

Importance of Landscape Architecture for Therapeutic Recovery

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Abstract

This study examines the integration of landscape architecture in the therapeutic recovery processes within psychiatric healthcare expectations. Acknowledging the growing demand for healing-centered design in mental health facilities, it further employs a mixed-methods framework that comprises of comprehensive literature review, expected principles and design evaluations to assess the influence of natural and biophilic elements on patient outcomes. Reckoning with sustainable and patient-centered design principles that enhance safety, privacy, and overall well-being for all in and out patient users. The findings demonstrate that thoughtfully designed therapeutic landscapes contribute significantly to stress reduction, emotional stability, and improved recovery trajectories for psychiatric patients. The study extensively offers evidence-based design insights to guide architects and other allied professions, healthcare proponents and planners, and policy stakeholders in fostering rehabilitative environments through landscape architecture. It further argues for a redefined approach to psychiatric hospital design that integrates ecological sustainability with therapeutic efficacy.

Keywords: *The Panopticon Concept, Seclusion Rooms, Green Space, Biophilic Design, User-Centered, Therapeutic Landscapes.*

I. INTRODUCTION

The level of human interaction in the society highly depends on mental wellness (Smith & Morgan, 2018). Traditionally, mental illness has been disregarded, which has resulted in stigma and cruel imprisonment. Even as standard of living have improved, mental health is still not given enough priority as social and physical health. In the past, mental illness has frequently fostered fear due to ignorance, disregarding etc. (Link & Phelan, 2006).

A Psychiatric hospital is a specialist hospital that offers mental stability treatments, which includes behavioral interventions, therapeutic medication management, with a main focus to improve one's mental health condition. (White & Bailey, 2015).

Psychiatric hospital design may surpass the general hospital in structure, functions, and treatments, with its rapid-recovery units. (Omer & Jones, 2019).

It is crucial to take healing and wellbeing into account while creating landscape architecture for psychiatric facilities. It involves the idea, planning, drafting, administration and adapting to outdoor spaces as gardens, playing grounds, complexes and parks. It is a

conglomeration of art, architecture, understanding ecology, and urban planning to arrive at an aesthetically pleasing, functional, and sustainable environments.

The natural environment improves psychological well-being, (Ulrich, 2008). Designing landscapes for psychiatric hospital is of therapeutic recovery, safety, and aesthetics.

Biophilic features, such as indoor vegetation, natural light, and outdoor views, can reduce stress and improve psychological well-being, with patients experiencing faster recovery. Natural ventilation strategies like operable windows and cross-ventilation regulate indoor temperatures, providing fresh air and reducing reliance on mechanical heating and cooling systems, which can be well effected through a good landscape design.

This study covers the idea of landscape architecture enhancing therapeutic recovery.

II. HISTORY OF PSYCHIATRIC HOSPITAL

The psychiatric hospital provides assessment, admission, care, accommodation for its patients under a suitable environment. The psychiatric hospital helps in

formulating plans that involves comprehensive understanding of the mental health of patient considering biological, social, and environmental factors. Patients in need for serious mental disorders like bipolar disorder, schizophrenia, major depression and others are referred to a psychiatric hospital for recovery. (King, Hussein, Shochet, Bar-Lavie, 2020).

Psychiatric hospital started as asylum which were over crowded religious refugee camp with poor living conditions and deinstitutionalizes community-based health centres. Since the old times of Rome and Greece, there were cases of mental and epileptics leading to disorder in feelings for people. This caused trouble for victims who were majorly returning soldiers of war and loved ones who mostly do not know how to care for the patients. This led to some patients becoming homeless,

handicapped or beggars, and the early Christian society then took in the mentally ill people helping them to heal. The first known asylum centre was established in 490 A.D., in Jerusalem and it increased within the first nine centuries afterwards. (Livianos, Sanchez, Sierra, & Rojo, 2020).

The first known psychiatric hospital in London was the Bedlam Hospital of 1330 as shown in fig. 1 and fig. 2. It operated not as a specialist hospital but to aid the process of recovery of mentally ill patients. Due to less understanding and education on the process of mental recovery for the missionary workers, the patients were treated in an inhumane way which even made the word ‘Bedlam’ to be synonymous to ‘a place of great confusion’, ‘a mad house’ in the English language dictionary. (Gieseckus, 2014).



Fig 1 The Exterior View of the Bedlam Psychiatric Hospital
Source: Wikipedia, 2012



Fig 2 The Interior View of the Bedlam Psychiatric Hospital
Source: Wikipedia, 2012

In Elbing, Germany, the Georg Hospital was created leading to more been created across Europe like in Valencia Spain by Rev. Father Joan Gilabert Jofre. The better understanding on psychiatric hospital system started around the 18th century as accommodation, discipline, security, and work ethics were taught to health workers in preparation for a better effective functioning. This helped the evolvement from isolation to evidence based personalized care for the patients. (Morris, & Kleinman, 2022).

Architectural construction of psychiatric hospital in continents differed within their nations due to beliefs, traditions, care pattern and responsiveness of the patients. For instance in the United Kingdom, the architectural concept was based on panopticon as designed by Jeremy Bentham. It aimed to make easy in the supervision of patients, their security and by this, a central building with good visibility to extended cells (rooms) was created. (Chrysikou, 2019). The Panopticon concept which is known as the 'no restriction concept' was seen in the Devon County Pauper Lunatic Asylum (1845) Glasgow Royal Asylum (1814), Hanwell Insane Asylum of London (1831).

After flourishing till the mid-19th century, there came the Pavillion inspired construction of the Americans. The layout was based outside the city, with single rectangular rooms with walkways and courtyard or enclosed gardens. A good example is the Tooting Bec Asylum (1902). This era believed that architectural design should serve as a therapeutic tool where enough daylight, rooms with lesser patients, communal spaces like dining room, common room, special seclusion rooms, halls can influence positively the recovery of patients. This led to the landscape design having open spaces, relative to the pavilion. Supporting services too were designed in this era for nurses, inward and outward patients of the psychiatric hospital. By the end of the 20th century, psychiatric hospital was considered as a fundamental medication to patients with design concept essential to recovery.

In Nigeria, the Aro Neuropsychiatric Hospital was the first mental illness home.

The design brief development for psychiatric wards is confinement of patients which includes the restriction of their freedom of movement where materials like glass are not mostly used, instead, plastic, barricades etc.

Cultural and religious stereotypes significantly impact the recovery process of patients, studies from Africa Polling Institute revealed that many Nigerians associate mental illness with supernatural causes, leading to seeking treatment from religious leaders and traditional healers. Poor public education about mental health has allowed these misconceptions to persist, leading to low public acceptance of mental health patients. Nigerian mental health expert Aisha Bubah states that people lack understanding about mental health, leading to a negative image of mental health. In 2019, Human Rights Watch reported that thousands of people with mental illness live

in religiously-run care centres.

III. HOW HOSPITAL DESIGN HEALS US

Healing architecture is very vital in hospital design. Hospitalization indeed has a long-lasting effect on recovery as some patients requires intensive care while some requires simple care to address their state of mind. Psychiatric hospitals started as asylum centres with open wards, long smaller windows, with lesser privacy and skilled worker to the modern-day specialist and wards hospitals. Meaning, that its function and scope had widened over time. (Simonsen & Duff 2020).

For instance, every patient in a private or semi-private room has a reduction spread of mental stress by 67% and 90% with less medication errors from nurses between 1972-1981. It was observed that patients with good nature view have shorter hospital stay, needing fewer medication than those without open wards of more than 10 patients. However, in 2002, a study on different areas helps categories patient and aided more connection between the nurses and the patients thus nurses' offices are centralized into each room and staff can easily work into each ward.

The design of a psychiatric hospital should be of great relief even to families and friends of patients, it deals with a mental emotional architecture. Natural materials, like soft land spaces, wood crafted features, porous materials like limestone, ventilation, lighting from nature, oversized garden planters and small spaces too are important.

Sustainable design also known as sustainability or sustainable architecture is the construction of buildings that uses minimal environmental impact as it meets the needs of the present and future generations through design. This includes the consideration on energy efficiency, the use of renewable resources, waste reduction, and generally, the human lifecycle (ecosystem). With the disappearance of different species of plants and animals in recent times than formerly, it tends to affect the plentifulness and originality of humanity. The nature of human being does not only threaten the environment but the increasing occurrence of it. With the principles of sustainable design, addressing the challenges of environmental degradation and fear in human quality of life, is tackled through the establishment of supporting development that is practical and can serve both for social and economic scale of preference of a community thus creating a conducive environment now and for the future.

IV. PATIENT-CENTERED CARE UNITS IN PSYCHIATRIC ARCHITECTURE

Consideration on the staffing experience and levels, medical and non-medical staff composition, interdisciplinary effective communication, the expected standard of care, early recognition of symptoms and treatment of patients, and the provision of a safest microclimates, that is local climate is of importance for patient-centred care in psychiatric hospital includes ways to encourage autonomy, encourage privacy, dignity and

spatial layouts in design.

The patient-centred care is divided into voluntary admission and the involuntary admission design. Voluntary admission arrears of the psychiatric hospital are meant for patients and other inpatient units which patients can easily request their leaving and without coercion. This admission ends when the patient seems fit, while involuntary admission determines the length at which patients stay in the hospital till they are completely recovered. In voluntary patient-centred care, the patient is admitted on their choice for mental illness allowing access to comprehensive scale of treatments. The services involved medication, therapy, and other services.

Involuntary admission patient-centred care is a civil commitment on patient. This is further explained as inpatient wards and out-patient wards.

V. DESIGN SAFETY AND PRIVACY

According to Curran, Kaplan, Laska, & Bank, (2013), in psychiatric hospitals, safety, privacy, and security are crucial factors. Legal and administrative protection can ensure confidentiality and privacy of patient data systems in mental health, while restricting access for patient welfare. During the course of performing case studies for this project, it was evidential how staff of psychiatric hospital prevented unnecessary visit of outward patients like friends and families into the main treatment wards and recovery sections.

Common measures include secured entrances, surveillance systems, privacy considerations, safe materials, features and fixtures, emergency response plans, staff training, effective communication systems within and after discharging patients, patient monitoring, a therapeutic environment, and collaboration with law enforcements are very important. Controlled entry points, surveillance cameras, and privacy considerations are implemented to regulate patient and staff access. Patient rooms and common areas are designed to maximize privacy while allowing staff observation. (Adenuga, 2016).

Autism awareness training in high-security psychiatric care hospitals is mandatory, with more emphasis on habitable wards and interior design. (Murphy, D., & Broyd, 2019). Safe materials and fixtures are used to minimize self-harm or injury risks. Staff training on de-escalation techniques, crisis intervention, and safety concerns is provided. Effective communication systems are implemented for staff to respond quickly to emergencies and coordinate care. Technology like wearable devices or sensors is used to monitor patient movement and behavior, ensuring prompt intervention. A therapeutic environment is created that promotes healing and recovery while addressing safety and security needs. Collaboration with law enforcement is established to address potential security threats.

VI. LANDSCAPE DESIGN

Landscape architecture is the practical approach in design of outdoor spaces, general open spaces, landmarks, to achieve environmental conduciveness, social behavioral, or aesthetic upgrade. This involves the systematic design and general study of various structures for construction and its reaction to human use, hence the investigation of existing social, ecological, and soil conditions and processes in the landscape.

The idea of creating a therapeutic environment in a psychiatric hospital aims to promote healing and recovery for patients. It was stated by Bolsinger, Jaeger, Hoff, & Theodoridou, (2020) that the therapeutic relationship in acute psychiatric settings significantly impacts clinical outcomes, patient satisfaction, and rehospitalization rates.

Furthermore, psycho-environmental design in the proposal of a psychiatric hospital design can give an effective result and serve as a tool in reducing to a drastic level the severe psychopathology hence improving mostly inpatient responsiveness to treatments.

Therapeutic environment show how workers of the hospital too can benefit from the design and interact through codesign activities and post-occupancy evaluation for instance using the case of the COVID-19, the isolated hospital design helped prevent the contamination of the virus and ensuring biological and mental safety. Therapeutic environment is a deliberate and systematic approach to align all measures of recovery and sense of belonging among the health works, to the patients and their loved ones. It includes creating safe atmosphere, having qualified staff, having a systematic and structured routines, therapy sessions, the need for individual counseling, medication management for patients, and activities for self-expression and relaxation.

With the physical environment designed to be calm and comforting, with natural light, avoiding glare as much as possible, using soothing and cool colours, and comfortable furnishings. The goal in all is to create a layout where patients feel being understood and supported wholly.

Landscape design is a multidisciplinary approach that also incorporates painting, architecture, engineering, economics and sociology, in design outdoor spaces that are influenced by seasonal natural and artificial changes and natural environmental materials.

➤ *Hard Landscape*

This refers to hard in nature landscape features that can be natural or artificial materials found in the built environment and still incorporated into a landscape. Natural stones, rocks, water fountains, pavements and walkways, retaining walls, sleeper walls, ramps, stairs, walkways, concrete, roads and any other are examples of hard landscape.

➤ *Soft Landscape*

This refers to soft in nature landscape elements include flowers, plants, grass, soil, flower beds, and groundcover. Despite the name, soft cape elements are not always soft to the touch—hard trees and mulch are also considered part of the soft cape design.

Soft landscaping allows landscape architects to experiment with color and an almost endless variety of plants and flowers to create a colorful new look to the site. Soft landscaping is the process of designing elements of a landscape that don't involve hard features. It includes green vegetation, ponds, trees and shrubs.



Fig 3 A Combination of Softscape and Hardscape
Source: Google, 2015

VII. PRINCIPLES OF LANDSCAPE DESIGN

Haider (2023) highlighted the important principles of landscape designs as follows:

➤ *Balance*

This is a state of equilibrium in design. In landscape design, balance is important as it gives a visual valuation of outdoor spaces. It inputs the idea of symmetrical, asymmetrical, and mixed or radial balancing in the landscape design. Symmetric balance is a prototype that ensures similarities in design between the landscape, asymmetric balance is a form of landscape design that is not balance, that is haphazard but it is intentional created and not messy. While radical balance deals with the combination of the two types of balance strategies. The design shall use a mixed landscape design.

➤ *Focalization*

In this design, the idea of having a place with a focal point e.g. waterfall, a central tree that draws the eyes, etc will be used to draw the recovering patients attention and aiding a good visual distraction. It can be one feature or plenty as it suits the design.

➤ *Simplicity*

This is the idea that accounts for the scale of the landscape. It is the study of the soft and hard landscape and the gentle and meaningful movement of the two types of landscape well mixed. It can be used in bit with 5-8 vegetations (softs landscape) and hardscape in the

proposed site over and over again.

➤ *Repetition*

This is similar to simplicity but it is a concise interception of a landscape architect to plant in odd numbers and in mass and repeated over and over again, this makes it look more appealing.

➤ *Proportion*

This is in plant considerations in which the proposed design understands the assumption of plant to future hindrances on other landscape features. Like the road, walkway been hindered by plants when they grow, hence each plants needs spaces to grow.

➤ *Unity and Enclosure*

This is a final and main purpose of the landscape design. It is a design orientation created to unify the two main types of landscape, repetition in front and back part of the design. While in the design, enclosure is a phenomenon that studies enclosure space for privacy with the patient, a hidden area but still ensuring unity with patients, staff, family and well-wisher.

These aforementioned points will aid the technical excellence of the proposed design through the study of coolness and energy saving, long sides of buildings should be facing north and the south cardinal points and doors and windows on smaller faces shall face the south (for glare of solar radiation), the light from north is always diffused and indirect direction of wind should be on the west side.

proposing courtyard design, the walls and roof have insulation with thicker wall paint which reflects and do not absorb heat, with the roof serving as shading device to the verandah, shading devices and trees shall be used. The plan shall be a compact design with inward building with more habitable patient wards, and rooms of the nurses. Walls to be used as thermal barriers and placed on east or west side, the habitable rooms will be built around the courtyard where cool air passes by kitchen leeward side to avoid hot air and kitchen smell circulation.

VIII. PROJECT ANALYSIS AND DESIGN SYNTHESIS

➤ Design Criteria

The healthcare facility design aims to foster interdisciplinary relationships between staff, patients and visitors, also considering interior and exterior landscape design principles. Utilizing various design considerations as follows;

- *Nature*

The design should provide an avenue for mental healthcare development, the organogram of the psychiatric health care facilities and the mode of operations of the project. This constitutes the majority of interaction to all users of the building, that is workers, patients and visitors.

- *Urban Form*

The design of the space influences the visual aesthetics and sense of place. Being a hospital, this implies that the use of green architecture to compliment the urban design.

- *Noise Control*

Noise control is crucial in psychiatric hospital design to create a therapeutic environment that supports patient recovery, comfort, and well-being. Key ideas include soundproofing, quiet zones, noise reduction materials, private spaces, soothing colors, nature integration, sound masking, flexible spaces, staff training, technology integration, patient-centered design, and adhering to acoustic standards. Soundproofing minimizes external noise and reduces echo, while quiet zones provide solitude and relaxation. Noise reduction trees, natural and artificial like acoustic panels, soundproofing blankets, or cork flooring help reduce noise.

- *Calming Colors*

Calming colors promote relaxation and reduce visual stimuli. Natural elements like plants, water features, or outdoor views create a calming atmosphere to reduce noise.

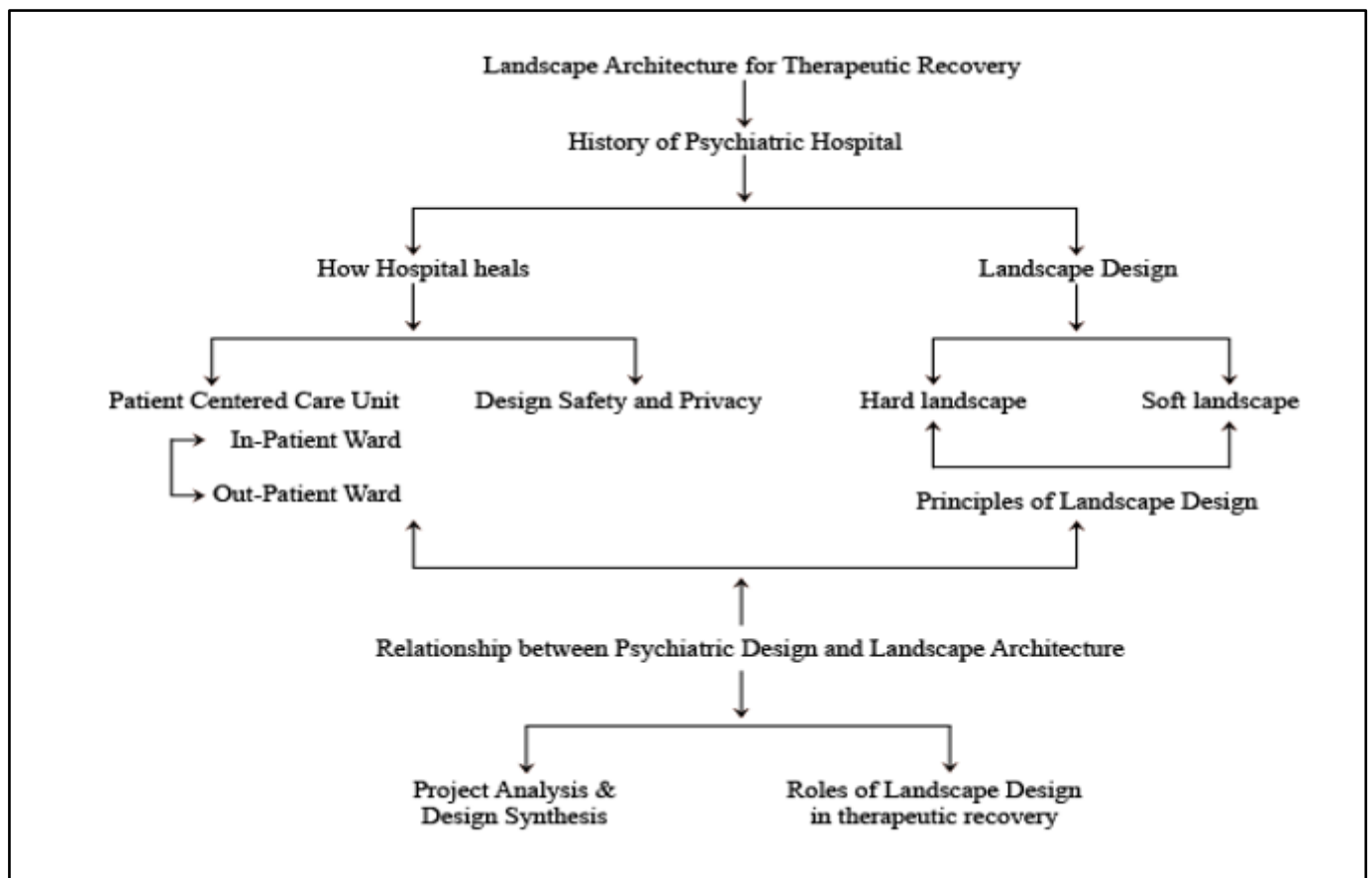


Fig 4 Framework of Landscape Architecture for Therapeutic Recovery

IX. RECOMMENDATION AND CONCLUSION

Nature is important in architecture and in psychiatric design. The incorporation of therapeutic gardens and outdoor spaces for recreation, relaxation, and therapy, the

use of techniques to reduce costs and promote sustainability, flexible spaces to accommodate different treatment modalities and changing patient needs is vital while considering a design of psychiatric hospital.

Adequate provision of staff facilities like training areas, break rooms, and accommodations for overnight stays. Training for staff on cultural sensitivity, patient-centered care, and evidence-based practices is important also.

In conclusion, the use of landscape architecture for therapeutic recovery offers a promising approach to promoting mental health and well-being by incorporating natural elements, recreational spaces, and culturally sensitive design, landscape architecture can create healing environments that support patients recovery and rehabilitation by enhancing patient engagement and motivation, social interaction and community integration from indoor to its outdoor design.

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