

REHABILITATION CENTER FOR TEENAGE VICTIMS OF DRUG ABUSE BASED ON A THERAPEUTIC COMMUNITY (TC) IN BANTEN PROVINCE WITH A BEHAVIOR ARCHITECTURE APPROACH

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Abstract. The increasing number of drug abuse cases in Indonesia, particularly among teenagers, indicates that government prevention measures have not been fully effective, as many areas lack adequate rehabilitation centers. These centers are essential for helping victims recover from addiction and reintegrate into society, serving both rehabilitative and preventive functions. Banten Province has several rehabilitation centers, but not all meet the necessary standards. This underscores the need for a specialized Drug Rehabilitation Center focused on teenagers, who are the majority of drug addiction victims. This center will utilize the Therapeutic Community (TC) model, where rehabilitants engage in social rehabilitation activities within their communities, and employ a Behavioral Architecture approach, which responds to users and their environment. The planning and design of this center will involve the analysis of primary and secondary data through five aspects: functional, contextual, technical, performance, and architectural. The Behavioral Architecture approach aims to create spaces that support the physical and mental healing of teenage drug addicts while being responsive to their needs. The analysis results will guide the subsequent design process.

Keyword: *Rehabilitation, Drug Abuse Victims, Teenagers, Behavioral Architecture.*

INTRODUCTION

Adolescence is a transitional period or phase of transition that humans go through from childhood to adulthood. During this transition or adolescence, humans have a high curiosity about various things. This is certainly good for the development of

adolescents if they engage in positive activities, but it is also often worrisome if they try or even get caught up in negative things.

According to Demista (2010), adolescents have unique personal and emotional characteristics because they are in this stage

of development. Adolescent growth and development occur in three stages: early adolescence (ages 11-14), middle adolescence (ages 14-17), and late adolescence (ages 18-24). During adolescence, due to psychological instability, many young people often do things that their friends do to try out or follow trends/lifestyles. This can have negative impacts as it has the potential to cause permanent brain damage that is difficult to revert to normal and can affect decision-making, making adolescents vulnerable to risky behaviors such as drug use. According to available data, the majority of drug users are in the 15-24 age group, which includes adolescents^[1].

Drugs or narcotics and illegal drugs are substances or medicines, either scientifically, synthetically, or semi-synthetically, that can cause effects such as decreased consciousness, hallucinations, and increased stimuli for the user. These drugs can cause addiction if used excessively. The misuse of these drugs often results in negative effects^[2].

Drug abuse among adolescents is a serious problem in Indonesia. The causes are very complex and varied, but some factors such as high curiosity, peer pressure, and lack of parental supervision can indicate reasons for drug abuse among adolescents. Drug use can cause several issues, including changes in adolescent behavior, personality changes, and academic performance^[3].

The proliferation of drugs is caused by the numerous distribution routes to Indonesia, often via sea routes. On Java Island, the most significant drug entry routes are in Banten Province, DKI Jakarta, and West Java. According to the National Narcotics Agency, Banten is one of the areas at high risk of drug abuse due to these entry routes^[4]. Furthermore, Banten Province has many drug abuse victims. According to the

2022 Drugs Report, the number of drug abuse victims in Indonesia reached 43,320 people in 2021 and increased by almost 30% to 61,090 in 2022. In Banten Province, according to BNN Banten, there were 6,322 cases in 2021, rising to 8,842 in 2022. This number is very concerning, especially with 52% of drug abuse victims aged 11-24 years, 38% aged 25-49 years, and 10% aged 50-64 years^[5].

Efforts to handle and prevent drug abuse have been made by various parties, both government and private sectors. One way to address drug abuse is to rehabilitate drug users who are addicted to these substances. Drug rehabilitation aims to restore users so they can be free from drugs. This rehabilitation process requires considerable time, especially if the patient has been addicted for a long time. Rehabilitation requires a place where drug abuse victims can undergo rehabilitation and be directly monitored by experts. The drug rehabilitation process has several programs, one of which is the Therapeutic Community (TC).

Therapeutic Community (TC) is a method of rehabilitating drug abuse victims where people with similar problems and goals gather as a "family," leading to positive behavioral changes, namely freeing from drug dependence (Directorate General of Social Services and Rehabilitation, 2003). According to George DeLeon (National Institute on Drug Abuse, 1994), Therapeutic Community (TC) is a structure and hierarchy in a series of programs, requiring individuals to be isolated from external influences during treatment, requiring the treatment to be gradual and intensive, and including norms that will shape responsibility and habits. TC involves groups, and the motto is "only you can do it, but you can't do it alone." TC focuses on shaping attitudes, behaviors, and ways of

thinking. Therefore, involving patients or residents in TC will trigger self-esteem (self-respect & self-perception) that was previously low to become high because they are involved in the social interaction and organization that occurs within the TC, motivating them to prove themselves and make their lives more productive. To facilitate all interaction activities, buildings need to be designed in such a way that they support the needs for recovery and therapy^[6].

Behavioral changes and rehabilitation of victims can be supported by appropriate facilities, so in designing a rehabilitation center, Behavioral Architecture can be utilized to change and shape user behavior. Behavioral Architecture is an architectural concept that can influence or be influenced by human behavior patterns. This concept can bring about changes in human behavior.

The concept of behavioral architecture is very important to be applied in building design, especially in drug rehabilitation centers, which are places for the healing process for drug abuse victims, offering many therapeutic methods for treatment and recovery. Behavioral architecture has several approaches that can influence human behavior, including spatial psychology, size and shape, furniture and arrangement, color, sound, temperature, and lighting. Through these approaches, understanding and changing the behavior of drug addicts can be achieved with psychological approaches to reach recovery^[7].

In Banten Province, according to BNN Banten, there are already 6 drug rehabilitation centers, but there is no specialized rehabilitation center. Furthermore, the existing centers cannot accommodate all the rehabilitants. In 2022, they could only accommodate 62% of drug abuse victims. Moreover, the rehabilitation centers specifically for adolescent drug

abuse victims are located in the youth correctional facility in Tangerang. The drug rehabilitation victims are rehabilitated alongside criminals. Therefore, a specialized rehabilitation center for adolescent drug abuse victims is needed^[8].

Hence, there is a need for a rehabilitation center specifically for adolescents that can change their behavior to free them from drug addiction in Banten Province. Thus, a Rehabilitation Center for Adolescent Drug Abuse Victims Based on Therapeutic Community (TC) with a Behavioral Architecture Approach in Banten Province should be established.

METHODS

This Architectural Design Report uses a descriptive method by explaining, detailing, and describing the design requirements and conditions in planning and designing the Rehabilitation Center for Teenage Victims of Drug Abuse Based on a Therapeutic Community (TC) in Banten Province with a Behavioral Architecture Approach. From the existing requirements and conditions, it continues with collecting the necessary data for planning and design. Then, the existing data is analyzed and conclusions are drawn.

The conclusions from the discussion and analysis are in the form of basic concepts and considerations for building the Rehabilitation Center for Teenage Victims of Drug Abuse Based on a Therapeutic Community (TC) in Banten Province with a Behavioral Architecture Approach as a basis for designing the Final Architectural Project. Several steps are taken to create an Architectural Planning and Design Program related to planning and designing the Rehabilitation Center for Teenage Victims of Drug Abuse Based on a Therapeutic Community (TC) in Banten Province with a Behavioral Architecture Approach, namely: Determining Design Ideas, Conducting

Identification, Implementing Data Collection Procedures, Analyzing Data, and Creating a Synthesis or Design Concepts.

CONCEPT

Overview of Architectural Concept

Emphasis

This review serves as a basic reference to emphasize the architectural concepts influencing the Rehabilitation Center for Teenage Victims of Drug Abuse. According to the National Narcotics Agency, a Drug Rehabilitation Center is specifically dedicated to rehabilitating drug abuse victims. It serves as a functional facility that organizes and implements medical, social, and vocational efforts in healing. Based on the topic of planning and designing programs related to drug rehabilitation centers, the author chooses to emphasize Behavioral Architecture. This concept involves designing buildings that consider fundamental aspects related to human attitudes and responses to their environment. The aim is to create spaces and atmospheres that align with human behavior and cultural environments, thus shaping human behavior through the design itself.

Site Determination Criteria

The goal of designing the Drug Rehabilitation Center for Teenage Victims of Drug Abuse Based on Therapeutic Community in Banten Province with a Behavior Architecture Approach is to create a facility that accommodates teenage drug abuse victims, facilitating their recovery and reintegration into society while considering the environmental impact and potential of the site. Several criteria that must be met in selecting the site include:

1. Infrastructure Network or Urban Utilities: The site needs urban infrastructure such as electricity, wastewater disposal, and street lighting for operational support.

2. Site Accessibility: Easy access for private vehicles, public transport, and pedestrians, with good road quality and minimal traffic congestion, is essential.
3. Noise: The site should have low noise levels to ensure a conducive environment for rehabilitation activities.
4. View: The site should not be surrounded by tall buildings that obstruct the view of the rehabilitation center's facade.
5. Surrounding Environment: The site location should be in a strategic area close to community services and adjacent to residential areas.
6. Sufficient Land Area: Approximately 35,000 square meters of land is required to accommodate both rehabilitation and educational facilities for teenage victims of drug abuse.

Selected Sites



Figure 1 Selected Site

Location	: Jalan Raya Pandeglang-Serang, Sukajaya, Kec. Curug, Kota Serang Banten
Area	: ± 3,5 Ha
Function	: Drug Rehabilitation Center
KDB	: 70%
KLB	: 2.4
Max. Height	: 5-10 Floors
KDH	: 15%
GSB	: 15 m

Contextual Aspect Approach

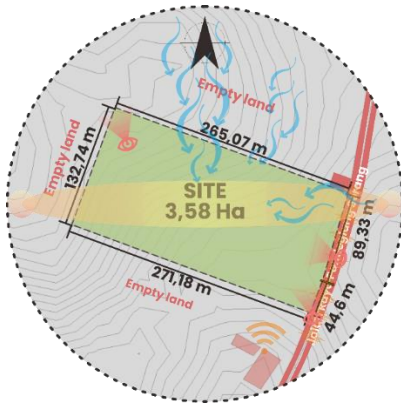


Figure 2 Site Analysis

1. Climatic: The design includes north-facing openings for natural ventilation, staggered masses to optimize airflow, glass openings with a secondary skin for natural light and reduced heat, and open spaces between buildings to mitigate direct sunlight exposure.
2. View to Site and Noise: The design incorporates restricted areas such as the rehabilitation center to minimize noise and control user access, and utilizes vegetation along the perimeter between the road and the site to further mitigate noise levels.
3. Accessibility: The site optimizes access with consolidated entrance and exit points on the eastern side, adjacent to the Pandeglang-Serang Highway, facilitating efficient circulation and monitoring at the Drug Rehabilitation Center, while strategically placing buildings to separate drug abuse victims from main accessibility areas.
4. Contour: With cut and fill, the site will be leveled to accommodate the construction of buildings and gardens. Accessibility will be enhanced with the addition of ramps and stairs.

Architectural Concept Approach

In designing the Drug Rehabilitation Center for Teenage Victims of Drug Abuse based on the Therapeutic Community, a Behavior

Architecture approach is used. Architecture and human behavior are closely related, making the design focus on the characteristics and needs of the users. Understanding the characteristics of drug users is essential to ensure that behavior-based architecture can aid in their healing process in terms of safety, comfort, and recovery. Here are the key characteristics and responses^[9]:

Table 1 Behavior and Architectural Response

Behavior	Architectural Response
Depression	<ul style="list-style-type: none"> • Colors used should promote peace and calm, such as brown, gray, white, light green, and light blue. • Room sizes should not be too small to avoid feelings of pressure, nor too large to prevent fear. • Use warm and natural materials like wood, natural stone, and andesite stone.
Easily Bored	<ul style="list-style-type: none"> • Spaces should not be entirely enclosed by solid walls. • Gardens should be designed as attractively as possible to make users feel comfortable and content while socializing. • Room layouts should be designed more dynamically.
Self-Harm	It's important to use materials that are not sharp or hard, and to reduce the angles in both the room and the furniture.

Lack of affection	Spaces using an intimate scale, where $1 < D/H < 2$, create a cozy atmosphere that fosters closeness and connection among individuals and their environment.
Close to criminal activities	<ul style="list-style-type: none"> • Avoid prison-like forms (create a familial environment), grouping in small numbers is better than larger groups. • Use small openings that do not resemble prison cells; incorporate geometric shapes like squares, circles, and triangles. • Integrate water elements and vegetation as barriers; water provides softness, and natural vegetation prevents a prison-like atmosphere.
Restless, anxious, and uncomfortable	<ul style="list-style-type: none"> • Natural and integrated with nature, realized through openings that directly connect to outdoor/green spaces. • Optimal lighting is crucial as it helps people orient themselves and can enhance mood. • Circulation should be straightforward with vegetation aiding orientation, using circulation types like linear and cluster.

The design aims to engage users' senses and imagination, integrating nature both inside and outside the building. The forms presented are intended to be fully comprehensible and accessible, fostering comfort both psychologically and physically. Achieving psychological comfort varies for each individual, but when attained, it promotes feelings of calm and happiness, influencing behavior positively. Physical comfort relates to thermal comfort, ensuring the environment maintains a suitable temperature conducive to well-being^[10].

DESIGN RESULT

Site Design

The types of roofs used in designing the Drug Rehabilitation Center for Teenage Victims of Drug Abuse Based on Therapeutic Community (TC) in Banten Province with a Behavior Architecture Approach are hip roofs (alderon) and flat roofs (pelana). These roof designs are responsive to the tropical climate of the surrounding area.



Figure 3 Situation

The site plan is designed using linear and cluster circulation, placing buildings according to their functions to create easier and more dynamic circulation. Additionally, due to the contoured site, two drawings are created: one with the original contour site plan and one with the modified contours.



Figure 4 Siteplan (Original Contour)

Processing the original contours involves cut and fill operations with varied leveling to suit the functions of the available land. Additionally, the use of stairs and ramps is crucial for circulation in areas with varying elevations.



Figure 5 Siteplan

Building Design

The building employs a multi-mass concept with different functions and designs tailored to its respective purposes. It is divided into seven main masses: Management Building, Medical Rehabilitation Building, Social Rehabilitation Building, Therapeutic Community (TC) Building, Sports Hall (GOR), School Building, and Dormitory Building.

1. Management Building.

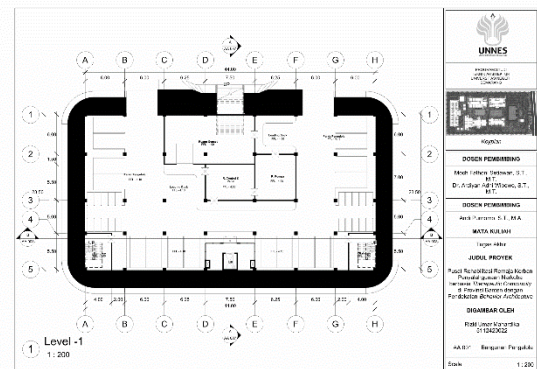


Figure 6 Management Building Floor Plan Level -1

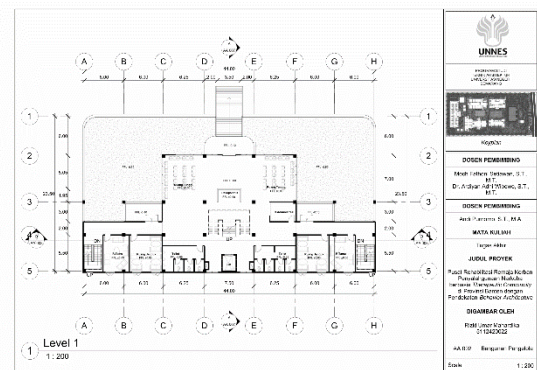


Figure 7 Management Building Floor Plan Level 1

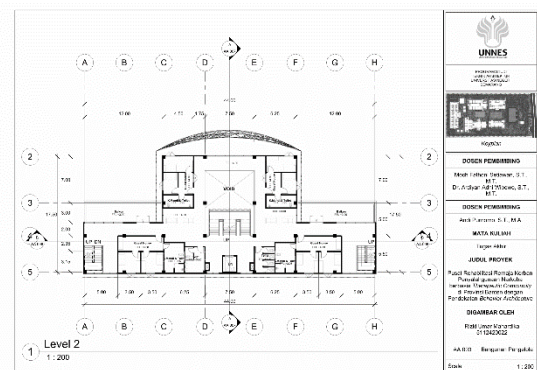


Figure 8 Management Building Floor Plan Level 2

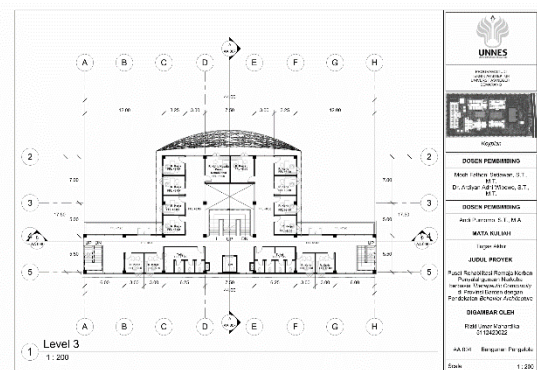


Figure 9 Management Building Floor Plan Level 3

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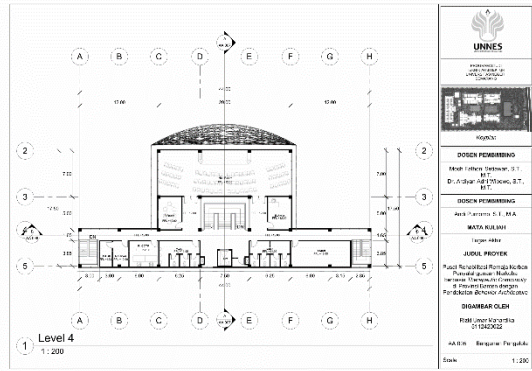


Figure 10 Management Building Floor Plan Level 5

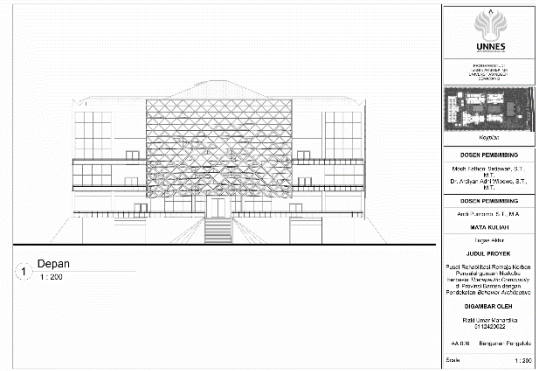


Figure 14 Management Building Front Elevation

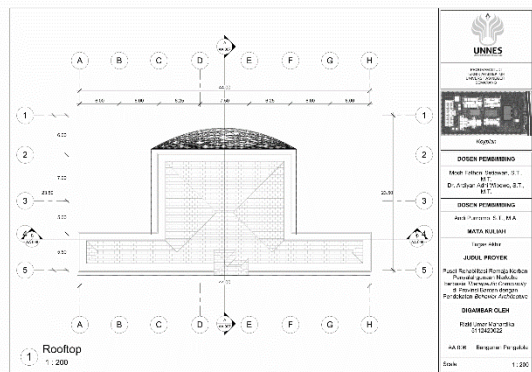


Figure 11 Management Building Floor Plan Level Rooftop

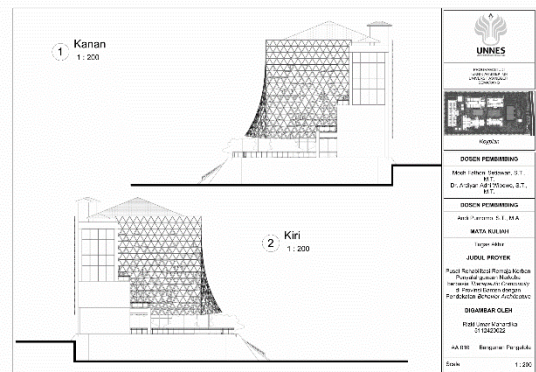


Figure 15 Management Building Left and Right Elevation

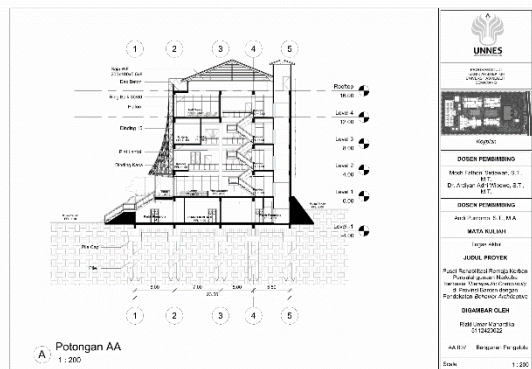


Figure 12 Management Building Section A-A

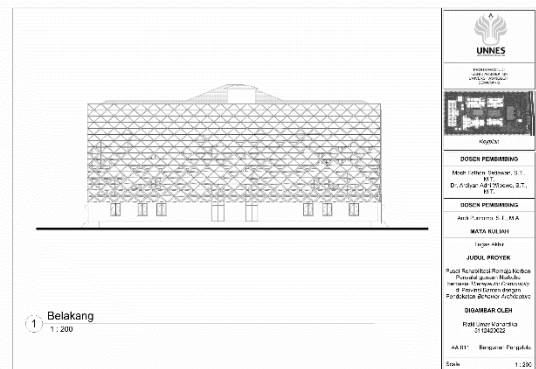


Figure 16 Management Building Back Elevation

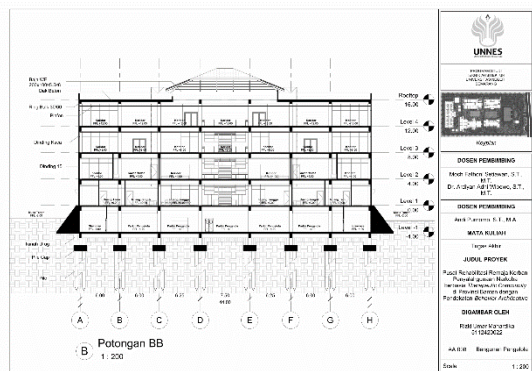


Figure 13 Management Building Section B-B

2. Medical Rehabilitation Building

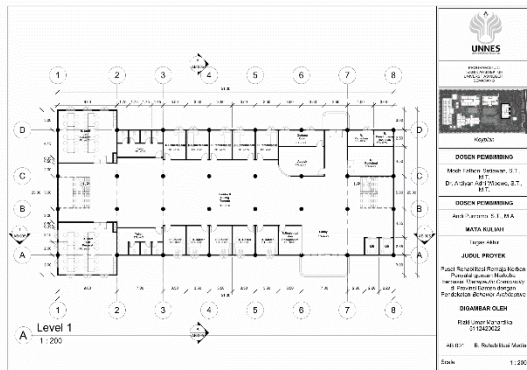


Figure 17 Medical Rehabilitation Building Level 1

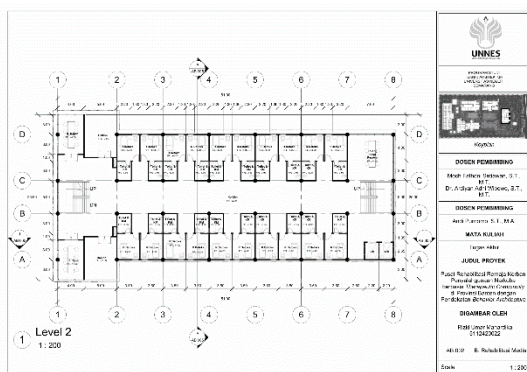


Figure 18 Medical Rehabilitation Building Level 2

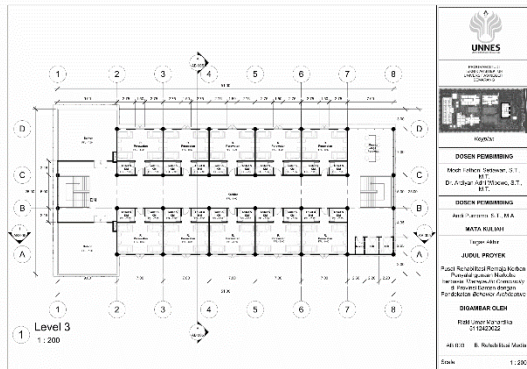


Figure 19 Medical Rehabilitation Building Level 3

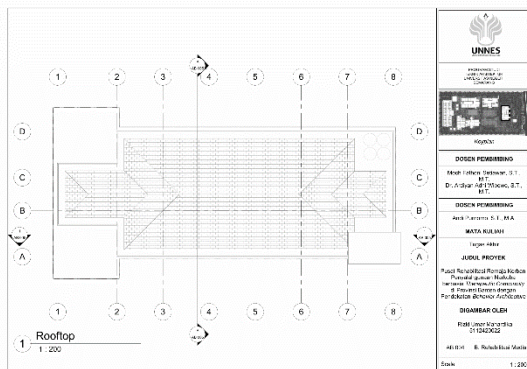


Figure 20 Medical Rehabilitation Building Rooftop

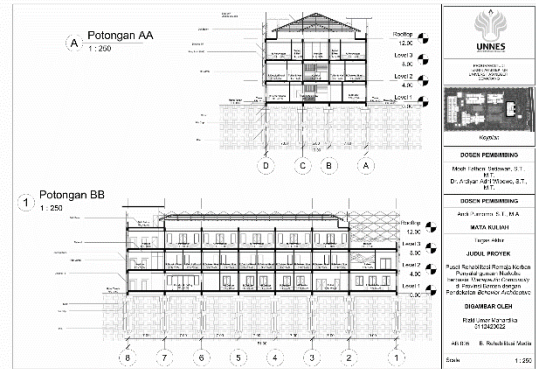


Figure 21 Medical Rehabilitation Building Section A-A and Section B-B

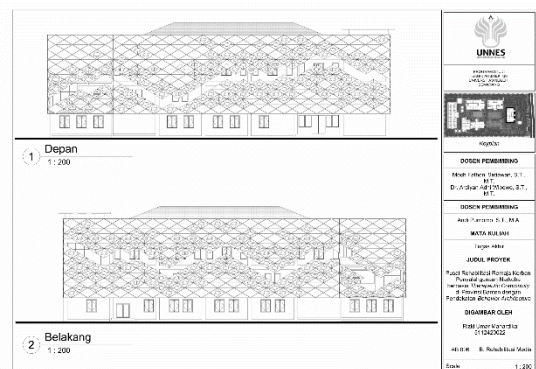


Figure 22 Medical Rehabilitation Building Front and Back Elevation

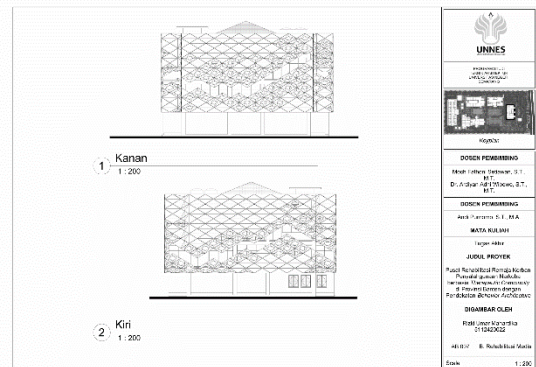


Figure 23 Medical Rehabilitation Building Left dan Right Elevation

3. Social Rehabilitation Building

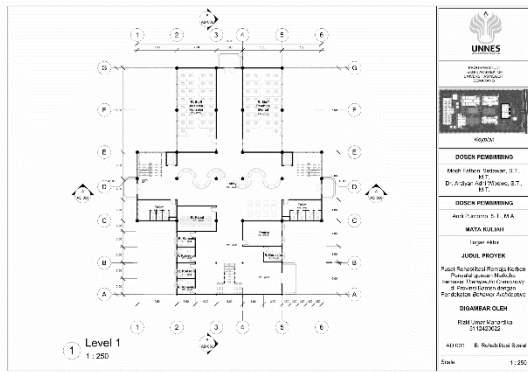


Figure 24 Social Rehabilitation Building Level 1

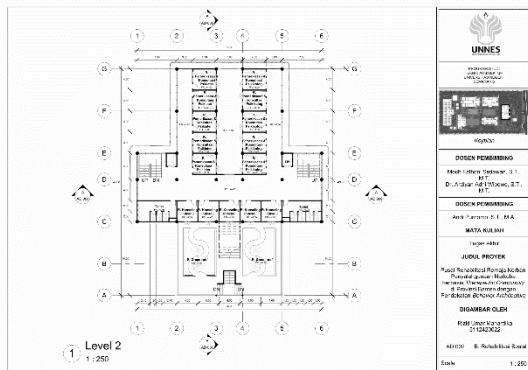


Figure 25 Social Rehabilitation Building Level 2

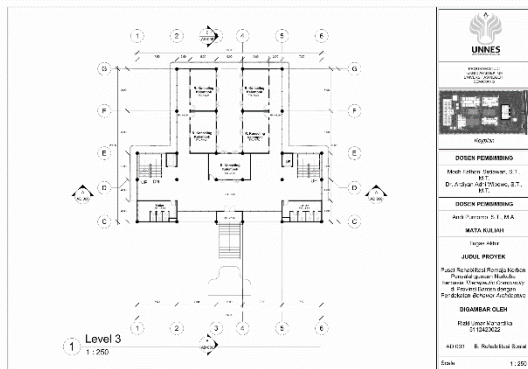


Figure 26 Social Rehabilitation Building Level 3

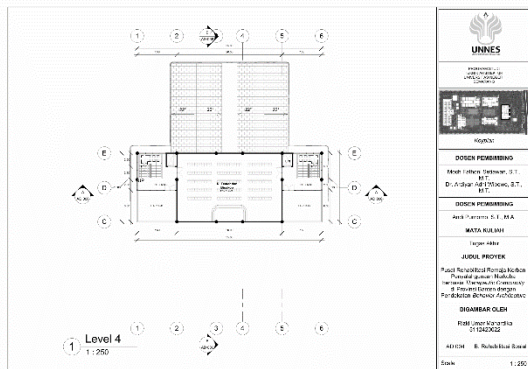


Figure 27 Social Rehabilitation Building Level 4

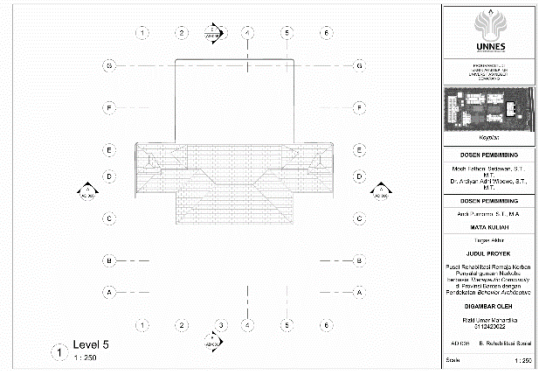


Figure 28 Social Rehabilitation Building Rooftop

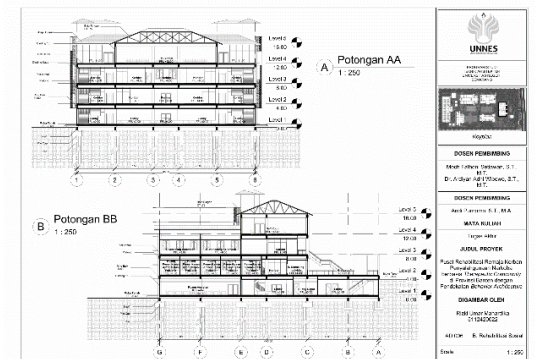


Figure 29 Social Rehabilitation Building Section A-A and Section B-B

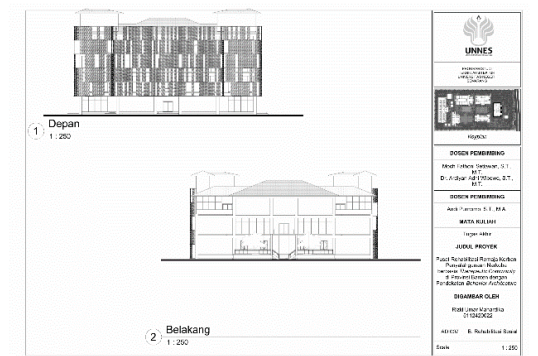


Figure 30 Social Rehabilitation Building Front and Back Elevation

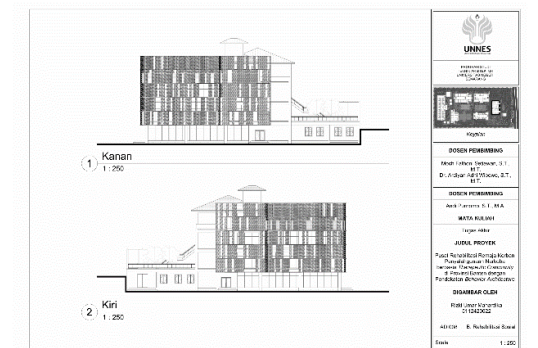


Figure 31 Social Rehabilitation Building Left and Right Elevation

4. Therapeutic Community (TC) Building

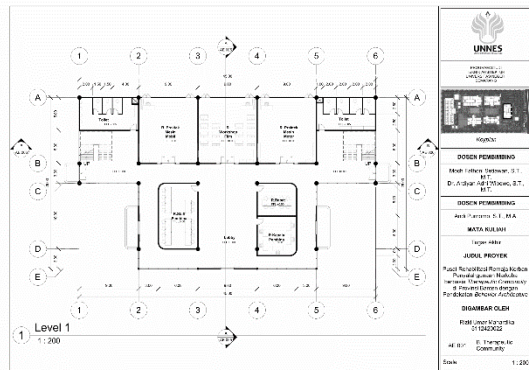


Figure 32 Therapeutic Community (TC) Building Level 1

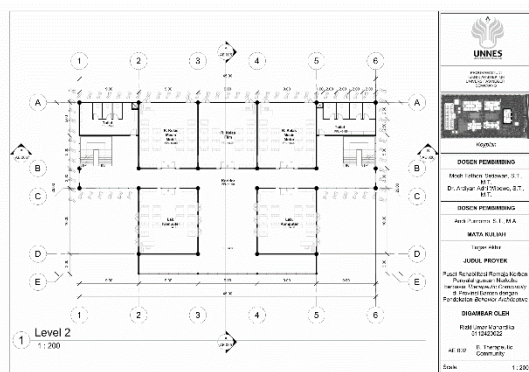


Figure 33 Therapeutic Community (TC) Building Level 2

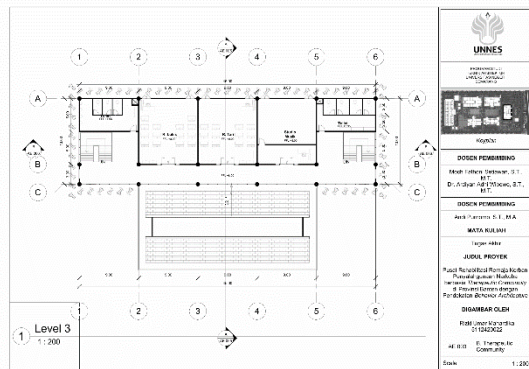


Figure 34 Therapeutic Community (TC) Building Level 3

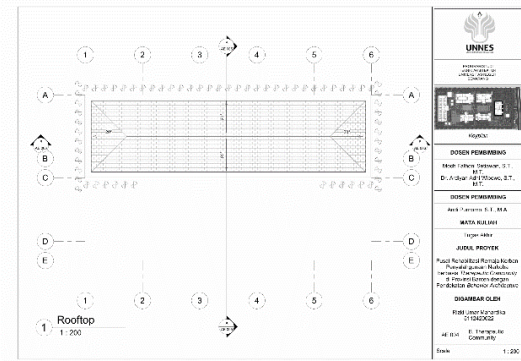


Figure 35 Therapeutic Community (TC) Building Rooftop

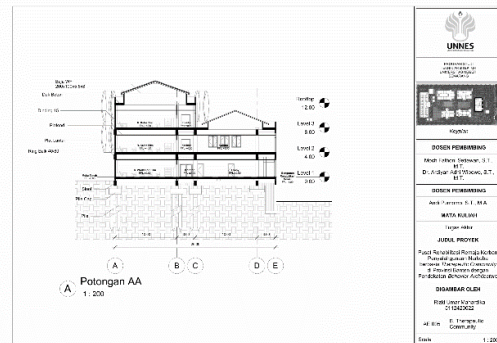


Figure 36 Therapeutic Community (TC) Building Section A-A

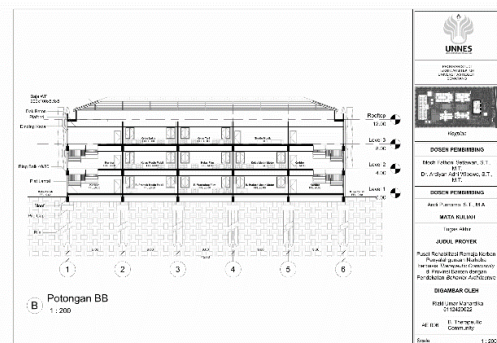


Figure 37 Therapeutic Community (TC) Building Section B-B

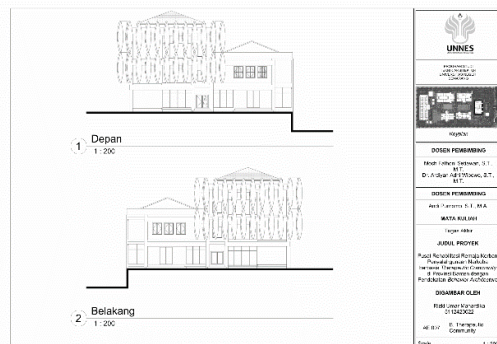


Figure 38 Therapeutic Community (TC) Building Front and Back Elevation

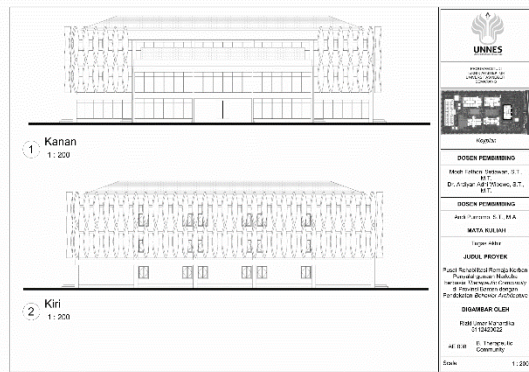


Figure 39 Therapeutic Community (TC) Building
Left and Right Elevation

5. Sports Hall

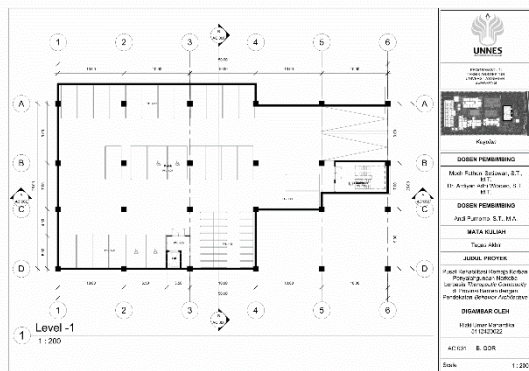


Figure 40 Sport Hall Level -1

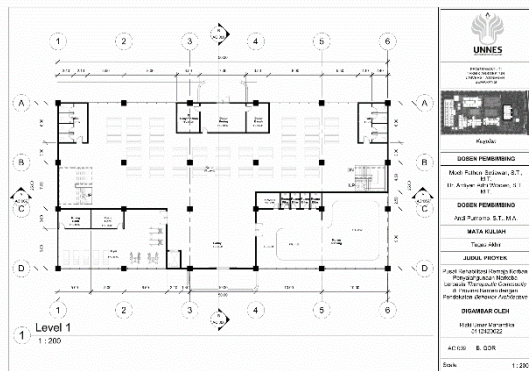


Figure 41 Sport Hall Level 1

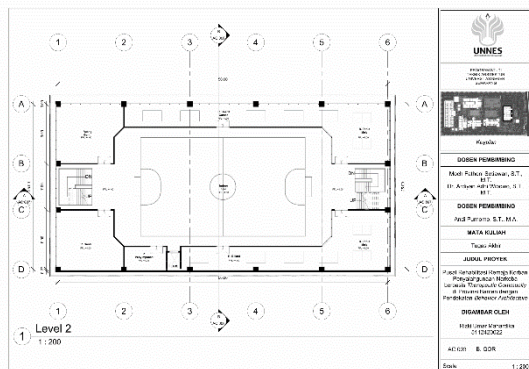


Figure 42 Sport Hall Level 2

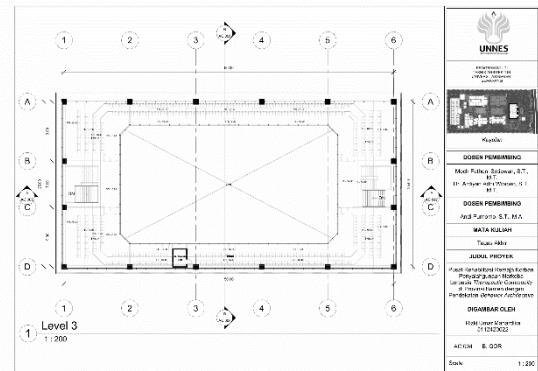


Figure 43 Sport Hall Level 3

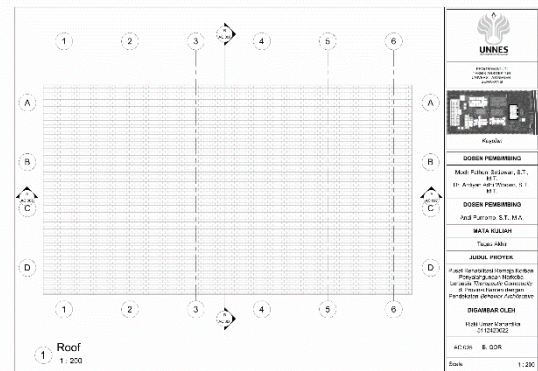


Figure 44 Sport Hall Roof

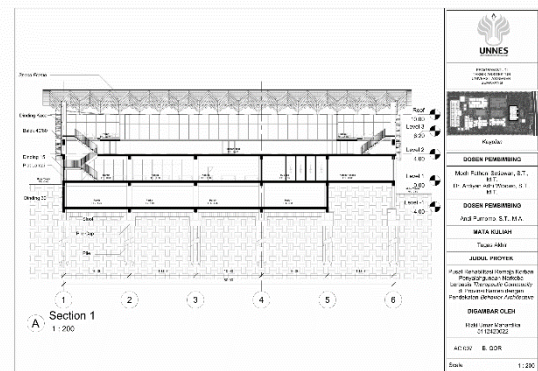


Figure 45 Sport Hall Section A-A

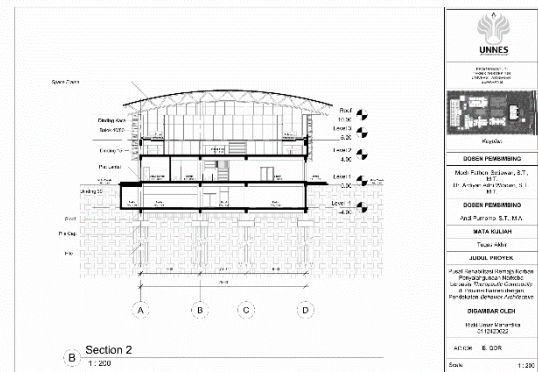


Figure 46 Sport Hall Section B-B

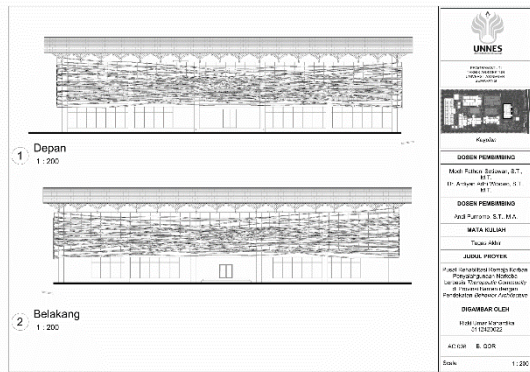


Figure 47 Sport Hall Front and Back Elevation

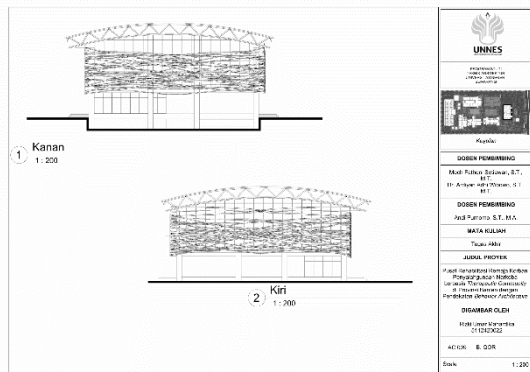


Figure 48 Sport Hall Left and Right Elevation

6. School Building

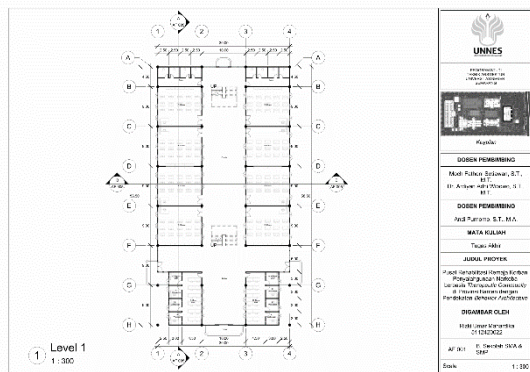


Figure 49 School Building Level 1

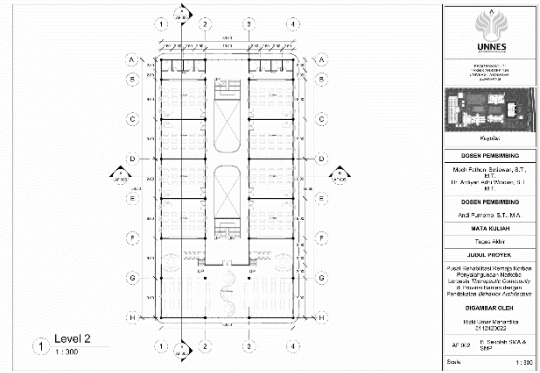


Figure 50 School Building Level 2

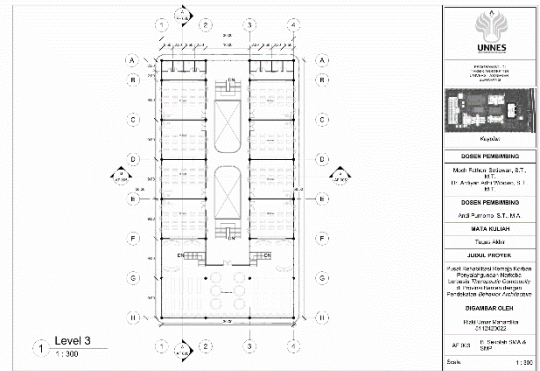


Figure 51 School Building Level 3

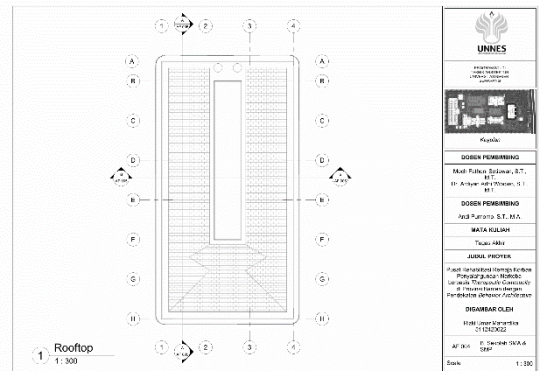


Figure 52 School Building Rooftop

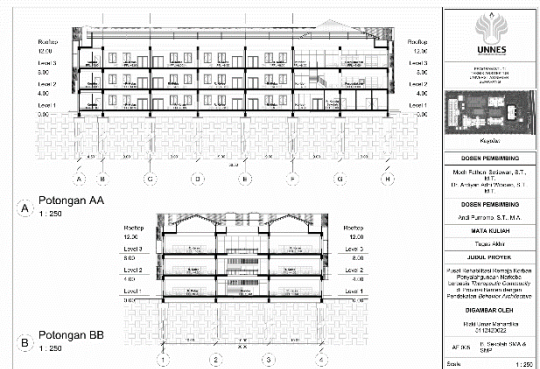


Figure 53 School Building Section A-A and Section B-B

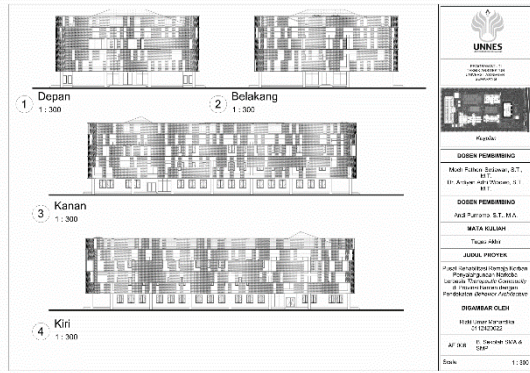


Figure 54 School Building Elevation

7. Dormitory Building

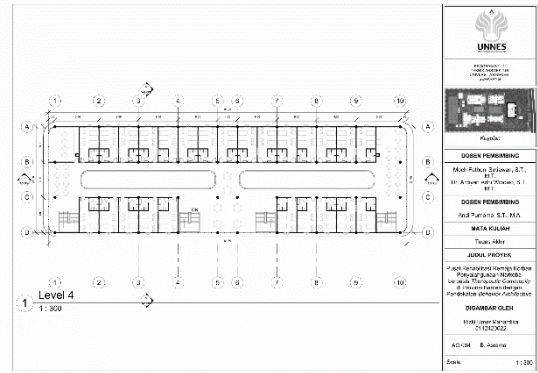


Figure 58 Dormitory Building Level 4

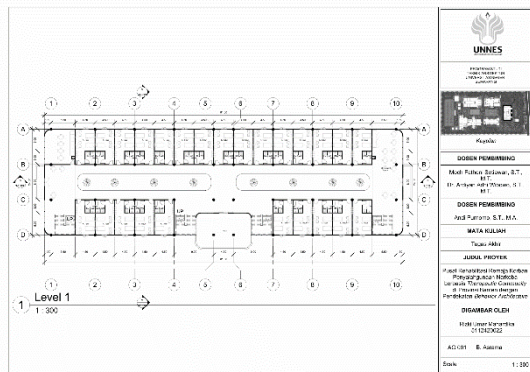


Figure 55 Dormitory Building Level 1

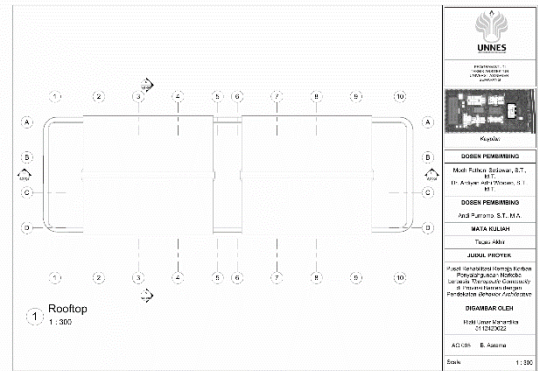


Figure 59 Dormitory Building Rooftop

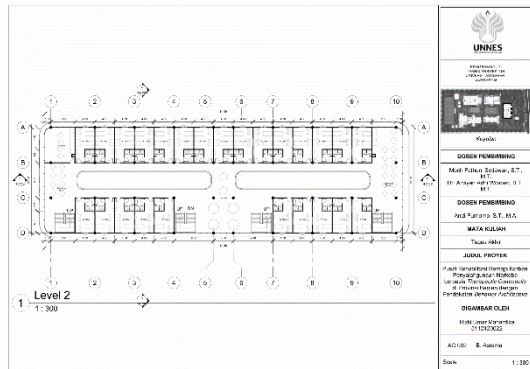
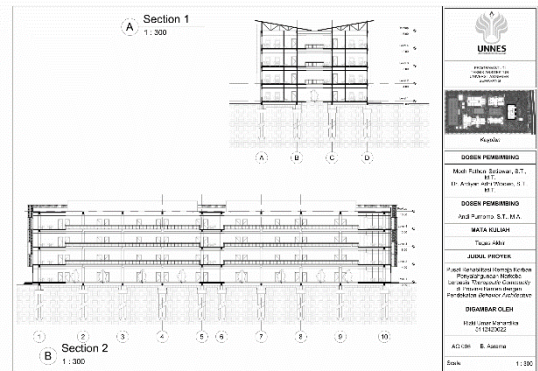


Figure 56 Dormitory Building Level 2



*Figure 60 Dormitory Building Section A-A and
Section B-B*

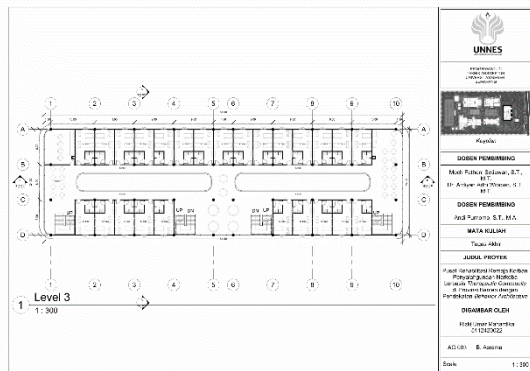


Figure 57 Dormitory Building Level 3

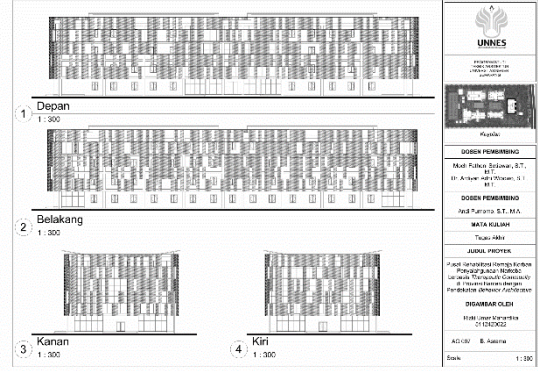


Figure 61 Dormitory Building Elevation

Outdoor and Indoor Space Design

Planning outdoor spaces should be oriented towards the concept of behavioral architecture, taking into account: Providing outdoor garden facilities used as communal spaces, allowing users to interact with others and support social activities, Providing outdoor sports facilities such as basketball courts or volleyball courts as recreational spaces for teenagers, Offering areas rich in morning sunlight, with clear boundaries between zones and bright-colored plants, Arranging vegetation combined with terrain contours to create an attractive landscape, Using smooth materials without rough textures for seating, Providing shaded areas in various spots, such as gazebos and seating under trees, Using water features and vegetation as boundaries



Figure 62 Outdoor 1



Figure 63 Outdoor 2



Figure 64 Outdoor 3



Figure 65 Outdoor 4



Figure 66 Outdoor 5



Figure 67 Outdoor 6

Similarly, the design of interior spaces is also oriented towards the behavior of rehabilitation center users. The interior design should provide comfort and security for both the rehabilitants and the staff, including the use of neutral and soft colors, natural materials like wood and stone, minimizing sharp angles on furniture, using fixed furniture, etc.

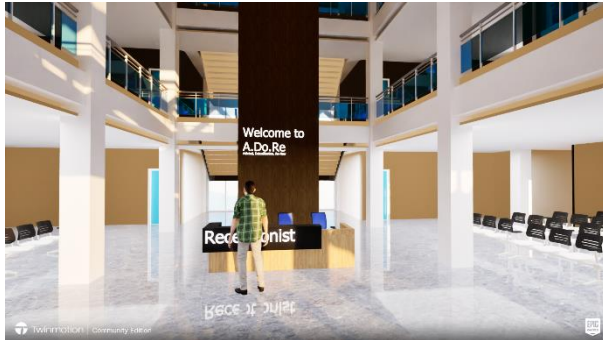


Figure 68 Lobby



Figure 69 Detoxification Room



Figure 70 Patient Treatment Room



Figure 71 Class Room

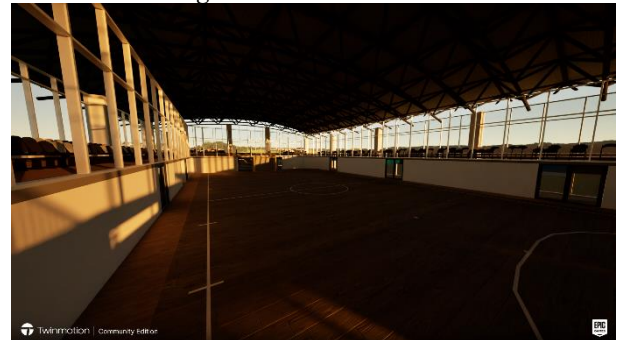


Figure 72 Indoor Field



Figure 73 Patient Treatment Room

CONCLUSION

The Rehabilitation Center for Teenage Victims of Drug Abuse based on Therapeutic Community (TC) in Banten Province with a Behavior Architecture approach is a specialized facility designed to address the challenges of adolescent drug addiction. It emphasizes the Therapeutic Community model alongside comprehensive medical and social rehabilitation efforts, integrating behavioral architecture principles to tailor the environment to the needs and behaviors of its users. This approach ensures that rehabilitation participants feel safe,

comfortable, and supported throughout their recovery journey, fostering positive behavioral transformations.

Located strategically along Jalan Raya Pandeglang-Serang, Sukajaya, Kec. Curug, Kota Serang, Banten, the chosen site meets essential criteria such as accessibility and suitability for the center's mission. Beyond treating addiction, the center aims to fill a critical gap in existing rehabilitation services in Banten, providing a vital resource to prevent the escalation of drug abuse among adolescents. By offering holistic support and a therapeutic environment, it not only facilitates recovery but also serves as a proactive measure against the worsening drug abuse epidemic among Indonesian youth.

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