

Psychiatric Resorts Design According to Design Standards and Quality of Life

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Abstract

Nowadays we can observe an increase regarding the problems that faced by people, the psychological disorders that afflict them and the pressures they face both in childhood and in later stages of adolescence, youth and old age. The purpose of this research is to investigate how architecture can assist individuals experiencing stress and how architects can leverage their knowledge to disrupt these unproductive patterns.

The aim of this research is to identify ideal functional relationships that architect need when designing psychiatric resort. The methodology includes firstly, reviewing the literature and methods that used to assess the quality of life in psychiatric resorts. Secondly, conducting an analytical study to explore the functional relationship between spaces and the design criteria of good psychiatric hospitals and studying its impact on patients. Finally, the research provides a deep understanding regarding the relationships between different spaces for a psychiatric resort based on a comparative analysis for three case studies.

Keywords

Psychiatric, functional relationships, patients, mental health, quality of life.

1- INTRODUCTION

The world is now moving towards prioritizing quality of life as one of the most important design principles to preserve the environment and reduce the harmful impact of the built environment on the natural

surroundings while meeting the user needs. Achieving quality of life can be integrated into the design process, incorporating elements such as functional relationships, natural lighting ,ventilation and ensuring privacy for all patients in different treatment stages.

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The primary aim of this research is to elucidate the ideal functional relationships essential for designing psychiatric resorts that positively influence the well-being of individuals under stress. The core problem revolves around understanding how architectural interventions can effectively address stress and contribute to the holistic welfare of individuals in psychiatric environments.

The methodology involves an extensive literature review, an analytical study of functional relationships within psychiatric hospitals, and a comparative analysis of examples and a proposed project. The structured approach includes examining the definitions, design criteria, and standards of psychiatric resorts, utilizing case studies, and applying a standards table for assessing functional relationships. Through this rigorous exploration, the research aspires to advance the discourse on psychiatric design and its impact on quality of life, offering valuable recommendations for future design considerations.

2- LITERATURE REVIEW

The literature review started with defining two study areas, Psychiatry and quality of life are interconnected. Psychiatry, a medical specialty, is dedicated to the identification,

management, and prevention of mental, emotional, and behavioral disorders. Individuals seek psychiatric assistance for various reasons, ranging from sudden crises like panic attacks, disturbing hallucinations, suicidal thoughts, or auditory hallucinations to enduring challenges like persistent feelings of sadness, hopelessness, anxiety, or difficulties in daily functioning that create a sense of distortion or loss of control in everyday life. ^[1]

Second, Quality of life, “The extent to which an individual experiences health, comfort, and the ability to engage in and derive enjoyment from life events. In the realm of healthcare, quality of life is perceived as multi-faceted, encompassing emotional, physical, material, and social aspects.”^[2] The idea of quality of life is about how we, as people, look at the 'goodness' of different parts of our lives. It's like thinking about how we feel emotionally when things happen, how we generally see life, whether we feel fulfilled and satisfied, and how happy we are with our work and personal relationships.^[3]

The design principles of psychiatric resorts aim to provide a healthy environment that facilitates its functions by integrating with the natural environment to achieve efficiency.

The research focuses on the functional relations within psychiatric hospitals elements,

to examine these functional relationships, it is necessary to define certain spaces. The following sections spot the light on these spaces for a more depth analysis of their functional relations.

A. Patient rooms: Patient rooms help minimize the risk of infections, enhance the effectiveness of nurses and healthcare workers in their tasks, and offer increased privacy for delivering bedside treatments. [4]

B. Vertical circulation: Vertical circulation in a building includes method transferring from one level to another such as; stairs, ramps, and escalators. [5]

C. Administration: In psychological hospitals, administration is a group activity which involves cooperation and coordination to help patients' parents to complete all procedures in the hospital. [6]

D. Cafeteria: It is a place has more tables and chairs dedicated to get food in specific times in the day under nursing control.

E. Treatment rooms: Rooms crafted for talk therapy are intentionally structured around the patient's anxieties, aiming to prompt the patient, with assistance from doctors, to explore alternative ways of thinking. [7]

F. Doctor's room: Doctors' offices serve as the main locations for ambulatory care, typically being the initial point of contact for

individuals seeking medical attention, unless it is an emergency, in which case they would go to the emergency department at a hospital. [8]

G. Examination rooms: An inclusive examination room incorporates features that enable patients with mobility disabilities, including those using wheelchairs, to receive proper medical care. These features facilitate the entry of patients into the examination room, their movement within the space, and the utilization of accessible equipment. [9]

H. Living room: A fresh area where patients can sit, unwind, and enjoy various soundscapes.

I. Isolation room: A room the doctor uses it when patient need to be isolated and kept away from other patients while receive medical care and in psychiatric hospital to the patient in acute condition. [10]

J. Hospital corridors: Corridors in healthcare facilities have a dual purpose. Firstly, they serve as pathways for navigating from one location to another. A well-designed lighting system ensures a clearly marked route for patients, staff, and visitors, regardless of the time of day. [11]

K. Public space: Public areas in healthcare go beyond the main lobby; they play a vital role in shaping the overall healthcare experience. These public spaces fall into five types: entrance and orientation areas, places for

peaceful contemplation, spaces with continuous movement, areas for navigation, and service-oriented spaces.^[12]

L. **Consulting room:** A space where a doctor conducts examinations and discusses the patient's medical case.^[13]

M. **Day room:** A space where patients can spend their day watching television, reading, or engaging in conversations.^[14]

N. **Emergency room:** The section of a hospital designated for providing immediate care, such

as for individuals who have experienced an accident.^[15]

O. **Pharmacy:** The section of a store or hospital where medications are compounded or prepared.^[16]

After reviewing the definitions of the psychiatric hospital and after examining the design criteria, the following table (table 1) shows the functional relationships between the most important elements.

Table 1- : Standard Of Functional Relationship Of Psychiatric Hospital [17,18,19]

Standard	Relationship	
Entrance	Located in the ground floor	●
Relation between entrance and patient rooms	Separated as patient rooms must have private entrance as well as hospital entrance	○
Entrance and Vertical circulation	Ensure a good relation between the entrance and the vertical circulation	●
Vertical circulation	Ensure a maximum distance of 30 meters between each vertical circulation and the adjacent one	●
Relation between patient rooms and administration	Moderate relationship as administration related with patient rooms but through private entrance	●
Relation between nursing room and cafeteria	Each nursing unit is required to have its own cafeteria.	●
Relation between patient rooms and treatment rooms	Strong connection, as each nursing unit is required to have treatment rooms, in addition to those located in the reception area.	●
Relation between patient rooms and doctors' room	Strong connection, as every nursing unit must have a doctors' room, along with additional ones in the reception area and clinics.	●
Relation between patient rooms and Examination rooms	Strong connection, as every nursing unit must have a doctors' room, along with additional ones in the reception area and clinics.	●
Relation between patient rooms and living room	Strong relationship as every nursing unit must has their own living room separate from the staff lounge.	●
Relation between isolation room and patient rooms	Strong relationship as every nursing unit must has isolation room as well as another in clinics.	●
Relation between patient rooms corridors	Ensure a direct access and avoid long corridors	●
Relation between patient rooms and public space	Ensure a quiet and separate patient room, away from crowded areas such as public spaces	○

● Strong relationship ● Moderate relationship ○ Weak relationship

Source: Author based on all the above references

3- METHODOLOGY

The methodology adopted in this research follows a systematic and comprehensive approach to investigate the relationship between psychiatric design standards and the

concept of quality of life. The research starts with introducing the existing knowledge on psychiatric and quality of life definitions, design criteria, and standards specific to

psychiatric resorts.

The second phase involves a comparative study between three physiological hospitals (The Centre de Psychiatrie du Nord Vaudois (CPNVD), La Métairie, Die Klinik für Soziale Psychiatrie (KSPAP) with a proposed project, emphasizing functional relationships within psychiatric hospitals. The research introduces the design criteria of successful psychiatric facilities and analyzes architectural plans against standards for various spaces, allowing a deeper understanding of how design principles and functional relationships are applied in existing psychiatric resorts.





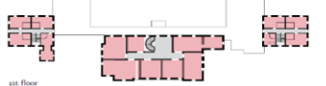
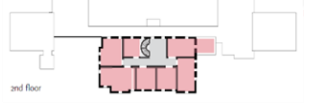




The final phase employs a standards table,

specifically focusing on functional relationships, to quantitatively assess the proposed project and the three examples. This systematic evaluation aims to provide a structured and objective basis for comparing the effectiveness of different design approaches in enhancing the well-being of psychiatric patients.

4- CASE STUDIES: The following analyzing table (table 2) shows the data about each example to be able to assess according to the pervious standard table. Three examples located at Switzerland with different of functional concepts [20,21,22,23].

Table 2- : Analyzing The Examples

Hospital Name	The Centre de Psychiatrie du Nord Vaudois (CPNVD)	La Métairie	Die Klinik für Soziale Psychiatrie (KSPAP)
Type of hospital (Offer)	Stationary hospital and ambulatory 	A stationary clinic designed for patients with private and semi-private insurance, specifically emphasizing ambulatory care. 	Provides three units tailored to specific health conditions: crisis intervention, acute day-care clinic, and rehabilitation clinic. 
Area	7200 m2	NA	2500 m2
Philosophy	Ensure the patient senses they are in a hospital receiving expert care and recognizes it as a temporary space that they will leave once their condition improves.	Providing psychiatric care at a high standard comparable to a hotel underscores the significance of patient autonomy.	To optimize service provision, patients should adhere to a pre-defined plan of therapeutic activities. It is advised not to linger in the center before or after the scheduled therapeutic sessions.
Location	Switzerland - near the city center	Switzerland	In the center of Zürich (Switzerland)
Year	2005	1860	1983
Hospital impression	The hospital offers positive impression to the patient	Positive impressions are more commonly associated with hotels than with hospitals	Freedom as patient can move in anywhere in the hospital
Description of the hospital	The H-shaped building has units that aren't separated by disorders, except for the geriatric unit.	Situated on a vast plot enveloped by trees and bushes, the building effectively conceals the clinic from view.	The hospital is situated within a repurposed office building and is surrounded by residential areas, a restaurant, and tertiary education institutes.
spaces	Hierarchy from private to public	Symmetry only in entrance and sudden transition from the public to the private	Spaces shared between Patient and Administration

<p style="text-align: center;">Floors</p>	<p>Ground: Entrance – Cafeteria – Conference hole – Emergency</p>  <p>ground floor</p> <ul style="list-style-type: none"> common space room for therapeutic purpose office patient room <p>First: Doctors room – Administration - Treatment rooms</p> <p>Second & Third: Nursing Units (12 Patient rooms) + Examination rooms +Administration rooms +living room for each nursing unit</p>  <p>1st floor</p>  <p>2nd floor</p> <ul style="list-style-type: none"> patient room horizontal circulator vertical circulation entrance 	<p>Ground: Entrance - Patient Shared rooms- Treatment rooms- Administration</p>  <p>ground floor</p> <p>Typical Floors: Patient rooms – Nurse rooms</p> <p>Ps: There is no separation between patient and public Spaces</p>  <p>1st floor</p>  <p>2nd floor</p> <ul style="list-style-type: none"> common space room for therapeutic purpose office patient room horizontal circulation vertical circulation entrance 	<p>Basement: Treatment rooms</p> <p>Ground: Entrance- Emergency - Patient and Administration living room – Kitchen – Cafeteria – Isolation room.</p> <p>First : Rehabilitation + Patient rooms +</p>  <p>basement</p>  <p>ground floor</p> <p>Examination rooms</p> <p>Typical Floors: Patient rooms + Examination rooms + Nursing Units</p> <p>Ps: Patient rooms in everywhere in the hospital without specific organization</p>  <p>1st floor</p>  <p>2nd floor</p> <ul style="list-style-type: none"> common space room for therapeutic purpose office patient room horizontal circulation vertical circulation entrance
<p>Corridors</p>	<p>Suitable corridors.</p>	<p>Too long corridors have sitting seats</p>	<p>Too long corridors with bad impression.</p>

Source: Author based on all the above references

According to the analyses of the previous examples, the proposed project tried to achieve the maximum standards within taking into consideration the quality of life and natural environment.

The following table (table 3) shows all the data about the proposed project to compare

between it and the three examples as shown at (table 4) using the standards table (functional relationships) to assess the efficiency of applying each element to maximize the function concepts with taking into consideration the quality of life and natural environment

Table 3 : Analyzing the proposed project

Hospital	The Proposed Project
Type of hospital (Offer)	Mental Health Hospital and Addiction Treatment
Area	10 Fadden, 41837 m2
Philosophy	It is essential to confirm and uphold the patient's privacy. This goal can be achieved through comprehensive studies of the patient's privacy both within and outside the building.
Location	Egypt
Year	Designed 2023
Hospital impression	The hospital interested to offer positive impression to the patient
Description of the hospital	In the H-shaped building, units are arranged without specific segregation by disorders, except for the geriatric unit. The choice of the H-shape is deliberate, reinforcing the concept of creating a welcoming and contained environment.
spaces	Separation of different treatment levels and maintaining patient privacy
Floors	Basement: Kitchen – laundry – Morgue – Intensive care- Rehabilitation –Parking. Ground: Entrance – Administration -2 Nursing Units (serve 20 patients for each- Dining room – living room- Doctor's room- Group therapy- Isolation room) – Radiology- Emergency- ECT Unit- Laboratory- Clinics- Rehabilitation. First: Administration - 4 Nursing Units (serve 40 patients for each- Dining room – living room- Doctor's room- Group therapy- Isolation room) – Doctors Hostel- Nurse Hostel- Admin Hostel- Clinics- One day room) Second: - 4 Nursing Units (serve 40 patients for each- Dining room – living room- Doctor's room- Group therapy- Isolation room) - Rehabilitation- Isolation center.
Corridors	Suitable corridors.

Source: Author

Table 4:-Comparing With Three Examples And The Proposed Project

Hospital Name	CPNVD	La Métairie	KSPAP	PROPOSED PROJECT
Entrance	Located in the ground floor	Located in the ground floor	Located in the ground floor	Located in the ground floor
Relation between entrance and patient rooms	Patient shared rooms on the ground floor are adjacent to the entrance, creating a connection.	The entrance is on the ground floor, and patient rooms span across all floors, establishing a comprehensive connection	The entrance is on the ground floor, with select patient rooms positioned adjacent to it, forming a specific connection.	The entrance on the ground floor is related to specific patient rooms situated beside it.
Entrance and Vertical circulation	Good relation	Good relation	Good relation	Good relation
Vertical circulation	25 m between everyone.	25 m between everyone.	20 m between everyone.	30 m between everyone.
Relation between patient rooms and administration	The administrative offices are positioned on the first floor, with patient rooms situated on the second and third floors, creating a vertical division.	In case of single patient rooms, it's separated as administration in first floor and patient rooms in typical floors, but Shared patient rooms related as it's in the ground floor.	The administration is situated on the ground floor, and patient rooms span across all floors, establishing a comprehensive connection.	The administration occupies both the ground and second floors, while patient rooms are distributed across all floors, fostering a comprehensive connection.
Relation between patient rooms and cafeteria	The cafeteria is situated on the ground floor, while patient rooms are located on the second and third floors. There are no additional cafeterias within the nursing unit, emphasizing a clear separation.	The cafeteria is shared between patients and administration, fostering a collaborative environment.	The cafeteria on the ground floor is related to patient rooms on all floors, establishing a comprehensive connection.	Each nursing unit has its own cafeteria, creating a direct relationship between the units and the dining facilities.
Relation between patient rooms and treatment rooms	Treatment rooms are positioned on the first floor, with patient rooms situated on the second and third floors, signalling a vertical division.	Treatment rooms are on the ground floor, and patient rooms are on typical floors, signifying a distinction in their placement.	Treatment rooms are present on all floors, mirroring the distribution of patient rooms and establishing a comprehensive connection.	Treatment rooms are associated with each nursing unit, creating a connection between the treatment facilities and the nursing units.
Relation between patient rooms and doctors' room	Physicians' offices are found on the first floor, whereas patient rooms are spread across the second and third	Physicians' offices are situated on the ground floor, and patient rooms are distributed across standard floors, with none	Doctors' rooms are present on all floors, creating a relationship with patient rooms and	Doctors' rooms are associated with each nursing unit, establishing a

	floors. Some patient rooms are also incorporated within nursing units, creating a distinct separation.	within nursing units, emphasizing a clear separation.	fostering integration.	connection with the treatment facilities within the units.
Relation between patient rooms and Examination rooms	All facilities are located on the second and third floors. However, there are no examination rooms in the reception area for new patients, indicating a specific division.	NA	Examination rooms are found on the first and typical floors, establishing a connection with patient rooms distributed across all floors.	Examination rooms are associated with each nursing unit, and there are examination rooms in the reception area for new patients, creating a comprehensive connection.
Relation between patient rooms and living room	Each nursing unit is connected as every unit has a living room.	The living room is shared between patients and the administration, creating a shared space.	The living room, located on the ground floor, connects to patient rooms on all floors, serving as a shared space for both patients and administration.	Living rooms are associated with each nursing unit, creating a connection across all units.
Relation between isolation room and patient rooms	NA	NA	The isolation rooms located on the ground floor and patient rooms distributed across all floors.	Related as isolation room in all nursing units.
Relation between patient rooms and corridors	Strong relation between patients' room and the corridors	Strong relation, however the corridors are long with setting areas	Related but not efficient as it's too long so it may leave a negative impression	Related and suitable for them.
Relation between patient rooms and public space	The patients' rooms are separated from the public spaces.	There is no separation between patient and public Spaces	Patient rooms are located without specific organization.	Good hierarchy from the patient zone to the public spaces

Source: Author

Finally (table 5) shows the final assessment project using the standards table (functional between three examples and the proposed relationships) by (strong – moderate – weak)

TABLE 5: Assessment Of The Proposed Project And The Three Examples Using The Standards Table (Functional relationships)

Hospital Name	CPNVD	La Métairie	KSPAP	Project	Standard
Relation between entrance and patient rooms	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entrance and Vertical circulation	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Vertical circulation	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and administration	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and cafeteria	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and treatment rooms	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and doctors' room	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and Examination rooms	<input checked="" type="radio"/>		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and living room	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and isolation room			<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms corridors	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Relation between patient rooms and public space	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strong relationship
 Moderate relationship
 Weak relationship

Source: Author

5- RESULTS AND DISCUSSION: After comparing research shows sufficient functional spaces for the proposed project with three case studies, the the KSPAP compared with the other case

studies. The project indicates that the patient rooms relation with the living room is not sufficient. The following figures (fig. 1 to 11)

shows the successful functional relationships between different spaces and how it reflects in quality of life and the human comfort.

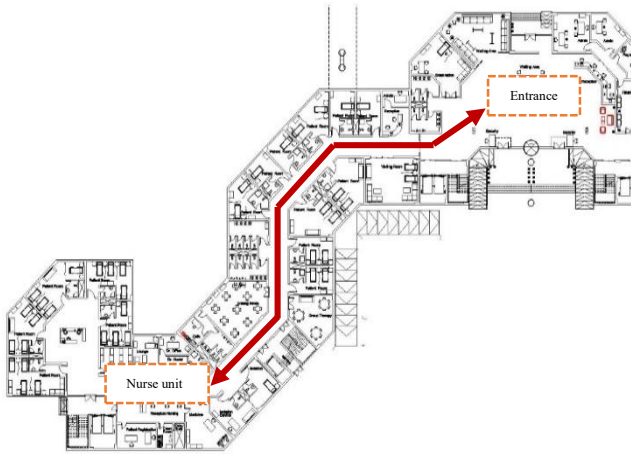


Fig. 1 Relation between entrance and patient rooms

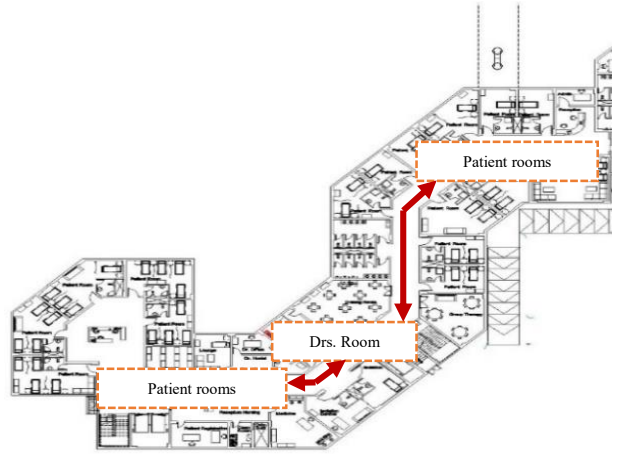


Fig. 2 Relation between patient rooms and doctor's room

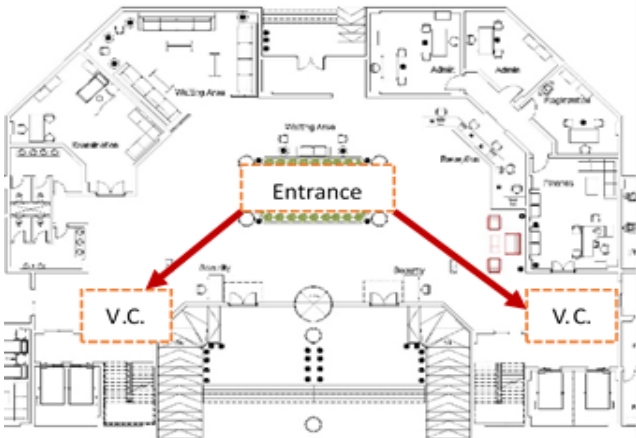


Fig. 3 Relation between entrance and vertical circulation

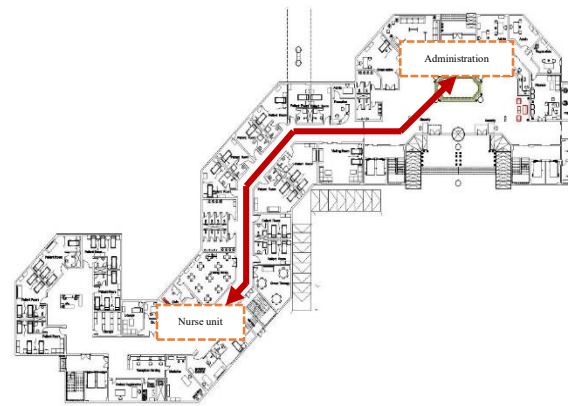


Fig. 4 Relation between patient rooms and administration

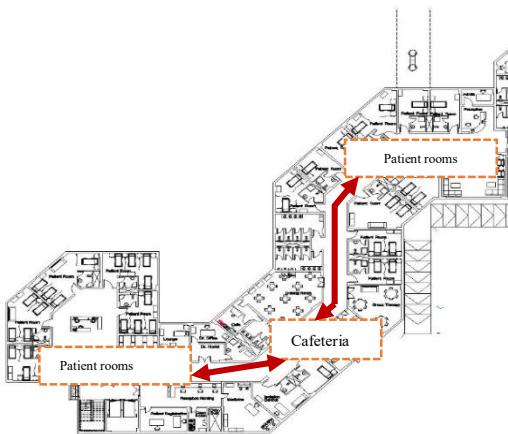


Fig. 5 Relation between patient rooms and cafeteria

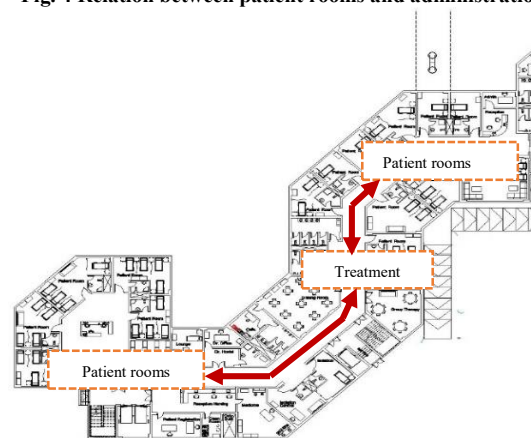


Fig. 6 Relation between patient rooms and treatment rooms

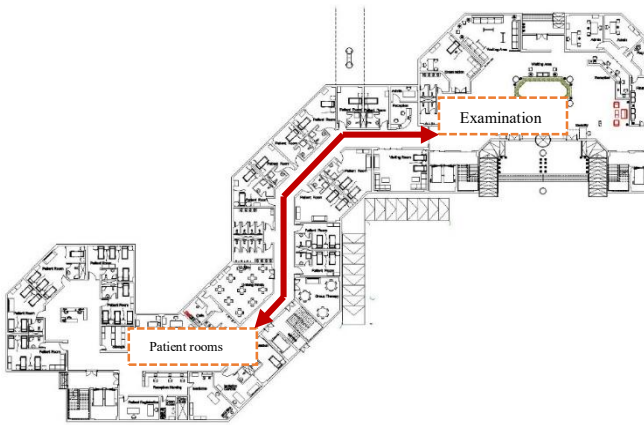


Fig. 7 Relation between patient rooms and Examination rooms

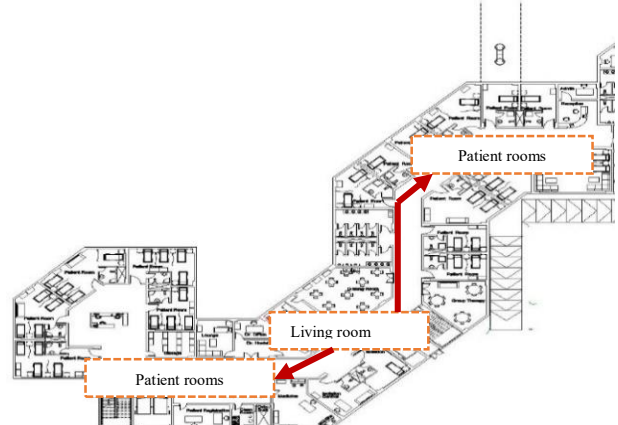


Fig. 8 Relation between patient rooms and living room

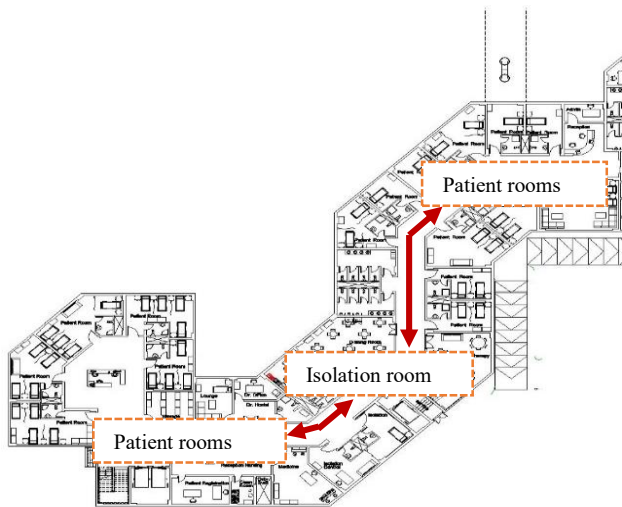


Fig. 9 Relation between isolation room and patient rooms

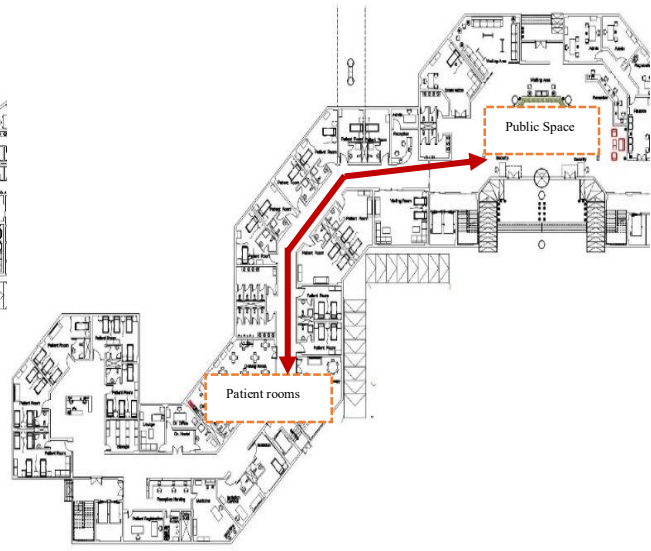


Fig. 10 Relation between patient rooms and public space

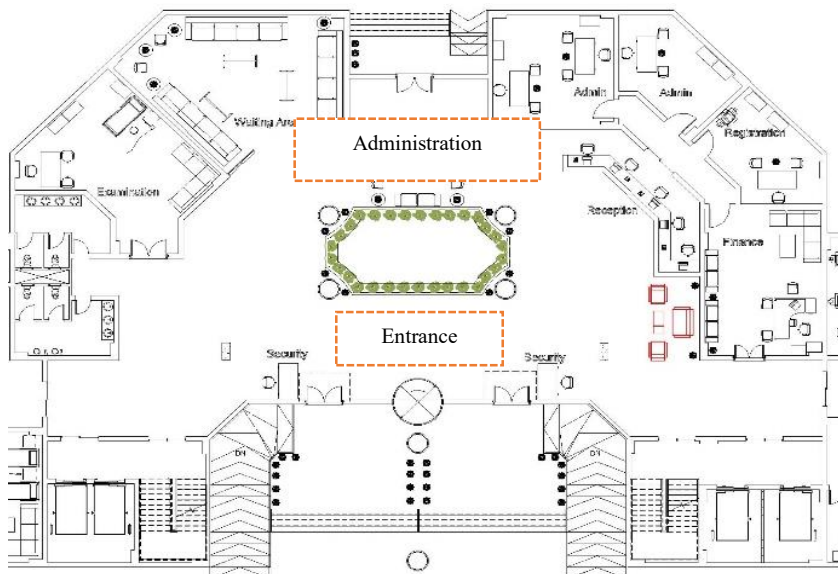


Fig. 11 Relation between entrance and Administration

CONCLUSION

According to the high speed of life and the work under stress psychiatric hospitals are one of the most important projects nowadays to release the stress during life. Psychiatric hospital not only work for sick or madness people it also works for people who exposed to stress for long time so taking into consideration the quality of life and maximizing integration between natural and building environment will maximize the efficiency and achieved its goal. Follow the architectural and construction standards also maximize the function of the psychiatric hospitals and it also ensure the security and the efficiency of each element if it

were in the right place with right proportions and relationships. The function relationships between spaces in psychiatric hospitals are very important to ensure the security and privacy of patients and if it work within the quality-of-life goals it will be work with high efficiency and achieve a high score of healing.

Finally, designer should take into his consideration the integration between landscape and building design to create a healthy environment for patients that is able to deal with the outdoor environment without being subjected to a psychological relapse again.

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