

## HEALING SOUL AND BODY: REHABILITATION CENTER FOR DRUG ADDICTS

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### Abstract

Rehabilitation center is to treat those with a dependency or an addiction to psychoactive substances such as alcohol or drugs. Many rehabilitation centers specialize in treating a certain kind dependency, which focus and help a particular group of people with all of their specific needs. This results in high-quality treatment methods and in-depth expertise. This study proposed a project of rehabilitation center for drug and addicts to heal their soul and body. The project combines drug therapy, physical, psychological and provides an environment conducive to full recovery and become good citizens. The primary zones that considered in this project are admin, clinical facilities, recreational, residential and services. The selected site for this project is located in North of Cornesh Road and the surrounding are public building and residential area. This project is intended to provide shelter to needy people as a return of their work in the complex with complete facilities that serve the residents.

**Keywords** -- Rehabilitation Center, Dependency, Addiction, Treatment, Drug

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### INTRODUCTION

Architecture can be a medium to raise awareness in the society on humanity [1]. Rehabilitation center is a place that provides rehabilitation services and helps people to recover from their illness or addiction. These centers can include clinic, hospitals, nursing homes or some private centers [2]. The therapists who work in rehab center can even make home visits if the patient feels uncomfortable joining the rehab center.

“According to statistics from the rehabilitation centers in Riyadh and Jeddah, in the beginning of the 2000s the number of patients amounted to 10 thousand people a year, but today it is more than 50 thousand patients annually and this number continues to grow” [3]. “According to internal statistics, 87.5% of MCN patients stood out for the first year after treatment and did not return to drugs .the doctors not only successfully arrest cravings for drugs, but also provide psychological and social rehabilitation of patients” [3].

Therefore, this study proposed a project of rehabilitation center to make the drug addict learns responsibility, participation and interaction with the other [4]. Also to promote their mental health and provide them with self-confidence to form new social relations, the addicted can get a job after the treatment, which will make their live easier.

This center will not only provide a roof for them but a home and supplies the them with cultural roots and gives them a feeling of belonging, also the center is going to be as a bridge to the local community .In addition it will be as an open place, which not only promotes the integration and supports interaction them with neighbouring communities.

### CASE STUDIES

This study considered three rehabilitation centres from Netherlands, Scotland and United States. The chosen rehabilitation centres are creatively designed and provide the best environment for the patients and visitors. The three rehabilitation centres are:

- Rehabilitation Centre Groot Klimmendaal, Netherlands
- Robin House Children’s Hospice, Balloch, Scotland
- Palo Alto Rehabilitation Center, California, US

### Rehabilitation Centre Groot Klimmendaal, Netherlands

Form a small footprint, the Rehabilitation Centre Groot Klimmendaal designed by Koen van Velsen gradually fans out towards the top and cantilevers out over the surrounding terrain. Despite its size, the brown-golden anodised aluminium facade allows the nearly 14,000 sqm building to blend in with its natural surroundings (Figure 1) [5]. The care concept is based on the idea that a positive and stimulating environment increases the well-being of patients and has a beneficial effect on their revalidation process. The design ambition was not to create a centre with the appearance of a health building but a building as a part of its surroundings and the community. Revalidation centre “Groot Klimmendaal’ radiates self-confidence and self-control.

### Robin House Children’s Hospice, Balloch, Scotland

The project is located in a sloping site in an agricultural land to emphasize on the relation to nature and rural context as well as it is near to city urban context for easy access (Figure 2). It aims to provide a welcoming and warm atmosphere in a modern, animated and engaging to children who suffer from terminally illness. It is composed of two bandwidths which are linear, an extended two-level band and another band shorter in lengths which are positioned in relation to each other indirectly.

A central core axis links between the two wings with a central semi-enclosed court where the entrance is located. This core axis is formed of an organic waveform roof which runs over the main entrance and a dayroom space which creates vibrant interior day activity spaces. The wavy form creates ceiling heights in shape of circles ellipse which allows for indirect sun light. The core axis is made of undulating steel beams [6].

This Hospice Center serves nine children with their families including at-home care program. It provides staff accommodations which contains two family overnight suites and two staff bedrooms sharing a kitchen. It also provide seven family apartments from the inpatient bedrooms, each room has its private bathroom. Other facilities are provided for the users such as bereavement room, chapel and quite room. This project is consisting of three floors that are design to serve the patients, their families and staff [6].

**Palo Alto Rehabilitation Center, California, US**

The center is part of a complex, multi-phased project that includes the 174,000 square foot rehabilitation center and a new 600 car parking structure. There are 34 Physical Therapy Rehabilitation Center beds, 42 Blind Rehabilitation Center beds, 22 Polytrauma Transitional Rehabilitation Program beds, Outpatient PT/OT Clinic [7]. The design considerations of the center outlined each department is preferred to be separate on each floor with its services and amenities. Each department can be reached by its direct vertical circulation. The inpatient and outpatient separated completely. The Aquatic Therapy Center can be used and a new 14,000 sq.ft. Memorial Rose Garden is situated by the entrance of building for the main hospital, and patients and staff to enjoy. Also, it has seating areas for reflection.



Figure 1. Rehabilitation Centre Groot Klimmendaal [5]



Figure 2. Robin House Children's Hospice [6]



Figure 3. Palo Alto Rehabilitation Center [8]

**SPACE PROGRAM**

The proposed rehabilitation center are a combination of several types zone namely admin, clinical facilities, recreational, residential and services. Figure 4 demonstrate the relationship between each zone. Table 1 tabulates the main zone percentage and the total of gross floor area (GFA). The site assumption area would be 40000m<sup>2</sup>, by total up the GFA and Un-built area which is 16m<sup>2</sup>.

The users of this project can be categories into inpatients, outpatients, members, visitor and staff. Inpatients are the patients who staying in the center till their injury and physical conditions have been improved and are ready to take care of themselves and head home. The time frame of each patient varies from one another depending on their condition. Outpatients are the patients that visit the center daily to receive medical care and support. the number of outpatients varies every day. There will be limited number of rooms will be provide for members to stay with their families for support. The staffs in this project consist of doctors, medical specialists, nurses, and workers. The types of essential general physiotherapy facilities in this project are physiotherapy for neuromuscular, respiratory, and cardiovascular. Second is occupational therapy for mental, physical or social disabilities to independently carry out everyday tasks or occupations. Also, there is water therapy, which use of water (hot, cold steam, or ice) relives discomfort and promotes physical well – being.

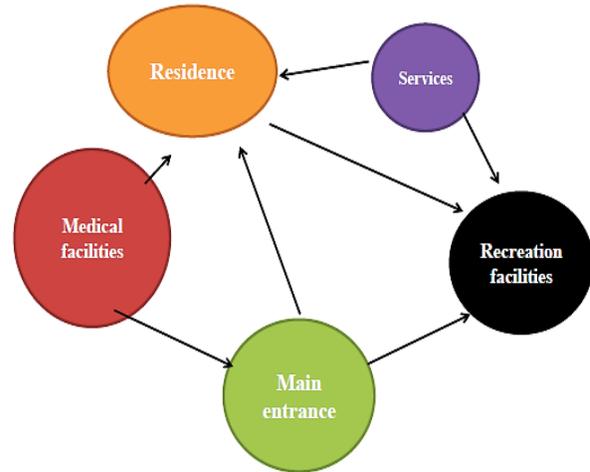


Figure 4. Main zone relationships

Table 1. Main zone percentage

Zone	Percentage (%)	Net area (m <sup>2</sup> )	GFA (m <sup>2</sup> )	# of floors	Foot print
Admin	12	1200	2880	2	1440
Clinical facilities	32	1700	7680	4	1920
Recreational	20	1200	4800	3	1600
Residential	28	1400	6720	4	1680
Services	8	750	1920	2	960
<b>Total</b>	<b>100</b>	<b>6250</b>	<b>24000</b>		<b>7600</b>

**SITE SELECTION AND ANALYSIS**

There are three site locations in Jeddah were proposed for the project. Site A located beside Al-Ahlam Marina, Bouhayrat, and there is a residential area beside the location (Figure 5). Obhour Road and King Saud Road are the two main roads that allow access to this location. Site B is located in North of Cornesh Road and close to FatmahAzZahra Mosque (Figure 6). The surrounding of this site are public buildings and residential area. Site C located near to the Al-Rahman Mosque and the surrounding is residential area (Figure 7).

Table 2 demonstrate the site evaluation on the three proposed site. The considered criteria for the site selection are existing natural elements, near to medical facilities, opportunity for landscape design, surrounding views, lack noise pollution, physiographic elements, future development, security and safety, capacity, shape, accessibility and infrastructure.



Figure 5. Site A [9]



Figure 6. Site B [10]



Figure 7. Site C [11]

Table 2. Site evaluation

Criteria		Weightage (%)	Site A	Site B	Site C
Existing elements	Natural	12	0.36	1.08	0.96
Near to facilities	Medical	7	0.42	0.42	0.42
Opportunity for landscape design		7	0.7	0.7	0.7
Surrounding views		10	0.6	0.9	0.9
Lack noise pollution		12	0.6	0.6	0.6
Physiographic elements		7	0.7	0.7	0.7
Future development		5	0.5	0.5	0.4
Security and safety		10	0.7	0.7	0.7
Capacity		15	1.5	1.05	1.05
Shape		3	0.24	0.15	0.15
Accessibility		5	0.4	0.4	0.4
Infrastructure		7	0.7	0.63	0.7
<b>Total</b>		<b>100</b>	<b>7.42</b>	<b>7.83</b>	<b>7.68</b>

According to the results of sites evaluation in Table 2, site B is considered to be the preferable site to locate the Rehabilitation center. This site can be accessed from King Road as well as from Cornish Road. It is located in Cornish in Jeddah. Since this site can be easily adapted it accommodate private and public zones for activates. The site is surrounded by a residential area, public buildings and Al Rahma Mosque (Figure 8). The site has excellent

views to the sea and good view. The noise levels in the site vary according to the surroundings of the site. The site has unique shape that will play an interesting role in the design of the project. The total gross area of the site is 30 square meter.

In overall, site B has low coast of land, excellent views, high level of security, low rise buildings, near to amenities, fresh air and tranquility and opportunities for good landscape. But, the challenges are irregular shape of the land, may require dewatering, poor public transportation and hard to construct underground parking. Also, the separation arrangement between the public and the private facilities becomes one of the challenges on project cost.

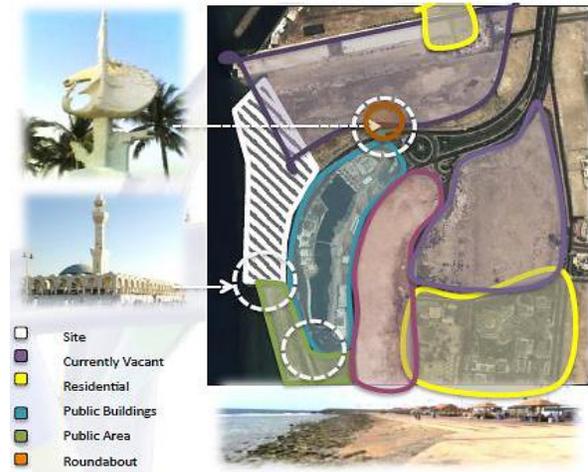


Figure 8. Site surrounding

**SITE ZONING AND PROJECT DESIGN**

The site zone is allocated carefully according to the topography and the landscape of the selected site. Figure 9 shows the main entrance will be located on the main street, which will lead directly to the admin. The medical facility is located on the main street too where there will be an outpatient entrance. The recreational area will be in the middle, so it can be accessed from the main entrance, residence, and medical facility. The residence is located away from the main street, away from noise and disturbance. The services and staff amenities will be located in the least desirable place, which was concluded in the site analysis. Figure 10, 11, 12 and 13 demonstrate the recreation area, residential area, service area, and medical facility area of the project respectively.



Figure 9. Site zone



Figure 10. Recreation area



Figure 11. Residential area



Figure 12. Service area



Figure 13. Medical facility area

### CONCLUSION

The proposed project provides a top facility to the community of Jeddah, which increase the quality of life, and support Saudi Arabia in the process of in development of sustainability and healthy community. The patient required to be treated well from different aspects to get good generations. This project not only a place to rehabilitate for drug addicts, but a place to start new life, to have a real opportunity to start anew page in life. The provided facilities would make their life easier to concentrate more on developing their skills and set new goals. The selected site for this project is located in North of Cornesh Road and close to FatmahAz Zahra Mosque, which situated by the public building and residential area.

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