ARCHITECTURE A SOCIAL RESPONSIBILITY REFORMING URBAN SURROUNDINGS A BARRIER FREE RESPONSIVE ENVIRONMENT ENABLING LIMITED ABILITY: CASES FROM KARACHI, PAKISTAN

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ABSTRACT

The built environment is a complex outcome of a society's geo-political and socio-economic development. An important consideration is the status of existing facilitation systems for population with disabilities in a developing country. International researches indicate that about one-tenth of the global population can be categorized in this human slab. Multiple predicaments such as climate change, induced disasters, violence, conflict, terror strikes, urban and regional hazards are constantly adding more people in this category. A review and basic observation of the built environment in Pakistan, including larger cities such as Karachi, reveal that the existing profile of various building types are grossly unsuitable to accommodate the users with frail and limited abilities. Common facilitation elements such as ramps, support balustrades, guiding rails, exclusive toilets, appropriate aisles and corridors, ventilation and daylight assistance mechanisms and other necessary ingredients are scantily found in these buildings. This shortcoming exists in many of the designed buildings and spaces for healthcare, education, social welfare, commercial centers, housing schemes, etc. The practice of accepting construction with a deficit built environment remains insensitive to people with disabilities and a major disrepute to architects, engineers, all professional saviors of the building industry and environment.

This paper explores the current status of response preparedness and intervention in the domain of Karachi's surroundings. Drawing from the existing literature, the paper adopts a case based approach to identify the various dimensions of built environment to establish their suitability for accommodating the specific requirements for population with limited abilities. Case studies of hospitals and educational facilities have been taken from Karachi. The pivotal role of local architects and urban planners has been appraised in this scenario. The paper concludes with design advise derived from the research analysis.

INTRODUCTION

Pakistan's built environment is still undeveloped with respect to facilitation of systems for populations with disabilities. Until recently the number of disabled persons was comprehended ambiguously that they are in minority. Disability is not easy to detect nor is measured widely, as its under reported by the population specially in females (World Bank, 2011). The people with disabilities comprise of a very populate social sector in every age group and different ethnic and religious cluster. It is observed that the society tends to ignore them, believing them incapable of participating in the community or avoiding them as reminders of existing weakness (Mobinuddin, 2008). There are people with disabilities not having equal access to health care, education, and employment opportunities. They do not receive the disability-related services according to their need and gravely experience exclusion from everyday life. Internationally people with disabilities and their requirements are increasingly understood as a human rights issue. There are however evidences for persons with disabilities experiencing worse economic outcomes due to social and physical barriers as compared to persons without disabilities (World Bank, 2011).

The Government of Pakistan compiled its last census in 1998 and is criticized for its insufficient projected data on various forums, specially where the increasing population of people with disability remains miscalculated. Awareness and scientific information on accessibility issues are also lacking. Gravity of such facts lead to a frail policy for design implementation in buildings and urban environment, effecting the performance of people with disability, making them suffer socially and economically.

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RESEARCH METHODOLOGY

An explanatory approach is used in this research paper. Some key questions explored are:

- How accessible is Karachi's built environment in health care and educational buildings for people with disabilities?

- How imperative is the role of professionals towards reforming or ensuring accessible building regulations?

Initially, a desk review of national and international literature on the subject was undertaken. Common repositories of information available on electronic media were reviewed. Some key informant interviews and discussions with NGO's like Ministry of Social Welfare and Special Education, Hani Welfare, Estanara Associates, Awareness Pakistan were undertaken. These were introductory meetings (one each with the named organization). The discussion revolved around general review of the research to understand the accessibility environment and the role of law enforcing agencies for facilitation.

Secondly, seven qualitative interviews were conducted of officers from different government agencies. Some of the professionals inducted for these interviews included Engineer from the Karachi Master Plan Department, Senior Director Karachi Municipal Corporation; Director Terminal Planning; and Engineer from the Department of Road Safety Transportation. These professionals discussed the various implementation of accessibility laws in the context of Karachi, pedestrian crossing facilities and road safety projects.

Four semi structured interviews were also held with faculty from the Department of Architecture and Planning, NED University. One of the interviewee was a faculty member with a disability. She spoke at length about her accessibility issues and the experience of living in Karachi with a disability. Discussions were also organised with final year students of the Department of Architecture and Planning around the research topic.

At the National College of Arts, Lahore semi-structured interviews of a couple of students with vocal and hearing impairment and a resident artist with vocal impairment were undertaken. The method of data collection through interviews included close ended (yes/no) and open-ended questions and observation of facial expressions and body language.

Furthermore, building amenities of health care and education facilities were visited and studied with reference to suitability of facility for people with disability. Digital surveys were carried out for obtaining baseline information searching through government data for Pakistan. It was discovered that there is no widely accepted definition of persons with disabilities (PWDs). In two instances however Pakistan's National Policy for Special Education report has following definitions for disability:

a) "Disability means the lack of ability to perform an activity in a manner that is considered to be normal."

b) "A person with disabilities means a person who, on account of injury, disease, or congenital deformity, is handicapped in undertaking any gainful profession or employment; it includes persons who are visually impaired, hearing impairment, physically and mentally disabled." (JICA, 2002: 126).

ACCESSIBILITY ISSUES IN THE CONTEXT OF PAKISTAN

While reviewing the literature it was imperative to understand the magnitude of the problem and urban challenges that large cities are experiencing in terms of barrier free environments. Karachi's growing population of people with disabilities is forecasted at 3.1% (2.5 million people) by the year 2020 (Government of Sindh, 2012). In reality this figure is much higher calculated at 10% to 30% in advanced nations (Junaidi, 2015). Urban challenges which are causing the increase in disabled population in Pakistan range from war on terror, climatic changes causing disasters and civil unrest. For example, the earthquake of 8th October 2005 in Pakistan caused many deaths and left 75000 people disabled (World Bank, 2011).

The disasters due to climatic factors result in the economic instability of rural areas, moving the population towards developed urban cities (Alam, 2006). This population is prone to ethnic and religious violence and exposed to inanimate and animate objects, falls, transport related injuries and terror strikes which contribute to serious forms of physical impairment. Interview with a representative and another with the director of an NGO of Karachi indicated the speculation of much accelerated figures for disabled population in Karachi than the already projected ones, which becomes a major cause of economic stress and constraint to many families.

Karachi's urban expansion is a barricade for people with disability. The learning environment is not favorable towards

the location of special schools, accessibility to buildings, availability of special furniture, consideration of design standards for making educational facilities accessible for people with a disability for example, ramp's gradients, door sizes, handrails, etc. Amenities like mosques, parks, shopping centers, libraries, places of public utilities (toilets, banks, ATMs), do not consider accessibility of persons with disabilities. Laws governing building construction for a barrier free environment are slack (MWD and MSWSE, 2005). A critical appraisal of the Karachi Strategic Plan - 2020 under the sub head of special education (ECIL, 2007) indicate population of persons with disabilities as separated from the public and are not considered normal. In this document the population projection for people with disability has been overlooked. Factors relating to accessibility code, design considerations of major areas like transportation regulation, economic plan for people with disability are also missing. In interviews with faculty members of architectural institution regarding educational considerations in curriculum for accessibility design, it was expressed that the education of architects in institutions in Karachi and in Pakistan at large does not include any accessibility considerations in detail for people with disabilities, although students are encouraged in their design studios to consider the accessibility aspect while designing.

CASE STUDIES

Health Care Projects in Karachi

A general survey of government and private hospitals of Karachi was under taken and a comparative analysis was developed for accessibility factor. The external approach as emergency and internal flow of pedestrian traffic was observed. In most cases these were designed as after thoughts sometimes after the hospital had been operational for a decade. As a general condition the accessibility and design standards of private hospitals was better than government owned hospitals.

Ziauddin Medical Hospital, Clifton

It is a hospital complex having five levels. Four of its levels have well maintained vertical transportation for its patients in each block, with wide staircases for patient attendants and staff use. The entrance and exits are in accordance to standard of accessibility, with a handrail placed at a proper height and specifications installed along ramps for attendant maneuvered wheel chairs and stretcher trolley. However, the ramp gradient is steep for independent accessibility for a person with disability or frailty. Entrance to the building and door widths are designed for easy access of large groups of people and also fulfil the requirements for people with disability, however in a few private rooms the bathrooms have a level difference where the wheel chair is inaccessible. Public areas, like the ATM facilities, have been overlooked in consideration for accessibility for people with a disability (Figures 1, 2)

South City Hospital, Clifton

This is a recently constructed four storey hospital and is an accessible and barrier free facility. The edge detail at the parking curb has been worked out in a way that makes it accessible for people using a wheelchair (Figures 3, 4). The gradients of the ramps also support wheelchair accessibility.

Figure-1: Ziauddin Hospital Clifton Karachi: Entrance Ramp does not have a hand rail.

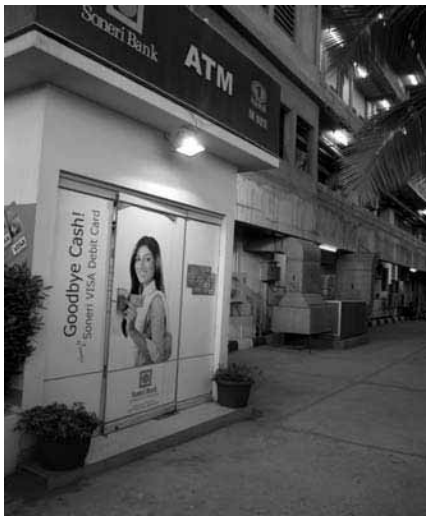


Figure-2: Ziauddin Hospital Clifton Karachi: ATM room un-accessible to people with disabilities.

The hospital floors have a number of lift shafts appropriately spaced within the building. The balustrades, bump rail, handles height, door sizes, slopes, materials on slopes and treads sensitively consider accessibility of people with disability. Certain private room bathroom door widths are, however, not accessible for a person on a wheelchair**.**

Agha Khan University Medical Center, Clifton

This is a three level building vertically connected by lift and staircase. The entrance is accessible from the ground floor at a vehicular dropoff point for patients. The gradient of the ramp is very steep from the road level. It is inaccessible for elderly pedestrians and accessibility impaired people (Figure 5). The interior follows international design standards with balustrade, bump rails and door handles heights following accessibility design standards. The bathrooms are also accessible for visitors on a wheelchair**.**

Jinnah Post Medical Centers (JPMC)

The provision of ramps with proper gradient are visible at the new JPMC Emergency Center (Figures 6, 7), but due to security arrangements and barricades, reaching the main building from the main road is difficult. The old emergency areas still need retrofitting of ramps, hand rails, balustrades and correct size of doors to make it easily accessible and barrier free.

Figure-3: Exterior curb detail of South City Hospital in Karachi.

Figure-4: South City Hospital: Accessibility requirements are fulfilled by the exterior details.

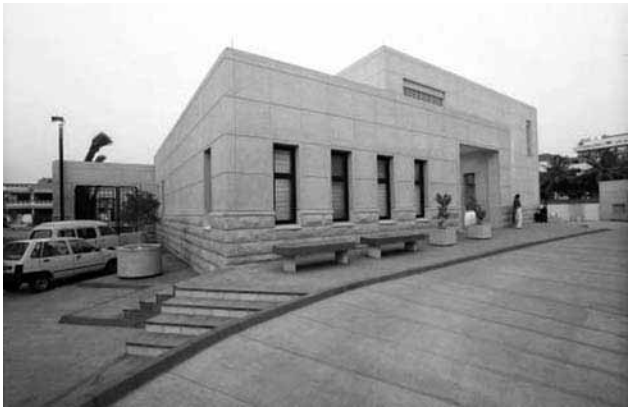


Figure-5: AKU Clifton, Karachi.

Figure-6: Access to Jinnah Post Medical Center.

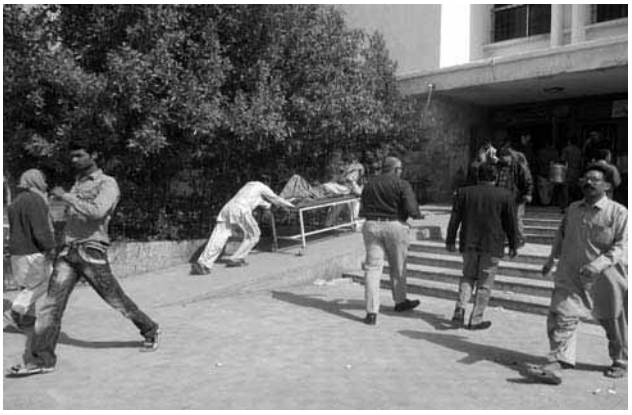


Figure-7: Jinnah Post Medical Center and Emergency Unit

Civil Hospital Karachi (CHK)

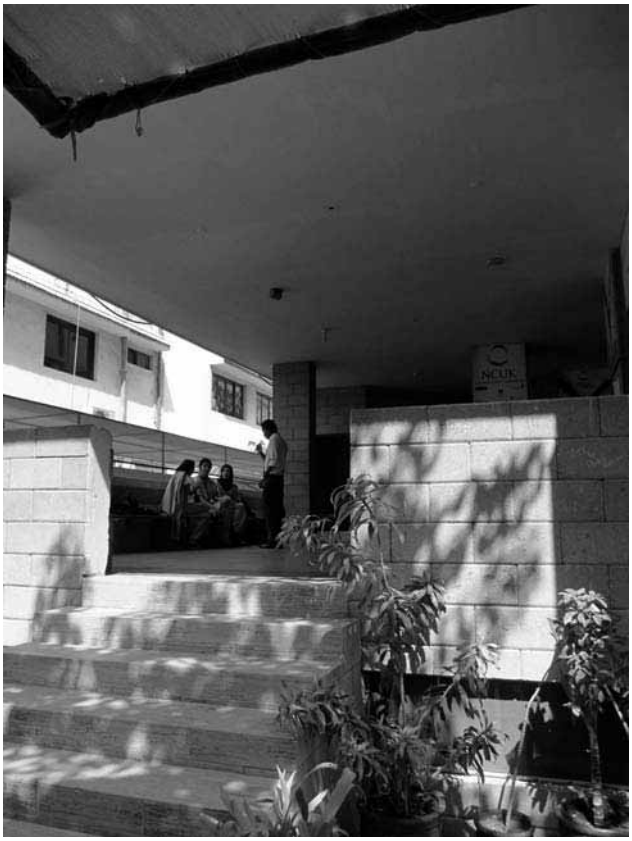
CHK is a government funded hospital in the center of the city of Karachi. Most vehicular arteries leading to the hospital emergency entrance are encroached, forming a bottle neck at the entrance and exit. In case of an emergency situation it is reported that innumerable causalities happen due to inability to reach the emergency center on time. The Civil Hospital departments which are administered by funding of different NGOs on a self-help basis, have a better environment and adequate accessibility than the departments still under government administration. The civic municipality does not play any role to remove the hawkers clogging the access to the entrance, making it inaccessible during emergency (Figure 8).

Figure-8: Civil Hospital Emergency center entrance.

Both JPMC and CHK are centrally located hospitals in the city. The entrance to the emergency blocks are not only far from the main road but become inaccessible during emergency due to the vehicular rush and the encroachments of hawkers lined on both sides of the road leading to the emergency center block. There is a possibility of creating a separate route to the Jinnah Hospital premises for the ambulances. Similarly the same can be done for the Civil Hospital, where the main entrance at the front can be relocated and the hawkers and parking lot bottling up the entrance can be shifted to a nearby open ground.

CASE STUDY OF EDUCATIONAL INSTITUTES, KARACHI

A survey of educational facilities in Karachi unfolded the



Figures-9, 10: Entrance of a local school, showing a ramp and steps for accessibility to classrooms.

fact that there is almost no consideration for accessibility of impaired students in the design of classrooms and the schools at large. In a newly constructed educational institute an entrance ramp was part of the design, however the school building had no elevators for vertical accessibility of persons with disability. Many schools operate in small residential town houses, having major accessibility issues. Thus, if a student becomes disabled he /she is unable to continue studies due to issues of accessibility (Figures 9, 10). Only one school, that is, Karachi Grammar School (KGS) in Clifton, had proper ramps and balustrade designed at appropriate child height and toilet accessibility had been thought about, in the design for students who have mobility issues.

It is the duty of the licensing agencies for educational institutions to ensure accessibility factor while establishing agreements with school administration. As of now all the educational school facilities are operating in violation of Accessibility Code 2006 (PEPAC, 2007),according to which any upcoming educational institution should ensure a barrier free environment for all students. This rule also applies for educational institutions already operational in the city.

Visual Studies Department, University of Karachi

This facility was designed by an international consultant by the name of Ecochard. It was constructed in 1959. As a government institution it ensures 2% of admission quota for students with disability. The building was made as a barrier free accessible environment. It is a three story building with two pedestrian ramps forming a strong design feature of the building. There is another wide ramp for the cars. These ramps reach the front entrance at the first floor level. The facility is designed and accessible at both levels for people with disability. There is another ramp leading to the workshop area at the back of the building. One must mention the sensitivity of the architect and construction managers to have looked into accessibility details in times when the accessibility law for buildings had not been formed.

Indus Valley School of Art and Architecture, Karachi

This is private run educational institution and a recently constructed building. It has five storeys. The building remained verticality inaccessible for people with disability for some years, but recently an elevator has been installed and made the campus a barrier free and accessible facility for students with disability and for elderly faculty members. A standard ramp from the main gate into the front path and sloping pathways in the garden have been added. Certain areas within the building still require construction of ramps, bridges and handrails for ease of movement for students with disability.

The art education institutions reviewed here were sensitively designed as inclusive for all. This ensured participation of persons with disability. Conclusively it can be said that although the primary and secondary private schools do not generally consider accessibility of students with a disability, colleges and university departments do give this aspect some importance and have retrofitted their campuses to welcome students with accessibility issues.

THE EMMERGING ROLE OF PROFESSIONALS

The case studies reviewed here reinforce the fact that architects and engineers in private practices are sensitive and professionally aware about accessibility standards. However, those employed with the government sector do not give this issue much importance within individual capacity. The architects, urban planners, engineers from the government sector are well aware of the universally available data and standards but the motivational factor is amiss in their performance norms, resulting in incoherent construction of public places which are not inclusive for all.

The boards and councils accrediting institutions need awareness creation at iterative bases through programs and workshops on accessible or universal design, making it an important part of the educational curriculum at technical level. The statuary bodies issuing professional practice licenses can be instrumental for enforcing adoption of Accessibility Code and Building Design Manual (PEPAC, 2007a) for implementation of details in construction to create inclusive architecture and barrier free environment.

The ministries of development, social welfare societies and building authorities must have a stronger role in establishing the accessibility standards in order to help elevate the socio economic status of the members becoming dependant on the society as a result of being disabled, as people with a disability suffer from depression and isolation.

The professionals in business educational institutions and those involved in hosting media programs for rectification of social norms must address this growing issue and disseminate thought provoking dialogue for the masses to accept and inculcate on smaller scale such attributes that enhance the living environment and make it accessible.

Urban designers and planners should recognize the importance of creating healthy towns and cities and that their role is becoming a challenging one as a result of the

massive sprawl of settlements. Since a neighborhood's infrastructure influences the life and health quality of its inhabitants, participating in community life for many people with disability requires an adequate infrastructure that is accessible and fulfils the requirements of the communities.

CONCLUSIONS AND RECOMMENDATIONS

Educational institutions and all affiliates concerning construction industry, must yearly undertake targeted researches in view of nationally recognized definition for people with disability. Issues linked to understanding the requirement of such persons can bridge the vacuum occurring in data collection. Establishing policies and planning strategies for implementation of the Accessibility Codes (PEPAC, 2007) in conjunction with the 'Design Manual and Guidelines for Accessibility' details in student projects as well as state advertised projects, while preparing for institutional consultation, can also help develop understanding of requirement of people with disability.

Reliance on evidence based knowledge through participation of people with disability, adopting accessibility design manual and guidelines as part of the infrastructure development is also a requirement. Accessibility as an issue must be dealt with in the curriculum for engineering and architectural education through framing of policy to be part of framework. Encouraging a larger percentage of people with disabilities in the education system for architectural and engineering studies can lead to the involvement of a force that will understand the sensitivity and need of implementing accessibility design details in projects.

Application of accessibility standards in the urban fabric should be encouraged to achieve sustainable development catering to the needs of people with disabilities. Karachi Strategic Plan 2020, needs amendments keeping the perspective of people with disabilities in planning, communication and infrastructure development to make Karachi accessible. Adequate design intervention needs to be made to make the present environment accessible and barrier free in the city and the country at large. One way of achieving this is to implement 'the Accessibility Code 2006' and Design Manual Details (PEPAC, 2007, 2007a) as retrofits on already built projects for making them barrier free.

Government bodies, NGO's, engineering and architectural councils, institutes of architects and engineers, civil society, education institutions and universities must work together towards understanding the issues people with disabilities face in the society in to order to access pubic places. They are handicapped because of the environment creating accessibility barriers. The people with disability can become independent and contribute actively to the society if the built environment is made accessible and inclusive.

REFERENCES

Alam, M., 2006,*A report on impact of climate change in Pakistan*, viewed 22 April 2015, from https://www.scribd.com/document/32259054/Climate-Pakistan.

ECIL, 2007, 'Karachi Stratagic Development Plan 2020', Mater Plan Group of Offices - City District Government, Karachi.

Governement of Sindh, 2012. 'Provincial policy for special education and rehabilitation of persons with disabilities 2012-2022', Government of Sindh, Karachi.

JICA, 2002, ' Country profile on disability Islamic Rrepublic of Pakistan', Government of Paksitan, Islamabad.

Junaidi, I., 2015. *DAWN,* viewed 19 April 2016, from .

Mobinuddin, 2008, 'Country Report of Islamic Republic of Pakistan', Estanara Magazine, Islamabad.

MWD and MSWSE, 2005, 'Situation analysis and national plan of action for persons with disabilities', Ministry of Women Development, Social Wefare and Special Education, Islamabad.

PEPAC , 2007, ' The acessibility code of Pakistan 2006', Pakistan Environmental Planning and Architectural Consultants (Pvt) Ltd, Islamabad.

PEPAC, 2007, 'Design manual and guidelines for accessibility', Pakistan Environmental Planning and Architectural Cosultants (Pvt) Ltd, Islamabad.

World Bank, 2011, 'World report on disability', World Health Organization, Malta.