



# Application of Architecture as a Therapeutic Tool: Design Solutions for Residential Addiction Treatment Camps Based on Environmental Psychology Principles to Enhance Motivation for Quitting

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## Abstract

Based on scientific evidence, addiction is a recognized disease that primarily damages the human brain and disrupts its communication system. This disease is considered a mental disorder due to the individual's departure from normal states and lack of control. Today, the architecture of most residential camps is not compatible with the mental and psychological conditions of patients, and these centers generally have a change of use, meaning that the physical space of the camp belonged to a space with another use in the past. The architectural and specific design of addiction residential camps, considering the mental and psychological states of addicted patients and establishing a link between addiction psychology and environmental psychology, can increase the motivation for quitting in addicts. Attention to the characteristics of light, form, color, ventilation, visual appeal, and view in camp spaces plays a significant role in creating motivation in addicts and improving their conditions. Previous researchers have focused more on the superficial and physical concepts and aspects of addiction treatment; therefore, it can be claimed that this article is the first time to establish a connection between addiction psychology and environmental psychology and the use of architectural creativity in the design of camp spaces. This research also aims to change the approach to the architectural design of camps based on the establishment of a link between addiction psychology and environmental and human psychology. The type of research is qualitative, and its data collection is based on library-field studies (questionnaire) and interviews with experts and camp survivors. The results show that harmony between addiction psychology and the environment in the architectural design of addiction treatment camps can create creative and innovative spaces that improve the quality of treatment spaces and motivate patients in the path of quitting and treatment.

**Keywords:** Psychology of Addiction - Motivation - Recovery - Addiction Residential Camps - Environmental Psychology.

## 1- Introduction

Addiction, a complex and devastating disease, has emerged as a global challenge in today's world. This vicious cycle not only jeopardizes the health of the addicted individual but also hinders their ability to regain independence and manage their lives without substance abuse. Overcoming addiction and achieving complete recovery necessitates assistance beyond personal capabilities and willpower. Addiction recovery is a community-centric process that requires mutual support between the individual and society, along with continuous encouragement from the community to quit. The scarcity of adequate addiction treatment facilities and the lack of specialized centers equipped to effectively treat and rehabilitate addicts pose a significant challenge, particularly among adolescents and young adults who are more vulnerable to addiction. Notably, many existing addiction treatment camps primarily focus on initial medical treatments and often lack the necessary standards to provide an encouraging and supportive environment for recovery. In response to these challenges, this research aims to propose innovative and creative architectural approaches to designing spaces that not only address the physical and medical needs of addicts but also create

pleasant and encouraging environments to help them embark on the path to recovery with greater motivation and hope. Additionally, this study delves into the connection between addiction psychology and environmental psychology, seeking to enhance the quality of treatment spaces and contribute to improving the mental health and overall well-being of addicts. Furthermore, this research aims to elevate the motivation of addicts to quit through architectural design solutions for addiction residential camps. The underlying belief of this study is that architectural design strategies for addiction residential camps, influenced by environmental psychology principles, can directly impact the motivation of addicts to quit. These strategies focus on creating spaces where light, color, form, size, visual appeal, and other architectural elements are employed in a manner that facilitates the healing and rehabilitation of patients.

## 2- Literature review

Several studies have been conducted in the field of this study, including "Developing a strategy for designing light in drug addiction centers". This paper provided a comprehensive framework for lighting (natural and artificial) in addiction treatment centers, considering the needs and well-being of patients. Using literature reviews,

case studies, and interviews with experts, the authors investigated the factors affecting lighting design and the importance of considering various factors such as activity type, level of privacy, and patients' sensory needs when designing lighting in these centers. This study showed that lighting can play a significant role in creating a calming, supportive, and motivating environment for patients [1]. Another study, titled "Therapeutic Efficacy of Environmental Enrichment for Substance Use Disorders," examined the effectiveness of environmental enrichment (EE) as a valuable behavioral intervention in the treatment of substance use disorders. This paper emphasized the key principles of the environmental enrichment principle, including physical activities, social interactions, privacy, sensory diversity, and exploration opportunities. The study revealed that environmental enrichment, focusing on designing calming interiors and providing a wide range of therapeutic and recreational activities, can help increase motivation for treatment and improve mental health in addicts [2]. Another study, titled "Toward a Sustainable Design of the Rehabilitation Centers for Addiction," argues that the process of incorporating sustainability, both environmentally and psychologically, is essential in the design of addiction treatment centers. This paper has used a two-step approach to applying sustainable design principles: identifying design requirements and implementing them in the design process. The study identifies design requirements from international guidelines and patient needs studies to enhance patient engagement with the environment, improve care services, and treatment outcomes. Environmental sustainability involves the interaction between patients and surrounding spaces, demonstrating that the design of outdoor or indoor spaces surrounding the patient has significant impacts on the patient's recovery status. The authors further emphasize that spaces should be designed to encourage patients to interact with their surroundings. This can be achieved through the use of elements such as natural light, ventilation, green spaces, natural materials, sensory-focused design, and creating a safe and supportive environment. The findings of this paper can assist architects, designers, and addiction treatment center managers in creating spaces that contribute to the recovery process of patients with addiction and increase their motivation to continue on the path to recovery [3]. Therefore, it can be claimed that despite the numerous studies conducted in the field of addiction residential camp design, this paper is the first-time deals with establishing a connection between addiction psychology, environmental psychology, and human psychology to provide innovative and creative design solutions for these camps with the aim of increasing the motivation to quit among addicts.

### 3- Methodology

In this article, the library data collection method has been used using previous studies based on psychological science in the field of addiction and the role of residential camp design in the process of quitting. Also, in this research, semi-structured interviews with experts and specialists active in the matter of drug addiction were used to collect their experiences and views in this field. In addition, due to legal and ethical restrictions on visiting residential camps, the information obtained through field studies has been very limited and under strict supervision.

### Research Implementation Stages

1. Utilization of library information, review of existing documents and records, relevant journals and articles, and observation of related websites.
2. Formulation of hypotheses based on the theoretical framework and empirical background of the research.
3. Utilization of conducted interviews with experts and relevant officials, and collection of information based on the research's theoretical framework.
4. Highly limited and partial visits to residential camps.
5. Presentation of the obtained results and research findings, and their analysis using a comparative approach.
6. Presentation of proposals based on the research findings.

### 4- Discussion

Distinct and noticeable differences between domestic and international addiction treatment centers have been studied. Examined international examples: Synanone Recovery House, Phoenix Recovery House and Drug rehabilitation center in Southern California which are designed and implemented with an explicit and predetermined goal for addiction treatment, have standard and suitable spaces for psychotherapy and personal improvement. These centers deal well with the psychological issue of addiction and specialized spaces such as: prayer and relaxation spaces, service spaces, recreational spaces, educational spaces have been considered to improve the recovery process. In contrast, the examined domestic examples: Tosca Addiction Empowerment Center, Youth Rebirth Addiction Treatment Camp (Saman County) which have mainly emerged from the conversion of existing buildings, lack a standardized and suitable design for addiction treatment. These centers, often facing spatial limitations and a lack of design standards, have failed to effectively respond to the needs of their patients. The existing spaces in these centers are often of low quality and cannot provide a sense of security and comfort for individuals. In terms of design, foreign examples have carefully considered the importance of the psychotherapy process and hotel-like amenities, creating environments that are not only effective for addiction treatment but also allow individuals to return to society with a better spirit. On the other hand, domestic examples, due to their disregard for these principles, address addiction in a very limited and passive manner. Therefore, based on the analyses conducted and the limited visits to these centers, it is proposed that the design of domestic centers should be modeled after successful foreign examples. This approach can significantly contribute to enhancing the quality of domestic centers and improving the services provided to individuals with addiction. Creating specialized spaces for psychotherapy and focusing on spatial design that supports the spirit and well-being of individuals during and after treatment can lead to a reduction in relapse and a healthier return to society.

**In the examination of regulations, standards, and physical programs for addiction treatment centers:** the facility's spaces are divided into six diverse areas to meet the diverse needs of patients and staff, enhance efficiency, and improve the treatment process.

1. **Cultural and Spiritual Area:** This area, encompassing a library, amphitheater, addiction exhibition, and prayer room, provides opportunities for patient education and increased awareness of addiction and the recovery process. With a focus on spirituality and tranquility, this section fosters an environment where patients can actively engage in cultural activities and find self-belief and confidence through art and culture. Connecting with spirituality can help patients discover deeper inner peace and serenity on their journey of recovery, strengthening their spirit and mind, enabling them to face the challenges of addiction in a more positive and vibrant manner.

2. **Sports and Recreation Area:** By providing facilities such as a gym, swimming pool, sauna, and billiard room, this area creates a healthy and active environment for patients to strengthen their physical health and reduce stress. These amenities help patients achieve sustainable recovery through physical activity and provide a healthy alternative to unhealthy habits associated with addiction. Sports activities, as part of the recovery process, not only contribute to physical strengthening but also improve mental health and reduce dependence on drugs. This combination leads to increased self-confidence and self-sufficiency in patients as they acquire new skills and progress in a supportive environment.

3. **Administrative Area:** This area encompasses management, administrative offices, archives, admissions, discharges, and meeting rooms. It facilitates the administrative processes and organization of the center. The presence of such facilities ensures that all administrative and support tasks are carried out efficiently.

4. **Service and Facilities Area:** This area houses a restaurant, cafe, prayer room, restrooms, and technical facilities, catering to the daily and infrastructural needs of the center. This section facilitates access to essential services and maintains hygiene and welfare standards.

5. **Treatment Area:** The Treatment Area, encompassing detoxification, counseling, medical spaces, and convalescence facilities, plays a direct role in patients' recovery processes. Equipped with specialized equipment and staffed by qualified professionals, this area delivers effective and professional medical services.

6. **Educational and Occupational Therapy Area:** In addiction treatment centers, the educational and occupational therapy area plays a crucial role in the recovery process of patients. This area, by offering diverse workshops such as pottery, tailoring, carpentry, and music, provides opportunities for learning and developing new skills. These activities not only help patients develop skills that they can apply in their daily lives and the job market but also allow them to discover and express their creativity. Occupational therapy, as part of the treatment program, plays a crucial role in facilitating the addiction recovery process. This approach empowers patients to focus on improving their concentration, boosting their self-confidence, and strengthening their social interactions through practical and creative activities. Through these workshops, patients can embark on a journey of self-empowerment and regain their independence, which in turn, positively impacts their overall well-being. In addition to providing opportunities for learning new skills, this area, with its emphasis on occupational therapy, assists patients in reducing stress, managing emotions, and enhancing their motor skills through specialized techniques. The integration of these methods equips patients with the necessary tools to navigate the challenges of life after addiction and function more effectively in society. Ultimately, these regulations and standards are rooted in the enhancement of the quality of life and the recovery process for individuals with addictions. Attention to detail in each of these areas is paramount to ensure that every space is optimally designed and utilized.

**In interpreting the results related to organizational concepts and principles in architecture:** We must consider the profound and multifaceted impact of design elements on humans and their emotions. Elements such as color, light, water, ventilation, and form not only shape living environments but also directly influence the psychology and behavior of the occupants of those spaces.

1. **Color in Architecture:** Colors have the power to transform spaces. Choosing colors based on their psychological effects can help improve quality of life and increase productivity. For instance, the color blue can evoke a sense of calmness and is suitable for relaxation rooms, while the color red can add energy and dynamism to a workspace.

**Table1** Psychology of Primary Colors and Applications in Addiction Rehabilitation Centers

Psychological Effects of Addiction	Color	psychological effect of color	Application
Anxiety	Red	Anger-Anxiety-Disturbing	Not recommended
Fear			
Panic	Blue	Calming, Soothing, Orderly	Sports Area
Restlessness			Treatment Area (Counseling Space) Educational Area Cultural Area Service Area
Lack of motivation	Yellow	Spiritual and mental awareness  Positive energy  Hopefulness	Cultural Area
Lack of concentration			Treatment Area (Residential and Counseling Complex)  Educational Area  Service Area
Depression	Green	Spirituality- Positive energy- Healing	Treatment Area (Detoxification)
Social isolation			Prayer and Meditation Space

2. Light in Architecture: Light, both natural and artificial, has a significant impact on the perception of space and its functionality. Proper lighting can help increase accuracy, reduce fatigue, and generally improve working and living conditions.

3. Water in Architecture: Across diverse cultures, water has long been revered as a symbol of purity and

rejuvenation. Its incorporation into architectural design, whether through fountains, ponds, or even ornamental elements, can significantly contribute to fostering a sense of tranquility and serenity in both indoor and outdoor spaces.

4. Ventilation in Architecture: Access to fresh air and high indoor air quality are fundamental to maintaining the physical and mental well-being of individuals. Proper ventilation plays a crucial role in establishing a healthy and

pleasant indoor environment by reducing pollutants and regulating temperature.

5. Form in Architecture: forms serve as a powerful Language for expressing the architect's emotions and concepts. Each form possesses the ability to elicit distinct emotional responses and influence human behavior. For instance, circular forms typically evoke feelings of unity and gentleness, while angular forms can instill a sense of strength and stability.

When these elements are used correctly and according to the needs of users in the design of addiction treatment camps, they can create meaningful and sustainable experiences. Intelligent use of color, light, water, ventilation, and various forms can help create an environment that is not only soothing and calming, but also provides positive stimuli for behavioral change and recovery.

##### 5- Conclusion

This article has delved into the significance of aligning addiction psychology and environmental psychology within the architectural design of addiction treatment camps, emphasizing an interdisciplinary approach. By meticulously crafting six distinct areas within the camp, each section is meticulously designed to cater to the diverse needs of patients and staff, ultimately enhancing treatment efficacy. A particular focus is placed on incorporating occupational therapy and alleviating social isolation through the design of workshops. Additionally, addiction replacement techniques are implemented through the design of sports facilities and the cultivation of cultural and spiritual spaces aimed at elevating patients' knowledge and spiritual well-being. The utilization of water elements in landscaping and the application of colors in the camp's architectural spaces are considered as tools for stress reduction and fostering a sense of renewal. This article demonstrates that by employing creative and innovative architectural approaches, spaces can be created that not only address physical and medical needs but also accompany patients on their journey towards recovery with greater motivation and hope.

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