analysis. At the conclusion, analytical presentations followed that also included basic proposals for addressing problems that were identified in the studio exercise. Begun in Dawood College, the studio was adopted by many schools of architecture in the country including the NED University, Karachi. This studio had multiple impacts. Understanding the realities behind creation of urban built environment, realization of multiple roles for professional contribution to ongoing metamorphosis and appreciation of diverse fields of studies within the domain of architectural education and practice were some of the vital aspects. The objectives of this paper are to document the evolution and process of CED studio work. The paper also aims to study the affects of CED work on the perception, understandings and professional orientation of architects who graduated from the schools where CED studio was conducted.

Keywords

Studio methodology, documentation approaches, analytical tools, urban environmental understanding, alternative roles of architects.

Introduction

In the domain of architectural education in the developed world, the understanding of roles and spheres of input from varied actors in shaping the built environment became significant during 1960s and after. Many schools of architecture introduced this dimension of knowledge through different ways and means. Special studio sessions, workshops, course modules, summer practices and organized voluntary work were some of the methods adopted to inculcate this useful tenet of societal development among the student architects at the undergraduate level. Rich literature is available in the domain of neighborhood re-vitalization studies, though the origin and expansion has been greatly focused to 'slums' in western cities (Goodman, 1972). The rationale to incorporate beyond the conventional ingredients in architectural

pedagogy was derived from several factors. The post war reconstruction efforts in Europe and East Asia constituted a useful case with reference to spread out contextual examples. The emerging cities in the developing countries experienced a rapid change due to migrations, spatial transformations and addition of new urban functions. For the appropriate training and education of young architecture students, creation of a sound understanding about the factors that affected the urban built environment was crucial. These aspects laid down the foundation of studio and case study modules of comprehensive environmental design (CED) in architectural education in Karachi.

In Karachi, this realization was introduced under the influence of architects / educationists who were trained abroad and exposed to this tradition in their respective context of education. Many professional architects who were educated at the Middle East Technical University, Ankara came and taught at the Dawood College from 1972 onwards – which was the only architecture school in the city till 1990. Almost all of them were sensitized to the problems of common man through internships in the rural areas, squatter setting or summer practices in construction in less developed contexts. The decade of 1970s saw rapid changes in the built environment of Karachi. Expansion of the existing neighbourhoods, creation of new neighbourhoods, steady increase in developer-builder built housing, relative affluence among middle classes, continued migration of people towards cities and consequent overcrowdings of older settlements were some of the most visible phenomena. Incapability of state organizations and apparatus as a whole towards housing and infrastructure needs of

the poor and low income groups gave rise to the squatter settlements. Through a clandestine relationship of state functionaries and para-professionals, an entrepreneur class came into being that facilitated informal settlements and their consolidation at a large scale. Initially, the state bodies continued to deny the existence of the squatter settlements on legal grounds. But as the scale and spread of these settlements was vast, the need was felt to study the phenomenon with a view to upgrade them. Visible transformations included land use changes, haphazard densification of inner city areas and expansion of transit based activities in different nodes / directions of the city. The academic and professional exploration had also begun in the city to understand and interpret this vital set of attributes. Much of this research was done under the disciplines of sociology, anthropology, social work and development economics.

The city was informally divided between 'have' and 'have nots'. The former had access to usual amenities of urban life while the later were devoid of them. Professionals including architects also served the former only. The conventional approach in architectural practice was organized as under in Figure 1:

This professional relationship was found to be uni-directional and limited in terms of its impact and outreach. Architect – educators considered it vital to link up the capacities and orientation of architects with the special needs of such segments of the society that could not access professional inputs. The faculty at the Dawood College was keen to come up with alternative options for extending the benefit of professional solutions to a vast

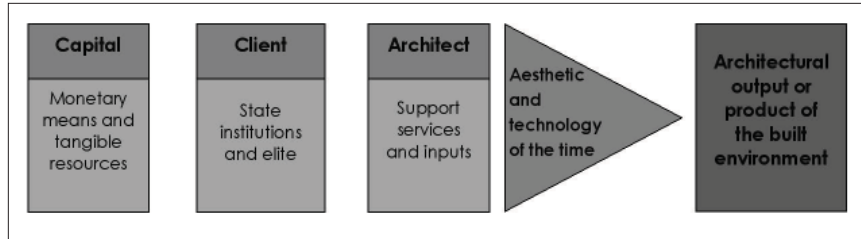


Figure 1: Conventional Approach in Architectural Practice (Source: Author).

clientele, irrespective of economic status or social classes. It was observed that alternatives could only be developed if the professionals have a sound understanding of the context and clientele. Therefore the input of CED at the concluding stage of undergraduate education was deemed instrumental in exposing the base realities to graduating young architects.

Comprehensive Environmental Design: Evolution, Process and Outputs

Inspirations

The faculty members introduced the ideas and works of architects and researchers working in similar direction, though with different approaches. The studio received references of international and national professionals and researchers who made useful additions to knowledge in this domain. Many architects and planners, though educated and trained in the conventional tradition, keenly observed the transformations in the built environment. They approached the changes from different angles in order to evolve planning and design alternatives that could help the masses, most of whom were negatively impacted by this change. A summary is presented below in Table 1:

Professional / Academic	Some Salient Contributions
Hasan Fathy (Egyptian architect and master trainer)	Pioneered adobe construction. Authored 'Architecture for the Poor' which became an influential work.
Laurie Baker (Indian architect of British origin)	Gandhian missionary known for his low cost solutions with high aesthetic value called 'Baker Architecture'.
John F. C. Turner (British architect and author)	Well known for housing and community empowerment solutions – extensively worked in Latin America.
Arif Hasan (Pakistani architect and planner, teacher and author)	Pioneered the self help technical solutions for Orangi Pilot Project in Karachi and elsewhere in Pakistan.
Bal Krishna V. Doshi (Indian architect and educator)	Proponent of environmental design and sustainable architecture. Founded CEPT University, Ahmedabad, India.
Nabeel Hamdi (British architect-professor of Iraqi origin)	Ardent supporter of public housing, community development and people's participation in design.

Kausar Bashir Ahmad (Pakistani architect and educator)	Advocated and taught architecture as a socially responsive environmental design discipline.
Johan Silas	Indonesian architect and academic well known for his work on upgrading low income communities.
Mohammad Pervaiz Vandal	Pakistani academic in Lahore who introduced field investigation as a means of understanding housing development and shaping of built environment.
N.J. Habraken (Dutch architect and educator)	Promoted linkage between built environment and people. Authored 'Structure of Ordinary' – an influential work.
Christopher Alexander (Architect / academic of Austrian origin)	Founder of pattern language movement. Taught and contributed many powerful texts.
Shlomo Angel (Architect and Urban Planner)	Taught, researched and published in affordable housing, urban development and planning theory.
Jorge Anzorena (Argentinean architect and missionary)	One of the founders of Asian Coalition for Housing Rights, activist for the right of urban poor communities - editor of 'Selavip' journal.
M. Fazal Noor (Pakistani architect and planner)	Catalyst for extending professional support to community groups, civil society organizations and vulnerable communities.

Table 1: Some Theoretical References (Source: Author).

and phenomena as an outcome of a design process. The main ingredient of this academic tradition is a design studio aimed to facilitate creativity in problem solving process. The studio also provides for material and non-material ingredients vital for assimilating knowledge towards design solutions. Examples include the environmental design programmes in the University of Manitoba in Canada, Bilkent University, Ankara and University of Dundee at UK. The comprehensive environmental design studio in Karachi was based on the tradition of studying and analyzing the contextual realities, absorbing the vital attributes of social environment and formulating appropriate proposals. Similar references also existed in the works of Prof. Johan Silas in Surabaya, Indonesia; Jorge Anzorena in Latin America countries and several others mentioned in Table-01. When the input of comprehensive environmental design was introduced, it was placed in the final year studio work. At a later stage of transformation, the studio was articulated into the ninth semester work. The main idea was to explore the composition, making and characteristics of a finite environment. The students were encouraged to observe and investigate into different attributes of the environment including its inbuilt features. Table 2 and Figure 2 elucidate the process of CED studio.

Curriculum Structure and Methodology

Comprehensive environmental design must not be confused with the developed world academic tradition of undergraduate (or even postgraduate) environmental design degrees of the same nomenclature. The core focus of the latter category is to view the objects

No.	Topic	Details
1	INTRODUCTION AND BACKGROUND	<p>a) It is a course focused onto the study of micro urban environments and their relationship with the larger city contexts.</p> <p>b) Micro environments are of various types; new residential developments, peripheral settlements, inner-city areas, growth corridors, city centres and emerging sub centres, industrial belts, relocation sites, ecologically sensitive areas, urban environmental assets, major infrastructure corridors, proposed and existing project sites.</p> <p>c) Relationship of micro environments; direct physical relationships; communal relationships; interest wise relationships; legal and administrative relationships are a few kinds.</p> <p>d) As architects, the understanding of the environment where one works/operates is a must. CED course aims to equip the graduating architects with this vital aspect of professional comprehension.</p>
2	SOCIETAL UNDERSTANDING	<p>a) Historical Background Evolution and development of the micro context; major city/national level events and their implications on the area; land mark developments; chronological points of changes and their after effects are some of the parameters of investigation.</p> <p>b) Sociological characteristics Types of communities and groups; life styles and patterns; social inclinations; cultural denominations; intra and inter relationship of groups; value systems; relationship with the larger city community; ethnicity, religion, sect and gender issues.</p> <p>c) Economic activity Employment and enterprises; skills and capital; prospects of growth (and otherwise); economic status of the individuals and community; link up with the larger city economy and in turn national economy.</p> <p>d) Physical characteristics Typology of spaces; space utilization pattern; infrastructure; transport; mobility and community links; density; occupancy; building stock and its characteristics; real estate; rules; regulations and byelaws governing the development; emerging trends in physical development.</p> <p>e) Environmental considerations Environmental assets; threats and dangers to environmental assets.</p>
3	DESIGN, ANALYSIS AND TOOLS	Documentation and survey procedures; modes of data collection; analysis synthesis; possibilities and justifications of interventions; preparation of planning and design briefs; proposal development; presentation.
4	OUTPUTS	The course generates several visual outputs leading to a final presentation and a written report. A series of preliminary work is done before reaching to the final outcome.

Table 2: Comprehensive Environmental Design: Studio Brief.
(Source: Notes by the author, 1993).

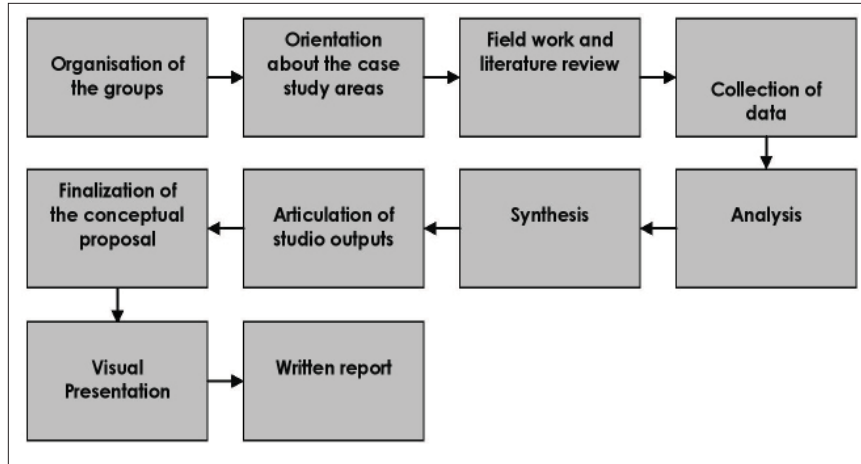


Figure 2: A Tentative Path (Source: Author).

Studio Process at DCET

The students were divided into groups and studied the assigned area according to the various parameters identified in Table-02 and Figure-01. Several approaches were adopted to gather information. Literature review was done with specific reference to the published, unpublished and compiled information available with municipal agencies, NGOs, resource centres and newspaper archives. Key informants pertinent to the broad area and study location were identified to add upon the information base. The baseline information acquired from these informal discourses was articulated for proper utilization in the studio. The students documented the built environment by using sketching and photography as the key techniques. While dealing with different sets of activities, importance was given to time zones and days where the activity took place in its varied scales and profiles. The interaction of students with the area residents, workers,

pedestrians, vehicle operators, shop keepers vendors, hawkers, social workers, police officers, administrators and other stakeholders was found effective in generating useful information base about the area. Whereas the students were normally guided to prepare a check list of questions and issues to be discussed, the random and informal discussions were also revealing from many standpoints. Common peoples perspectives about the components of built environment, invisible problems experienced due to spatial disorders or short comings, points of conflict between various interest groups, evolution and consolidation of informal control mechanisms in commercially attractive locations, matters related to women, children, disabled and social outcasts were keenly observed through the various forms and formats of this unstructured interface.

The phase of fact finding and information collection was followed by analysis. The

analysis was done from different perspectives. Identification of key processes and forces in the chosen cross section of built environment, definition of trends in urban development, identification of negative and positive practices and link up of formal/informal governance structure with the development process were some common denominators in analytical work. The students were asked to utilize their graphical skill in organization documentation and communication of information and analytical findings. Fact finding and analytical work was translated into charts, diagrammatic notations, link diagrams, photo-texts and sketches with captions. These exercises attempted to fulfill several requirements. Capacity building among architecture students to present complex observations into 'easy to understand'

graphical forms, using architectural drawing and drafting skills onto large scale contexts, evolving proper sequence to show the area documentation in an effective manner and creatively building up a presentation material to initiate discussion and debate with the peers were some of usual results normally achieved in this studio. During interim and final juries, the students developed the skills to verbally defend the presentation from the strength of information base, argumentation framework enacted around identified issues, trends and directions in development outlined during analysis as well as conceptual proposals to improve respective scenarios. Table 3 gives a summary of outputs:

No.	Batch (by graduating year)	Topic / Location in Karachi	Remarks
1.	1980	Quaidabad	An emerging transit camp along National Highway.
2.	1981	Old Town	A typical example of inner city area with mixed land use and activities.
3.	1982	Old Town	Follow up on the earlier location.
4.	1983	Sabzi Mandi (fruit and vegetable market)	A whole sale and retail enterprise which began impacting the land use of the surroundings.
5.	1984	Cantonment Station	A multi model transit node where intercity trains and buses had an interface space and activities.
6.	1986	Hasan Square at University Road	An evolving land use pertinent to administrative and residential activities.
		Tariq Road	A trendy shopping space in the midst of an upper class locality.
7.	1987	Lines Areas Re-Development Project	An example of a planned intervention in resettlement.
		Dhobi Ghat (washermen yard) in the Old Town, Area.	A traditional washer men community at the edge of a dense city centre.

8.	1988	Lines Area Re-Development Project	Deeper insight into Lines Area Re-Settlement Scheme.
9.	1989 (I)	Cantonment Railway Station and its Surroundings	A fast changing land use around the rail and road transit modes at this point.
10.	1989 (II)	Lea Market and its Environs	A planned market space over whelmed by changing land use dominated by wholesale and retail activities.
11.	1990	Chanesar Goth and its Surroundings	An old rural settlement after incorporation in a planned urban housing scheme.
12.	1991	Mereweather Tower and Surroundings	City gateway – now the entry point to central business district.
13.	1993	Kharadar	Pre-British Karachi location now host to wholesale trade.
14.	1994	Tariq Road Axis	A trendy shopping street with unplanned densification and diversification of activities.

Table 3: Topics of CED Studio at DCET (1980-93).

(Source: Derived by the author from raw data and records available in DCET Archives, 2009).

Several benefits were derived from the CED studio. The students learned to formulate a composite methodology of documentation, analysis and proposal preparation according to the considerations of assigned contexts. Working in teams enabled them to distribute work, utilize collective and individual potentials and follow deadlines in a professional manner. Interaction with stakeholders and municipal agencies helped in the development of inter personal skills and communication abilities. They also experienced the attitudes, systems and procedures of various ranges of municipal offices concerned with urban development. The overall understanding about the visible and invisible processes that shape the built environment increased to a great extent. For many students, it was the first experience to observe a complex urban area in such detail. These studios generated useful documentation of several types around urban locations

such as old city centre, traffic nodes and corresponding land use, whole sale market spaces, historic districts and commercializing streets.

CED Studio at NED University

The Department of Architecture and Planning (DAP-NED) was set up in 2000. The structure of undergraduate curriculum introduced a chain of courses pertinent to environment, planning and development. This move was based on the objective of inculcating gradual buildup of understanding about the built environment issues from the foundation year to the final year. Many faculty members had done CED studio as students. Some had even supervised it at DCET. A full studio course in the final year was kept for CED work. During the earlier batches, the methodology adopted at NED was similar to DCET. However, it was deemed

appropriate to change the process, construct of the studio contents and outputs to some extent in order to improve the teaching, outputs and skill development.

The faculty took upon themselves to prepare a CED Source Book before the commencement of the actual exercise. This volume contained published and unpublished material about the case study location, facts and figures, basic working maps and layouts, articles and news clippings as well as information about government proposals and policies related to the area. The main idea for taking this demanding preparatory exercise was two folded. It allowed the students to utilize their time and efforts on fieldwork and exclusive

interviews with chosen stakeholders. Besides, it also enabled the faculty members to gain first hand understanding about the case study and associated locations. Lecture presentations were also conducted on the CED studio process, supporting case studies and related issues. The second change introduced in the CED was the requirement of a detailed proposal at an urban design scale based on their surveys and analysis. The idea was reinforced when NED collaborated with four other universities from South Asia and Europe under the auspices of Asia Link Programme of European Commission (EC) during 2004 to 2007. Under collaborative arrangements, CED work received valuable inputs from international faculty members who hailed from

No.	Batch (by graduating year)	Topic	Remarks
1.	2001	Study of Mai Kolachi and its Environs	A new connecting road to the port with Clifton and Defence Society neighbourhoods that opened a corridor for prospective real estate development.
2.	2001	Study of Dhan Mandi Relocation and Rehabilitation Project	An old wholesale and processing activity in old town of Karachi that is in need of relocation to a sub urban district.
3.	2002	Lea Market and its Environs	An old market and its precincts that have been experiencing transformations.
4.	2005	Study of Lyari Expressway on Sohrab Goth Interchange	Origin of the expressway has begun impacting land use and activity pattern along a major sub-urban highway.
5.	2006	Study of Lyari Expressway on the Lyari Corridor	An infrastructure project introduced at the cost of social dislocation, physical and environmental impacts.
6.	2007	Karachi Water Front Development	Study of newly planned real estate and recreational projects along Karachi's coastline.
7.	2008	Study of seven Commercial Corridors on PECHS Precincts	Transformation in land use and activity pattern of an upper class neighborhood in the central part of the city.

Table 4: Selected Topics of CED Studio at Ned University (2000-2008)
(Source: Derived by the author from the data and records at DAP-NED Archives, 2009).

The CED studio at DAP-NED has received input and feedback from the concerned stakeholders at various stages of development. This category comprises municipal councilors, local activists, members of community based organizations and technical staff in different development agencies. The juries have been held in front of a diverse audience comprising faculty members, practicing architects, developers, builders, real estate experts, engineers, municipal staff and NGO managers.

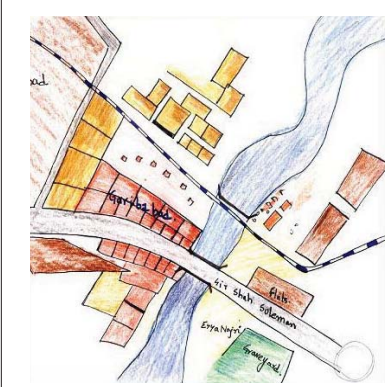
Comparative Approaches: A Critique

The DCET model has been useful in several distinct ways. The processes of sharing, transforming, adding and even financing the built environment became known to participating students. They were able to assimilate the process of development, change and corresponding stakeholders. The students also understood the nature of technical inputs by professionals from various orientations. Architects, engineers, surveyors, lawyers and others had varied inputs in the various stages. For instance, if a heritage building in a historic location was decided to be pulled down by the owners, the professional cadres normally colluded and evolved administratively valid options. The collusion often stretched into the decision making fora in the governmental structures. A very significant aspect of understanding was about the clandestine nature of transactions, partnerships and arrangements in informal, quasi formal or informal areas. The students were able to see that the construction and management of facilities of different ranges invariably possessed many inputs which were

not formally documented or accounted for. They were also able to observe the linkage between regulatory control mechanism prescribed for buildings and facilities with the actual sequence of construction and development. The CED studio created a methodology of urban documentation and analysis which did not exist before. When became an integral part of architectural education, it was also adopted by several individual consultants or firms working on similar assignments. The DCET model stopped short of approaching a detailed design proposal as the focus was more on building a comprehensive understanding. At times, the information gathering from public agencies became a tiresome and lengthy exercise. Motivation level of faculty also had a bearing on conduct and output of studio work.

In the case of CED approach at NED University, the understanding aspects mainly benefited from the earlier discussed methodology. However the emphasis on developing a design solution was introduced to enhance the design capabilities of the students. As several faculty members had postgraduate qualification in urban design and planning as well as experience of working in the same domain, the emphasis on design became effective. Time management was done in a manner whereby the students received threshold support in the form of source book, lectures and presentations. Thereafter the students would set out to field work and concentrate on area findings. The analysis leads to identification of salient issues and development trends. While taking the factual aspects of understanding into view, the students were encouraged to expand their

imagination to formulate design solutions with rational justification. Some images from the studio outputs are outlined in Figures 3 – 8.



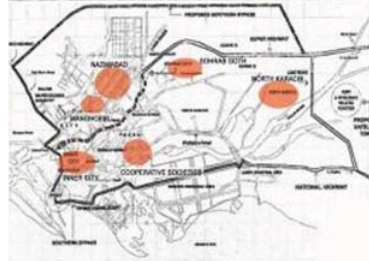
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6.



7.



8.

Figure 3: Cross section of a main street at Sir Shah Suleman Road which is a busy artery towards the eastern part of Karachi. Informal processes contribute to the change of landuse in a rapid manner (Source: Author).

Figure 4: A traffic junction in the dense central part of Karachi (Source: Author).

Figure 5: Mausoleum of Abdullah Shah Ghazi (Source: Author).

Figure 6: Route analysis of Lyari Expressway (Source: Author).

Figure 7: A view of Lea Market (Source: Author).

Figure 8: Night view of Lea Market (Source: Author).

Impacts

Faculty's Perspective

Five faculty members gave their responses to a structured questionnaire. The responses are presented and summarised in this section. As per the feedback from the first faculty member, the need to study the contextual realities evolved into CED studio. It also linked with the possibilities of addressing them through design solutions. The structure of the studio has been worked out to develop observation capacity, interview methodology, information gathering from different sources, analysis / synthesis and design interventions among students. A manual is prepared by the faculty for guidance of the students. Lectures are given and site visits organized. Design programmes are formulated and concepts are developed to address identified issues. Evidences of changing perceptions amongst students have been noticed in different ways. More students now want to be involved with post CED works through the Urban Research & Design Cell (URDC). This unit is helpful in expanding the work to a realistic level. In addition, feedback from graduates in architectural practices suggests that the skills gained (in CED) are very rare in conventional practices and thus greatly appreciated. The strengths of the course include observation, synthesis and translation skills amongst the students. More clarity is needed in respect to (develop) inter-relationship of architectural design issues / larger influences in a more elaborate manner.

The second faculty member elaborated the process and outputs in some detail. Comprehensive Environmental Design (CED)

was introduced in 1979-80. Several factors constituted its background. There was no City and Regional Planning Programme existing in Karachi / Sindh. The four years architectural studies were found adequate for students to equip them for a challenging design assignment at an expanded scale. It was also deemed necessary to study the social, economic, political and cultural context of the chosen locations through surveys, observation and documentation. In DAP-DCET, the role played by some lead professionals who was particularly useful in guiding the field research, documentation and analysis process. In the usual sequence of organizing CED, a problem write up is prepared and shared. Orientation is provided about the different aspects of study parameters, key informants and institutions. Series of juries are conducted to see the development of understanding and student performances. CED has helped the students to undertake research in an organized manner. It also enables them to study and link the economic, social and cultural parameters in relation to design process. There are several strengths in the CED process. Students get to learn through the interaction amongst themselves. They realize that solutions may not always evolve in the form of physical form. CED also helps the students to develop vision about diversified areas related to the built environment. In some cases, it generates more interest among those students whose abilities in conventional architectural work is limited

The faculty has identified development of observation and analytical skills as the strengths of the studio. Weaknesses include the occasional inability of students to establish inter-relationship of design process with

external influences. Short comings in routine preparatory aspects also become a handicap in this reference. It has been found that such faculty members who either participated in the CED studio as students or supervised it were in a better position to manage it. Other faculty members developed that capacity after conducting the sessions as co-teachers for a few instances.

Viewpoint of Beneficiary Architects

A questionnaire was circulated to twenty five architects from DCET and NED. Twenty two responses were received. However two representative responses are presented in this text. The first architect recalled his experience of CED Studio on transforming a sub-urban location into an emerging city centre. A multi-layered vision forming approach was adopted. Ingredients included site analysis, data collection, literature review, strategies for intervention and views of stakeholders as well as professionals. The various groups studied infrastructure, landscape, ecology and socio-economic conditions (of stakeholders). In a step by step manner, the groups developed their respective visions under the broad caption of 'Sohrab Goth as Gateway to Karachi'. Outputs also included development of commercial spaces, community development (in the Goth area) and ecological improvement of Lyari River. Outputs comprised conceptual strategy, schematic design and final design. Sizable understanding was drawn from other CED reports. This exercise has helped in the study of potentials and threats in urban environment. It also enabled the students to learn the documentation of complex urban environment and their graphical presentation.

Some of the solutions formed in this studio were superficial in nature

The second architect shared his experience about Lyari River Studio. The river runs through the city with diverse urban landscape on its banks. The passage of Lyari River and its adjoining locations were studied. As it touches different localities with varying socio-cultural, economic and historic backgrounds, therefore the study area context was diverse in nature in respective micro context. Methodology comprised site visits, surveys and interviews. Facts and figures pertinent to socio-economic factors and physical aspects of the area were also examined. The situation was then analyzed under different scenarios to obtain possible pictures of the problems expected to be faced in the future. The know-how of the area mainly depended on students understanding. However the process of analysis was taught thoroughly by the teachers. Feedback from the residents and stakeholders having no political objectives was missing. Analysis of the problems and understanding of their causes was of high standard. However the design output generated were not realistic in many cases. Outputs as a whole and particularly towards the conclusion were of great importance. Learning from precedents was a missing dimension, particularly from the same context. The changing perceptions were easily noticeable with the passage of time amongst the students. The understanding of problems and their reasons were more realistic towards the end. Also a change in thinking was also spotted in students. Previously the problems were seen in isolation with other realities but after the exercise, the understanding progressed to be more context

based, people oriented and environment friendly. The greatest strength of the process is that the students are given real life problem and trained around it. They are encouraged to analyze it in a realistic manner. Time was however very limited to wrap up the studio

The beneficiaries have interpreted the learning experience in multi furious ways. Most of them confirm the description about studio process elaborated in the earlier heads. They also affirm the usefulness of methodology and experience. Commonly cited short comings include superficial nature of some design solutions, limited scope of application in the practical work in architectural offices, incomplete outputs at the design stage (in some cases), handicaps in group dynamics (and absence of monitoring the same by faculty members) and less preparation on the part of teacher (in some cases).

A reasonable correlation was found between

the conduct of CED studio and the choice of undergraduate thesis design (see Table 5 and 6). It shows that a significant number of students preferred to work on topics inspired from CED work.

It is also vital to note that many architects chose to work in the unconventional fields such as public service, action research and voluntary work compared to the orthodox option of design office. A selected profile of graduates is presented in Table 7.

No.	Batches (by graduating year)	Total Students		Students Who Chose CED Inspired Topics	
		No.	Percentage	No.	Percentage
1.	2000	07	100	02	28.57
2.	2001	18	100	07	38.89
3.	2002	19	100	08	42.10
4.	2004	16	100	05	31.25
5.	2005	22	100	14	63.64
6.	2006	21	100	08	38.09
7.	2007	21	100	08	38.09
8.	2008	26	100	12	46.15
Total		150	100	64	42.66

Table 5: Undergraduate Thesis Design Topics Inspired by CED Studio at NED (2000-2008)
(Source: Author's assessment based on the records in DAP-NED Departmental Archives, 2009).

No.	Batches (by graduating year)	Total Students		Students Who Chose CED Inspired Topics	
		No.	Percentage	No.	Percentage
1.	1980	18	100	5	27.77
2.	1981	17	100	6	35.29
3.	1982	19	100	10	52.63
4.	1983	33	100	14	42.42
5.	1984	29	100	6	20.69
6.	1986	36	100	9	25.0
7.	1987	32	100	25	78.125
8.	1988	21	100	0	0
9.	1989 (I)	24	100	5	20.833
10.	1989 (II)	24	100	8	33.33
11.	1990	24	100	6	25.0
12.	1991	20	100	4	20.0
13.	1992	20	100	14	70.0
14.	1993	13	100	5	38.46
Total		330	100	117	35.45

Table 6: Undergraduate Thesis Design Topics Inspired by CED Studio at DCET (1980-1993) (Source: Author's assessment based upon the records in DAP-DCET sources, 2009).

No.	Architect	Batch (by graduating year)	Career Summary
1.	Perween Rahman	1981	Working for Orangi Pilot Project, Karachi since 1983.
2.	Shahed Anwar Khan	1981	Associate Professor of Urban and Regional Planning at Curtin University, Perth – involved with urban research and development.
3.	Salim Alimuddin	1989	Working for Orangi Pilot Project, Karachi since 1989
4.	Ahmed Saeed	1989	Working as development consultant since 1991.
5.	M. Fazal Noor	1987	Development consultant, advisor on social entrepreneurship and visiting faculty member at architecture schools in Karachi.
6.	Khadija Jamal	1986	Aga Khan Development Network Institutions in Pakistan and elsewhere
7.	Shaukat Ali Sharar	1989	Founder of a development organization in Swat valley for rational urban development and environmental protection.

8.	Essa Khan (late)	1982	Directed the planning support activities in northern areas of Pakistan.
9.	M. Younus	1990	Director of Urban Resource Centre, Karachi.
10.	M. Humair Ahmed	1995	Development consultant, now working in Planning Department, Sydney.
11.	Rabia Siddiqui	1993	Former trainer for para professionals at OPP / now development consultant.
12.	Asiya Sadiq	1993	Faculty member at NED University / development consultant.

Table 7: DCET Graduates Directly Impacted by CED Studio: A Selected Tracer Profile (Source: Author's interpretation from records at DCET, NED and Pakistan Council of Architects and Town Planners).

No.	Stakeholder	Remarks on CED Studio
1.	Municipal Councilor (Lyari), 2005	<ul style="list-style-type: none"> Students have shown enthusiasm in learning about the area problems. We explained our view points and shared information with them. If development authorities (KDA – now defunct and replaced by CDGK) may apply some solutions suggested by these students, it will be beneficial for the area.
2.	Lady area activist (Lyari), 2004	<ul style="list-style-type: none"> Lyari is one of the oldest areas of Karachi. It is also neglected by governments. Few development works have been carried out. The area also needs planning input from agencies. It was refreshing to see engineering (architecture) students taking interest in this poor area. It may help bring about some change.
3.	Executive Engineer (Gulshan-e-Iqbal), 1983	<ul style="list-style-type: none"> A sizable encroachment has taken place around Sabzi Mandi (Fruit and Vegetable Market). Laborers and transporters have facilitated in the development of Katchiabadis (squatter settlements) such as Welfare Colony. Students of engineering and architecture must study the real life situation. This helps informing realistic designs and plans. CED studio is a useful exercise. All architects and engineers must be trained in this fashion.
4.	Shop Keeper / CBO Activist, Dhan Mandi (Grain Market), 2001	<ul style="list-style-type: none"> We have been trying to solve problems of Dhan Mandi (grain market). We approached the administration many times but to avail. All we want is a suitable land on super highway or national highway. Our business cannot perform in congested location like present instance. The students have done commendable work. But no one will listen to us or them!
5.	Street Hawker, Lea Market, 2002	<ul style="list-style-type: none"> Our plight is miserable. We have to bribe every official and political group to survive. We are not heard by any one. Nobody gives any importance. We are weak. These kind hearted students are doing useful work. I wish them success.

Table 8: Stakeholder Feedback. (Source: Author's notes during CED studio supervision and archival records at DCET, 1992-2000 and NED, 2000-2009).

Viewpoints of Allied Stakeholders

A selected profile of stakeholder responses has been prepared and presented in Table 8.

Conclusions and Recommendations

Several conclusions can be drawn from this research. They are outlined as follows:

(a) Contextual relevance of CED studio in the reference of Karachi is adequately established. Professionals relating and contributing to the built environment as designers and managers do not receive an opportunity to explore the context in a systematic manner. This exploration leading to understanding and sensitization at least equips them to deal with professional assignments in an appropriate manner. It may be noted that the stakeholders have identified the limited scope and opportunity of linking up urban problems with existing solution development process in an open manner. Thus CED as a social and educational initiative is found to be playing a useful role in a scenario where participatory decision making and planning still has a long way to emerge.

(b) The objective of understanding the complexities of built environment and the forces that shape it have been reasonably achieved. The outputs from two schools have had adequate evidence of that indicator. However the point of concern is that the information collection work in CED must not be confused with the compilation of a design project brief of usual nature. The importance of exploration, attempting with multiple techniques and consequent analysis are extremely vital to be ensured at all ends in the

CED structure.

(c) The architects do not work in conventional design studios alone. They have multiple roles to perform. The CED studio hints towards the role of architect as a facilitator of development with regard to genuine problems and concerns of stakeholders. In this manner, he becomes a catalyst towards social justice, especially with reference to spatial transactions, utility and control. The exploration empowers him with the knowledge to offer alternative solutions, challenge conventions and even advocate the appropriate initiatives with relevant stakeholders. In this complex process, CED studio is merely an inception point. Those graduates who become interested to take upon themselves a professional role have opportunities as shown in the Table-03. Alternatively new scopes can be carved out by the enlightened professionals themselves.

(d) CED opens the window for architects to diversify into varied roles. They may even acquire a role which may not have an orthodox design or construction activity as the main stay of professional work. At the same time, the penchant to carve out solutions has led the architects to venture into development and NGO related sectors. It will, however, need a detailed and focused investigation to find out whether CED was the key reason for motivating such professionals to take up such careers or it pertained to their overall world view.

There are several recommendations towards the CED studio.

(e) As obvious, the process review for content, quality and methodology improvement

must be done on a regular basis. This can be undertaken at two levels. The in-house faculty may conduct an internal review and evaluation with the external jury members. The outputs of the students, especially visual presentation and report or brief may be distributed to the concerned participants. The next stage is a reflection with reflection and alumni, especially the recent graduates. This open participatory assessment will bring in the feedback on understanding gained in CED and its impacts. It will also act as a forum for scoping the modification in the structure and conduct of the studio.

(f) The interaction with the stakeholders has been a very useful input to CED studio. However its full benefit can be realized in many ways. Faculty interaction with stakeholders, conduct of unstructured interviews, building in exclusive sessions during the development of design proposals and jury sessions are some examples. The students may also be encouraged to evolve communication approaches where spatial understanding can be translated into 'easy to understand' packages for non-technical audience. This input shall help make the participations more effective.

(g) The students may be encouraged to develop effective tools and graphic notations to synthesize field understanding in a concise manner. That is to say the utilization of meaningful graphics can be extremely useful in effectively summarizing their work at analysis and proposal making stage.

(h) There is a need to compile and transform the heritage of CED studio work and produce publications with concurrent attempt to

derive theoretical connotations. A cursory review of the reports show that very valuable epistemological and applicational learning can be transcended from this rather underutilized wealth of knowledge.

Notes

'Para-professionals' are such individuals with practical known how to a particular field including construction and property management without any academic training or education in the same field. There have been a sizable number of such workers in construction and development who often become self employed entrepreneurs by virtue of working knowledge.

The works of Prof. Dr. Jan van der Linden and his team from Free University Amsterdam as well as Institute of Housing Studies, Rotterdam is vital. They teamed up with Department of Sociology, Karachi University and propounded urban research in an organized manner in 1970s.

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See also catalogue of NED Archives, 2009.

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