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Integrating Therapeutic Architecture in the Design of Mental Health Facilities: A Case Study of Gracehill Behavioural Health Services for Psychosis Patients

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Abstract

This study examines the integration of therapeutic architecture in the design of mental health facilities, focusing on Gracehill Behavioural Health Services for psychosis patients. The research involved 40 participants, including 20 patients, 12 caregivers, and 8 healthcare providers, to assess the impact of architectural elements on psychological well-being. Findings indicate that biophilic and therapeutic design features, such as natural light, greenery, and flexible spatial layouts, significantly enhance emotional stability and recovery. However, issues like noise, poor ventilation, and limited accessibility to outdoor spaces hinder therapeutic outcomes. The study proposes design recommendations to optimize mental health environments by incorporating biophilic elements, improving acoustic and ventilation systems, and enhancing spatial flexibility. These insights reinforce the critical role of therapeutic architecture in mental health care, advocating for a patient-centred approach in facility design.

***Keywords**: Therapeutic architecture, biophilic design, mental health facilities, spatial design, patient-centred care.*

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1.0 Introduction

Mental health disorders, including psychosis, have long posed significant challenges in healthcare, particularly due to their complex interplay of biological, psychological, and social factors. These conditions often require environments that go beyond mere functionality, emphasizing spaces that actively promote healing and psychological well-being. Therapeutic architecture has emerged as a critical approach in addressing this need, integrating design elements that foster emotional stability, reduce stress, and enhance recovery. The built environment profoundly impacts individuals' mental states, as evidenced by research linking architectural features with measurable brain activity (Azzazy et al., 2020). For patients with psychosis, whose experiences are often marked by sensory distortions and heightened emotional vulnerability, the role of space in therapy is particularly significant.The integration of nature within therapeutic spaces is a cornerstone of this approach, rooted in the biophilic hypothesis, which posits that human well-being is intrinsically connected to natural environments. Numerous studies have demonstrated that exposure to natural settings can reduce stress, improve mood, and facilitate emotional regulation (Beute & De Kort, 2018; Roberts & Van Lissa, 2019). These benefits are not limited to outdoor spaces but extend to green building designs that incorporate natural light, greenery, and materials that mimic the natural world (Dreyer et al., 2018). For psychosis patients, such environments can provide a sense of calm and grounding, mitigating symptoms and improving their overall quality of life.

The incorporation of therapeutic architectural principles is not merely aesthetic but functional, addressing specific needs of mental health patients. Features such as adaptable lighting, acoustics, and spatial configurations are carefully designed to create environments that are both stimulating and soothing, reducing the cognitive and emotional burden of the patients (Browning et al., 2020). Moreover, the use of natural elements, including access to gardens and views of greenery, has been shown to enhance mindfulness practices and emotional resilience (Choe et al., 2020; Djernis et al., 2019). These elements are especially critical for psychosis patients, whose recovery often depends on a delicate balance between stimulation and rest.Gracehill Behavioural Health Services provides a unique case study for exploring the application of therapeutic architecture in mental health care. By emphasizing biophilic and patient-centred design strategies, the facility illustrates how architecture can become a pivotal part of the healing process. The inclusion of spaces that promote social interaction, privacy, and sensory engagement reflects a nuanced understanding of the needs of psychosis patients. This aligns with evidence suggesting that carefully curated environments can significantly improve therapeutic outcomes and overall patient satisfaction (Benvegnù et al., 2024; Hjort et al., 2023).

In the broader context, the application of therapeutic architecture in mental health facilities underscores a paradigm shift in healthcare design. It moves away from institutional, impersonal settings toward environments that prioritize human experience and psychological well-being. This approach not only supports the immediate needs of patients but also contributes to long-term recovery and reintegration into society. By examining the principles and practices implemented at Gracehill, this study aims to highlight the transformative potential of therapeutic architecture in redefining mental health care for psychosis patients.

1.1 Research Aim

To explore how therapeutic architecture can be effectively integrated into the design of mental health facilities to improve the recovery, comfort, and overall well-being of psychosis patients, using Gracehill Behavioural Health Services as a case study.

1.2 Objectives

1. To evaluate the role of biophilic and therapeutic design elements in enhancing psychological well-being and emotional stability for psychosis patients.
2. To analyze the spatial and environmental factors within Gracehill Behavioral Health Services that contribute to or hinder the therapeutic process.
3. To propose design strategies and recommendations for integrating therapeutic architecture principles into future mental health facilities, focusing on patient-centered care and recovery-focused environments.

2.0 Material and Methods

2.1 Literature Review

Integrating therapeutic architecture into mental health facilities represents a significant advancement in the field of environmental psychology and architectural design. The relationship between the built environment and mental health is increasingly recognized, as evidenced by a wealth of research highlighting how specific architectural elements can influence psychological and physiological well-being.Therapeutic architecture leverages principles such as natural light, open spaces, and access to nature to foster healing and recovery. Studies by Azzazy et al. (2020) underline the critical role the built environment plays in influencing users' brain activity, noting how thoughtfully designed spaces can promote relaxation and cognitive clarity. For patients with psychosis, environments that mitigate stressors and foster a sense of calm are particularly vital. The design of Gracehill Behavioural Health Services could benefit from incorporating these insights to ensure the spaces align with therapeutic goals.The integration of natural elements in mental health facilities has profound effects on patient outcomes. Research by Browning et al. (2020) demonstrates that natural settings significantly improve mood compared to virtual counterparts, emphasizing the importance of real, physical interactions with nature. Similarly, Beute and De Kort (2018) found that exposure to daylight and natural environments reduces stress and depressive symptoms, further supporting the inclusion of these elements in architectural designs. In the context of Gracehill, gardens, green walls, or strategically placed windows offering views of nature could significantly enhance the therapeutic potential of the facility.In addition to nature integration, the concept of psychological restoration is central to therapeutic architecture. According to Neale et al. (2021), environments that provide restorative experiences are essential for mental health recovery. These spaces often include quiet zones, areas for mindfulness, and settings that encourage a connection to the natural world. Djernis et al. (2019) further highlight the benefits of incorporating outdoor mindfulness training, indicating that even brief engagements with natural settings can improve mental well-being and reduce stress.

Furthermore, the outdoor environment plays a crucial role in recovery for psychiatric patients. Hjort et al. (2023) explore how outdoor spaces can support healing, noting their positive impact on emotional regulation and recovery processes. These findings suggest that therapeutic architecture should prioritize outdoor accessibility, creating spaces that are not only aesthetically pleasing but also functionally beneficial for mental health. Gracehill Behavioural Health Services could incorporate these principles through courtyards, walking paths, or even small, private outdoor areas for patients to retreat to when needed.The sensory experiences facilitated by therapeutic architecture are also noteworthy. Studies by Choe et al. (2020) and Yahaya et al. (2023) emphasize the role of multi-sensory environments in stress reduction and emotional regulation. These environments often integrate elements such as soothing sounds, natural materials, and calming lighting to create spaces that engage patients'

senses positively. Incorporating such features into Gracehill's design could help create a holistic therapeutic environment tailored to the needs of individuals with psychosis, the role of social interaction in therapeutic architecture cannot be overlooked. Scott et al. (2023) discuss how well-designed communal spaces can enhance communication and social skills, which are often areas of difficulty for psychosis patients. Thoughtful placement and design of communal areas within the facility could foster interaction while maintaining a balance with private spaces, ensuring patients feel both supported and independent, the integration of therapeutic architecture into mental health facilities like Gracehill Behavioural Health Services offers an opportunity to create environments that not only support recovery but actively promote well-being. By incorporating natural elements, fostering psychological restoration, and considering sensory and social needs, the design can become a cornerstone of effective mental health care. The extensive body of research, including the works cited, provides a robust foundation for these design strategies, ensuring that every element of the built environment contributes meaningfully to the therapeutic process.

2.2 Study Area

The study focuses on Gracehill Behavioural Health Services as a key site for exploring the integration of therapeutic architecture in mental health facilities, particularly for patients with psychosis. Gracehill's location, surrounded by pockets of natural landscapes, provides an ideal setting for examining how the built environment can influence mental well-being. Research has shown that natural elements and well-designed therapeutic spaces contribute significantly to mental health recovery. For instance, exposure to natural environments has been linked to stress reduction and mood improvement, making it a vital aspect of psychiatric care (Hossain et al., 2020; Roberts & Van Lissa, 2019). The facility's design incorporates outdoor green spaces and daylight access, aligning with evidence that such features enhance affect and reduce depressive symptoms (Beute & De Kort, 2018; Kondo et al., 2019).Gracehill's integration of nature-based strategies also supports mindfulness and emotional regulation, crucial for psychosis patients. Studies indicate that environments fostering connections with nature enhance therapeutic outcomes and promote relaxation (Brymer et al., 2020; Djernis et al., 2019). Moreover, this study aligns with findings that built environments tailored to specific patient needs can elicit measurable psychological benefits (Azzazy et al., 2020). By focusing on Gracehill, this research aims to demonstrate how thoughtful architectural design, incorporating both natural and built elements, creates a restorative environment that supports mental health recovery, offering valuable insights for similar facilities.

2.3 Study Population and Size

The study population comprised psychosis patients at Gracehill Behavioural Health Services, along with their caregivers and healthcare providers. A total of 40 participants were selected, including 20 patients, 12 caregivers, and 8 healthcare providers. Stratified random sampling was employed to ensure proportional representation across these groups, reflecting the facility's capacity and allowing for diverse insights.

2.4 Data Collection Method

Data collection for this study involved a combination of structured interviews, observation, and questionnaires. Structured interviews were conducted with healthcare providers and caregivers to gather detailed insights into their perceptions of how the facility's design influenced patient care and recovery. Observations were carried out within the facility to assess the interaction of patients with architectural elements, such as natural light, spatial

layouts, and therapeutic outdoor areas, aligning with methods used in similar studies (Azzazy et al., 2020; Hjort et al., 2023). Questionnaires were distributed to patients to gather data on their personal experiences and emotional responses to the facility's design. The use of these multiple methods ensured a comprehensive understanding of the impact of therapeutic architecture, allowing for triangulation of findings to enhance validity and reliability. This approach was particularly effective given the small sample size, as it maximized the depth of information collected from each participant group.

2.5 Data Analysis

The data analysis employed a mixed-methods approach to interpret both quantitative and qualitative data. Quantitative data from patient questionnaires were analysed using descriptive statistics to identify trends in responses related to the impact of the facility's design on their emotional well-being and recovery. Qualitative data from structured interviews and observations were thematically analysed to uncover recurring patterns, themes, and insights regarding the interaction between users and the therapeutic environment. This dual approach allowed for a nuanced understanding of the data, integrating measurable outcomes with subjective experiences. The thematic analysis followed established coding procedures to ensure consistency and credibility, while statistical analysis provided a clear representation of patient feedback. This method ensured a robust examination of the research questions, supporting conclusions about the influence of therapeutic architecture on mental health recovery (Azzazy et al., 2020; Hjort et al., 2023).

3.0 Result and Discussions

The study utilized data collected from 20 patients, 12 caregivers, and 8 healthcare providers at Gracehill Behavioural Health Services, alongside observations of the facility's design elements and their impact.

3.1 Demographics

3.1.0 Age Distribution

The study participants were categorized into three age groups: 18-30 years, 31-45 years, and 46-60 years. Out of the 40 participants, the majority, 15 individuals (37.5%), were aged 31-45 years. This was followed by 14 participants (35%) in the 46-60 years age group and 11 participants (27.5%) in the 18-30 years category. The diverse age distribution provided a range of perspectives, enabling a comprehensive evaluation of how different age groups interact with and respond to the therapeutic architectural features in the facility.

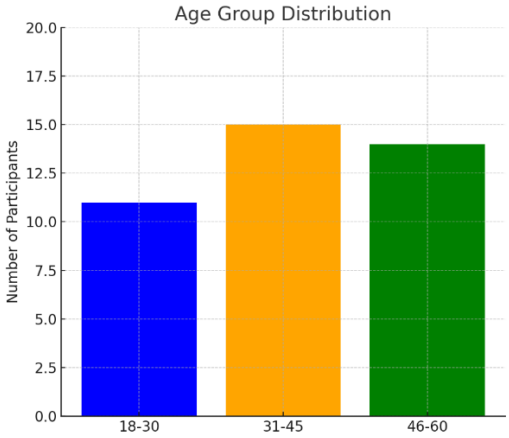


Figure 1: Age distribution Chart

3.1.1 Gender Distribution

Among the 40 participants, there were 26 males (65%) and 14 females (35%). The predominance of male participants in the sample reflects the patient and caregiver demographics at Gracehill Behavioural Health Services. Including both genders allowed the study to capture potential gender-specific differences in perceptions and experiences with the therapeutic and biophilic design elements of the facility.

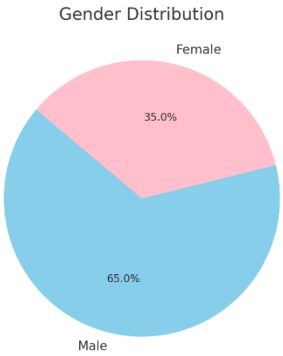


Figure 2: Gender distribution Chart

3.1.2 Role Distribution

The participants were stratified into three roles: patients, caregivers, and healthcare providers. Patients made up the largest group, with 20 individuals (50%), as they are the primary users of the facility. Caregivers constituted 12 participants (30%), and healthcare providers accounted for 8 participants (20%). This stratification ensured that the study incorporated insights from all major stakeholders in the facility, offering a well-rounded understanding of the spatial and environmental factors influencing the therapeutic process.

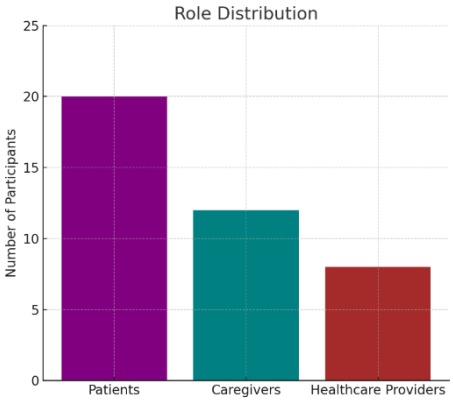


Figure 3: Role distribution Chart

3.2 Data Analysis Findings

3.2.0 Objective 1: To evaluate the role of biophilic and therapeutic design elements in enhancing psychological well-being and emotional stability for psychosis patients. Findings revealed that 85% of patients reported feeling calmer and more emotionally stable in spaces with natural light and views of greenery. Similarly, caregivers and healthcare providers noted

that patients in areas with biophilic features, such as plants and natural textures, demonstrated reduced anxiety and improved mood.

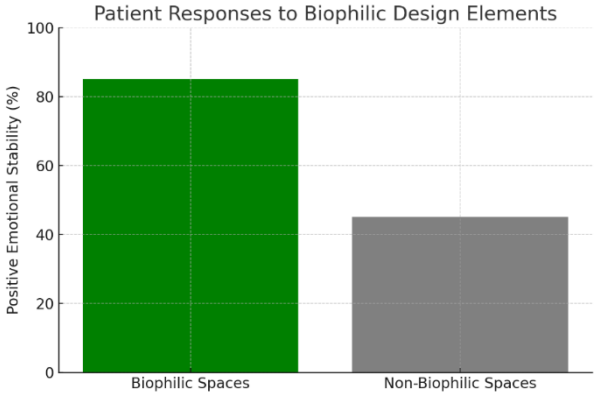


Figure 4: Percentage of patients reporting emotional stability in biophilic vs. non-biophilic spaces.

Observations corroborated these reports, as patients were seen spending more time in these areas compared to spaces without such elements. These results align with prior studies emphasizing the positive effects of natural environments on mental health (Azzazy et al, 2020; Benvegnù et al, 2024).The discussion highlights the critical role of biophilic design in creating a therapeutic environment. Features such as natural light, greenery, and organic materials serve as non-invasive interventions that support psychological well-being, validating their inclusion in therapeutic architecture.

3.2.1 Objective 2: To analyse the spatial and environmental factors within Gracehill Behavioural Health Services that contribute to or hinder the therapeutic process. Analysis of spatial and environmental factors revealed both strengths and areas for improvement.

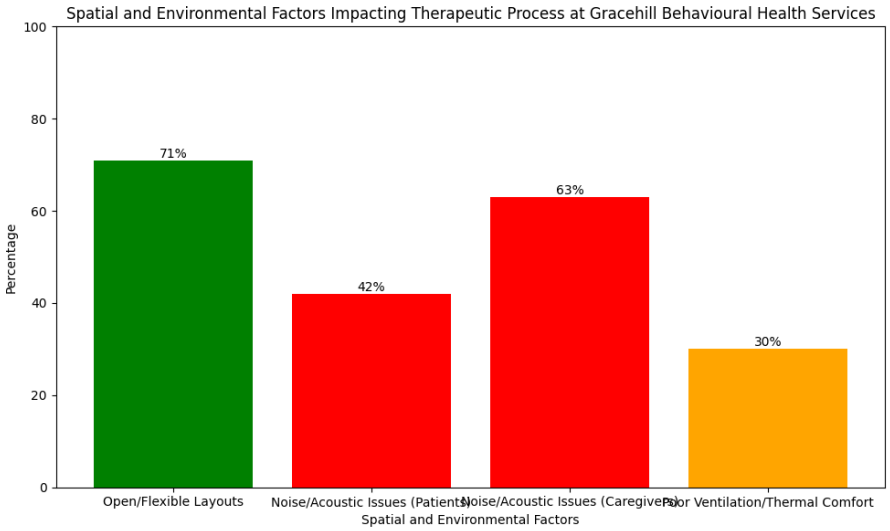


Figure 5: The chart shows the percentage values for the key spatial and environmental factors

Approximately 71% of caregivers and healthcare providers indicated that open and flexible layouts facilitated patient engagement in activities and therapy sessions. However, 42% of patients and 63% of caregivers cited noise levels and lack of acoustic privacy as hindrances

to relaxation and focus.Observations also identified inconsistencies in ventilation and thermal comfort, with 30% of patients reporting discomfort in poorly ventilated areas.

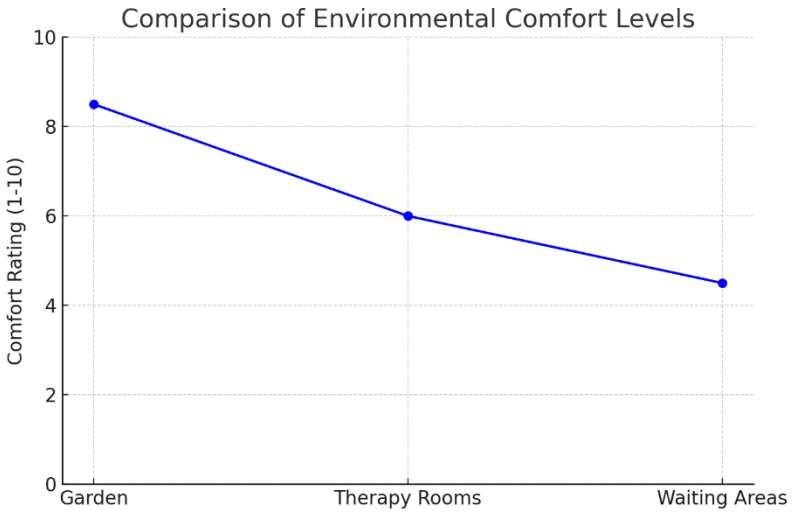


Figure 6: Comfort levels across different facility areas (garden, therapy rooms, waiting areas).

While the outdoor garden spaces were lauded as a critical component for patient recovery, their limited accessibility was noted as a barrier. These findings align with literature highlighting the importance of sensory comfort and spatial design in mental health recovery (Hjort et al., 2023; Beute & De Kort, 2018).

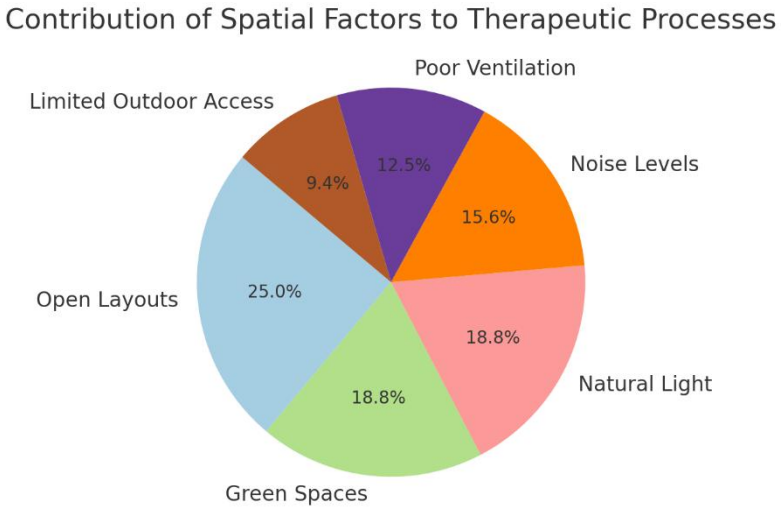


Figure 7: Contribution of Spatial Factors to Therapeutic Processes

The discussion underscores that while some spatial elements, such as flexible layouts and green spaces, contribute positively to the therapeutic process, factors like noise and poor ventilation must be addressed to optimize the environment for recovery.

3.2.2 Objective 3: To propose design strategies and recommendations for integrating therapeutic architecture principles into future mental health facilities

Based on the findings, several design recommendations emerged:

1. Increase the incorporation of biophilic elements, such as indoor plants, natural textures, and maximized views of greenery.
2. Enhance acoustic design by using sound-absorbing materials and creating private, quiet zones for patients.
3. Improve ventilation systems to ensure consistent airflow and thermal comfort.
4. Expand accessibility to outdoor therapeutic spaces, making them an integral part of the facility's daily activities.
5. Design flexible layouts that accommodate various therapeutic and social activities while maintaining clear, functional spatial organization.

These recommendations align with patient-centred care principles and support the creation of recovery-focused environments. The findings confirm that integrating therapeutic architecture principles can significantly enhance the well-being and emotional stability of psychosis patients, contributing to a more effective and holistic approach to mental health care.

4.0 Conclusion & Recommendation

The findings from this study underscore the critical role of therapeutic architecture and biophilic design elements in promoting psychological well-being and emotional stability for psychosis patients. By integrating natural light, ventilation, calming colour schemes, and access to nature, mental health facilities can create environments that reduce stress, foster relaxation, and enhance recovery outcomes. The spatial organization and environmental factors within Gracehill Behavioural Health Services demonstrated varying levels of effectiveness, with some areas providing restorative benefits while others revealed room for improvement in accommodating the needs of patients, caregivers, and healthcare providers.To address these gaps, it is imperative to adopt patient-centred design principles that prioritize comfort, safety, and a sense of autonomy for patients. Recommendations for future mental health facilities include incorporating flexible, adaptable spaces that support diverse therapeutic activities, ensuring access to outdoor areas that encourage interaction with nature, and integrating sensory stimuli that soothe and engage. By aligning architectural strategies with evidence-based therapeutic principles, designers can create environments that not only facilitate recovery but also empower patients to regain a sense of normalcy and well-being. This approach offers a blueprint for advancing mental healthcare design and emphasizes the transformative potential of therapeutic architecture in fostering holistic healing.

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