

## **Critical Regionalist Approach to Architecture: Lessons to be Learnt From Three Case Studies From Karachi**

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**Abstract:** Critical Regionalism, as a theory, stresses on contextual connection of built form in terms of its link to society, physicality and climatic response. It is critical of nostalgic interpretation and representation of built form in countries which have remained colonies. The theory around Critical Regionalism, at times, is also shunned as merely a ‘style’, lacking evolution and social connect with the local context. Although Critical Regionalism as a theory is restricted to a certain scale and typology of buildings, its contribution beyond the built form itself is little researched. Thus, the objective of this paper is to evaluate the impact of public buildings, three universities, at Karachi which were designed around the concepts propagated by Critical Regionalist theory. This analysis is carried out within the larger debate of globalisation and localisation. The key factors focused are the response to climate, society, development of local aesthetics, connections with memory and identity and local urban morphology. Another aspect of analysis attempted through review of theories of other disciplines, geography and anthropology, is aimed towards drawing lessons in terms of research methods and vantage points which can inform Critical Regional theories. A case study methodology, along with ten qualitative interviews of architects and a focus group, has been used to generate data. The findings point towards the valuable contribution of these buildings in terms of climate, social and aesthetic response, and the limitations in terms of replicability to other building typologies and lack of establishment of a critical dialogue with larger community.

**Keywords:** Critical Regionalism, Regionalism, Memory, Aesthetics, Climatic response.

### **1. Introduction**

In theory, Critical Regionalism emphasises the split between local and global built form. There is stress on respecting the local context, having grasped the vernacular design approach. It discourages nostalgic copying of the built form (Lefaivre & Tzonis, 2003). But there is also criticism related to the actual implementation of this theory in practice. The criticism is associated with the incapability of the buildings to evolve and change with time (Shadar, 2010). The static nature of the built form, based on theoretical exploration

of Critical Regionalism, is attributed to the lack of involvement of community. The finished projects reflect a regional connection, in terms of physicality and aesthetics, but are unable to adapt with time, which according to some theorists (Eggerer, 2002; Shadar, 2010) weakens its ability to respond to local requirements. Critical Regionalism is also dubbed as a ‘style’ which is limited to certain built form typologies and specific scales of architectural projects (Eggerer, 2002, p. 228). This very idea is questioned in this paper, using three case studies from Karachi.

A number of buildings have been constructed

in Karachi, through public and private commissions, which have been designed by foreign architects practicing within the theoretical realm of Critical Regionalism. A couple of these building complexes are also cited in the literature on Critical Regionalism by Lefaivre & Tzonis (2012) and on Regionalism by Abel (2000). These buildings and some others which were designed by local architects had a lot to offer in terms of climatic and social responsiveness. Thus, even if these buildings lacked community participation at large, and were designed through an inclusive methodology, and may not have the capacity to grow with time, they were still adequate responses to the local climatic and social requirements as public buildings. They were theoretically sound explorations, reflecting local aspirations and ideologies and also creating built form that had local-global connect.

Karachi was the capital city of Pakistan from 1947 to 1960; thus a number of distinctive public buildings were constructed during this period. Observation today reveals that the docile countenance of the earlier years of construction of public buildings has recently been replaced by the sleek and flashy expression of today, where buildings have started competing for the title of 'tallest', as a response of global influences. But a global-looking form does not mean that the internal use of the building responds to global social norms as well. A cooperate building inspired by global design aesthetics could accommodate localized social practices. This idea resonates with the idea of production of built form by a certain few who are the decision makers, and how the resultant form is adapted and adopted to local requirements.

Karachi's public, recreational and corporate architecture, over the years, has achieved foremost importance with the construction of many institutional buildings, offices, theatres, cinemas and hotels. Some of these buildings follow pre-existing set of ideologies of early/ mixed colonial styles (Ahmed, 2010) where as others are modernist in their architectural vocabulary. Thus, the contextual influence of immediate past plays a vital role in the post-independence buildings of Karachi.

Focusing on the typology of University Campuses, and using the theoretical lens of Critical Regionalism, three projects have been documented, analysed and evaluated with the

objective of ascertaining their larger outfall within the context of Karachi, to assess whether the buildings have become merely styles or offer greater learning. All three university complexes were designed between 1950 and 1980, two of them were executed by foreign architects and one by a local architect. A case study methodology along with qualitative interviews of ten architects, and a focus group was used to develop the data.

The first section reviews relevant literature, and based on that a theoretical framework is developed in the next section. This framework is used to analyse the case studies of the three public sector universities in Karachi in the next section, after giving an overview of Karachi's regional architecture and the research methodology for this research. The description and analysis of the case studies is divided into subheads derived from the theoretical review and includes the findings of qualitative interviews and focus group. This is followed by the conclusion section.

## 2.Literature Review

### 2.1 Critical Regional as a theory

Critical Regionalism is defined as an approach to architecture that aims to counter placelessness of the International style, and aims to contextualise built form, having 'an anti-centrist consensus' (Egger, 2002: 233). It thrives on binaries, like local-global, and how built form can be modern in its outlook, yet have deep rooted connection with its roots (Egger, 2002: 234). Thus, binaries are at the core of objectives of Critical Regionalism. Respect for the local context is promulgated as part of this theory (Lefaivre and Tzonis, 2003), not just in terms of physicality, but also in terms of social and vernacular approaches. There is at the same time caution against nostalgic reference of the built form. A number of countries that have experienced Colonisation, use Critical Regionalism as a point of reference, to create built form which is locally relevant after having vetted out nostalgic reference, ensuring built form produced is not simply a copy-paste exercise (Lefaivre and Tzonis, 2003). Another aspect that Critical Regionalism promulgates is the development of a critical dialogue promoting particularity of a context, both in terms of its tangible and intangible

**Table (1). Defining Critical Regionalism as a theory**

Broad Indicators	Details
Cynical of mindless modernisation	
Anti-Placelessness	
Respect for local context	Tangible and Intangible aspects in terms of culture, society, vernacular building techniques, climatic responsiveness
Aims to develop a critical dialogue	
Responds to historical evolution	Physical and nonphysical historical evolution

**Table (2). Indicators of Critical Regionalism and their details**

Broad Indicators	Details
Cynical of mindless modernisation	Non reference to nostalgia
Aims to develop a critical dialogue	Critical reference to identity and memory

aspects (Tzonis and Lefaivre, 2012). Creating built form that connects to the local context is an adequate response to local climate, connects with the historical evolution, respectful of pre-existing settlements and local traditions, and at the core of Critical Regionalism (Tzonis and Lefaivre, 2012: 186). Some of these features of Critical Regionalism are summarised in Table (1).

**2.2 Critical Regionalism and Regionalism**

The non-reference to nostalgia and a critical approach to the realities of the local context are two parameters in which Critical Regionalism differentiates itself from Regionalism (Abel, 2000). Narratives on theory and history of regionalist architecture, with respect to globalization (Lefaivre and Tzonis, 2012) analyses examples of buildings from around the world on the basis of selecting cases which have a critical historical perspective and are not nostalgic imitations. This promulgates the weaving together of opposed forces of regionalism and globalization within a fresh framework.

Tzonis and Lefaivre (2012) use the terms ‘identity’ and ‘memory’ as components that if identified and addressed, help create critical physical, social and cultural connections with the

local context. The emphasis on these two terms is mainly on the premise that these terminologies are intrinsic in any explanation/ understanding of social, cultural and physical elucidation of a locality. But what the literature falls short on is that there is no explanation how this link is specifically created. The built form elements that create the local element are not discussed in the literature. These indicators of critical regionalism are highlighted in Table (2).

**2.3 Criticism of Critical Regionalism**

More recently, a couple of theorists have criticized Critical Regionalism as merely a style (Eggner, 2002; Shadar, 2010). Buildings which have been designed on the theoretical exploration of Critical Regionalism are mostly buildings which are designed and implemented to the core, without much community involvement. Thus, another criticism these buildings receive is the inability to evolve and change over time (Shadar, 2010). In the view of these theorists, the response of these projects to local climatic and regional elements and aesthetics is a plus point, but their inability to grow, change and adapt to the local context with time is a weakness. In short, projects built under the theoretical exploration of Critical Regionalism are adequate responses to physical local

requirements but overlook social and intangible aspects of empowerment and involvement of communities in the building process. This connection comes through when the built form goes beyond a single building typology (a school, a university or a hospital), and connects with the larger urban scale. Eggener (2002:208) debates that critical regionalism is a 'style' that is forced from within, and its deficit lays in the fact that it became a 'style', which in the first place it was critical of, thus it remained restricted to specific typologies and scales of built form (Eggener, 2002:228).

## 2.4 Global forms-local meanings

Abel (1994), states that it cannot be assumed, on the basis of construction of imported built forms, that a city has adopted a foreign culture. In other words, just because a building looks out of context, and aspires for a global imitation, it doesn't mean that the society has also excepted/ adapted to a foreign culture. Local social practices could be taking place within these imported forms. Thus, according to Abel (1994) it is vital to decode and connect these practices before arriving at conclusions like the loss of local culture and

identities. Similarly, when trying to understand economic globalisation, it is naïve to assume that multinational companies impose their culture on local practices wholly; in fact, it is worth exploring the variation of multinational companies that link to the local context. This is evident in decentralisation policies of these companies, which result in setting up semi-autonomous units that respond better to local demands (Abel 1994). This idea generates a basic question regarding the relationship between built form and meaning associated with it, and the intrinsic relationship of the two. Frampton (1983), giving a theoretical background to this co-relationship, starts to put together a potential framework, that links these intangible processes to the design of the built form. According to him, the building design should neither try to copy the historical past, nor should it attempt to augment imported technologies. According to Frampton (1983), an approach should be taken which takes inspiration from local context, tectonics, topography, climate, and urban form. Based on the review of this and the last section, some more indicators are added to Table (2) and presented in Table (3).

Table (3). Additional Indicators of Critical Regionalism and their details

Broad Indicators	Details
Cynical of mindless modernisation	Non reference to nostalgia
Anti Placelessness	Economic globalisation needs to be decoded to understand its impact in a local context
Respect for local context	Tangible and Intangible aspects in terms of culture, society, vernacular building techniques, climatic responsiveness, tectonics, topography and urban form.
Aims to develop a critical dialogue	Critical reference to identity and memory. But does not acknowledge community involvement and empowerment
Responds to historical evolution	Physical and nonphysical evolution Stress on decoding of local social practices

## 2.5 Space vs. Place

There are other theoretical paradigms, anthropology and geography to be specific, for which the point of analysis is communities. These paradigms lead towards weaving together a local-global relationship for the built form, which is not labelled as Critical Regionalist design; is not style centric and is not restricted to a certain scale. One such theoretical approach is used by anthropologists and is understood as the difference between space and place. Space is classified as 'embodied' by anthropologists, having 'metamorphic' and 'discursive' qualities and being 'physically located'. When 'embodiment' is introduced in space, it becomes place and is connected to the local via socio-spatial analysis, which in-turn connects to local and global scales (Low & Lawrence-Zúñiga, 2003). This analysis 'incorporates metaphors, ideology, and language, as well as behaviours, habits, skills, and spatial orientations derived from global discourses and faraway places, and yet is grounded at any one moment in a specific field context'. Space which is embodied is defined as a 'model for analysing the creation of place through spatial orientation, movement, and language' (Low & Lawrence-Zúñiga, 2003, p. 9). It is the 'location where human experience and consciousness takes on material and spatial form' (Low & Lawrence-Zúñiga, 2003, p. 9). Low (2009) argued that changes and transformation in space can be understood via identification, understanding and analysis of the social construct, 'through peoples' social exchanges, memories, images, and daily use of the material setting — into scenes and actions that convey symbolic meaning' (Low, 2009, p. 24). This understanding then needs to be connected to larger economic, social and physical realities and political ideologies. This is the approach taken by urban anthropologists and the literature by Peterson (2010), Marston, Jones, & Woodward (2005), Low & Lawrence-Zúñiga (2003), Sheppard & McMaster (2003) are some examples. Some anthropologist, when discussing the concepts of space and place, have a 'flexible and mobile conception of space, one that speaks to how space is produced historically and physically and came to be in its current material form, but also how it is created by bodies in motion, embodied dreams and desires, and social interaction and environmental interrelations' (Giesking, Mangold, Katz, Low, &

Saegert, 2014: 2).

## 2.6 Understanding the scale of localisation

Another set of theories review the binaries of local-global connections and debates the role of local design interventions at different urban scales (Davoudi and Madanipour, 2015). Local is highlighted as design elements that give importance to culture of a place, respects the social patterns, and is connected to the natural historical evolution of the context. From the spatial point of view, 'localism often refers to small geographical scales down to neighbourhoods'. It may also be viewed not as a fixed unit, but as a 'fluid, relational space that is socially (re)produced' in order to avoid the 'scale trap', that is being fixated on a certain urban scale (Davoudi and Madanipour, 2015:2). Localism is a related concept, which although mostly used in the field of governance, venture into planning as sustainable urbanism (Hoolachan & Tewdwr-Jones, 2015: 119). This is used to describe a sense of place for a locality. Local places then become agents of globalisation, that connect the current reality to future, maintaining a continuation of historical evolution too (Hoolachan and Tewdwr-Jones, 2015). Sassen (2012) supports this idea, and stresses on the concept of local forms within global cities. She doesn't term these forms as Critical Regionalist forms but argues that many of the economic aspects of a city are not mobile and are embedded in a certain place. Thus, in order to understand the debate around place and space, it is vital to accept and comprehend multiplicity of form production, and the notion of multiple localisations within a global city. Another lesson that can be drawn from this debate is the fact that built form and its study can generate an understanding of larger global economies and political ideologies, because the process of construction and decision making tells many stories.

The ability of Critical Regionalist projects to be modern, yet connected to the roots of a context, and be climatically responsive, and connecting with memory and identify are some of its strong features as outlined in the literature review. The inability to evolve, allow community participation and being restricted to a certain scale, are however, some of its down sides. The concepts explored in this and last section are summarized in Table (4).

**Table (4). Indicators beyond the theory of Critical Regionalism that help explain ideas of global-local meanings of space**

Broad Indicators	Details
Space vs. Place	metamorphic' and 'discursive' qualities and being 'physically located
Concept of embodiment	Decoding of metaphors, ideology, and language, behaviours, habits, skills, and spatial orientation peoples' social exchanges, memories, images, and daily use of the material setting
Local forms within global cities	comprehend multiplicity of form production

The theoretical framework, outlined in the next section, weaves together these intrinsic qualities, questioning the fact that do buildings which are constructed on the theoretical premise of critical regionalism have an impact beyond the building scale and on the larger community or not? This theoretical framework is applied on the cases selected from Karachi, to arrive at a discussion and analysis which addresses the larger research question.

### 3.Theoretical Framework

Public universities from Karachi have been shortlisted as examples of adequate response to climate, materials, and social and economic realities. The function, scale, typology, context and time of construction of all the three projects are similar. These case studies have been analysed on the basis of the literature review, which helped outline the following parameters for analysis:

- Response to local climate: Climatically responsive built form incorporates certain design elements and thus contributes towards developing a language for design. Does this characteristic have greater learning, beyond the individual built form, and helps develop a communal identity for the urban fabric, as the design elements are replicable? (Abel, 2000; Frampton, 1983; Lefavre and Tzonis, 2003)
- Connection with memory and identity: The built form needs to respond to the identity of a region, and constitute towards generating a

sense of memory. Does this intangible aspect of the built form help develop the language and aesthetic characteristics of the built form? (Peterson, 2010; Sheppard & McMaster, 2003)

- Connection with pre-existing urban morphology and context: In order for the built form to gel in with the given context, and connect with local identity, is it important for it to be connected with the aesthetic and functional language of the larger urban scale, in terms of open-built ratios, built up density and the skylines. This links to the debate generated by theorists on globalism-localism and the idea of scale (Sassen, 2012; Marston, Jones, & Woodward, 2005)
- Development of a critical dialogue: If a built form that fulfils the prerequisites for Critical regionalist theory, will it have a larger aesthetic impact, which will go beyond the age and boundaries of the building itself, and will it connect with the larger context, and promote a critical dialogue with theoretical discussions and literature with the ability to evolve, change and adapt? (Eggner, 2002; Shadar, 2010). The aesthetic elements would primarily be defined by proportions, scale, shape, and other design elements like texture, colour and, balance.
- Incorporating concepts of embodiment: Through decoding the metaphors, ideologies, behaviours, habits and skills allied with spatial orientation intangible notions

of space can be decoded and the association with the built form on a daily basis can be comprehended (Peterson, 2010).

#### **4. Research Methodology**

The first half of the research was a desk review of the literature around Critical Regionalism. This review helped outline a theoretical framework (as outlined in the last section) and the research methodology. The primary data was collected via three case studies documentation and analysis, qualitative interviews of ten prominent architects in the city and a focus group discussion with architects, planners and academics, where the various aspects of the theoretical framework were debated with respect to the three case studies. The three case study sites were visited, informal interviews were conducted with students and faculty at the campuses and qualitative interviews were conducted with officials of in house design departments of each of the university campus. Furthermore, analysis of the campuses was done based on photographic documentation and personal observation.

The theoretical framework helped outline the research questions to be asked in the qualitative interview with prominent architects in the city. These architects are engaged with the design of public buildings in the city, and are socially known to the author through the local Institute of Architects and Planners (IAP). The qualitative interviews revolved around questions related to the larger impact of public buildings designed in Karachi on the concepts of Regionalism and Critical Regionalism. The impacts in terms of contribution to memory, tangible and intangible identity, contribution to larger city morphology and architectural aesthetic of the city were questioned. The three particular case studies were the main focus of discussions.

The triangulation of the data gathered via case studies documentation and analysis, and the qualitative interviews was done via the focus group. Ten professionals, including architects (other than those who took part in qualitative interviews), planners and academics engaged in the teaching of architecture were part of this focus group, and prompts from the literature review, case study findings and qualitative interviews were used to facilitate the focus group discussion. Prompts around intangible aspects of the built form, which

are harder to ascertain, like aesthetics, ideas of embodiment, memory, and identity were mostly used.

#### **5. Karachi's Regional Architecture**

The built form of Karachi can be sub-divided into core, sprawling and peripheral typologies. The core form comprises of buildings and urban design projects which are expected to portray a certain image of the city of Karachi and respond to the global context. These projects are executed by architects and planners, mostly trained in the western institutions of planning and design. The demand of the client is to portray a certain global image thus their contribution in the cityscape has been the introduction of some form of ornamentation and cladding on the building facades in the post-modern traditions (Mumtaz, 1999). These buildings do not use the architectural elements existing previously in the city and its context and are not always best climatic or responsive solutions that address the notion of localness. It remains to be seen as to what are the reasons that the architects are not building upon the climatic and contextual solutions (the solutions offered by vernacular architecture, neo-classical buildings, classical British architecture, Indo-Gothic buildings, Neo-Renaissance and Hindu Architecture in the context of Karachi) as shown in Figure (1).

Some of the institutional buildings however, designed by foreign architects in the 1970s and 80s, are suitable examples of adequate response to climate, materials and economic realities, as shown in Figures (2). These buildings address the notion of localness by creating urban forms which are adequate climatic responses which 'combines modern building forms with traditional courtyard planning concepts and natural ventilation techniques' (Abel, 1994). The Karachi University and the Aga Khan University Hospital (AKUH) are two such projects in Karachi, as shown in Figures (3) and (4).

The sprawling form which dominates the urban morphology of the city comprises of commercial and residential walk ups and domestic built form. These buildings are mostly executed by developers with the intention of maximizing profit, and ends up in poor quality because of substandard usage of material as shown in Figure (5).



**Figure (1).** Qamar House in Karachi constructed between 1946 and 1955 by Qamardin & Co is an example of experimentation of core built form in search of an identity for the newly independent city/ country



**Figure (2).** The Islamic Chamber designed by Architect Habib Fida Ali- completed in 1979 is another example of core built form using the language of Islamic design principles to develop a certain aesthetics





Figure (3). The AKUH, which is one of the case studies, and is cited by Abel (1994) as an example of a Critical Regionalist project within Karachi



Figure (4). Mahmud Husain Library within Karachi University, which is another case study and has been mentioned by academics and practicing architects as a building which responds well to the local climate, aesthetics and creates spaces for social connections. Source: Mahmud Husain Library Facebook images



Figure (5). An example of sprawling built form in Karachi



Figure (6). Examples of high income domestic architecture in Karachi



**Figure (7).** An example of local vernacular built form of Karachi. Source: Department of Architecture and Planning, NED University of Engineering and Technology



**Figure (8).** The informally developed built form in Karachi

Some of the high income domestic architecture which employs architects tries to explore the notion of localness through incorporation of design strategies which stem from local vernacular and climatically responsive solutions. The impact of this building typology is minimal because its percentage is negligible as shown in Figure (6).

The vernacular physical elements and layouts which contribute to localness in the context of Karachi range from both gridded to organic urban layouts, characterization of urban areas through definitive entrance portals, ground plus two morphology in dense areas and sprawling morphology in suburban areas, incorporation of different typologies of open to sky spaces both in the public and private realm, usage of materials

like brick, stone, timber, steel girders, cement and corrugated iron for construction and mud, stucco, lime plaster and terracotta tiles for finishes as shown in Figure (7). Colonnaded walkways, courtyard plans, concrete cemented screens for blocking the sun and letting the breeze through, shading devices like deep/ recessed windows along with wind catchers and water bodies are some of the passive ventilation systems used in the vernacular architecture in the regional context of Karachi. These design elements mostly remain limited to the older parts of the city, and are used/ replicated in newer developments which emulate a global image rather than a modern interpretation of local design elements.

Another type of urban morphology which

dominates the city of Karachi is the informally and incrementally developed housing settlements. According to recent estimates 60% of the population dwells in this typology yet it does not visually impose on the morphology of the city simply because it occupies the backwaters. These settlements, however, do offer some locally responsive solutions both in terms of the process of delivery (it's not a top-down approach) and in the layout and design of settlements as it involves community participation and consultation as shown in Figure (8).

There is another set of building stock present in the city which, being an example of core built form, responds to the global image which the city wants to achieve. These buildings are usually commissioned by multinational corporations or funding institutes like commercial banks, and engage top design professionals of the city as shown in Figure (9). These buildings communicate a certain aesthetics for the city, which is disconnected to the urban realities of many struggling to make a living on a daily basis.



Figure (9). The 23 stories UBL tower completed in 2016 in Karachi

But the pluralism of the built form production within the city of Karachi can become an asset for the city if the local qualities of each typology of built form are recognized and highlighted to give it a global advantage and to strengthen the connections with the local context which help retain the distinctiveness of the local context.

## 6. Selection of Case Studies

A number of foreign architects were appointed for individual buildings and complexes through private and public commissions during the two decades after independence of the sub-continent. Some of these buildings are cited in the literature on regionalism by Abel (2000) and Critical Regionalism by Tzonis and Lefaivre (2012), as examples of adequate response to climate, materials and economic realities. Abel cites the example of the AKUH in Karachi (Abel, 1994) by Payette Associates as an outcome of the regionalist movement. Thus, the AKUH was the first case study selected, to analyse the complex as an example of Critical Regionalist architecture. Next it was decided to document and analyse the Karachi University campus, as another building which claims to be an adequate climatic response by recent researchers (Kazmi & Karrar, 2017), was also designed by a foreign architect searching for a built form identity for the then capital of the country, thus exploring aesthetic ideals using local materials. The last case study, NED University of Engineering and Technology (NEDUET) was selected firstly because it is comparable in scale and typology to the other two campuses, and secondly because it was designed by a local professional thus comparisons could be drawn between the practice of a foreign and a local designer. The three case studies were documented and analysed as per the theoretical framework outlined above. All the three case studies are formally planned university buildings which employed architectural firms during their execution and are presented here in chronological order

## 7. Introduction to Case Studies

In 1951 the Government of Pakistan established the University of Karachi. The site for the University was located on the northeast of the city, eight miles away from the city centre on a flat



Figure (10). Case 1: Karachi University

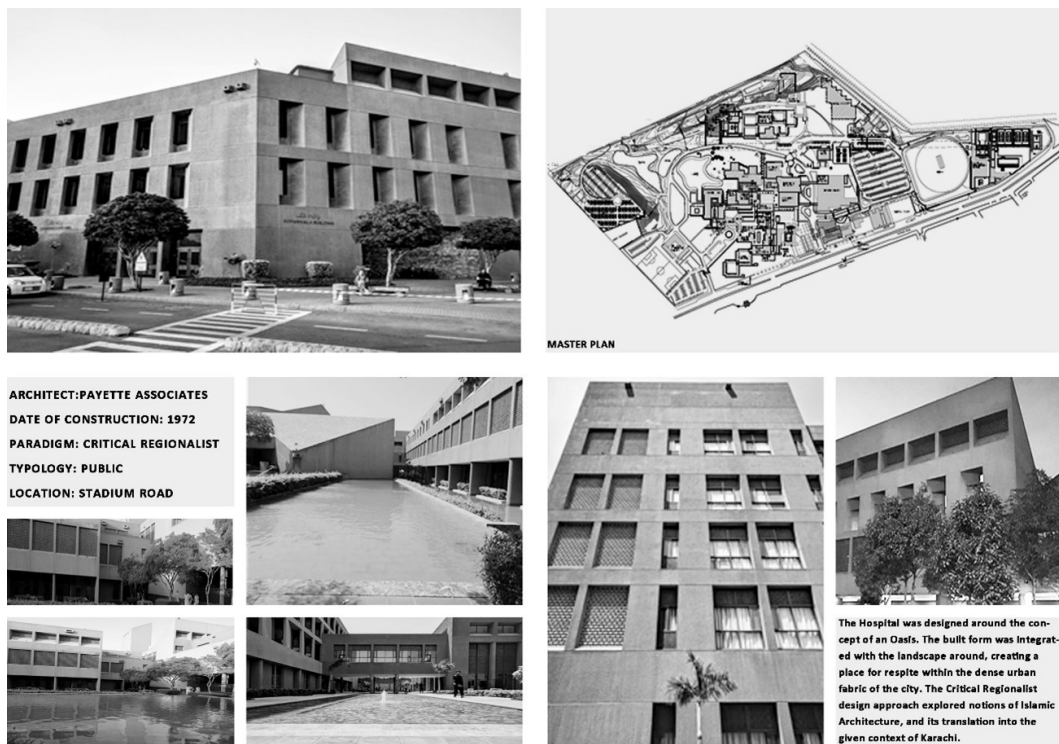


Figure (11). Case 2: The Aga Khan University Hospital

land of 1200 acres. A French architect by the name of Ecochard was commissioned for the master plan and the design of the individual buildings. The University was to house seven thousand students in the Faculties of Arts, Islamic Learning, Sciences, Business and Public Administration. In addition, housing for one thousand students and for staff and servants were to be designed. Furthermore, administration buildings, an auditorium, a library, a museum, a mosque, a teacher’s club, a student union’s office, infirmary, guest houses and spaces for athletic facilities were to be designed as shown in Figure (10).

The AKUH, was commissioned in 1971, by His Highness the Aga Khan, on sixty-four acres of land, which at that time was located on the outskirts of the city. The construction of the project was completed in 1985, and with the expansion of the city, the University Hospital is now located within the city center and stretches over an area of eighty-four acres. The campus today comprises of a teaching hospital, a medical school, hostels, staff housing, clinical and laboratory facilities, parking and a mosque as shown in Figure (11).

NED UET is the oldest institution now in

Pakistan for teaching and turning out Graduate Engineers; having begun initially as an Engineering College in 1922 established by subscriptions from private donors. The University retains the initials in honour of the principal donor for that College – Nadirshaw Edulji Dinshaw in its name!

A comprehensive plan was prepared in 1964 to relocate the College from the downtown area to a new 40-hectare site adjoining the University of Karachi. The College was shifted to the new Campus in 1975. The College was upgraded to full-fledged Engineering University on March 1, 1977 as shown in Figure (12).

### 8. Findings and Analysis

These three case studies were analysed with reference to the parameters outlined in the theoretical framework, using documentation on site, qualitative interviews with the architects, focus group and informal interviews at the three campuses with the users of the buildings.

#### 8.1 Response to local climate

The Mahmood Husain Library, within the

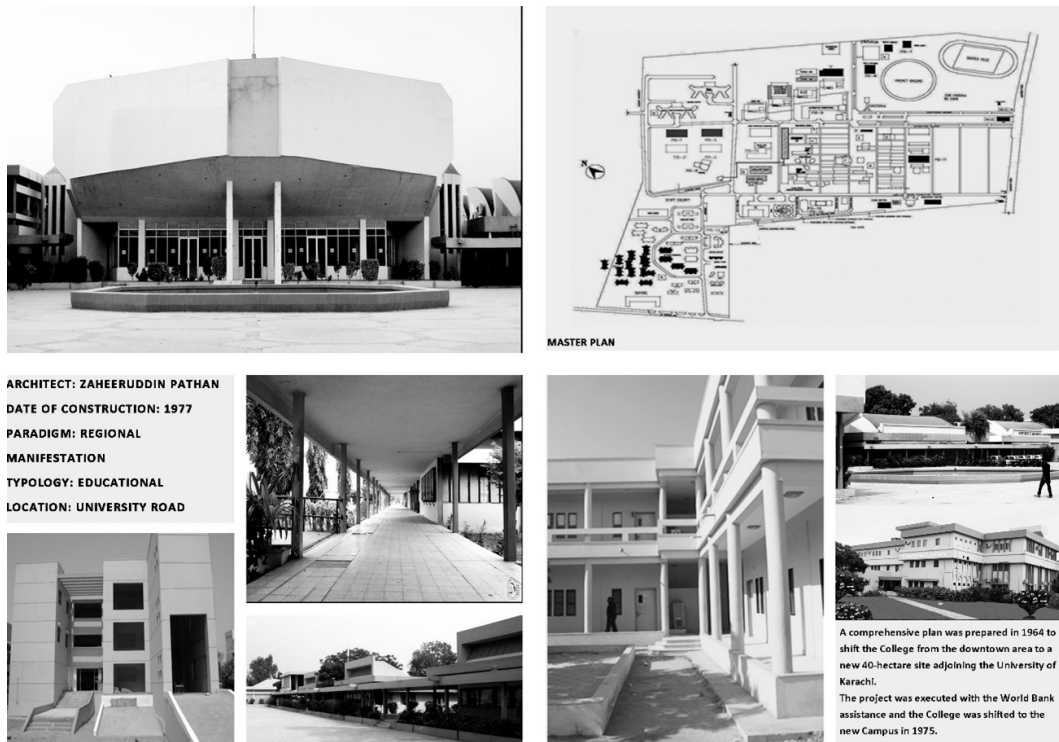


Figure (12). Case 3: NED University of Engineering and Technology

campus of Karachi University, is the epitome of the different buildings designed in the Campus. It is a six storey structure, which is elevated on podiums, has deep recessed windows, balconies, sun breakers and double height spaces which help keep the temperatures within the building pleasant throughout the day. According to Kazmi & Kar-rar (2017) who have analysed the campus build-ings for the response to climatic conditions, Ecochard made use of the southwest breeze in Karachi which blows at an average direction of 245 degrees, by orienting the long façade of the buildings perpendicular to the wind direction. This helped in through ventilation and creation of thermal comforts within the interior spaces. The clear story windows helped exit the warm air.

In the AKUH, the courtyards, which are landscaped using water, aromatic vines, flowering shrubs and trees help bring the temperature down for the entire campus and create a micro climate of its own. According to the head of Design Department at AKUH, following lead from the initial concept of a 'garden university', water as an element is used abundantly throughout the complex, in the form of lakes, shallow pools and water channels, that have been taken as an element of landscape design from the design of traditional Islamic Gardens. The presence of water in various types of water bodies also helps bring down the temperature in the entire campus, as the breeze that enters the buildings and courtyards gets cooled by flowing over these water bodies. As per the informal interviews with students on campus, this design element is immensely valued by them. The entire complex of AKUH is oriented on a grid, responding to the cardinal points, with recessed windows, splayed walls, shaded courtyard spaces, screens and wooden brise soleil (design on Islamic geometric patterns) made in wood. According to an interview with a lead architect in Karachi, the tapered roofs of some of the masses have wind scoops which provide fresh air for all the air handling units. Besides being a source of natural ventilation, these scoops also serve as reminders of the use of 'wind catchers' in the historical part of the city, as ventilation devices, about a century ago.

The main design elements used by Zaheeruddin Pathan for NEDUET as a response to control temperature, and keep the circulation and classroom spaces cool, were provision of singly and doubly loaded corridors, colonnaded walkways, shell shaped roofing system for class rooms, landscaped spill out areas between

departments and landscaped central piazza in front of the main auditorium. According to the discussion in the focus group, the professionals agreed that these design elements also helped in giving the University its architecture language.

## **8.2 Connection with Memory and Identity**

The Karachi University connected with the idea of memory and identity as the North-South Road within the campus was areed by Ecochard to be kept as the Principal Axis within the Master Plan, which divided the campus into two halves, with general buildings to the east of the axis, and the student housing and sports facilities to the west, whereas the classrooms and major academic buildings were centrally located. The sense of memory and identity was achieved at AKUH by the exploration and implementation of a design language which focused on a modern interpretation of Islamic Architecture. As discussed in the focus group, AKUH introduced in Karachi a Critical Regionalist architectural language which reinterpreted traditional Islamic architectural elements, like muqarnas, shallow water pools, entrance portals (iwaan), courtyards and some landscape elements. These were implemented using modern aesthetics, creating connection with memory and developing a sense of identity.

For the NED University the design elements used by the architect (shell roof in class-rooms, covered walkways, landscaped courtyards and plaza) became an identity for the Campus. As pointed out in the focus group, these design elements became precedence for future Univer-sities in the city as shown in Figures (13-15).

The design elements used in all the three projects respond to the climatic conditions and create an architectural identity for the city, by having deep recessed windows, colonnaded walk-ways, oversized entrance portals, and integration of landscape within the overall composition. The built form needs to respond to the identity of a region, and contributes towards generating a sense of memory. This intangible aspect of the built form helps develop the language and aesthetic characteristics.

## **8.3 Connection with pre-existing urban mor-phology and context**

The overall vocabulary of the campus of

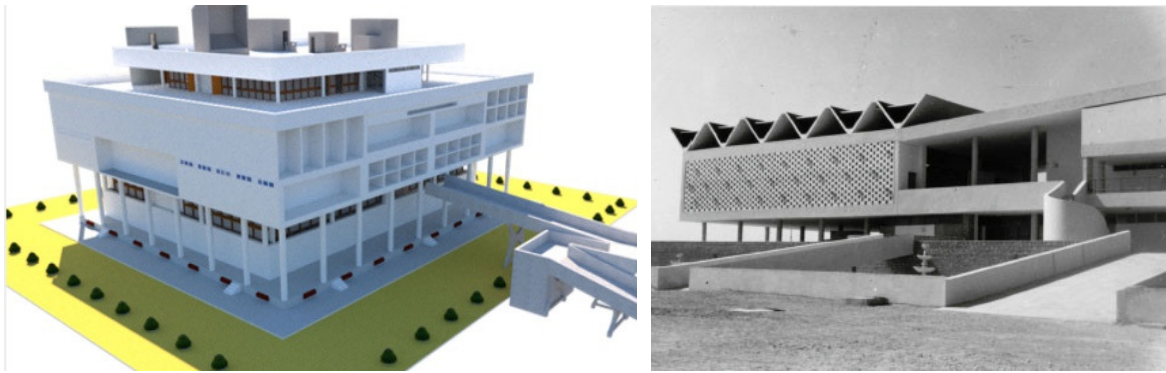


Figure (13). Mahmud Husain Library (left) and Visual Arts Department (right) in Karachi University, showcasing deep recessed openings, cantilevered slabs and colonnaded walkways. Source: Department of Architecture, NED University of Engineering and Technology



Figure (14). The recessed windows and colonnaded walkways of AKUH



Figure (15). Shell roof and colonnaded walkways of NEDUET



Karachi University was Modern Architecture that reflected influences of traditional and local environmental conditions. The usage of Gardens was meant to reflect the traditional Mughal Gardens and water bodies were used as decorative elements, again inspired by Mughal architecture and landscape design. The language of individual buildings used by Ecochard was Modern, greatly influenced by Le Corbusier, although it was adapted to respond to local climatic needs.

AKUH was planned as a cohesive network of buildings with 'diverse physical elements' that maintain 'functional relationships'. The overall massing of the complex has a Modernist language, with wooden screens and colonnades giving the form a local flavour. The use of maroon coloured plaster, as the finish on all the buildings, unifies the complex visually, blends in with the surroundings and is easy to maintain, as well as being weather resistant, solid and robust. The material is very forgiving when it comes to addressing the local climate.

The design principles of NED University had direct correlation with buildings designed in Karachi; especially there was heavy influence of Ecochard from Karachi University's design, as it used similar proportions of colonnaded walkways and recessed openings. The overall master plan of NEDUET followed a similar language as that of Karachi University, with landscape design on a grid, similar to a charbagh (or Chahar Bagh, a Persian garden concept), and

variety of courtyards, lined by colonnades and enclosed by Department buildings following similar grid lines development of a critical dialogue.

The architectural vocabulary of the Karachi University buildings, designed by Ecochard, had many offerings for the profession of architecture, in terms of the design elements that need to be incorporated in order to achieve climatically responsive architecture in the context of Karachi. The campus however, because of being enclosed within a boundary wall and not providing easy access to citizens, does not develop a critical dialogue with the general public. The impact of the Campus remains limited to people who can access it, and those who are somehow engaged with the premises. So although these observations are supported by the theories put forward by Eggener (2002) and Shadar (2010), the case study did have an impact in developing an architectural memory for the city, and connecting this with the existing growth corridors as argued by Frampton (1983) and Sassen (2012). Similarly, the AKUH led to the development of a certain aesthesis for university campuses and beyond by introducing design elements like shallow water bodies, transition spaces between the open courts, buildings with deep entrance portals, creation of thresholds between the open and covered areas and design details like deep recessed windows. The deep tapered entrance portals help humanize the scale of the built form, as they visu-



Figure (16). Recessed windows and deep entrance portals evident in later designed public buildings in Karachi

ally screen tall structures. This, and other design principles, introduced in both Karachi University and AKUH, have been carried forward in the design of newer buildings on the campus, that are much taller, and are also replicated elsewhere in the city as shown in Figure (16).

According to the head of Design Office at AKUH:

“The most important thing that this campus was designed around is the human scale. Now that we are going high-rise, along the pedestrian pathways we are still maintaining low rise buildings. So you come through a low building, a courtyard space and then you enter the high-rise building, without feeling intimidated by tall structures”, according to Architect Samir Sadruddin (Sadruddin, 2018).

After the year 2000, a number of buildings were designed by in-house architects from the Department of Architecture and Planning at NEDUET. Most of these buildings not only respond to the language established by Zaheeruddin Pathan but also uplift the general aesthetics of the Campus by experimentation of color, well resolved spatial layouts and evolution of ventilation elements, like fenestrations. The in-house consultants were also backed by sound theoretical bases, ethical practice, and delivered the design schemes at competitive rates as compared to the open market. They were supported by research initiatives and opportunities to bounce theories/ ideas to students.

As discussed earlier, for built form to have a connection with memory, it needs to respond to the context and contribute towards developing an aesthetic (Lefavre & Tzonis, 2003). The design impact of the buildings designed by in-house architects at the NEDUET in later years has led to the development of a critical dialogue in the following ways:

- Inputs have been about developing a symbiotic relationship between old and new, with new buildings respective of existing forms.
- Buildings are low budget but high performance, retaining a certain quality, and had an impact on the practice of architecture. It was proven by the in-house architects that good quality of design and construction can be achieved with low budget as well.
- Setting of a simple design language based on a grid, and being similar on the inside

and the outside, with clarity of function and visual appearance.

Generally, the open communal spaces created in the form of various sizes courtyards helped create a critical dialogue between the users of the space and the built form. Other design elements like the perforated screens, weeping plaster finishes or concrete finishes, also help develop this vocabulary further, as the campuses age well with time.

Incorporating concepts of embodiment with respect to the three case studies, the climatic responsive design, use of materials that connect with the social requirements of the student body, creative use of materials and development of an architectural vocabulary which connects with the Modernist principles but is rooted in the context of Karachi, were some of the aspects that were appreciated by the professionals and the users of the campuses. This also connects to the argument of the anthropologist and geographers (Hoolachan & Tewdwr-Jones, 2015; Marston, Jones, & Woodward, 2005), where the built form goes beyond creating physical connections and ventures into creating social, cultural and intangible linkages.

Students and other users of the three campuses had many stories/ experiences to narrate and spoke of their associations with the buildings, especially the circulation spaces like colonnaded corridors, courtyards. “The medical college is very spacious, with the library looking onto a big courtyard through the glass façade. I value the connection between the open and built spaces; and the landscaped courtyards add to the aesthetic quality and spatial experience of the campus,” according to a medical student at AKUH.

Another student at NEDUET narrated her association with the built form as such, “most of my memories about NED are staged either along the colonnaded walkways, or the smaller green courtyards that remain in shade throughout the day. These are the places where we friends hang out during our breaks between classes”.

## 9. Conclusion

The conclusion is two folds. The first part is related to the theory of Critical Regionalism, and how it can benefit from some of the lessons from theories of other disciplines, like geography and anthropology. The second part of the conclusion is related to the impact of the three case studies

designed within the realm of Critical Regionalism, on the larger practice of architecture within the city.

For a formally designed building, belonging to certain typology, designed projects prescribing to Critical Regional theory can create contextual connection and lead towards evolution of a sense of aesthetics. But, in the end, as a method, buildings prescribing to this theoretical trajectory do not incorporate community participation and flexibility in design. It may not merely be a style, as labelled by Shadar, 2010, but it definitely lacks strong social connect. On the other hand, built form designed and analysed with a different vantage point, as offered by anthropologists and geographers (Peterson 2010; Sheppard and McMaster 2003; Marston et al. 2005; Low and Lawrence 2003), may address this lack of social connect, but its contribution towards climatic response and development of an architectural aesthetic for newly Colonised nations should not be underestimated (Abel, 2000; Frampton, 1983; Lefaivre & Tzonis, 2012).

The concept of embodiment addresses various scales and ties up the physicality of a space to intangible aspects like social behaviour (Peterson, 2010). These theories also connect to concepts explored in Critical Regionalism and are related to memory and identity, and can lead towards development of a critical dialogue.

The local case studies reviewed respond to local climate, societal norms and succeed in developing an architectural vocabulary for the city. They also start the development of a critical dialogue through addressing the concept of embodiment and an impact on the profession of architecture, but the contribution towards this end is limited because of lack of flexibility in the projects due of their nature and because of lack involvement of the community. As far as the impact of AKUH was researched and analyzed, it was felt that it is a successful architectural masterpiece, which offers many learning aspects for the profession. The details of construction have been replicated in other buildings and locations, but the impact has still been limited because of the typology of the building. For instance, the same design principles cannot be applied in a high rise office tower, where limited land is available. It is, however, concluded that the outreach and connection of the AKUH, as compared to the Karachi University and NED UET, has been greater

because of two reasons. Firstly, because the University Hospital is frequented by a much larger number of public who experience and engage with the premises, and secondly because until recently the Hospital did not have a boundary wall around it, unlike the other two University campuses that are heavily guarded and not everyone is allowed to enter these premises. This resonates with the theoretical discussions initiated by Eggener (2002) and Shadar (2010), where they criticize Critical Regionalism as a theory because it does not promote engagement with the community. With respect to the Karachi University and NED UET, the climate responsive design, use of materials, connection with the social requirements of the student body, the creative use of materials and the development of an architectural vocabulary that connects with the Modernist principles but rooted in the context of Karachi, were some of the aspects that were appreciated by the professionals and the people who engage with the built form. The University campuses also develop a relationship with the existing morphology and old structures, and have succeeded in providing budget-friendly and high quality architectural solutions.

The built form that is responding to the global and local trends in Karachi in general was termed as 'new modernism' by the professionals. This is not completely modern, but is based on simple lines, and depends on climatic response. This locally defined vocabulary can be derived from the three case studies, especially in terms of their climatic response and aesthetic, and in terms of creation of a sense of place, for a building typology that has a certain scale and is more horizontal rather than vertical in terms of its spread.

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## النهج الإقليمي الناقد للعمارة: الدروس المستفادة من ثلاث دراسات حالة في كراتشي

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قدم للنشر في ١٩ / ١٠ / ١٤٤٢ هـ؛ وقبل للنشر في ٤ / ٣ / ١٤٤٣ هـ.

ملخص البحث. تؤكد الإقليمية النقدية، كنظرية، على ارتباط سياق شكل المبنى بالمجتمع والنواحي المادية والاستجابات المناخية، حيث تنتقد هذه النظرية تفسير الحنين إلى الماضي وشكل المبنى في البلدان التي خضعت تحت الاستعمار. وفي بعض الأحيان يتم تجنب استخدام هذه النظرية، وذلك بسبب اعتبار كونها مجرد «أسلوب»، تفتقر إلى التطور والتواصل الاجتماعي مع السياق المحلي. وعلى الرغم من أن الإقليمية النقدية كنظرية تقتصر على مقياس وتصنيف معين للمباني، إلا أن مساهمتها خارج شكل المبنى نفسه لم يتم بحثها كثيرًا. ومن ثم، فإن الهدف من هذه الورقة هو تقييم تأثير المباني العامة (ثلاث جامعات) في مدينة كراتشي، والتي تم تصميمها بناء على المفاهيم التي روجت النظرية الإقليمية النقدية لها. وقد تم إجراء هذا التحليل في إطار النقاش الطويل حول العولمة والتوطين. والعوامل الرئيسة التي تم التركيز عليها هي: الاستجابة للمناخ، والمجتمع، وتطوير الجماليات المحلية، والارتباط مع الذاكرة والهوية والتشكيل الحضري المحلي. كما أن هناك جانباً آخر من جوانب التحليل تمت تجربته من خلال مراجعة نظريات التخصصات الأخرى (الجغرافيا والأنثروبولوجيا)، وهو يهدف إلى استخلاص الدروس من حيث طرق البحث ونقاط الأفضلية، والتي يمكن أن تثري النظريات الإقليمية النقدية. ولقد تم تبني منهجية «دراسة الحالة» جنباً إلى جنب مع عشر مقابلات نوعية للمهندسين المعماريين ومجموعة متخصصة لتوليد البيانات. وقد أشارت النتائج إلى المساهمة القيمة لهذه المباني من حيث المناخ، والاستجابة الاجتماعية والجمالية، والقيود من حيث قابلية التكرار لأنماط المباني الأخرى بالإضافة إلى عدم وجود حوار نقدي مع المجتمع بكامله.

الكلمات المفتاحية: الإقليمية النقدية، الإقليمية، الذاكرة، الجماليات، الاستجابة المناخية.