

The Healing Nexus: A Patient-Centered Model for Rehabilitation Architecture

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Abstract

This research exploration aimed to provide a projection and design of a Rehabilitation Center design which proposes to offer physical, psychological, and social recovery to people who need special attention. The research aims at developing a functional and therapeutic setting which allows to enhance patient well-being by means of due spatial planning, and accessibility criteria, and patient-helpful architectural elements. The research involved the study of rehabilitation requirements, space programmed, comfort of the user and safety on the basis of the medical and psychological rehabilitation principles. The design proposed is meant to provide a healing environment by utilizing natural light, open spaces, landscapes, and free flow. The final result of this project demonstrates the relevance of patient-centered design in rehabilitation centers in order to improve patient recovery, independence, and quality of life.

Keywords: Rehabilitation, Architecture, Therapeutics, Patient centered design, Healing Architecture.

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INTRODUCTION

Human beings have been seeking peace and tranquility since the dawn of civilization, and they do not consider built-in environments as being very convenient and special to their comfort and peace. Excessively strict criteria and ill-thought-out design aspects may adversely affect the overall well-being of the population and even damage the capacity of an architect to design the space that will be favorable to health (Mukhtar et al, 2024). Drug abuse especially has become a wide issue. It happens when people use legal or illegal substances in an inappropriate manner, i.e. higher dosage than prescribed or taking medicine that belongs to a different person.

Drug abuse in Pakistan has also become a deadly social problem that is spreading in the country as quickly as an epidemic. The UN statistics suggest over 8 in the country, more than 4 million of the drug users are addicts, which is a worrying figure by international standards. The issue has reached deep into the society, with its far-reaching effects. It is a cause and effect of increased criminal activities, it stricter burdens the already stretched healthcare system and causes more strain to limited government welfare resources. On top of the effects, it causes on infrastructure and policy, substance abuse poses a direct threat to personal health as it contributes to violence and massive criminal actions in communities.

Rehabilitation facilities are an important source of help to people with addiction; they do not only handle their physical and emotional conditions but in most cases it is accompanied with a mental illness (Bhatti et al., 2024). The drug rehabilitation concept or the so-called drug rehab is characterized as a complex process involving medical and psychological therapies. The major aim is to assist the individuals to get their substance abuse overcome and effectively re-enter the society thus avoiding the large scale adverse effects of addiction. The document places a lot of stress on a comprehensive definition of the term health, which goes beyond physical fitness to include other important aspects of life such as education, family, working, environmental and personal independence, which is of particular importance in advanced stages of life. The rehabilitation programs are planned to be comprehensive to cure the drug dependence along with reducing the many ill effects caused by overindulgence in drugs. Such negative effects all spread in several areas: physical and mental well-being, economic security, social connections, and legal status. Additionally, rehabilitation centers are in most cases a transitional home, which provides structured and conducive environment where inmates can rediscover their dignity and free will which are usually diminished by addiction.

The basis of this necessity of rehabilitation is the issue of drug abuse as such. The inappropriate use of substances that may either be illegal drugs or legal drugs, which are used inappropriately like stealing another person medication or taking more than the prescribed dosage are all associated with drug abuse. First time drug use is usually driven by a desire to feel euphoric, relieved of stress or to escape reality. This may however develop into a long-term and chronic state- addiction. The addictive process is characterized by compulsive, uncontrollable drug seeking and drug taking processes which continue irrespective of the realization by the user of the negative effects. The choice to take a drug is usually free, but in the case of chronic use, the brain functioning undergoes significant transformations. Such developments weaken willpower and enhance the desire to take drugs, and it is extremely hard to control. It is an epidemic problem that goes across borders of all ages, socioeconomic statuses, and even geographical boundaries.

Rehabilitation centers are the solution to this multi-dimensional problem since they provide structured treatment programs. A standard facility offers a range of care which encompasses

detoxification, rehabilitation and aftercare services. The very process of rehabilitation can be a well-organized residential therapy aimed at providing an opportunity to addicts to recover physically and psychologically. Whenever a person finds himself into such a center, he is usually in a very weakened position, especially in the psychological aspect since addiction greatly affects the psychological health. The length of the treatment programs may differ; apparently, the duration of certain programs is four-eight weeks, whereas more acute inpatient support may take between three and nine months. They have these centers, which are prepared to handle the patients who are at risk of self-harming or being aggressive and this gives them a secure and controlled environment that is vital in the recovery.

The study offers a critical and growing problem of drug addiction among the young population in Pakistan, which is treated as an urgent social epidemic and life threatening crisis. The main assumption is that this issue is not a single entity but a complication of socioeconomic circumstances, mental weak points, and cultural strains. The major reasons that have been pointed out are poverty, inadequate education as well as the social pressures all around. As such, the study will suggest constructing a structured and multidimensional model of the successful prevention, treatment, and rehabilitation of the affected young people. This model goes beyond being the simple physical detoxification model to concentrate on the underlying psychological and social factors of the addiction with a preferred policy of promoting long term recovery and effective reentry into the community.

The document also gives a history of the use of natural drugs such as opium and cannabis that have been used since ancient times to relieve pain but with the modern production of drugs such as heroin, addiction has been widespread and instead of being a means of escaping, it had become a massive personal and social catastrophe. The wave of this addiction is far reaching and goes beyond an individual to disrupt the stable life of families, communities, and the state, being part of the social disorder, crime, corruption, and financial unpredictability. The inefficiency of a purely medical model of detoxification is one of the underlying arguments of the thesis. Although physical cleaning is an essential initial step the psychological and emotional harm caused by addiction is sometimes more crippling, and the major cause of relapse. The reading stresses the fact that without the recovery of mental and emotional stability, it is impossible to recover. The study supports the establishment of a therapeutic environment so as to close the divide between the addiction world and the mainstream society. Such environment does not only aim at motivating users, but also to help them actively work on changing their lifestyle and breaking off harmful habits.

Here the study presents its original architectural proposal. It places architecture as a curative tool. The intended project will be designed to develop a rehabilitation facility that will operate as a whole organization, where the built environment is used to promote healing and behavioral change. Lastly, the research paper recognizes the unique cultural limitations in Pakistan, especially the major setbacks that women have when seeking treatment as a result of culture-based restrictions, as well as male dominated social system. It concludes that although rehabilitation centers are crucial, there should be a concerted effort between the government institutions, families, and the society at large in order to achieve meaningful and sustainable results.

Hence the research was set forth on these two research objectives:

1. To explore and document architectural needs in the context of Lahore, Pakistan towards designing a rehabilitation center.
2. To propose an integrated design solution based on the documentation developed.

The effectiveness of any project is based on the fact that it has to react to the needs of people and solve urgent social problems. The absence of proper facilities to address the needs of people with the addiction issue in Lahore highlights the need to have a better rehabilitation center. The majority of the city has private hospitals that do not offer effective methods of healing and their treatment charges are beyond the reach of most people. Moreover, the current state of the Fountain House highlights the acute need to have a new rehabilitation center in Lahore that should be planned with the use of the international standards to meet the immediate demands of the community.

REVIEW OF LITERATURE

A substance use disorder, also known as drug addiction, is a chronic, relapsing disorder that is associated with compulsive seeking and use of a substance without consideration of the harmful effects (National Institute on Drug Abuse, 2018). It is known as a complicated neurological condition that affects the brain system and a behavioral condition characterized by inability to regulate use. One of the pillars of addiction is the concept of tolerance, which describes a condition when the substance becomes less effective with time, and more and more doses are needed to reach the same effect (American Psychiatric Association, 2013). Abuse substances are commonly classified to be used in regulations and clinical fields. Hard drugs, which include heroin, cocaine, and methamphetamine, are usually linked to a great likelihood of serious physical injuries and easy dependence (Bhatti et al., 2023). Soft drugs on the other hand are said to be less prone to physical dependence, but can cause serious psychological dependence.

It is important to note that there should be a difference between drug abuse, which is the harmful or dangerous use of psychoactive substances including the non-medical use of prescription drugs, and the clinical condition of addiction. Although the initiation of abuse can be either voluntary due to social pressures or experimental, chronic abuse can cause the neuro-adaptations that entail addiction (Volkow et al., 2016). The final aim among people struggling with this condition is rehabilitation which is a holistic process that aims at assisting someone to stop substance use and return to the society as a normal functioning member (Bhatti et al., 2023). This may be achieved through medical intervention, psychological counseling and social intervention.

Addiction Etiology: A Biopsychosocial Framework

Drug addiction development is not a process that can be explained by one factor but a concept best explained in terms of a biopsychosocial model where biological, psychological and social aspects are put into consideration.

Biological Causes: Genetic predisposition is rather influential, and family history is one of the most powerful predictors of the predisposition to addiction (Volkow et al., 2016). At a neurochemical level, addictive substances take control of the reward system in the brain, especially in dopamine, which results in the strong reinforcement of drug-taking behaviour as well as dysfunction of executive control circuits.

Psychological Causes: Substance use is closely connected with mental health. Self-medication through medication is another aspect that makes people resort to drugs or alcohol to relieve symptoms of some underlying conditions like anxiety, depression or even trauma (Khantzian, 1997). This coping system to mental health degrades over time, and it is a vicious cycle where substance use exacerbates the same symptoms it was intended to improve.

Social Factors: Environmental stressors are potent factors. The widely-reported substance-use initiator is peer pressure, especially in adolescence. Moreover, academic stress, poverty,

and lack of education are some of the factors that provide the conditions in which the use of substances can thrive as a perceived means of escaping reality.

A Case Study: Alcohol use in Pakistan

Pakistan is an interesting context in terms of the way in which the principles of global addiction are applied to a particular socio-cultural and legal context. Although the alcohol consumption rate per capita in the country is among the lowest in the world (0.08 liters of pure alcohol as of 2020), the problem is acute and concealed (Macrotrends, 2020). Although the number of lifetime abstainers is 96.5% among the population aged 15 and over (World Health Organization, 2018), recent statistics provide a more detailed picture. The fact that alcohol-related excise revenues grew by a steep 102% to PKR 577 billion in FY 2023-24 suggests that an increasing amount of alcohol demand is being regulated through the existing permissible channels (The Boss Life, 2024; AP News, 2024).

According to community level research, there are disturbing trends, particularly in young people. A survey conducted in Gilgit-Baltistan revealed that among male adolescents, they had 44.9% consumed alcohol during their lifetime, and 22.6% had risky drinking involving psychosocial problems such as anxiety and depression (Khan et al., 2021). A different cross-sectional study revealed that 16.5 percent of the Pakistani youths claimed to have been tried at least once in alcohol consumption, with higher rates in males, out-of-school children and in selected geographical areas. Peer influence was a major cause in the Badin district with 45.2% of adult respondents being habitual drinkers (Raza et al., 2022).

The major motivation behind alcohol consumption in Pakistan is in line with psychological explanation of self-medication. The 27.4% anxiety and depression rates in a Karachi community study lead to a population at risk of seeking temporary relief by drinking alcohol (Husain et al., 2020). This is exacerbated by sociodemographic conditions; in Badin, half of all of people consuming raw alcohol were illiterate, and half of them gave peer pressure as the cause of such consumption (Raza et al., 2022). Academic pressure (reported by 65% of medical students) is one of the most influencing factors in student groups (22.8% of the students confirm that they know alcohol as a coping strategy of their colleagues) (Ahmad et al., 2019).

This is a practice that falls in a limiting legal and cultural framework. Prohibition (Enforcement of Hadd) Order of 1979 imposes hard penalties on the consumption of alcohol among Muslims making them to do it covertly. One of the primary obstacles to treatment is the stigma it causes because many people tend to perceive addiction as a sin instead of a disease and consume drugs in secret and only seek treatment later.

The Challenges and Role of Rehabilitation

The fundamental pillar of recovery is rehabilitation, which considers the damage of addiction with many facets (Ali et al., 2024). A successful program should go beyond basic physical detoxification, to offer a comprehensive approach, which incorporates psychological therapy of underlying mental illnesses, vocational training, and community reintegration (Bhatti et al., 2022). This is a comprehensive model that is needed to minimize the possibility of relapse. Nonetheless, the existing rehabilitation facilities especially when applied in situations such as in Pakistan possess serious flaws. These are severe shortage of resources, lack of funds and stigma that permeates in society and keeps people away out of services provided (Bhatti et al., 2024). These loopholes indicate the necessity to develop new methods that would bring the effectiveness and popularity of rehabilitation centers to a higher level.

The Therapeutic Architecture Emerging Paradigm

The combination of therapeutic architecture is an innovative method of enhancing the rehabilitation process. According to this paradigm, the built environment, in itself, can be an active agent of the healing process. The fundamental concept is Design for Healing, in which such aspects of architecture as natural light, sound, and spatial organization are designed precisely to produce a state of peace and tranquility that will enhance emotional stability and minimize stress.

Local Case Study - GENIUS REHAB CENTER

The Genius, Rehab Center – Lahore Location Barki Road, Lahore, Pakistan Dated 2008
Area: 7 Acres

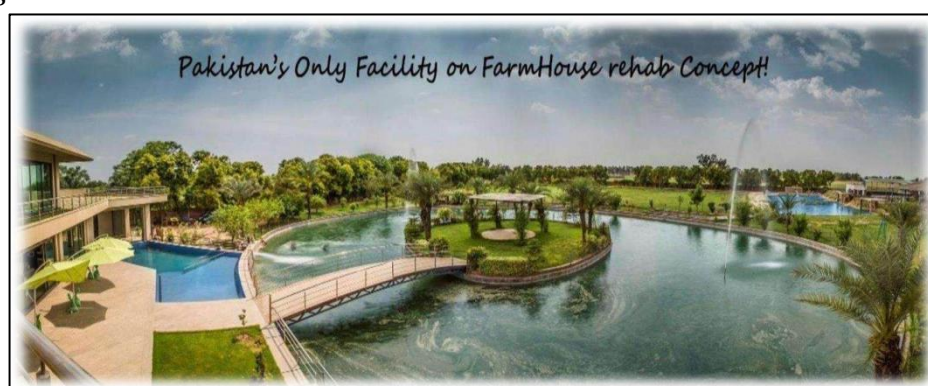


Figure 01 Genius Rehab Center, Lahore (Researcher, 2025)

Project Background: The addiction Center at The Genius Farmhouse Rehab Center is one of it's a Drug and Alcohol Treatment facility and rehab center in Lahore, Pakistan. It is one of the first rehab center in Pakistan which has all the necessary spaces and functions required for a good rehab center. It is the only rehab center in Pakistan, which is designed on the farmhouse concept. On an area of 7 acres, they have provided a beautiful landscape that provides a biophilic approach to the facility and also helps in the recovery of the patients. In the center of the area, a beautiful water body is designed to add some extra comfort in the natural environment.

RESEARCH APPROACH

The design project based research focused on both primary and secondary data collections to come up with a comprehensive view of the role and the potential of architecture in the rehabilitation and reintegration process.

Primary Data Collection

The primary data are collected using the structured and professionally organized interview with the specialists in drug addiction and therapeutic architecture. Field visits to the present rehabilitation centers similar to those proposed in this study are also done to record the functional and physical features. Moreover, the analysis will be backed by photographic and graphic records of these visits and enhances the findings of the study.

Secondary Data Collection

The secondary data is collected using the reliable sources such as literature reviews, research articles, international case studies, blogs, magazines, newspapers, and other online sources. Reported information of the Anti-Narcotics Force of Pakistan, print media and academic research are also used to develop a good knowledge base.

PROPOSED BUILDING PROGRAM & SPATIAL ANALYSIS REQUIREMENTS

Rehabilitation centers are special institutions that treat patients with psychiatric conditions or substance addiction, and the problem of drug abuse in the world may be partially solved by

intelligent structuring of the buildings. The spatial patterns and interior design have always been an issue of discussion among the scholars, therapists, and architects regarding their effects on the human psychology. Treatment process is usually prejudiced when the design of such centers is not taken seriously. So, the successful results of such facilities planning should be admired to the modern treatment strategies, and the architectural solutions should take an active part in the process of recovery. Architecture will be quite instrumental in facilitating the healing process through enabling the practice of therapy and improvement by coming up with a setting that is conducive. Although it is not a treatment in itself, architecture still has a great influence on the rehabilitation by skillfully using space, scenery, natural light, color, and movement. This form of design ensures a recovery through the provision of space which goes beyond the containment to give the chance of interaction, reflection, and personal growth. This viewpoint does not perceive people as quiet patients who have to be put under lock and key but as active agents in their respective transformation and self-exploration. It is aimed at designing interesting and interactive settings that would encourage reintegration of people back into the society and enabling them to own their recovery. The psychological elements of recovery can even be influenced by the smallest elements of design including sunlight, which enters into a window as Cynthia Leibold mentions, and design details enable patients to take control of their own health (Cynthia A. Leibrock, 2011).

Therapeutic community is an alternative to the institutional care offered to provide a structured setting in which the individuals live with the purpose to achieve drug-free lives (BA, 2013). These communities are mini-societies with members playing certain roles to help them break into recovery through such approaches as group-counseling, psychoanalysis, creative work, and slow reintegration into the community. Architecture helps this process to take place through the provision of an external framework that helps the healing of the inner self, and makes the residents feel at home in an environment where they can reform themselves, and not feel incarcerated in an institution. Decision-making and creative expression also empower individuals and enable them to take back their lives. This therapeutic environment is also essential in its color which directly affects psychological wellness. Colors have an influence on emotional conditions, behavioral reactions, and, in cases of smart use of color theory, it will be a powerful tool at setting up a healing atmosphere, which may be psychologically comforting, calming, and stress relieving.

Violence and aggression is a very serious issue in rehabilitation facilities and studies have shown that 32.4 percent of mental patients could be violent. The key to a reduction of cases of aggression, self-harming, and suicidal tendencies, therefore, is to create a stress-relaxing environment. This underscores the importance of treatment environments that ensure emotional stability and serenity of mind. The concept of restorative architecture does not imply that buildings are the curing agent of patients but rather emphasizes on the use of thoughtful design such as incorporation of shade, sound, scent, views and natural light which can be used to aid in the recovery of a patient. An example would be that psychologically ill patients can be relieved by being placed in a setting of positive colors, big windows overlooking outside and designs that minimize intrusive sound. The environment possesses both tangible and intangible features that have a great influence on the well-being of humans, which is why the overall health and life satisfaction are intertwined. Good emotional states enhance the sensitivity of patients to treatments and the drawback of poorly designed facilities may enhance stress levels and deteriorate the wellness of patients and employees. Making centers look like homes has worked well; turning isolated rooms into a homely set up will go a long way in the satisfaction and well being of the patients, mostly the women (Vaaler, 2005).

The community formed in therapeutic community is structured to enable them to find back their identity, reestablish themselves, and reintegrate into society with the help of a hierarchy of activities that are aimed at reflecting normal life back. Such activities may comprise creative writing, theater, sports, visual arts and literacy classes. It employs a humanistic approach and the residents are given an opportunity to vent their feelings via means of creativity such as art and drama, which are considered outlets of the repressed feelings and will also undergo a process of self-help. Therapeutic design practice aims at designing environments that help in healing, with a delicate selection of elements such as natural light and natural sound, color and views. The environment has significant influence on patients and the relationship between well-being, life satisfaction, and quality of surroundings is high (Sapmaz, 2012). Patients will react well to treatment when they feel at ease with their surroundings.

The medical and the psychological treatments are complemented with the architectural layout of the treatment centers which is critical. Research has shown that the inclusion of good recreational amenities including gyms, swimming pools and green spaces is strongly linked to improved treatment results. Moreover, the design of furniture in the communal places can impact greatly on the behavior and health of patients. Considering the mobility of the seats allows patients to feel that they can control their space, delimit boundaries, establish relationships, and reduce stress by being social. Studies conducted by Sommer (1969) and Holahan (1972) have indicated the role of furniture arrangement; the sitting of chairs around small tables at the centre of a room encourage interactivity compared to sitting of chairs on the walls. The design considerations of the rehabilitation facilities are to give differentiation in both the social and solitude spaces, the use of natural resources such as trees and stones, extensive open spaces with small reflective spaces, and diversity in the activity areas to stimulate the mental factors. A different study in the hospital setting revealed that patients gravitated towards the areas with comfortable chairs whereas the staff would flock around stations or corridors. Finally, a therapeutic space is a conducive environment to recovery of illness, stress or mental tension, which is guided by environmental psychology principles. One of the principles is to foster the feeling of control by providing people with options on the environment, including seating, lighting, or privacy to make them feel more comfortable and independent. That is in line with the different modalities of therapies that have been applied in these spaces such as group therapy as a means of sharing learning and support, family therapy as a means of enhancing communication, art therapy as a means of expressing emotions non-verbally, motivational interviewing as a means of overcoming ambivalence and physical, occupational, yoga, and landscape therapies as means of boosting holistic well-being.

List of Staff

Psychologists, therapists and psychiatrists (3+3+3) Social workers Drivers (2)

Library in charge (Duties performed by the patients) Cooks (2).

Storage in charge Sweepers Guards.

This is a 250-bed rehab facility. According to case studies, the area per person should be approximately 700 sqft to 950 sqft because the rehab center would have communal areas unlike the general hospital. Based on building blocks of the Rehabilitation center:

Administration

- Reception and waiting (20 people) 15 sqft/ person -300 sqft
- Executive director — 320 sqft
- Education service head — 170 sqft
- Social service head — 170 sqft
- Conference room — 300 sqft

- Accounts office — 200 sqft
- Research publications — 250 sqft
- Outreach office — 200 sqft
- Toilets — 500 sqft
- Display and family therapy 1750 sqft.
- Pharmacy — 400 sqft
- Kitchen — 150 sqft
- Sam = 6,660 sqft

30% circulation — 1548 sqft

Total = 6708 sqft

Treatment Area

- Psychiatrists' rooms (3) — 450 sqft
- Psychologists' rooms (3) — 450 sqft
- Therapists' rooms (3) — 450 sqft
- Duty medical officer (6) — 600 sqft
- Reception and waiting — 1000 sqft
- Laboratories — 2000 sqft
- Dispensary — 270 sqft
- Dry store/medicine proprietary store 160 sqft.
- Cold store — 110 sqft
- Pharmacy — 1000 sqft
- Toilets — 1000 sqft

Inpatient Department

- Detox block (48 inmates)
- Inmate rooms (60 inmates) 60x 100- 6000sft
- Toilets (attached) 30x80 — 2400sft
- Triage 01: 02 x 860 — 1720sft
- Medical Officer: 02 x 300 — 600sft
- Service Detox wards Activates = 400 x 3 -1200sft.
- 05 Beds stable wards: 676 x 08 — 5400sft
- Prayers Area: 900sft
- Recreational Block: 1100sft
- Pharmacy: 650sft
- Medical and Storage room: 320sft
- IPD Special Checkup Wards: 04 x 600 -2400sft.
- 30 Privatized Room with Bath + Balcony: 30 x 300 -9000sft.
- Routine checkup: 08 x 300 — 2400sft
- Attendant office and nursing station- 250sft.
- Paramedical Staff room: 2 x 500 — 1000sft
- IPD Staff Break Down: 400sft
- Social Workers Area: 400sft
- Staff Room: 2 x 200 — 400sft
- Warden's room (2) —500sft
- Conference and Donor meeting area 02 x 450 = 900sft.
- Gymnasium and Recreational Block: 30000sft.
- OB: Library and Digital skills learning (30000sft).
- Café = 1000sft

- Common room (TV lounge) 1500sqft

Therapeutic Block

- 7 Therapy rooms:
- CBD, Group therapy rooms, Family therapy rooms, music room, meditation room, art and therapy room) 7 x 1200 -8400sqft.
- Toilets — 200sqft
- Staff lounge — 360sqft
- Sum = 8960sqft
- Circulation 30% = 2688sqft
- Total = 11,648sqft

Recreational Block

Games room Indoors: carom boards, table tennis, ludo, chess, cards etc. = 2000sqft

- Outdoors volleyball, badminton, cricket, lawns/gardens: other social evening functions, music etc.
- Movie room/T. V room = 1000 sqft
- Toilets — 5000 sqft
- Cafe — 2000 sqft
- Sum — 5500 sqft

30% circulation — 1,650 sqft

Total covered area = 7,150 sqft

Sum = 8600 sqft

30% circulation — 2580 sqft

Total = 16,180 sqft

Services Department

- Garbage collection and disposal -100 sqft.
- Daily supplies room — 100 sqft
- Cold store (meat, fish, and dairy compartments) (3 x 100 =300 sft)
- Pre cooling store — 110 sqft
- Bulk storage — 220 sqft
- Main store — 220 sqft
- Dry goods (tinned and preserved) -220 sqft
- Dietitian's office — 160 sqft
- Dining hall — 3500 sqft
- Storage space of dish washing and plate stackers -1500 sqft.

Sum = 11,050 sqft

30% circulation — 3,303 sqft

Total = 9,460 sqft

House Keeping

Individual sorting and weighing section -175 sqft.

Wet working area and laundry collection room 550 sqft.

Dry working area — 650 sqft

Detergent store — 125 sqft

Sewing room — 125 sqft

Laundry store/clean sorting room 175 sqft.

House keeper office and storage (closest to linen storage) -200 sqft

Sum = 1,875 sqft

30% circulation — 562 sqft

Total = 2,437 sqft

Electrical Systems

- Transformer rooms (2) — 200 sqft
- Generator room — 200 sqft
- Electric rooms (100 × 10) — 1000 sqft
- Sum — 1400 sqft
- 30% circulation — 420 sqft
- Total = 1820 sqft Employee Facilities.
- Lockers (1 × 9.5" each) & Rest room + drivers' room (sitting and lying down bench) -800 sqft.
- oven Toilets and shower rooms 400 sqft

Sum — 1200 sqft

30% circulation — 360 sqft

Total = 1560 sft Storage and Public parking.

OBG 20 sqft × 300 beds Medical and general records 6000 sqft

Security (CCTV) room 200 sqft — 6000 sqft

Parking Requirements

27.5 Acre Total Site area of the project =

- 96 bikes for visitors (96 × 18) = 1,728 sq/ft
- 120 visitor/integration cars (126 × 128) = 16,128 sq/ft
- 40 cars for staff (40 × 128) = 5,120 sq/ft
- 2 vans for patients = 1000 sq/ft

DESIGN & CONCEPT EVOLUTION

The proposed location of the Rehabilitation Center is a 72-Kanal piece of land in Lahore, Pakistan, area which is strategically located at Hurbanspura Ring Road and Lahore Press Club housing scheme, which will offer good accessibility to all parts of the city and other areas through the major arteries such as the GT Road and the Ring Road. The area environment is also very favorable with Gorki Hospital (6.3 km), Allama Iqbal international airport (6.5 km), Canal road (1 km), and Shalamar garden (6 km) located in the near vicinity in addition to the presence of local police stations and a medical college. The location itself provides a non-violent, calm environment that supports patient recovery and it is enhanced by the natural elements of the site like the presence of existing trees and greenery, fertile soil, fresh air flow, and sufficient sunlight despite the semi-arid climate conditions of hot summer and cold winters. Essential facilities such as power supply, gas, water supply, and sewerage system are in place and the infrastructure comprises of main road accessibility, foot paths and access to a transport system. The major opportunities are the ease of access to the site and its good connectivity to the region, but the site has some constraints and weaknesses such as a dusty environment, air pollution risks, and a serious absence of proper rainwater and sewerage management system that are marked as the main weaknesses and threats in the SWOT analysis that should be tackled in the design and planning of the project.

The proposed Drug Addiction and Rehabilitation Center is conceptualized based on the idea of therapeutic architecture and strives to provide the comprehensive healing experience, i.e. to focus on the multi-level psychological, emotional and social aspects of recovery. The design process will be guided by an elaborate literature review and stakeholder consultations with the medical professionals, architects and social workers to make sure the design suits the real needs of its users. The main architectural principle is known as the healing architecture which involves a combination of various important features: biophilic

design, including the use of natural elements such as indoor plants, green walls, landscaped courtyards, and water, to alleviate stress and get in touch with the nature; a high focus on natural light and ventilation to give interiors a feel of brightness and spaciousness; and a well-thought-out zoning approach that would balance personal space with communal space and therapy with socialization to overcome isolation. In addition, the design focuses on flexibility, as multi-purpose areas can be adapted to different therapeutic exercises and changing resident requirements, and inclusivity, so that the facility may be friendly and decent to all individuals regardless of their capabilities and diversities. Following the particular cultural context of the Malaysian nation, the design is also a deliberate attempt to overcome the stigma that surrounds the addiction issue by crafting the environment that encourages compassion and comprehension and fosters the social integration of the community through shared areas that foster the desired awareness and human contact. This, in the end, patient-focused, ecologically sustainable, contextually responsive architectural proposal establishes the built environment not as a passive recipient of the treatment but as as energetic, defining influence on the long-term healing process by offering a safe, healing environment that actively promotes physical, psychological, and social healing.

PROPOSED DESIGN INTERVENTION

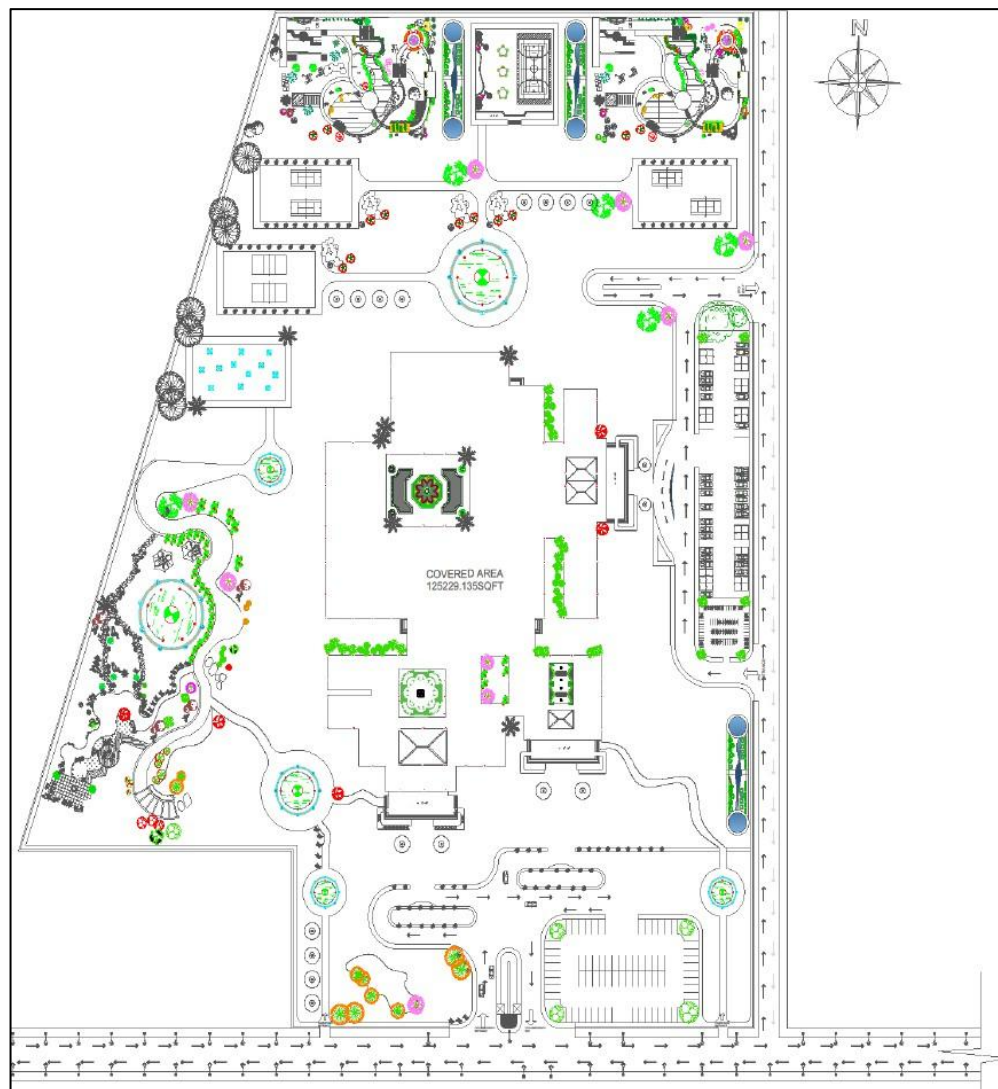


Figure 02 Proposed Master Plan of the Facility



Figure 03 Proposed 3D view of the facility

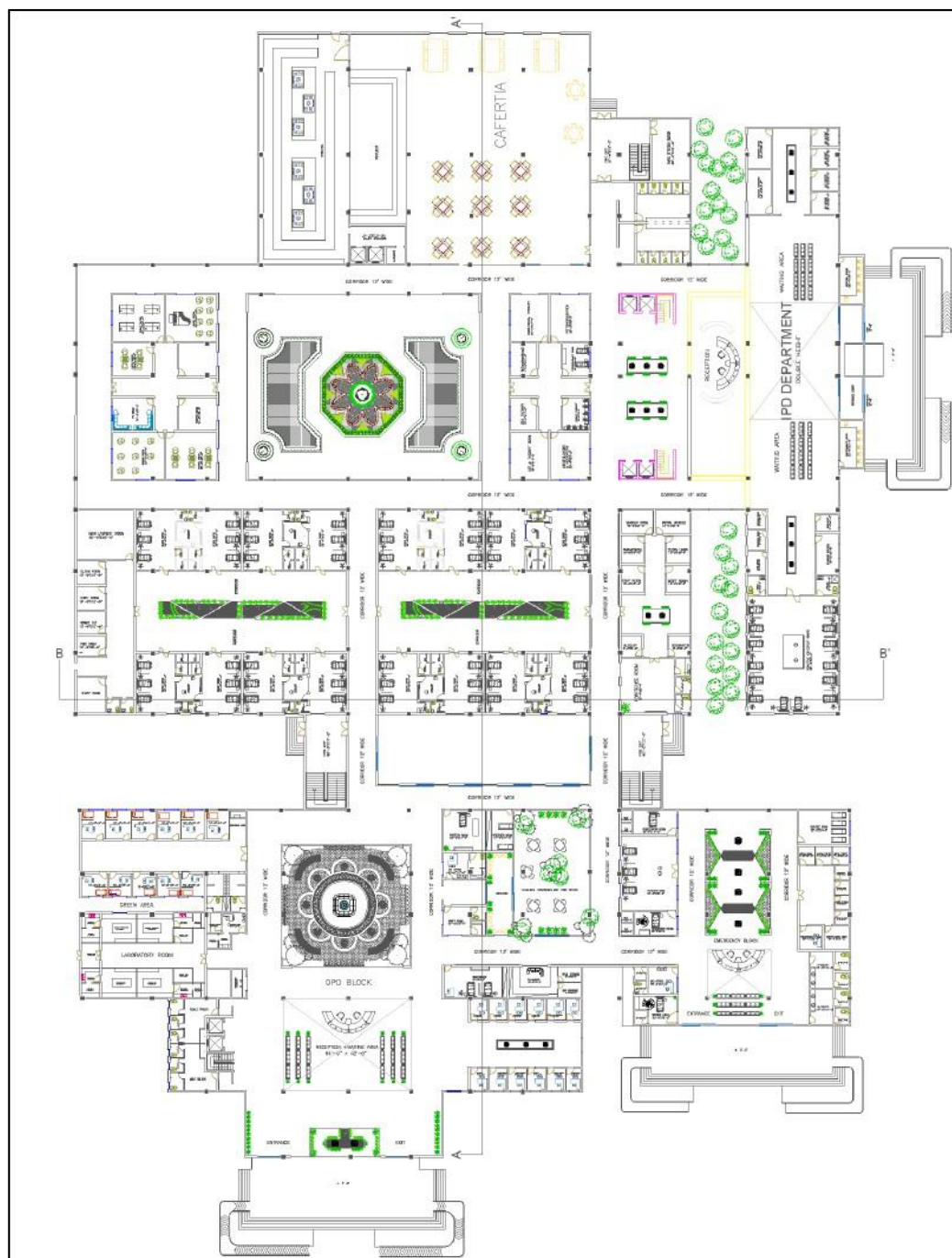


Figure 04 Proposed Ground Floor Plan

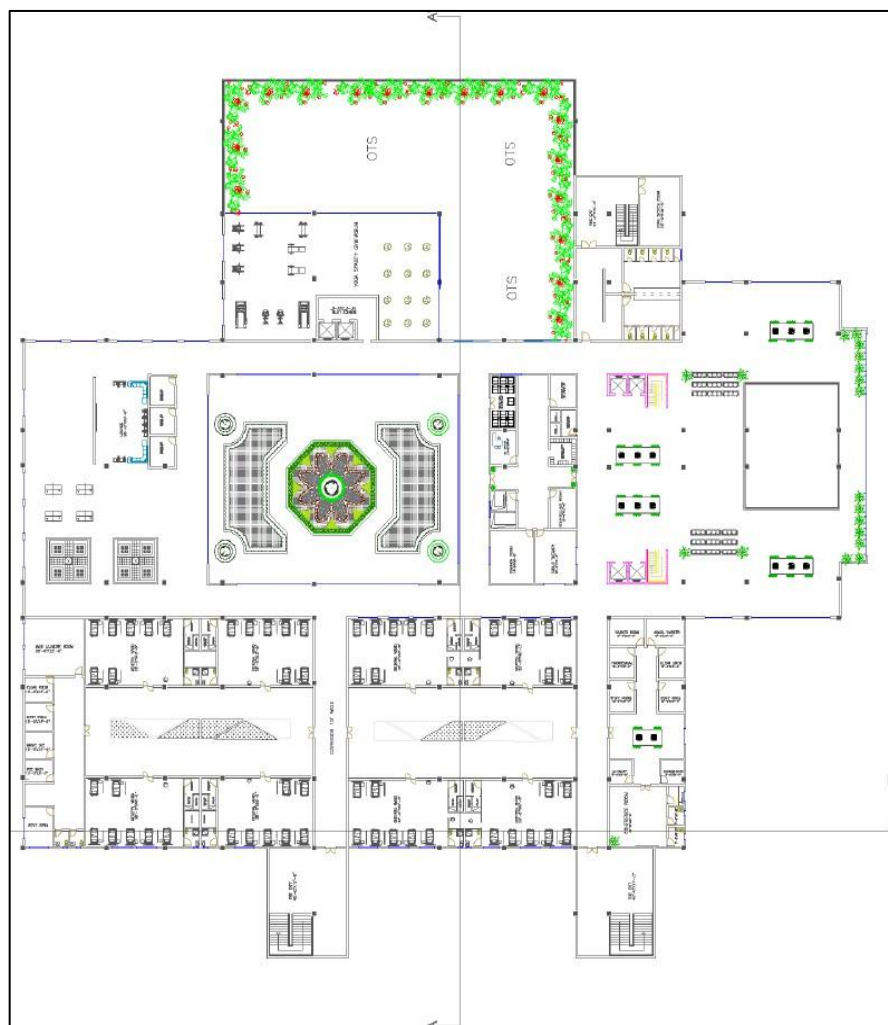


Figure 05 Proposed First Floor Plan



Figure 06 Proposed Elevation of the Facility

CONCLUSIONS & RECOMMENDATIONS

The proposed Rehabilitation Center research and design development provided the following main results related to the issue of architecture in a therapeutic environment:

Therapeutic Design as a Core Profile: The most important observation is that an architectural design with principles of therapeutic design is not only supportive but also basic in the recovery process. The physical, psychological, and emotional needs of people in rehabilitation are complex and intertwined and can be directly addressed through the built environment that is designed with that purpose.

Influence of architectural factors that are specific: The study found that there are a number of significant critical architectural factors that are influential in a healing atmosphere. These include:

- Utilization of natural materials that helps in cultivating association with nature and non-institutional atmosphere.
- Plasticity of design, where the spaces can be modified to meet the changing needs and preferences of the users.
- An emphasis on sustainability, which enhances operational health in the long run and is an indication of holistic well-being.
- Accessibility and dignity of the environment to everybody.

Psychological and Emotional outcomes: According to the findings, there are strong indications of the psyche of the occupants of such a designed environment. It is capable of actively influencing the sense of optimism, a sense of belonging, and the encouragement needed to get people so involved in their recovery process.

Research Conclusions

Based on these results the following conclusions were made:

The Architecture as a Vital Participant in the Cure: The main finding is that the functions of architecture within the rehabilitation process go way beyond the creation of a place to stay and the practical spaces. It is able to serve as a proactive treatment. Architecture can be used to revolutionize the process of addiction recovery, reintegration into society, and self-development by providing a space that promotes the interdependence of mind, body, and spirit.

A Paradigm Shift in Rehabilitation Facility Design: The proposed rehabilitation center shows a needed transition of the historical traditional and, in many cases, institutional rehabilitation centers to an integrated healing rehabilitation center. This model demonstrates that physical environment can make people stronger, reestablish their sense of power and make them gain control over their lives again.

One of the Future Viable Models: The project manages to put a precedent in the future of therapeutic spaces. It finds that the combination of architectural design and clinical therapeutic practices is not just possible but has become critical in producing higher and even sustained recovery results. The center is a model to be emulated showing how design can be an immediate source of healing, strength, and sustainable change.

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