

VISUALLY IMPAIRED COMPLEX

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Abstract

This project proposed a complex for the visually impaired which specialized in blindness from birth, partial blindness and accident victims. The objective of this project is to make a difference in the lives of children and adults who are blind and to help them educationally, emotionally, mentally, physically, psychologically and economically. It is an institution that will assist and create a support system for the visually disabled allowing them the opportunities to experience active and fulfilling lives. The proposed project consists of several primary zones such as education, entertainment, community support and health services, culture zone, athletic facilities, food services, and general services. The project was selected based on the site evaluation criteria of capacity, shape and proportion, topography, accessibility, noise levels, utilities, security and safety, visual quality, visibility, future development plans, demographic patterns, surrounding, and views. The project provides safety and comfort environment with rehabilitation courses and motivating them psychologically.

Keywords--Visually Impaired, Psychologically, Support System, Rehabilitation Courses

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INTRODUCTION

The vision-impaired and blindness people were under special needs and they were lack of concern from government and officials focus. But at the present time and according to the Saudi vision 2030, some benefits such as facilities and technology were allocated to them in order preserve the social equality and mix those people with a normal people [1, 3]. This category of disability people experiences difficulty to search for a job compared to other natural people. They may be treated differently or discriminated due to their weaknesses and disability [4, 5]. Therefore, this group of people may experience frustrations in their life and losing hope for their future. The awareness of society and officials towards these groups plays a significant role to improve and motivate them to keep moving forwards. There is an ability to change and develop the disability people if they received moral support first and were educated and integrated with the community to know.

According to the statistics of the Ministry of Housing, the number of people suffering from vision problems is large and remarkable, and this means that there is a class of society needs to be entered and engaged with the community so as not to become dispersed [6]. Blind and vision-impaired are disability that can overcome with guidance and training [7-9]. They need opportunities such as quality education, skills, training, rehabilitation, employment and a full social and family life. There is solution to understand these people to facilitate their lives and integrate them into society without reducing their interest. The proposed project aims to benefits the vision disability patients through provided several service and facility as well as helping them to build their self-confident follow by increase their personal value through learning process.

CASE STUDIES

There are three blindness rehabilitation centers are considered for the case studies. The chosen case studies provide sufficient education support and program to develop their personal skills. Also, the design concept and project consideration are used as the benchmark for this project. The selected case studies are:

- Overbrook Blind School, Philadelphia, PA
- Center for the Blind and Visually Impaired, Mexico

(c) National Rehabilitation Centre for Persons with Disabilities, Japan

Overbrook Blind School, Philadelphia, PA

The designer of Overbrook Blind School is Cope and Stewardson (Figure 1). It's a place where the people can develop and deliver education that enhances the options available for persons with visual impairments and other challenges so they have the greatest opportunity to experience active and fulfilling lives [10].

Center for the Blind and Visually Impaired, Mexico

The designer of Center for the Blind and Visually Impaired is Taller de Arquitectura-Mauricio Rocha (Figure 2) [11]. The Centre for the Blind and Visually Impaired was created as part of a program by the Mexico City government to provide services to one of the most disadvantaged and highly populated areas of the city; Iztapalapa is the district with the largest visually impaired population in the Mexican capital [11].

The Center aims to enhance spatial perception, activating the five senses as experience and source of information. A water channel runs through the center of the plaza, so that the sound of the water guides users along their way. Horizontal and vertical lines in the concrete at hand height offer tactile clues to identify each building. Six types of fragrant plants and flowers in the perimeter gardens act as constant sensors to help orientate users within the complex.

National Rehabilitation Centre for Persons with Disabilities, Japan

The National Rehabilitation Center for Persons with Disabilities (NRCD) provides advanced and comprehensive healthcare, medical care, and welfare services to assist persons with disabilities (PWDs) in maintaining and recovering their overall living functions under an integrated system that provides services ranging from medical care to vocational training. The center is Located in Asia, Japan, Tokorozawa City (Figure 3) [12]. Near train stations, schools, medical college, police station, the site is located within the city not isolated, making the center accessible to most people.



Figure 1. Overbrook Blind School, Philadelphia, PA [10]



Figure 2. Center for the Blind and Visually Impaired, Mexico [11]



Figure 3. National Rehabilitation Centre for Persons with Disabilities, Japan [12]

SPACE PROGRAM

The users of the building that considered in this project are public people, visitors, employer, visually impaired, disability people, and family. There are seven primary zones that allocated for education, entertainment, community support and health services, culture zone, athletic facilities, food services, and general services. Figure 4 and Figure 5 demonstrates the bubble diagram and zoning relationship respectively. The allocated total area of this project is about 25000m². The build-up area of the project is about 9400m². Table 1 tabulated the space program of the project and educational zone dominated the biggest space about 65%.



Figure 4. Bubble diagram

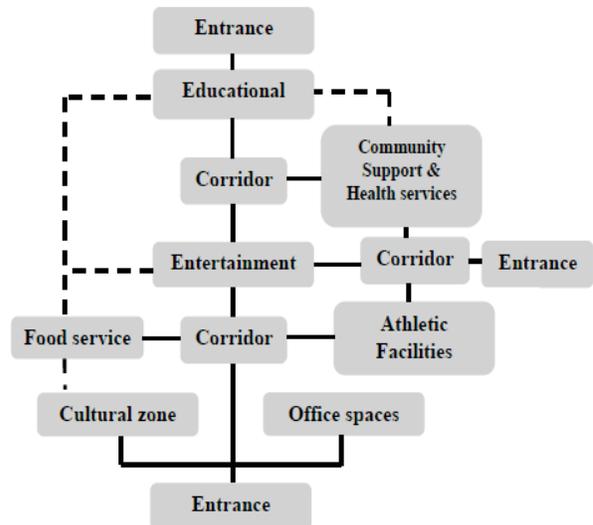


Figure 5. Zoning and relationship

Table 1. Space Program

Departments	Number of floors	Percentage use (%)	GFA (m ²)
Education	1	65	6090
Entertainment	1	6	550
Community support and health services	1	6	590
Culture zone	1	4	370
Athletic facilities	1	6	610
Food services	1	9	850
General services	1	4	340
Total		100	9400

SITE SELECTION AND ANALYSIS

The proposed site locations are at the north side of Jeddah since that is the direction Jeddah is growing towards with the increasing population. Figure 6 shows site1 is located at north Jeddah, next to King's Road tower. It is accessible from two main roads, Al Malik road and Al Rawdah Street and two secondary roads. The land size is approximately 59,658 m². Figure 7 shows site 2 is located at north Jeddah, next to Roshan Mall and king Abdiaziz international Airport. It is accessible from one main road, Al Malik Road and a secondary road Al Imam Ahmed Bin Hanbal Street. This site has the earth Roundabout view. The land size is approximately 142,560 m².

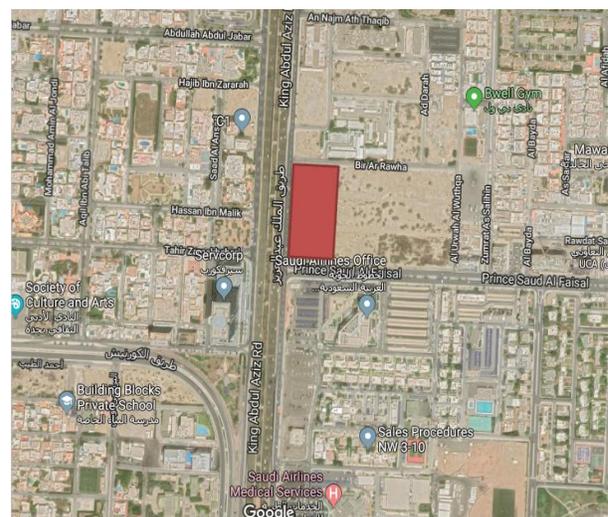


Figure 6. Site 1 [13]

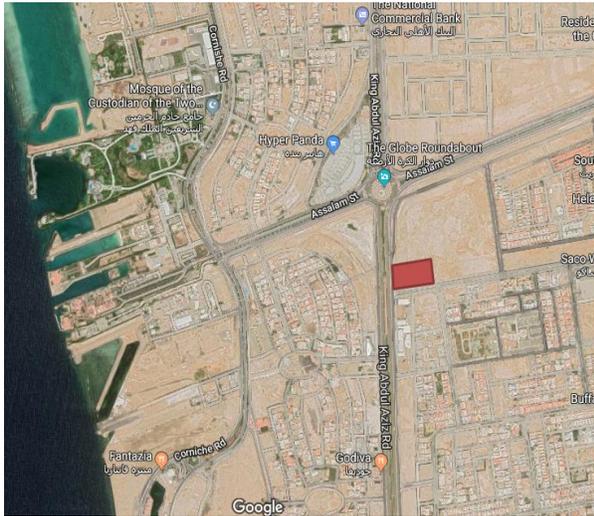


Figure 7. Site 2 [14]

There are several criteria are considered for site evaluation and they are site capacity, shape and proportion, topography, accessibility, noise levels, utilities, security and safety, visual quality, visibility, future development plans, demographic patterns, surrounding, and views. The usable area of the land should be less than the total area. The sites with shapes almost rectangular in form are usually easiest to plan. The site is gently sloping with an elevation and contour which will ensure good drainage. It is important to consider the traffic speed and intensity at the point of driveway access. The noise at the site should not be serious enough to cause interference with communication. The presence of electrical, water, gas, sewer, and other services should be existed in the place.

Regarding the security and safety, the site should be convenient to a fire station, police station, hospital. Also, the site should away from industrial and manufacturing areas to avoid bad air quality problems, such as odour, dust, noise. The site should be compatible with surrounding land uses, both existing and proposed. The site location is required to attract a large number of people. The value of the site could be increased or decreased based on the potential of future development. The site should be a good demographic pattern where people can easily reach it and conduct other activities during the same trip. Surrounding of the site should have a relation with the main function of the project. Beautiful views from the inside of the site into the immediate surroundings are preferable. The site evaluation result is tabulated in Table 2.

Table 2. Site Evaluation

Criteria	Weighting factor	Site 1	Site 2
Site capacity	3	15	9
Shape and proportion	3	15	9
Topography	1	1	2
Accessibility	3	12	9
Noise levels	2	8	10
Utilities	2	6	10
Security and safety	2	6	10
Visual quality	3	12	9
Visibility	3	12	9
Future development plans	2	8	8
Demographic patterns	2	6	10
Surrounding	3	12	9
Views	3	12	9
Total score		125	113

The selected site location for the project is site 1 based on the site evaluation result shown in Table 2. The selected land size is approximately 59658 m² and the area will be used is approximately 33485 m². This site is surrounded by many important building in Jeddah as Saudi City, Malik Road Tower, Lailati Ceremonial hall, and Commercial and Residential buildings. It has different views. It is accessible from two main roads and two secondary roads.

The strength of the selected site are proportional site's shape, very good site capacity, highly accessible, surrounded by different amenities, Al Rawdah and Al Khaldia are safe and secure affordable districts. There are certain constraints of the site. The views of the site are mainly residential and a few commercial areas. The intensity of the traffic during the rush hours and weekends, holidays which will affect the noise level that should be taken under consideration in a Jami Mosque.

ZONING AND PROJECT DESIGN

Figure 8 demonstrates the site zoning of the project. The site has three entrances which allow for easily accessible. The educational zone occupied the biggest site area and surrounded by entertainment zone, and community support and health services center. This project aims to develop and deliver education, entertainment, and social that enhances the options available for persons with visual impairments and other challenges so they have the greatest opportunity to experience active and fulfilling lives. Figure 9, Figure 10, Figure 11 and Figure 12 show the project's view of educational building, outdoor landscape, car park and culture zone and food services respectively. The main perspective view of the project is demonstrated in Figure 13.

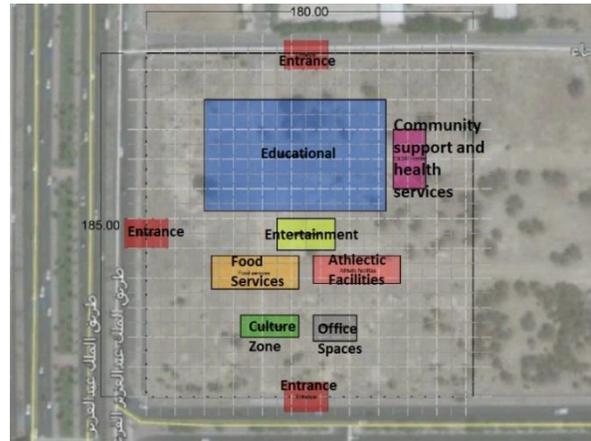


Figure 8. Site zoning



Figure 9. Educational building



Figure 10. Outdoor landscape



Figure 13. Main perspective view of the project



Figure 11. Car park and culture zone



Figure 12. Food services

CONCLUSION

This project merges the special needs and normal people in a place where there is no difference between people with special needs and ordinary people in terms of treatment or performance, just as the natural person does not need to ask the aid of one in less movements, so people with special needs and especially here blind people. The proposed site zoning consists of education, entertainment, community support and health services, culture zone, athletic facilities, food services, and general services. The selected site draws the criteria advantages of capacity, shape and proportion, topography, accessibility, noise levels, utilities, security and safety, visual quality, visibility, future development plans, demographic patterns, surrounding, and views. This project helps blind children and adults be independent and contributing citizens and to help them to produce job opportunities.

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