

CREATING A HEALING ENVIRONMENT: BEHAVIORAL ARCHITECTURE AT SIBOLANGIT DRUG REHABILITATION CENTER**Anastasya Putri Purba ^{*1}, Samsul Bahri ²***^{1,2}Departement of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Indonesia***Corresponding Author: anastasyaputripurbaa@gmail.com***Abstract**

The issue of drug abuse is a global concern with a significant prevalence in Indonesia. Therefore, designing a Drug Rehabilitation Center is essential to provide mental and spiritual healing for victims of substance abuse. A drug rehabilitation center is a crucial facility to support the recovery and rehabilitation of individuals trapped in drug abuse. The application of a behavioral architecture approach is highly relevant to creating an environment that effectively supports the rehabilitation process. This study examines the architectural design of the drug rehabilitation center in Sibolangit, North Sumatra, with a focus on integrating the principles of behavioral architecture. The main objective of this research is to design a space that not only meets physical needs but also facilitates positive behavioral changes in the residents.

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1. Introduction

The term "drugs" is an inappropriate term, because in the medical field, the term "dangerous drugs" actually refers to types of drugs that must be strictly regulated and should not be used carelessly without a doctor's supervision. Many types of narcotics and psychotropic drugs have significant benefits when used properly in medical practice. Medical procedures such as surgery require the use of anesthetics. Patients who experience stress or mental disorders are usually given psychotropic drugs by doctors to recover. Therefore, the anti-drug attitude must be adjusted to the appropriate context; what should be opposed is drug abuse, not drugs as a substance (Partodiharjo, 2003) [1].

Narcotics are substances and drugs prohibited due to their harmful effects on human health when consumed excessively. These substances are commonly used in medicine as painkillers, tranquilizers, and for other purposes. They are also notorious for their addictive properties, leading to dependency in users. Initially developed in England, these drugs spread to various regions in Asia, including China, Hong Kong, Japan, and Indonesia. Heroin and morphine, types of narcotics frequently imported or smuggled into Asian regions, including Indonesia, have drawn significant attention. Domestically, numerous groups are involved in the production of ecstasy, Lexotan, and marijuana.

The issue of drug abuse and addiction emerged with the discovery of morphine in 1805, initially used as an anesthetic but later expanded during the 19th-century wars and continues today[2]. Addressing drug abuse presents a complex challenge not only in Indonesia but also in many other countries. Indonesia is recognized as one of the largest drug markets in the ASEAN region, with primary sources originating from China and Thailand to meet high demand. Data indicates an annual increase in drug abuse cases in Indonesia. According to the Head of the National Narcotics Agency (BNN) Komjen Pol Petrus Reinhard Golose, a national survey during the Covid-19 pandemic recorded a 0.15% increase in drug use prevalence, reaching 1.95% or approximately 3.66 million people [3].

Narcotics pose an emergency situation in Indonesia, evident from data released by the National Narcotics Agency (BNN). Each day, approximately 50 people die due to drug abuse, totaling around 18,000 deaths annually, with 4.5 million people requiring rehabilitation[4].

Therefore, the role of rehabilitation in the healing process of narcotics addiction is crucial, especially given the significant increase in the number of addicts, ranging from children to adults. The effectiveness of rehabilitation is essential to help victims break free from narcotics dependency, as it is often challenging for them to do so independently. Narcotics users or addicts are, on one hand, perpetrators of criminal acts, but on the other hand, they are also victims. [5].

Drugs, Rehabilitation, Drug Rehabilitation Drugs

The term "Narkotika" in Indonesia derives from the Latin term "*narcotium*", which means anesthetic or sleeping medicine[6]. According to Article 1 of Law Number 22 of 1997 concerning Narcotics, substances or drugs originating from synthetic or semi-synthetic plants can induce altered or lowered consciousness, loss of sensation, reduction or elimination of pain, and potentially lead to dependency[7].

Rehabilitation

Rehabilitation refers to the process of restoring an individual to their original condition. The term "rehabilitation" itself is derived from the combination of "re," meaning back or again, and "habilitation," which refers to ability. Thus, rehabilitation can be interpreted as an effort to restore someone's abilities[8].

This rehabilitation action aims to repair or enhance the physical, mental, and social abilities of individuals affected by drug abuse[9]. Besides serving as a recovery effort, rehabilitation also functions as a step in the treatment and care of drug addicts, with the hope that they can recover from their addiction to narcotics.

Drug Rehabilitation

A drug rehabilitation center is a facility designed to provide knowledge and skills for individuals to distance themselves from narcotics. Victims of drug abuse are the focus of rehabilitation programs aimed at restoring or enhancing their social, mental, and physical capabilities. In addition to restoration, rehabilitation serves as treatment or therapy for drug addicts with the goal of helping them overcome their addiction to narcotics[10].

According to Republic of Indonesia Law No. 35 of 2009 concerning medical rehabilitation for addicts, abuse, and victims of narcotics abuse, two recognized types of rehabilitation exist:

- a) Medical Rehabilitation, a process involving integrated medical treatment aimed at freeing addicts from narcotics dependency.
- b) Social Rehabilitation, a comprehensive recovery process encompassing physical, mental, and social aspects to facilitate the reintegration of former narcotics addicts into societal functions [11].

2. Methodology

Literature Review: A literature review is a research component focused on gathering and analyzing information from relevant text and literature sources related to the research topic. It helps in understanding the theoretical foundations and previous research related to environmental conditions and the needs of rehabilitation patients.

Interviews: Interviews are utilized as a qualitative approach in this research. Through interviews, researchers can gain a deep understanding from the perspectives of rehabilitation experts and obtain their insights into specific patient needs and environmental factors influencing rehabilitation.

Field Survey: A field survey is a quantitative approach used to collect data directly from respondents in the field. In this context, a field survey may be employed to gather data on the physical environmental conditions and to systematically and representatively identify specific rehabilitation patient needs.

3. Result and Discussion

Interpretation of Theme

Behavioral architecture is architecture that consistently incorporates considerations of behavior in its design and application. Planning and designing architecture cannot be separated from human behavior because the goal of architecture planning and design is to accommodate human activities as its users [12].

The behavioral approach emphasizes the relationship between space and the society or individuals utilizing it. In this way, we recognize the importance of understanding human or societal behavior in utilizing space, which varies depending on place, time, and circumstances. According to this approach, space holds different meanings and values, depending on how closely people use it. In other words, this approach posits that various elements of societal norms, culture, and psychology will result in different concepts and forms of space (Rapoport, 1969)[13].

In the development of behavioral architecture design, it is essential to consider the principles highlighted by Carol Simon Weinstein and Thomas G. David in their book "Spaces for Children: The Built Environment and Child Development." These principles can be outlined as follows:

1. Architecture design should effectively interact with humans and the surrounding environment.
Proper design can be easily understood by users through their physical observation and perception of the building. Architectural forms should be fully comprehensible to users by meeting the following criteria:
a) Clearly conveying the building's function.
b) Demonstrating appropriate scale and proportion that can be appreciated.
c) Presenting building materials and structures in a way that users can appreciate.
2. Facilitating users effectively to provide comfort and satisfaction in their activities. Physical and psychological well-being of users should be a top priority, ensuring a pleasant experience.
3. Design should accommodate user conditions and behaviors accurately[14].

The theme to be used in the "Drug Rehabilitation Center" is Behavioral Architecture.

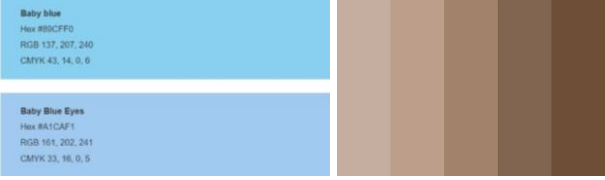



Architecture:







1. An environment designed to meet the needs of drug users, providing safety (security) and a space for socialization, ultimately facilitating their reintegration into society.
2. The ability to create a well-constructed area encompassing construction, aesthetics, and functionality.
3. Efforts to create a residence that fosters social interaction. [15].

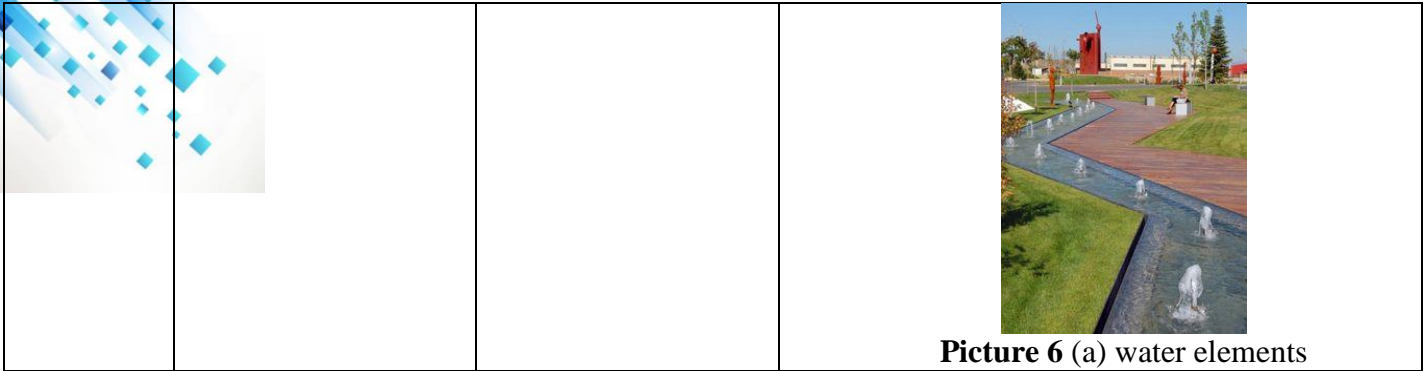
Based on data from the National Narcotics Agency (BNN), there are common behaviors exhibited by drug users during rehabilitation and withdrawal phases, namely:

- Dishonesty: They are often known as liars, willing to do anything to obtain the substances they use.
- Proximity to Criminal Activity: They tend to steal to get what they want and, in extreme cases, may even commit murder.
- Fondness for Violence: They enjoy violence and immoral acts, socializing freely without constraints.
- Lack of Empathy: They show no affection for others, with their only love being the drugs they use.
- Forgetting How to Relate: They forget or do not know how to befriend or communicate with family or friends.
- Boredom.

Table 1 Behavior and Design Solution

Behavioral	Analysis	Space Requirements	Design Solution
Depression	<ul style="list-style-type: none"> • Drawing closer to God • Receiving consultation 	<ul style="list-style-type: none"> • Prayer room / lecture room • Counselor's room 	<ul style="list-style-type: none"> • The colors used are those that impart a sense of calm and peace, such as light brown, gray, white, light green, and light blue.  <p>Picture 1 (a) Light blue color (b) Light Brown Color</p> <ul style="list-style-type: none"> • The room size should not be too small, preventing patients from feeling confined. However, the space should not be too large either, to avoid making patients feel overwhelmed. • Use warm and natural materials, such as wood, natural stone, and andesite.  <p>Picture 2 (a) Wood material (b) andesite stone</p>
Boredom	<ul style="list-style-type: none"> • Engaging in positive activities • Enhancing interest and talents 	<ul style="list-style-type: none"> • Music room • Computer room • Gardening Area • Sports Area • Painting Area • Knitting room • Audiovisual room 	<ul style="list-style-type: none"> • The rooms should not be completely enclosed; they should not consist entirely of solid walls. • The garden should be designed to be as attractive as possible so that patients feel more comfortable and inclined to socialize with their surroundings.  <p>(a) (b)</p>  <p>(c) (d)</p> <p>Picture 3 (a) music room (b) Computer room (c) Gardening Area (d) Sport Area</p>

<p>Self-harm</p>	<ul style="list-style-type: none"> Receiving consultation with a counselor, psychologist, and psychiatrist 	<ul style="list-style-type: none"> Counselor room Psychologist room Psychiatrist room Therapy room 	<ul style="list-style-type: none"> The materials used should not be sharp or hard, such as carpet and foam, to ensure they are not hazardous to patients <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: space-around;">   </div> <p>(a) (b) (c) (d)</p> <p>Picture 4 (a) Carpeted floor (b) Carpeted walls (c) Foam-covered walls (d) Foam-covered walls</p>
<p>Lack of empathy</p>	<ul style="list-style-type: none"> Fostering empathy through socialization 	<ul style="list-style-type: none"> Common room Gathering room Aula Therapy room 	<ul style="list-style-type: none"> A room with an intimate scale that fosters a sense of closeness and familiarity among individuals. <div style="display: flex; flex-direction: column; align-items: center;">  <p>(a)</p>  <p>(b)</p> </div> <p>Picture 5 (a) Gathering room (b) Aula</p>
<p>Proximity to criminals</p>	<ul style="list-style-type: none"> Drawing closer to God Receiving consultation 	<ul style="list-style-type: none"> Prayer room / lecture room Counselor room 	<ul style="list-style-type: none"> The colors used should create a sense of calm, warmth, and peace. Avoiding long corridors to prevent feelings of confinement. Using water elements and vegetation as dividers to promote a serene and natural environment, avoiding a sense of confinement.



Picture 6 (a) water elements

4. Conclusion

The establishment of the drug rehabilitation center in Sibolangit aims to reduce and alleviate the prevalence of drug use and abuse. By implementing appropriate principles of behavioral architecture, it is hoped that positive impacts will be extended to the surrounding community. This approach intends to prepare individuals undergoing rehabilitation to integrate successfully into society without facing negative stigma. Therefore, the rehabilitants will receive tailored training according to their interests and talents to enhance their skills and foster creativity.

Moreover, the facility is expected to provide a more comfortable environment for former drug addicts, distinguishing itself from typical hospitals by facilitating stress-free recovery through supportive architectural designs. This study offers new insights into how spatial design can serve as a tool to promote both mental and physical health, thereby reinforcing rehabilitation efforts within environments like the Sibolangit Drug Rehabilitation Center.

5. Acknowledgements

This study explores the behavioral architecture approach at the drug rehabilitation center in Sibolangit, serving as a facility dedicated to providing services related to drug abuse and addiction. These services include integrated recovery and development activities encompassing physical, mental, social, and spiritual aspects. The aim is to facilitate the recovery of addicts so they can reintegrate into society and fulfill social functions. The author expresses gratitude to the Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, and the professors who guided the research, as well as all parties involved in supporting the study and the design of the drug rehabilitation center.

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