International Journal of Architecture and Built Environment, Volume 2, Number 1, 2010

ARCHITECTURAL BARRIERS TO SPECIAL NEEDS STUDENTS

D. Gwatau and P. S. Nimlyat
Department of Architecture
University of Jos, Plateau State, Nigeria

ABSTRACT

The design of most school buildings do not incorporate the requirements of the handicapped people and where they are found, such architectural facilities for the special need students are inadequate or substandard. This paper discusses architectural and environmental barriers and hazards to orientation and mobility, which are essential components in the educational service delivery system of special need students. Barriers that affect the handicapped person include limitations to the use of certain spaces, mobility or accessibility problems and building types. It observes that architects employed selective dispensation of their services particularly in school environment, which impedes access to learning and other facilities. The paper suggest in conclusion that to minimize these limitations and improve efficiency in learning, the technology employed in the planning, design and construction of learning facilities by professionals should serve as enabler rather than an end in itself.

Keywords: Barriers, Design, Environment, Handicapped, Special Need.

INTRODUCTION

In Nigeria as in most developing countries, most buildings in our schools and higher institutions of learning are not planned and built with the handicapped people in mind. Persons with disabilities are historically underserved, underprivileged, marginalized and socially disadvantaged. The basic intention of buildings is that they should be planned, designed, built and manage to offer an environment in which all occupants can carry out their work and feel well, and to some extend be refreshed by the environment. An efficient building should have the characteristics of effective climate control, proper space utilization, durability, comfort and maintainability. An efficient building must provide a responsive and supportive environment within which its occupants can meet their performance objectives. The essential role of architecture should be to provide built environment that sustain occupants health, psychological well-being, physiological comfort and productivity (Kim, 1988). Over the years, people with certain type of disabilities are being stigmatized by an aura of mystery and misinformation and are sometimes seen to constitute "economic negatives" to any society (Abang, 1986). It is estimated that 600 million people in the world, that is 11 percent of the world population is suffering from one form of disability or the other and two-third of these people live in developing countries. According to World Bank benchmark, 10 percent of a country's population has disability (John and David, 1992). Based on Nigeria's 1991 estimated population, 13.7 million Nigerians have disabilities. Oluigbo (1986) indicates that there are about 2,351,064 estimated school age handicapped children in Nigeria, out of whom only 9,813 (less than one percent) are said to profit from special education. There about 190 educational facilities (from primary to post-secondary) for the handicapped in the Federation. A cursor observation of these institutions reveals the existence and prevalence of architectural related barrier and other forms of environmental barrier problems. Consequently, a significant portion of these special need students is at risk of being technically excluded from the learning environment because the environment itself is a disabled one. The direct implication of this on the handicapped is destitution, prostitution, street begging, and urban degradation and so on. The aim of this paper therefore is to stimulate interest in minimizing architectural related barriers and provide hints for awareness to professionals and school administrators for effective planning and management of the school environment.

SPECIAL NEED STUDENTS AND SPECIAL EDUCATION

The term "special needs students" or "children with special needs" are commonly used to refer to students who in one way or the other different from children who are considered "normal" by the greater segment of the population. The deviation must be so significant that the children are incapable of functioning adequately within the community or school. The common term in usage today is "exceptional" children. In recent years, interest has risen for the child who is considered exceptional on the grounds that he/she deviates from the general norm of the society. Abang (1986) opines that some professionals refer to them as "handicapped" persons. Most handicapped persons do not find the term appropriate and have found support from some

professionals. They argued that the terminology was incorrect and unacceptable because one could be disabled but not handicapped. The term handicapped means the disadvantage imposed by impairment as the child functions in his/her environment. Abang (1986) quoted Hamilton (1950) as stating that it is the cumulative result of the obstacles which disability interposes between the individual and his functional level that renders the individual handicapped. A handicapped is an individual who is not normally well due to physical or mental disability. This constitutes a barrier to the individual in performing his functions such as working, going to school, housekeeping and so on. A disabled person is therefore one who has some impairment affecting any one of these areas: physical, mental, social, emotional and occupational. Able bodied Nigerians and architects are insensitive to the fact that architectural barriers have prevented many special needs students from participating in such life sustaining activities as schooling and reading in the library, shopping, going to the theater or concert, traveling and so on. Velleman (1979) observes that over 500 college campuses in the United States of America had been made architecturally accessible to the disabled and were offering special services to physically challenged students. This was in compliance to the 1973 Act that created the architectural and transportation barriers compliance board. It is in this light that the federal government of Nigeria in its National Policy on Education (1977) defined special education as the education of children and adults who learning difficulty because of different sorts of handicaps, blindness, partial sightedness, deafness, hardness of hearing, mental retardation, maladjustment, physical handicaps etc. due to circumstances of birth, inheritance, social position, mental and physical health or accident in later life. Consequently, the children require special education services to enable them to develop to their maximum capacity both academically and socially. They also require specially planned educational environment to function well.

ARCHITECTURAL BARRIERS

Barriers can be defined as artificial ways of enhancing or encouraging the isolation of the handicapped people (Abang, 1981). There are different types of barriers that affect the handicapped people. These include; social barriers, psychological barriers, physical barriers, attitudinal barriers and most importantly architectural barriers. The existence of architectural barriers for special need students is no longer news in Nigeria. Lack of carefully composed architectural schemes make accessibility of the physically handicapped people into buildings impossible and frustrating. Architects and planners over the years appeared to have employed selective dispensation of their services as could be seen in the neglect of needs and desires of the disabled. The design and use of general-purpose architecture such as private buildings and public facilities like banks, post offices, school building, theatres etc. pose great hindrances to disabled users. The resultant effects is the limitation to use of certain places and opportunities and consequently constraining their participation in all societal facets thus undermining their effort at self-reliance. Mobility – a prerequisite for smooth working life for persons with visual impairment becomes seriously jeopardized as a result of architectural hazards and transport difficulties. The issue of architectural hazards and transportation as a barrier to the employment of the visually impaired are recognized in the Americans with Disabilities Act ADA 1972 (Duro, 2003). The Act spells out the provision which required that public spaces, which include buildings, work spaces and means of transport, be made accessible to people with disabilities. Similarly, mobility of the blind is difficult because pavements are not built on most of our roads and streets in the cities and villages. Hence, the blind person has no safe place to walk on the road. Abang (1986) pointed out that where pavements exist, they are often broken into open gutters or septic tanks. This makes mobility difficult and unsafe for them and in the process creates psychological barrier. These are brought about by the way people think, act and react towards the challenged people and the manner in which the challenged perceive themselves when faced with hazards and difficulties. Among the most important environmental elements that serve as architectural barriers to special needs students are:

(a) **Buildings:** - These create accessibility related barriers to both the visually and the orthopedically handicapped students. When a building is two to four floors high and not service with ramps, lifts or elevators or badly designed steps, and is used as lecture halls, library or theatre, handicapped students are technically excluded from the use of such buildings because of accessibility difficulty. Long monotonous corridors may create just as many orientation difficulties as winding corridors where no outdoor reference points can be recognized from windows. Similarly, narrow entrances and inadequate space in front of buildings make access for wheelchair and crutches users difficult. Also smooth

volume should be avoided, as they are hazardous to the blind. Therefore, offices and classrooms should be brailed for easy identification, as well as brightly coloured writings should be emphasized for the visually impaired.

(b) **Stairs:** - Badly designed staircases or stairs with irregular steps are hazardous to the disabled. Stairs shall not be part of an exterior accessible route or sidewalk because people on wheelchairs cannot safely negotiate them. Handrails should be provided to guide and assist handicapped people. In school environment.

(c) **Ramps:** - Any part of an accessible route with a slope greater than 5% shall be considered a ramp and should be provided with handrails. The minimum clear width of a ramp shall be 1200mm and the landing shall have a minimum of 1500mm clear. Ramps make movements a lot easier for special needs students. Most buildings used by special need students on our campuses are without ramps.

(d) **Pavements/Walkways:** - Where these are provided and without handrails, the visually handicapped cannot use them because of the difficulty it posses to them instead, they walk on main roads, which is very dangerous. Sometimes they are planned and designed in such a way that will terminate in open gutters.

(e) **Lifts and Elevators:** - These are building services used for vertical movement of goods and people. The major impediments posed to special need students are their absence in many buildings and where provided, the doors are too narrow for wheelchair to enter into or turn around. Sometimes it is the fear in use especially when one is trapped in a lift for some time.

(f) **Landscape Elements:** - These include footpaths, vegetation, fountains and so on, which are essential for mental refreshment. These are mostly absent from our school environment.

The psychological and planning problems caused by these barriers are legion. For instance, two cases were confirmed in University of Jos where two handicapped students were admitted to read courses of their choice but because they cannot be assisted all the time by friends to move upstairs for lectures, they had to change the course against their wish to read law because they sometimes miss lectures as a result of difficulty imposed by vertical movement. This could be frustrating because our society deliberately or otherwise has made barriers not to allow free movement for all in the community. Our campuses and streets in our cities are turning into what Agbola (1986) described as architecture of fear. This does not take into cognizance the needs of handicapped people when designing new buildings and making alterations to existing ones.

DESIGN HINTS FOR AWARENESS FOR PLANNERS AND ARCHITECTS

To be able to design a building for the subset of a population like the school environment where special need students abound, information has to be gathered about the needs of client and the users, including the resources available, the site conditions, then the type, nature and size of the building to be designed. Some of the data requirements present themselves in precise, logical and mathematical form. (E.g. size of the site, building height, width, length, number of rooms, amount of money allocated, etc.). While others are not so precise and can be resolved only by the imaginativeness of the designer in the course of work, such issues include character of form, organization of spatial relationships and the meaning and values such issues represent. In architecture, it is the activity of combining all these rational, systematic and objective factors on one hand, and intuitive, imaginative and subjective factors on the other hand, which produces a pleasant setting in the built environment as shelter for human use, called a building that we refer to as design. What constitute design problems to a building are the major influences that may impinge on the organization of space, give character to, and hence, determine the physical form of the design. These influences include factors that constitute user requirements and the demands for developing rational methods of organizing available resources to meet these requirements optimally. This requirement includes those of the client, the users, the legislator and the designer. Building projects such as public complexes like hospitals, institutions of higher learning, commercial buildings etc. may have clients who are not necessarily the same as users. According to Uji (2002), users needs are:

- Space
- Services
- Environmental control and
- Fixtures, fitting, physical objects for use.

Architects, planners, school administrators need to be aware that the capacity for natural and built elements to act as symbols and barriers to special need students depends on the effective resolution of the client's desires, user's needs, legislative framework and the capability of designers.

CONCLUSION

Buildings that give occupants very poor control of their environments are not only inconvenient, but are psychologically unacceptable because the occupants tend to feel incapable of controlling their surrounding which will over time result in the loss of productivity as seen with the learning environments of special need students and may ultimately affect the health and wellbeing of the occupants. Efficiency is therefore demanded from buildings and the environment to compliment human activities. The ultimate aim of architecture is to provide environmental comfort and not barriers. This study specially observed that architectural facilities of special need students are inadequate and substandard; circulation is difficult and complex due to poor planning and this creates unfavourable environment for special need students. To minimize these problems and step up efficiency in learning, the technology employed in design and construction of school environments by professionals should serve as means to an end not an end in itself. Schools of architecture must begin to offer additions to present courses as well as special course work in this fairly new area.

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FIRB/2010/IRDI/83

INTERNATIONAL JOURNAL OF ARCHITECTURE AND BUILT ENVIRONMENT

VOL. 2, NO. 1, 2010

Blackwell Educational Books