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PULCHOWK CAMPUS

DEPARTMENT OF ARCHITECTURE

THERAPEUTIC CENTER

REHABILITATION FOR THE WOMEN INVOLVED IN SUBSTANCE ABUSE

TOKHA, KATHMANDU

SUBMITTED BY

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074-BAE-220

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Date: 24th April, 2023

To,

The Chairperson and members of the Jury
Department of Architecture
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Dear Sir/Madam,

In compliance with the requirement of the course V Year Architectural Design Thesis (AR851),
for the Bachelor in Architecture degree,

I hereby respectfully present my thesis for evaluation and approval.

Project Title: Therapeutic Center: Rehabilitation for the Women Involved in Substance Abuse

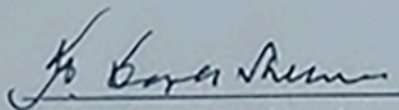
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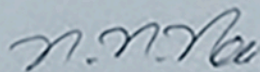
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**THERAPEUTIC CENTER: REHABILITATION FOR THE WOMEN INVOLVED
IN SUBSTANCE ABUSE**

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This is to certify that this thesis entitled “THERAPEUTIC CENTER: REHABILITATION FOR THE WOMEN INVOLVED IN SUBSTANCE ABUSE” at Tokha, Kathmandu submitted by Ms. Neha Rai Danuwar has been examined and it has been declared successful for the partial fulfillment of the academic requirement towards the completion of the degree of Bachelor of Architecture.

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DECLARATION

I hereby declare that this dissertation has not been previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree. I state that this dissertation is the result of my own independent investigation/work, except where otherwise stated. I hereby give consent for my dissertation, if accepted to be available for photocopying and understanding that any reference to or quotation from my thesis will receive an acknowledgment.

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ABSTRACT

Therapeutic Center: Rehabilitation for the Women Involved in Substance abuse is a woman-only treatment center mainly focusing on the creation of a healing environment solely focused on women who by choice or by force are involved in substance abuse. At present, there are more than 8000 female drug abusers as per the recent survey and the number might not be true as many females are pressurized into not accepting the usage of drugs by the family to avoid the stigma and shame. A rehabilitation inner and outer space provides them with the means of understanding what went wrong and how to work-through the group towards building their own strength to surpass physical and psychological obstacles on the road to recovery and active inclusion.

Drug Addiction has been a growing problem worldwide, the report shows that this year also the addiction rate has increased more in than previous years making it the highest to date. Rehabilitation centers only provide support to the addicts but also help them rehabilitate and be self-employed. It will also give an opportunity to raise awareness among the public through various community-based programs and events.

Drug rehabilitation centers from the past and present in many ways. The spaces and the way of treating as taken ninety-degree change. In the past, drug addicts used to be treated as prisoners and user to be kept in prison like cell but at the present, most of the rehabilitation centers are treating addicts as students or health patients and are provided freedom unlike the past rehabilitation center. The drug addicts are given holistic treatment and the rehabilitation centers are more focused on the person by providing them psychological help.

Therapeutic Center: Rehabilitation for the Women Involved in Substance abuse, is programmed to address the specific need of female addicts through a home-based holistic and integrated approach. The women are treated through various kinds of therapy making them physically and psychologically fit focusing on providing them with gender-based needs. The primary objective of the rehabilitation center is to assist female substance abusers to achieve physical, social, emotional and economic independence. It is a realistic project method in which a person's habit is corrected with the process and time.

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1 INTRODUCTION

1.1 PROJECT INTRODUCTION

Addiction is consistently performing a task or engaging in a behavior. It can be found in every part of the world and age, sex, race, knowledge or wealth does not matter for a person to be an addicted person. Every person either is addicted to themselves or knows someone is addicted. People can be addicted to even the strangest thing like reading a book or use of drugs and this implies that various kinds of addiction can range from harmless to life-threatening. The number of people who are being clinically diagnosed as an addict is increasing rapidly. It is common to hear about people being addicted to drugs or alcohol but people can also be addicted to anything such as sweets or habits.

In the present context, people view addiction as a social problem and judge them in every way they can but knowing the reason behind their addiction is one of the important ways to help a person to be free from abuse. The main misconception present in people's minds is that addicts can only change if they are willing to change their behavior themselves. But, through scientific research the effect of drugs on the brain is being studied hence, addiction can be treated to help people stop abusing drugs or any other substance.

Substance abuse is the use of illegal drugs or the use of prescription or over-the-counter drugs or alcohol for purposes other than those for which they are meant to be used, or in excessive amounts. Substance abuse generally leads to various problems such as social problems, physical problems, emotional problems, and job-related problems. Substance abuse just not always mean illegal drugs but the use of pain medications, alcohol, and other legal substances.

Substance abuse is affecting mostly the youths of the country. Young people get involved in the substance abuse out of eagerness or under peer pressure. These young people also get involved in various criminal activities and damage the image of the themselves, their family and their society. Traditionally, the addicts were trapped in a holding cell with the idea that the addicts can not get access to the drugs or the substance they are abusing and keeping these substances away from the addicts for certain time will help them get de-addicted. But, the idea was not successful as the addicts, after signing out of the prison or

holding cell, will again return back to the same habit as they fall into the problem once again.

A rehabilitation center is place where the people restore themselves. They are the facilities in which the people get help to restore themselves. It can either be a physiological help for the people with certain illness. Rehabilitation is a process of assessment, treatment and management by which the individual is supported to achieve their maximum potential for physical, cognitive, social and psychological function, participation in society and quality of living.

1.2 RATIONALE OF THE RESEARCH

Traditional, the substance abusers, specifically drug users were kept enclosed in a room with the idea that the addicts cannot get access to the drugs or the substance they are abusing and keeping these substances away from the addicts for certain time will help them get de-addicted. But, this way of treating the drug abusers is not considered the good as people, once out of the facility, again go back to the way they were. Through the researches it is found that therapy helps more for the drug abusers to get de addicted rather than trapping them in a room.

Thus, it has become a necessary to create a rehabilitation center which is not just a holding cell for the abusers but a space which brings a psychological change and helps in the improvement of the physical health as well as the mental state and it is even more important to create a space specifically for women where they can be treated with the treatment specifically designed for them. This could help them retain there place in the society after they get out of the facility. The basic outlines as to why the female rehabilitation center is required is listed below:

- i. There are limited number of rehabilitation centers and these centers hold limited number of people. Also there is even less rehabilitation center focused towards women who are involved in the substance abusers.
- ii. A treatment center which focuses on healing a person through is still missing hence there is a need of a therapy center

- iii. Women are the main pillars of the society so healing them shall be a major task but there are still no rehabilitation center designed specifically for women.
- iv. The facility, at now are mainly occupying the building that are built for the purposes other than the rehabilitation center which has created functionless building. The centers do not have the spatial requirement that are required for the rehabilitation center.
- v. A design that helps in healing the people with therapy is a need of present for the substance abusers so that they can get out in the world without the fear of them being insulted or being seen down.

1.3 IMPORTANCE OF THE RESEARCH

Substance abuse is one of the global problems and has become one of the major problems that has had a drastic effect on the youth of Nepal for a long time. The abuse of substances such as alcohol has mainly affected the people of underdeveloped areas that are present in the Kathmandu valley due to which many people are dying at a very young age. This research will help in designing rehabilitation centers that are focusing more on the therapeutic healing of substance abusers. The people in the rehabilitation of the people will help them in enhancing their life, their socioeconomic relations, and their health condition. This research will help in creating a space specifically for women which is one of the most important needs of the present context. The research will also help in understanding the relationship between environment and psychology thus helping in creating a facility where the substance abusers can be happy and can have a good change of behavior.

1.4 PROBLEM STATEMENT

Substance abuse has greatly affected to millions of people all around the world and Nepal is not any different. (Nepal Drug users survey, 2000)According to the Nepal Drug Users Survey (NDUS) conducted on 2076 B.S., there are about 1,30,000 drug users out of which 93% were male where as 7% were female. The drug users were in high number in Bagmati Province as compared to other as there are about 33.5% male and 64% of female from total drug users in Bagmati Province. Even with more than 8000 female drug users, a facility only catering the needs of females are less in numbers. There are numerous rehabilitation center just centered in Kathmandu valley and most of them are located in a place of chaos.

As opposed to treatment used in the past for the drug users, now they are being treated with mostly therapy all around the world. The importance of therapy in changing a person's behavior has been acknowledged everywhere. But here in Nepal there is a lack of such facility that just caters the need and treats female substance abusers. So, there is a need of such rehabilitation centers.

(Arpa, 2017) Women substance users, as compared to men substance abusers, face many more problems such as they need to face higher stigma and shame, they receive less social support. Women substance abusers are also likely to have gender-specific vulnerabilities to blood borne infection, to have experienced a traumatic event such as sexual harassment. Since, they face far more problem as compared to male counterparts, there is a need that just caters female. Placing them in the facility same as the males' facility might even trigger their emotion that might be an obstruction for being de-addicted. Hence, introduction and expansion of facilities that meets the need of women who use drugs is quite necessary.

1.5 RESEARCH OBJECTIVES

The main objective of the research is to determine the ways for proper rehabilitation of the women substance abusers and design a rehabilitation center to provide proper treatment for them to move forward in their life. The major objectives of the research are as follows:

- a. To design rehabilitation center which will mainly focus on healing the women involved in substance abuse mainly via environment and therapy.
- b. To design a facility that is gender responsive incorporating women's needs in all aspects
- c. To create a place that can enhance holistic treatment for the substance abusers so as to focus on the entire problem of the person rather than just their mental needs.
- d. To create a therapeutic environment which will be different from the institutional and prison type of design
- e. To provide treatment to the women substance abusers as a therapy to aid in being completely de-addicted. To provide a center with residential service and various trainings to enhance their life and to help them to gain respect in the society.

- f. To investigate environment psychology that will help in creating proper healing environment for the substance abusers and to know about the way to create environment that are welcoming, non-judgmental, supporting and physically and emotionally safe.
- g. To create a place for the physical treatment and mental treatment for the substance abusers by building spaces for the substance abusers to interact with the people having same problems.

1.6 RESEARCH QUESTIONS

- a. How can human psychology be affected by the built environment?
- b. What components should be included in women-oriented treatment?
- c. How can the design of a rehabilitation center assist in the care that a person experiences and requires individually?
- d. How to create a welcoming, non-judgmental, supporting, and physically and emotionally safe environment?
- e. How can a therapeutic architecture help in healing a person's mind?
- f. What spatial requirements are necessary for creating an ideal healing environment for substance abusers?
- g. How can the design of rehabilitation centers of the past be improved to ensure proper healing of the substance abusers?

1.7 PROPOSED METHODOLOGY

There is need to be a method in order to start any project that will help to meet the needs of the design . There is a set of certain methods that needs to be followed for the successful completion of the project. It can generally be divided in two phases:

- a. Research phase
 - b. Design phase
- a. Research phase

In this phase, researches are done in order to know about the spatial requirement and to know about what the topic entails. It can be divided into two parts:

- i. Literature Review
- ii. Case Study

It can be considered as the preparatory phase for the project where data related to facts, spatial requirement are collected. The functioning and organizing of spaces through case studies are also studied which can then be applied in the design phase.

b. Design Phase

In this phase, proper design of the project is carried out in various phases such as:

- i. Site selection and analysis
- ii. Program formulation and zoning
- iii. Conceptual design
- iv. Design development
- v. Analysis and evaluation of output design
- vi. Preparation of architectural drawing, 3d views, model, report for final presentation

2 LITERATURE REVIEW

2.1 Substance Abuse

2.1.1 Introduction

Substance abuse is a patterned use of a substance like a drug and alcohol in which the user consumes the substance in amounts or with method abuse is the harmful pattern of using substances such as tobacco, alcohol, illicit drugs, and prescription drugs leading to impairment or distress.

2.1.2 Stages of Addiction

The road to addiction is different for every person. Some people take their time while others go from zero to 60 in a short period of time. (Palmera, 2009)No matter how long your journey is, there are generally four main stages of drug addiction: experimentation, regular use, risky use/abuse, and drug addiction and dependency.

2.1.2.1 Experimentation:

Experimentation is defined as the voluntary use of drugs without experiencing any negative social or legal consequences. For many, experimenting may occur once or several times as a way to “have fun” or even to help the individual cope with a problem.

2.1.2.2 Regular use:

Some people will be able to enter the stage of regular use without developing a dependence or addiction. These people will be able to stop drug use on their own. The problem with regular use is that the risk for substance abuse greatly increases during this stage. It also increases risky behaviors such as driving under the influence, unexplained violence, and symptoms of depression and anxiety.

2.1.2.3 Risky use/ abuse:

There is a very thin line between regular use and risky use/abuse but is usually defined as continued use of drugs in spite of severe social and legal consequences. This is the stage where the warning signs of addiction will begin to appear: craving, preoccupation with the drug, and symptoms of depression, irritability, and fatigue if the drug is not used.

2.1.2.4 Drug addiction and dependency:

The physical dependence on a drug is often intertwined with addiction. Characteristics of dependence and drug addiction include withdrawal symptoms and compulsive use of the drug despite severe negative consequences to his or her relationships, physical and mental health, personal finances, job security, and criminal record.

2.2 Women in Substance Abuse

2.2.1 Causes of Substance Abuse

(What causes drug abuse in young women)A recent study by the National Center on Addiction and Substance Abuse at Columbia University revealed that girls and young women commonly initiate substance abuse during these crucial years. Often, their reasons for trying drugs are tied to the stress and pressures experienced in this transitional period. Sometimes, the causes of drug use in young women are rooted much deeper.

2.2.1.1 Depression and Mental Illnesses

Depression in adolescent girls is not uncommon. Over one-third of high school girls reports regular feelings of sadness or hopelessness. These girls are likelier than boys to consider (23.6 percent vs. 14.2 percent) and attempt (11.2 percent vs. 6.2 percent) suicide. Substance abuse and mental illnesses such as depression often go hand-in-hand. Young women who are depressed and suicidal often self-medicate with drugs of abuse, increasing their risk of drug addiction.

2.2.1.2 History of Trauma

Among all adolescents in drug treatment, nearly twice as many girls as boys report sexual or physical abuse in their lifetime. Girls who have been physically or sexually abused are also twice as likely to smoke, drink, and use drugs than those who were not abused in childhood.

2.2.1.3 Stress and Inability to Cope

While males tend to externalize their stress with aggression and delinquency, females have a tendency to internalize their reactions to stress. In most cases of severe stress, young women become depressed and withdrawn. According to the survey, 41 percent of young women report their inability to cope with stress as the main reason for using drugs. Stressful

life events may include a death or illness in family or friends, parental divorce, changes in school or relationships, and moving from home to home.

2.2.1.4 Low Self-Esteem

Low self-confidence frequently accompanies the teenage years. This is especially true among girls. Body-image and social image are often top priorities for high school girls who want to fit in. They associate weight loss with beauty and popularity. They associate drinking, drug use, and smoking with being sexy, trendy, and cool. They believe that drugs are the answer to their problems.

Teenage girls with low self-confidence are twice as likely as those with higher self-confidence to report drug use. Not only are high school girls more than double as likely to diet and engage in unhealthy weight-related behaviors than boys, but they are also more likely to use drugs or alcohol to try to control their weight.

2.2.1.5 Social Pressures

One study found that many teenage girls initiate drug use to fit in with their peers. Another study of 11 to 13-year old girls revealed that the most “popular” girls believe they are under even more pressure to smoke, drink, and try drugs. According to the report, the more friends a girl has who smoke, drink, or use drugs; the likelier she is to do so herself. If five of her close friends drink alcohol, she is over seven times likelier to drink.

2.2.1.6 Academic Pressures

High school is undoubtedly a time of great academic pressure for young women. It is the time that matters most for colleges, and the time in which students come to a new, mature level of learning. Yet academics and substance abuse can easily (and dangerously) intertwine. Teens who get A’s and B’s in school are at half the risk of drug use as teens who have poor school performance.

2.2.1.7 Lack of Parent-Child Communication

One of the greatest things a parent can do to prevent their daughter’s drug use is simply to communicate. If you believe your teenager is at risk of using drugs, talk to her about the

consequences of drug abuse and her options. Teach her how to say no. Educate her about the risks of substance abuse.

2.2.2 Effects of Substance Abuse

a. Effect on individual

Drug addicts experience various physical effects such as difficulty in tracking time, depression and anxiety. With the continuous use of the drugs, there is the development in the tolerance level which makes them to increase amount of the drug to replicate the effect of the first intake of drug. Sharing the hypodermic needle would increase the risk of contracting diseases such as AIDS and hepatitis. Also, the use of the drug is uncontrolled hence, it might lead to drug overdose which might end up taking the life of the individual.

People feel intoxicated after using drugs. Over time, the brain is changed by drugs. The brain becomes desensitized to the drug so that more of the drug must be used to produce the same effect. As the person consumes more, drugs start to take over the person's life. One may stop enjoying other aspects of life. For many people, social, family and work obligations fall to the side. The person with Substance Use Disorder (Clinic) starts to feel like something's wrong if he or she isn't under the influence of the substance. They may become consumed with the need to recapture that original feeling.

b. Effect on family

The use of the drug affects the mood, behavior and performance that might lead to marital problems and poor work performance at the job. It can even disrupt family life and create destructive patterns of codependency on the family members and they might unintentionally enable the drug addict for continuation by covering up, providing money or even by denying there is a problem.

Pregnant drug users have a high rate of giving birth to underweight babies due to poor self-care and lack of nutrition. Drugs like as crack and heroin cross the placental barrier resulting in baby intaking the drugs and after birth the might go through withdrawal and cause fetal alcohol syndrome. Pregnant women who acquire the HIV-AIDS through intravenous drug use might pass the virus to their infant.

c. Effect on society

Drug abuse affects society in many ways. Drug-related crime can disrupt the peace in the neighborhood not by the violence among drug dealers, threats to the residents and crimes of the addict like robbery, theft, etc. It can also cause loss of work time and efficiency. Most of the drug users face occupational accidents and not only endanger themselves but also the people around them. The majority of the homeless people have either drug problem, or alcohol problem or might be mentally ill.

d. Effect on health

Drugs are chemicals that affect the body and brain. Different drugs can have different effects. Some effects of drugs include health consequences that are long-lasting and permanent. They can even continue after a person has stopped taking the substance.

i. Short term physical effect:

- Sleepiness
- Difficulty in tracing time
- Impaired or short term memory
- Increased heart rate
- Bloodshot eyes
- Dry mouth and throat
- Decreased social inhibition

ii. Long term physical effect:

- Enhanced risk of cancer, heart attack, stroke and respiratory failure
- Contraction of HIV, hepatitis
- Increase in blood pressure, breathing rate and body temperature
- Brain seizures
- Reduction of body's ability to resist and combat infection

iii. Behavioral effect:

- Paranoia
- Aggressiveness
- Addiction
- Impaired judgement

- Impulsiveness
- Loss of self control
- iv. Psychological effect:
 - Mood swings
 - Depression
 - Anxiety
 - Violence
 - Hallucinatioins
 - Confusions

2.2.3 Cycle of Addiction

(Mackey, 2020)Addiction can negatively affect multiple areas in someone's life like memory, motivation, family, and more. Some people may say that addiction lies inside of a person's character. If they were to have even just a single sip of an alcoholic beverage, they would become addicted. However, addiction is a lot more than just a person's character. According to the American Psychological Association, drug addiction is a chronic brain disorder created by a change in the brains chemistry which doesn't happen quickly but occurs throughout different stages. These stages can be short time frames or even months or years to develop. The cycle of addiction consists of 6 different stages.

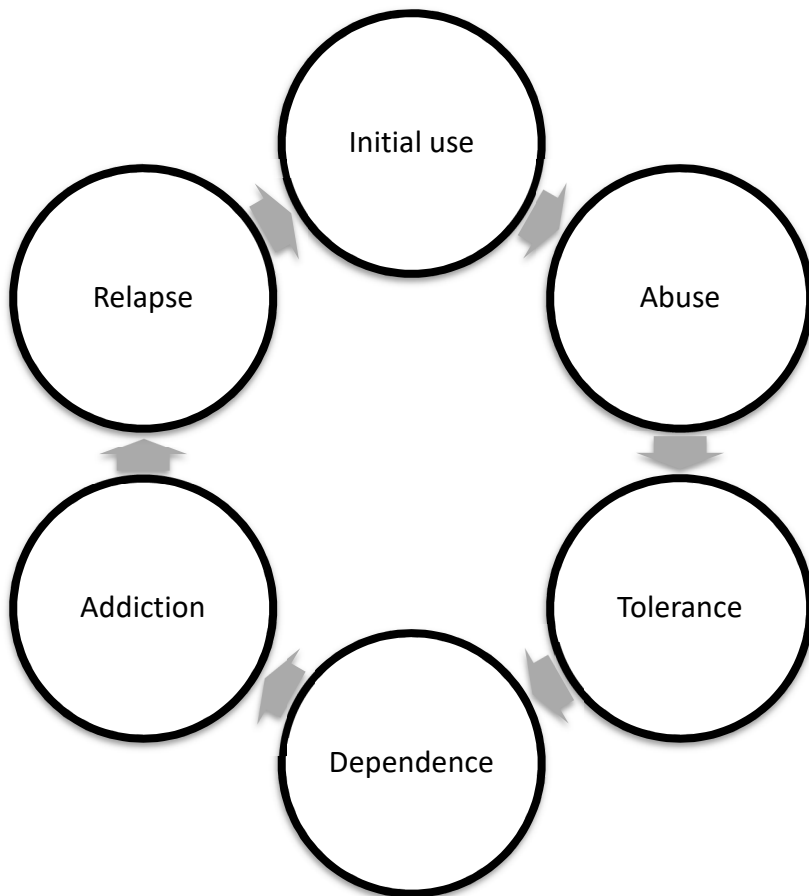


Figure 1 Cycle of Addiction

2.2.3.1 Initial Use

The first time you use can be the one time it takes to become addicted. There could be multiple ways that a substance is introduced to you which can range from family history of substance abuse, peer pressure, and more. People might also start using to escape their everyday lives or heal physical pain without a doctor. After the first time, the person might feel enjoyment or have a relieving feeling of discomfort which will drive the person to continue to use the substance or activity to keep them feeling happy. This is what leads to the second stage of addiction.

2.2.3.2 Abuse

Addicts continue to use to keep the effect of euphoria and escape from reality in this stage. This is the stage where the addiction becomes a lot more intense and the user starts using more. (Mackey, 2020)The person will use a higher dose to get the same feeling he did when

he first used it. Some people might even move on to harder drugs to get the same high. An example of this could be a person who uses cocaine because drinking wasn't giving them the same feeling anymore. This when the addiction gets harder to stop.

2.2.3.3 Tolerance

In this stage, the brain has made a huge change in response to the substance. The brain doesn't produce the same amount of dopamine as it did when the person first used which leads to the addict using more drugs or just a higher dosage to get the same high.

(Mackey, 2020) This can also cause users to move on to a harder drug like methamphetamine or cocaine. This is what causes the brain to lose chemical receptors. This will make the person feel depressed when not under the influence. Slowly, the brain starts to change over time to how it reacts to the drug. This physiological change leads to the next stage of addiction which is dependence.

2.2.3.4 Dependence

At this stage, the addict becomes heavily dependent on the substance and it becomes extremely hard to find pleasure without the drug. However, there can be times that a person is dependent on a drug but for medical reasons, this would not be counted as an addiction. During this stage, addicts can go through withdraws when they don't have the substance. Going through withdrawal symptoms can be tough for the person.

2.2.3.5 Addiction

This stage is the almost end. This is when the addict has gone through the addiction cycle and knows they have a problem. At this point, the person's health, finances, and social life are all affected by their addiction.

“PsychCentral” in their article, “Symptoms of Substance Use Disorder”, have mentioned 11 symptoms for the substance use disorder. (Pederson, 2021)

- i. Use more of the substance
- ii. Have a hard time stopping/worrying about stopping or their use
- iii. Have a lot more cravings
- iv. Spending a lot more time doing drugs or whatever they are addicted to

- v. Go through withdraws
- vi. Building up a higher tolerance
- vii. Keep using even when it causes problems in relationships with others
- viii. Keep using even when it causes health problems (depression, anxiety, sleep change, blackouts)
- ix. Reducing time with activities and replacing them with drugs
- x. Using in inappropriate areas
- xi. Using in dangerous areas

2.2.3.6 Relapse

This is the final stage of addiction. At this point, the person going through the addiction experiences extreme withdrawal symptoms. So extreme that it gets overwhelming for the person. So much that the person then seeks out ways to get a hold of the substance. They do this to get back the emotional support from the drug or activity to be happy again. This will cause them to fall back into the dependent stage of the addiction cycle. This is the stage that holds most addicts back from recovering.

2.2.3.7 Breaking the Cycle of Addiction

The action and maintenance stages are referred to as the process of a person trying to get help and quit their addiction. If a person is trying to quit an addiction there are 5 stages of getting back on track. These stages are:

- i. **Precontemplation** – this is when the person has not thought about stopping their habits
- ii. **Contemplation** – the person might have started thinking about stopping
- iii. **Preparation** – the person is getting ready for change and preparing to get help
- iv. **Action** – the person has acted by seeking out help, the person also stops using
- v. **Maintenace** – the person keeps a straight path and follows a recovery program

2.3 Women Substance Abuse in Nepal

It is difficult to get a full picture of women's substance use, since international, national and local studies on the prevalence of substance use and associated problems do not often address gender issues. (Crime, 2004) Women with substance use problems may not show

up in official statistics in some countries, such as India, because of their small numbers and subordinate position in the drug culture. This is consistent with the historical focus on men in the field of substance abuse.

The Government of Nepal had conducted the third Nepal Drug Users Survey 2076 (NDUS 2076) with the aim to understand the profiles, substance use patterns and risk behaviors and provide statistically sound and reliable data essential for developing evidence-based policies and programs to reduce harmful drugs and their usage in Nepal.

2.3.1 Estimated Number of Substance Abusers

According to the Nepal Drug User Survey 2076, there seems to be great difference the number of male and female drug users. There are about 1,21,692 male drug users and 8732 female drug users according to the data of 2076. On comparing the number of drug users of 2069, there seems to be increase in the number of female drug users by more than 30%. The low number of female respondents is likely due to the higher level of stigma associated with drug use faced by women.

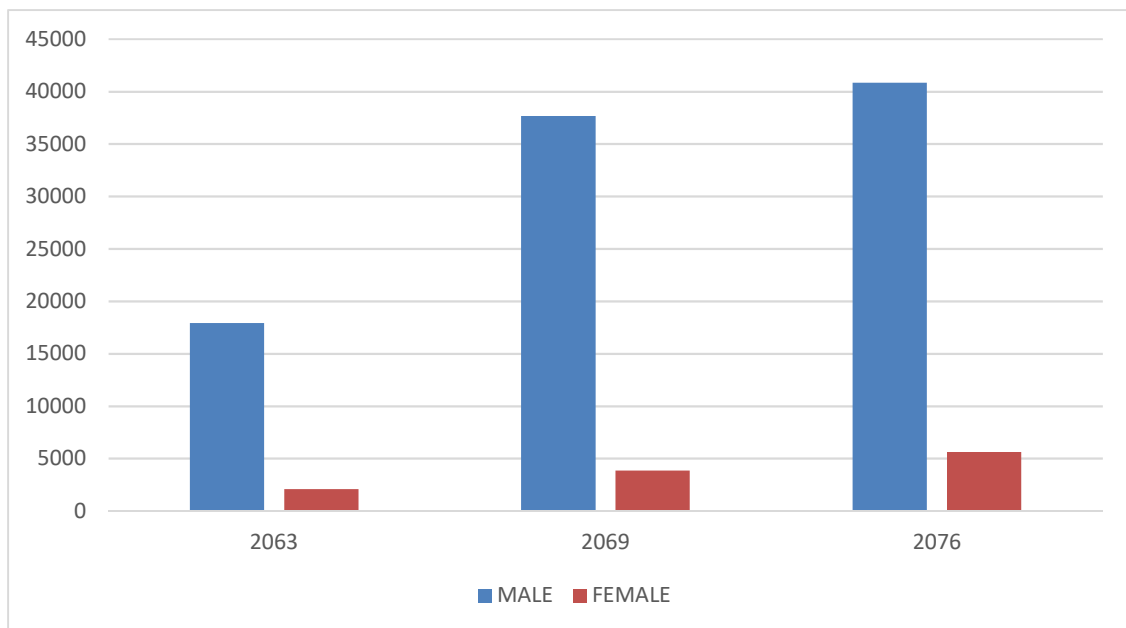


Figure 2 Estimated number of substance abusers

2.3.2 Numbers of female substance abusers by province

The highest number of the drug users were reported in Bagmati Province: 46,480 (35.6 percent) followed by Province 1: 27,605 (21.2 percent), Province 5: 25,930 (19.9 percent), Province 2: 15,834 (12.1 percent), Gandaki Province: 8,956 (6.9 percent), Sudoorpaschim Province: 3,808 (2.9 percent), and Karnali Province: 1,811 (1.4 percent).

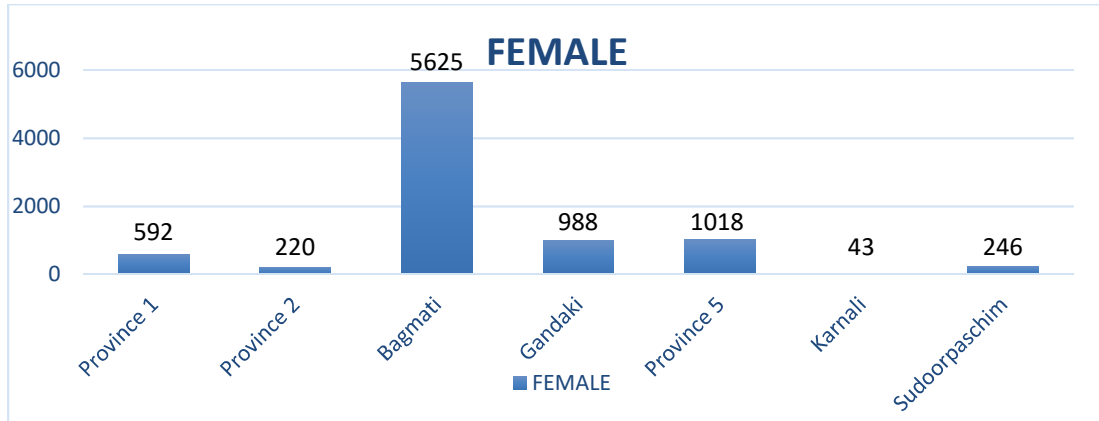


Figure 3 Provincial data for women substance abusers

2.3.3 Age Pattern of Substance Abusers

According to the drug user survey 2076, the percentage of women of age 20-24 are mostly taking drugs which is 51.4%, followed by the women of age 25-29 by 29.3%. There are 12.1% and 6.1% of women of age 15-19 and 30-34 respectively are involved in drug abuse.

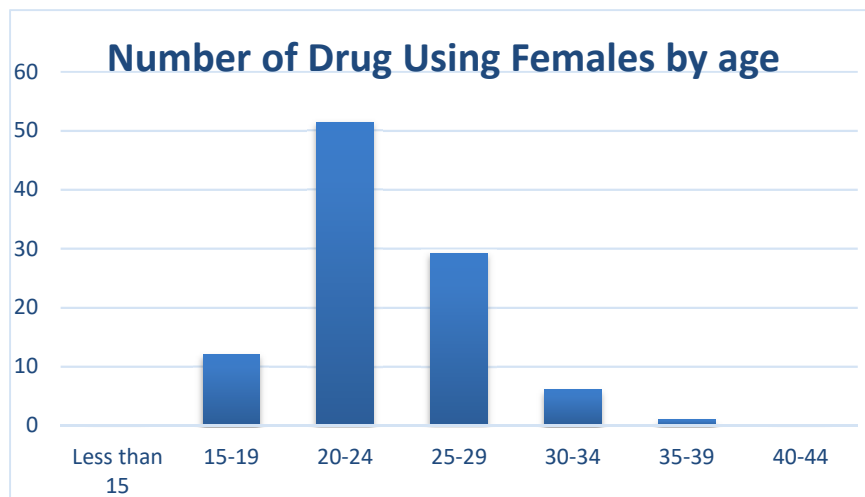
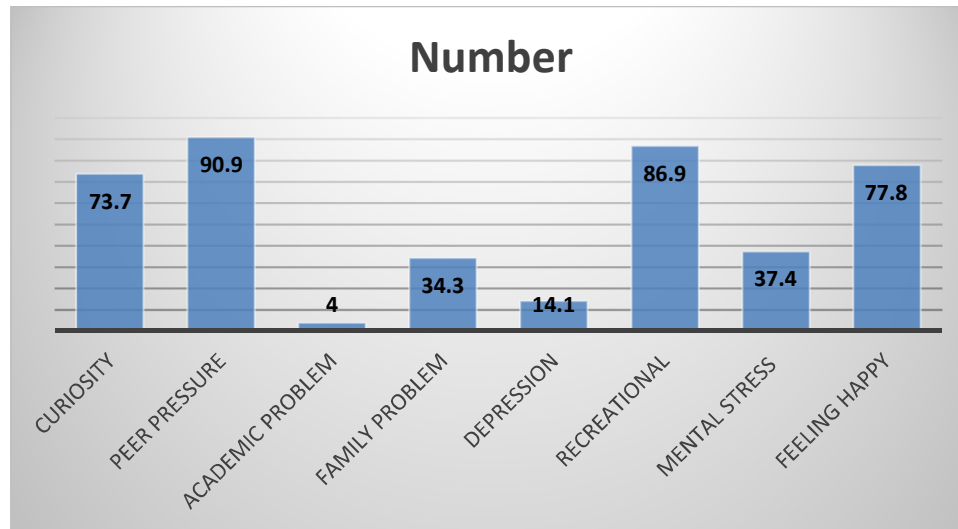


Figure 4 Number of Substance abusers by age

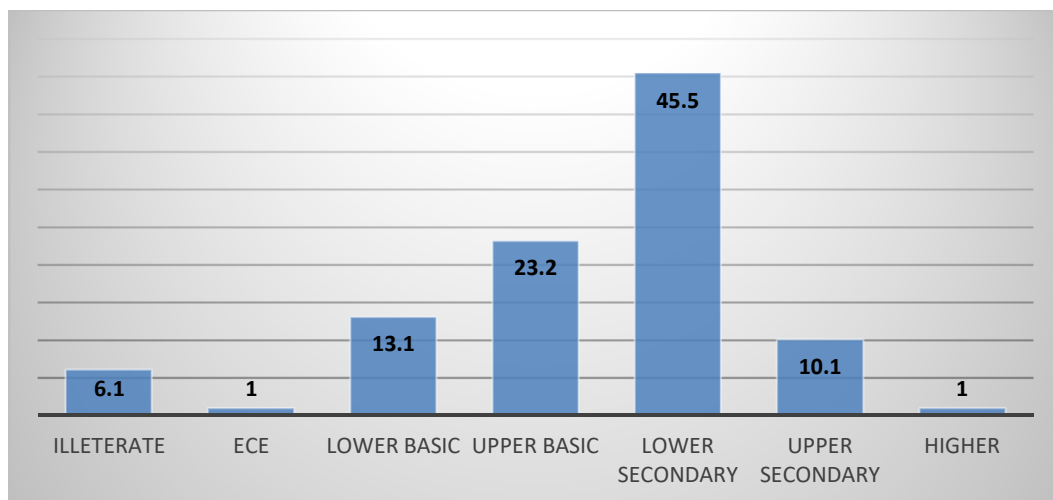
2.3.4 Reasons for the Substance Abuse



[Figure 5 Reasons for the substance abuse](#)

2.3.5 Educational Status of Substance Abusers

According to the Nepal Drug User Survey 2076, the data that 96.5 percent of drug users had ever attended school/college or early childhood education programme while 3.6 percent had never attended. 10.9 percent are currently attending schools/college. Provinces with the highest proportion of attendance in school/college was Karnali Province (18.8 percent), and the lowest in the Province 5 (7.5 percent).



[Figure 6 Educational Stautus of the substance abusers](#)

2.3.6 Occupational Status of Female Substance Abusers

According to the Nepal Drug User Survey 2076, the highest number of drug users seems to be unemployed. The women involved in agriculture and industry do not seem to be involved in drug. The percentage of women involved in drug abuse working in business, service, study are 8.1%, 9.1%, 5.1% respectively.

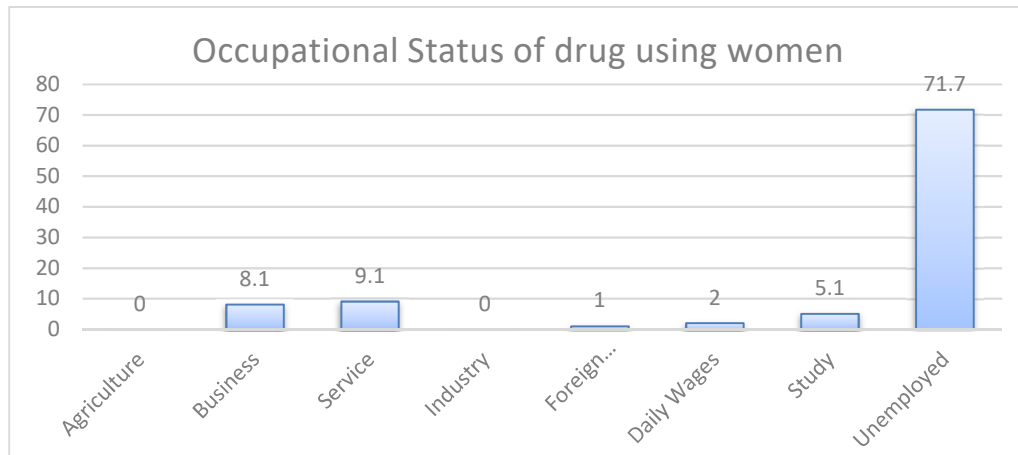


Figure 7 Occupational Status of drug using women

2.3.7 Marital Status of Female Substance users

According to the Nepal Drug User Survey 2076, the percentage of women who are unmarried are mostly involved in drug addiction which is about 56.6% followed by 29.3% of married women. The divorced and separated women who are involved in drug abuse are 10.1% and 3.0% respectively.

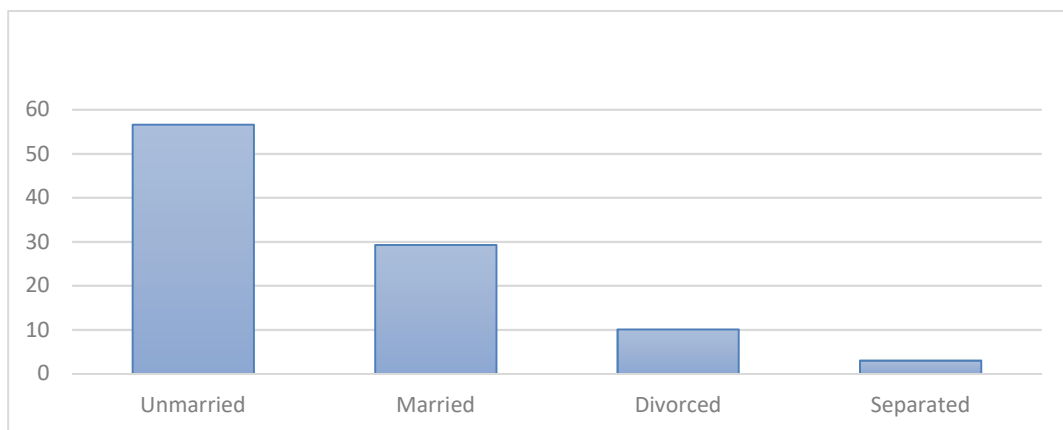


Figure 8 Marital Status of Female Substance users

2.4 Treatment and Rehabilitation

Drug rehabilitation is the psychotherapeutic treatment given to drug addicts which helps the patient to get rid of substance abuse as well as process abuse. The treatment mainly includes counselling by experts, medication for depression, making them to be spiritual. Various rehabilitation centers are generally designed to provide treatments at mainly three levels i.e. surrender, rehabilitation and reintegration.

2.4.1 Surrender

Surrender is the intersection between acceptance and change. It is an initial point into the road of recovery where an addict admits for the change. Treatment is preceded with surrender with the initial phase where addict is completely in his addiction. Due to the break in drug using habit, it creates a craving that may make him more aggressive and violent, hence at this phase a close inspection from the staff is required.

2.4.2 Detoxification

Surrender is followed by detoxification process. Detoxification is the process by which the drug is eliminated from the human organism, generally by natural metabolism. Once an individual has discontinued using drugs physical and behavioral withdrawal symptoms may follow. The sudden withdrawal of drugs is known as "cold turkey" and is usually accompanied by extremely unpleasant side effect and acute craving. The character and severity of the withdrawal symptoms vary greatly depending on the particular drug and amount administered daily. Thus, this is mostly avoided and detoxification may be carried out on a gradual basis, an addict experiences physical pain when they suddenly give up their habit. Thus, some sort of treatment, whether through medication, acupuncture medication, they are taught to control their craving and withdrawal drug slowly.

2.4.2.1 Medical detox

Medical detox provides patients with medication and medical treatment in order to prevent and address complications. As previously mentioned, withdrawing from alcohol, benzodiazepines, and barbiturates can be dangerous to attempt alone, due to the risk of serious symptoms. Seizures may emerge that require immediate medical management, which may not be available in a social detox program. Further, withdrawal can lead to

delirium, a confused, agitated state, in which the person may experience hallucinations and exhibit dangerous, unpredictable behaviors. Medical detox takes several days. It is said as an unconscious type of detoxification as drug is replaced by another medicine. Usually natural detox is preferred.

2.4.2.2 Physical detox

Once the body is no longer dependent on drugs, one will need to work on building up on physical health. A nutritionist can be helpful during this phase, enabling to develop a balanced diet to help through the rest of the detox process.

2.4.2.3 Emotional detox

Detox can be great toll on the addicts emotional health, which is why most treatment centres offering counselling during detox. Because drugs have become an integral part of the mental, emotional and social life, one will need emotional help as detox.

2.4.2.4 Non-Medical detox

Non-medical detox, also known as social detox and natural detox, is a non-medical type of detox program, involves the individual stopping the use of the drugs entirely essentially going “cold turkey” while under the care of treatment professionals. This social model of detox involves professionals providing the patient with emotional and psychological support throughout the withdrawal process but not administering medications to manage symptoms and complications.

2.4.3 Rehabilitation

Rehabilitation is the combined and coordinated use of educational, social and vocational measures for training or retraining the individual to the highest level of functional activity. Rehabilitation is the process of helping individuals to establish a state in which they are physically, psychologically and socially capable of coping with the situations encountered, enabling them to take advantages to the opportunities that are available to other people in the same age group in the society. So, rehabilitation is the process of recovering those capabilities that have been diminished due to illness or injury and the recovery can be only sustained if the addict doesn't relapse. However, rehabilitation is more than simply avoiding drugs.

2.4.4 Reintegration

Re-integrating back to the society is the final leg of an addict's journey of recovery. Many addicts do relapse after staying clean for a certain time. Relapse can be triggered by many factors, in most cases it is due to the of family support and social acceptance. "No mans an island" and recovery alone is unattainable. Hence a successful rehabilitation would be when the addict can successfully become active, accepted member of society. Social awareness, patients counselling play a vital role in re-integration phase. It is also necessary for the addict to gain some life retaining skills for which vocational training is important. Vocational training also makes the addiction feel productive as it is said that an empty mind is devil's workshop. Vocational training; that too in a creative work helps the addicts develops skills not just in terms of work but also life skill.

2.5 Women-only treatment center (WOTC)

2.5.1 Introduction

A female-only treatment center is only open to accepting female patients. There are inpatient women-only treatment centers and outpatient treatment programs exclusively offered to women. Women are more likely to attend outpatient treatment than men because they tend to have less family support than men and are often in a caretaking role.

Women only treatment center are the rehabilitation centers that are better equipped for women than mixed gender treatment center. They are the centers that are more focused on fulfilling women's gender-based needs such as:

- i. Women with children need housing and children assistance
- ii. Abused women need safe and secure environment to attend and complete the treatment
- iii. Women might feel social pressure which might inhibit the chances of recovery.
- iv. A place for pregnant women experiencing hormonal changes

Substance abuse affects man and woman differently. In general, women have harder time than men entering rehab because they cannot find affordable and reliable childcare facility, female are often the caretaker of elderly and children in the family hence they do not have enough time and they might have experienced violence from the family members and

partners and family member might prevent them entering such facility as it would bring shame and stigma on the family.

2.5.2 Benefits of WOTC

The general treatment methods for addiction are as following:

- i. Safe, medical detox
- ii. Medications to ease cravings for drugs
- iii. Individual and group therapy
- iv. Ongoing aftercare and maintenance program

For women, however, they often face unique, gender-specific needs that only a female-only treatment center can meet. For example, women with children usually need financial, housing, and childcare assistance when they seek treatment for drug or alcohol addiction. For women who've been abused by an intimate male partner, attending a female-only treatment center can help her feel safe and secure enough to stick with treatment. Even for women who have not been abused, they are often subjected to social pressures when they are in the presence of men that can inhibit their chances of recovery.

2.6 Therapy

2.6.1 Introduction

Therapy is a form of treatment aimed at relieving emotional distress and mental health problems. It is also called as Psychotherapy, or talk therapy. Provided by any of a variety of trained professionals psychiatrists, psychologists, social workers, or licensed counselors it involves examining and gaining insight into life choices and difficulties faced by individuals, couples, or families. Therapy sessions refer to structured meetings between a licensed provider and a client with a goal of improving some aspect of their life. Psychotherapy encompasses many types of treatment and is practiced by a range of clinicians using a variety of strategies. The critical aspect is that the client or patient works collaboratively with the therapist and can identify improvement and positive change over time.

2.6.2 Importance of therapy for substance abuse

- i. Engages people in substance abuse treatment
- ii. Provides incentives for the addicts to remain sober
- iii. Modifies peoples' attitude and behaviors toward drug abuse
- iv. Increases life skills and teaches people how to manage stress, triggers and high-risk situation in recovery
- v. Helps break down an individual's resistance to treatment and open up the opportunity for recovery

2.6.3 Types of therapy

2.6.3.1 Cognitive behavioral therapy (CBT):

Cognitive behavioral therapy combines the tenets of talk therapy with behavioral modification. By focusing on a single thought stimulus at a time, cognitive behavioral therapy emphasizes change in behavioral responses over heavy analysis. Through a process known as "cognitive restructuring," patients learn to create more positive habits, coping skills and mental processes. Cognitive behavioral therapy can be particularly useful in retraining mental reactions to stressors, negative thoughts and practical problems, transforming triggers for drug use into springboards for positive actions. Some therapists may also use exposure therapy to augment cognitive behavioral therapy, particularly to lower trigger reactivity in survivors of traumatic events.

2.6.3.2 Psychotherapy/ counselling:

Psychotherapy is the treatment of mental health and emotional and psychiatric disorders. Psychotherapy is based in verbal communications and interventions with the therapist and relies on a trusting relationship between the patient and therapist. Sessions take place in a structured environment for a specific amount of time. Therapy is an opportunity for someone to share present problems with an objective listener.

2.6.3.3 Group therapy:

Therapy groups typically include 6 to 8 individuals. Sometimes these individuals are dealing with the same issues, and sometimes people are placed in a group to learn to listen

and identify with others in a safe environment. There are a range of issues that can be negotiated within a group context that might take longer in individual counseling.

2.6.3.4 Individual therapy:

In individual therapy, a patient meets privately with a mental health counselor or psychologist to discuss personal problems. Individual counseling typically happens once per week until the individual feels some improvement. Some issues, such as addiction and psychiatric illness, may require a longer period of time in ongoing therapy.

2.6.3.5 Family therapy:

The concept of a disease affecting a whole family governs family therapy. Any disruption to the healthy social structure of the family unit is evident in the roles that individuals take. Addiction disrupts everyone's life. To treat the addict successfully, the family unit and the dysfunction within the family unit must also be addressed.

2.6.3.6 Meditative therapy:

The technique of bringing one's mind into the present has been practiced for thousands of years. There are two types of meditation, both of which produce a calming, relaxed environment for the mind and the body. Concentration meditation brings the mind's focus to a single sound, sensation of breath or an object. Mindfulness meditation brings the focus to the sounds and sensations of the present reality as an observer. The body remains quiet and the mind remains focused. Learning to quiet the mind and body is beneficial to one's health and to the healing process.

2.6.3.7 Art Therapy

As in art, the essence of therapy is communication. By liberating patients from the restrictive confinement of words and setting them loose in the much wider vocabulary of paint and clay, art therapy enables them to formulate the meaning of their predicament, and by mobilizing the creative resources latent within their own personalities, it assists them to heal themselves.

It uses art media, images, and the creative process, and respects patient/client responses to the created products as reflections of development, abilities, personality, interests,

concerns, and conflicts. It is a therapeutic means of reconciling emotional conflicts, fostering self-awareness, developing social skills, managing behavior. solving problems, reducing anxiety, aiding reality orientation, and increasing self-esteem.

2.6.3.8 Music therapy:

A licensed, trained music therapist uses music to address physical, emotional, cognitive and social needs of a patient. Exercises can include creating music, singing, movement and listening to different types of music. Music therapy can be useful for those who have difficulty expressing in words his or her feelings. Music can be the form used to give voice to these thoughts and feelings.

2.6.3.9 Dance therapy

It is based on the assumption that body and mind are interrelated and is defined as the psychotherapeutic use of movement as a process that furthers the emotional, cognitive, and physical integration of the individual. Dance/movement therapy effects changes in feelings, cognition, physical functioning, and behavior.

2.6.3.10 Labyrinth therapy

It is an ancient symbol that relates to wholeness and combines the imagery of the circle and the spiral into a meandering but purposeful path. It acts as an instrument of holistic healing. It is also called as spiritual discipline- "walking meditation". It is a metaphor for the soul's spiritual journey. It quiets the mind and opens the soul to a sense of wholeness and wellness. It is a symbol that creates a sacred space and place and takes us out of our ego to "that which is within." Its benefits are short-term calming, relaxation, and relief from agitation and anxiety.

2.7 Architectural Psychology

(Abel, 2021) *Architectural psychology is the science of human experience and behavior, especially in the context of the space designed or influenced by humankind. Through the examination of the mutual relation between human experience and behavior, and the dimension of space, created or influenced by man, its intention is to support human well-being on one hand, and the continued existence and conservation of the entire ecosystem on the other.*

Architectural psychology is an environmental or ecological psychology which deals with the interaction between man and his environment, as far example spatial perception, spatial thinking, orientation behavior, or spatial experience, territorial behavior, living requirements and satisfaction, local identity.

2.7.1 Human psychology and architecture

Human psychology is the science of studying human nature and behavior. The field of psychology includes both mind and body. Basically, it is the impact on human mind and the result of which is seen in human body. Every single individual in this universe is entirely different from one another and so is their behavior.

Architecture is both the process and product of planning, designing and constructing form, space and ambience that reflects technical, social, and aesthetical considerations. Moreover, architecture is an art of creating a space be it a closed or open space.

To understand our relationship with space, we first need to explore how we become aware of it. The processing of visual sensations into perceptions of the world around us involves a complex interaction of the eye and brain. Our own characteristics are such that our visual sensations largely dominate our perceptions. Since over two-thirds of the nerve fibers that enter our central nervous system are from the eyes. Because of this we have come to live in a very visually dominated culture, and it is easy to forget that space is also perceived through the sensations of sound, smell and even touch. Perception is actually more than just sensation. Perception is an active process through which we make sense of the world around us.

Human psychology is directly related with architecture. Appropriate use of various architectural components has the capacity of enlightening the atmosphere whereas inappropriate use does the opposite. The building forms, the functions Incorporated in it, colors, negative and positive spaces in and around it may be the few points but architecture is directly attached with human psychology from conscious to subconscious level. Some of the components of architecture which affects human psychology are:

- i. Building form
- ii. Colors
- iii. Open spaces
- iv. Openings
- v. Lighting
- vi. Acoustics
- vii. Landscapes

2.7.1.1 Building form and psychology:

Building form in architecture also affects human psychology. Many buildings are made in the shape the natural species which falls in the branch of bionic architecture, It gives psychological feel of a type and gives a person idea of what the building is about. Similarly there many such example of building form which affects human psychology at much extent.

2.7.1.2 Colors and psychology:

Color psychology is the study of color as a determinant of human behavior. Using warm and cool sources for Key and Fill light not only increases sense of shape and depth of an object, but assist with defining direction of light. Color also can provide information about an object's dimensions and depth. Human visual system assumes the light comes from above. This relies on the visual experience with nature to explain direction of light.

Red	competition, emotion, optimism, violence
Orange	extraversion, adventure, celebration
Yellow	creativity, imagination, optimism, newness
Green	nature, balance, fertility
Blue	dependability, protection, purity, peace, trust, loyalty, patience, hope, perseverance
Purple/Violet	spirituality, creativity, wit, sensitivity, vanity, moodiness
Pink	sweetness, delicacy, refinement, sentimentality
Brown	stability, harmony, hearth, neutrality
Black	sophistication, simplicity, power
Gray	neutrality, boredom, coolness, safety, conservatism
White	purity, calm

Figure 9 Color and their psychological effect

2.7.1.3 Open spaces and psychology:

Spaces within the residential environment in the rehab center which are readily accessible to the dwellers regardless of their size, design or physical features and which are intended for, primarily, amenity or physical recreation, whether active or passive are termed as outdoor open spaces for the addicts. Open spaces in such center have the potential to provide opportunities for sensory stimulation, socialization, and meaningful activity. Broadly open outdoor spaces are classified as green and non-green spaces. Green space typically includes parks, both designed for formal and informal physical activities, playgrounds and nature reserves. Non-green spaces are those that provide effective linkages between point of departure, home and open space destinations which is a critical aspect of physical activity inducement. Non-green spaces include paved walkways, patios, connecting bridges, gazebos, patis, courtyards, outdoor plazas and dabalis.

Open spaces benefit both active and passive engagement with outdoor spaces. Active engagement offers feelings of usefulness and productivity, opportunities for self-expression and personalization, and physical activity. Gardens enable residents to continue engaging in enjoyable activities, which helps to create familiar, non-institutional surroundings. Gardening activities encourage positive effect upon addicts and an outdoor garden space may result in less agitation or be used to calm an agitated one.

Social interaction always takes place inside the built form. Internal living offers socialization in many ways. Also dining kitchen areas, bedroom sets indoor socializing space where they together interact with each other. Besides these areas, other areas which contribute to the socialization are wide corridors. In building having cluster of rooms together with wide corridors as circulating spaces, it has always been a place for gathering. Also courtyard planning offers a place for gathering and interaction. Courtyard has always been a traditional hub for socialization.

SOCIAL INTERACTING SPACES FOR ADDICTS

1. Courtyard spaces

A courtyard is an enclosed area, often a space enclosed by a building that is open to the sky. These areas in inns and public buildings were often the primary meeting places for some purposes. Courtyard spaces are private open spaces surrounded by walls or buildings that have been in use in residential architecture for almost as long as man has lived in constructed dwellings. Courtyards are sound can be showcased. Simply, they are niches of beauty and solace.

In rehabilitation centers, courtyard can provide a space for informal gatherings and active recreation. A range of functions from passive visual enjoyment to active recreation can be appropriately provided by courtyard. As courtyard space offers sense of openness along with sense of security that people require to have as surrounded by building, it is the most suitable interaction space.

2. Patio

Patio is an outdoor space generally used for dining or recreation that adjoins a residence and is typically paved. It may also refer to a roofless inner courtyard or a paved area between a residence and a garden. It offers opportunities for interaction via meeting and chatting among the addicts in rehab.

3. Promenade/walkways

Promenade is a paved path for walking. It offers opportunities for interaction. Le opportunities of chatting, meeting with people while walking, jogging, nature walk etc. Both active and passive types of activities are performed in promenades. They should be wide enough to accommodate wheel chair user and a helper.

4. Covered pathways colonnade

Colonnade is a structure with a roof structure over a walkway, supported by a sequence of columns often free standing or enclosed by walls. It provides opportunities for interaction. Le. opportunities of chatting, meeting with people while walking, etc. Passive types of activities are performed. It should be wide enough to accommodate wheel chair user and a helper

5. Plaza space

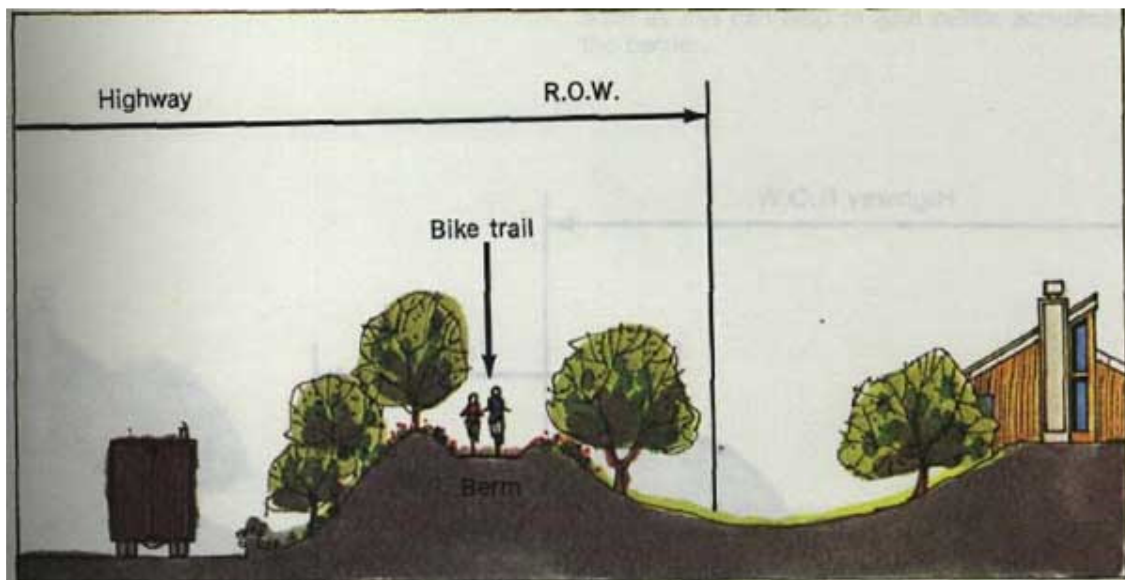
Any gathering open space especially at the front part of buildings is known as plaza. Plaza space includes sitting areas, landscapes, and recreational features. It offers opportunities for interaction i.c. opportunities of chatting, meeting with people while walking etc. Both

2.7.1.4 Acoustics and psychology:

The integration of natural physical environments into treatment for human sufferers has always proven to be an effective course of action Elements in nature emulate qualities of calmness and serenity that are necessary for a healing environment Studies have shown that simple changes like a view to a green landscape becomes a mental focusing tool of distraction allowing recovery to manifest quickly. The capacity of the mind to heal suffering is overwhelming neglected in modern facilities Generally, healthcare facilities are designed to hold the tools to heal, not be the tool heal. If one were to begin to think of architecture as just important as the medicine, there could be a major shift in how people are treated for the future

With the help of the result of researches and surveys done, it is found that when in a hospital if green landscape is visible through the opening the recovery speed is much faster than that of the building seen through the openings. Also, quiet is more preferred. The lesser the noise is around such buildings like hospital. Rehabilitation centers, etc. Faster the recovery is. The noise level should also be planned in architecture to give a positive effect to human psychology

With the help of proper zoning of different spaces with different noise level. Sound level can be maintained which not only help faster recovery in such building but also gives a satisfactory environment in all other types of buildings.



[Figure 10 Controlling the noise via plantation of trees](#)

2.7.1.5 Landscapes and psychology:

Anything we see and experience is bound to have some impact on us. A sight of well-designed controlled landscape design and the expanse of wilderness, both affect our mind in different ways, which further depends on our emotional state at the moment of reception. Environmental psychology means ‘an interdisciplinary field that focuses on the interplay between individuals and their surroundings.’

There are two sides to this interaction—one is concerned with the inner world of the human mind, and the other of the physical reality. It pertains to our primary senses: vision, touch,

hearing, smelling, tasting, and perhaps also our sixth sense (non-corporeal intuition). A full evaluation of landscapes is possible when all visual, sensory, and cognitive perceptions are involved- because they amplify each other- to create the whole image.

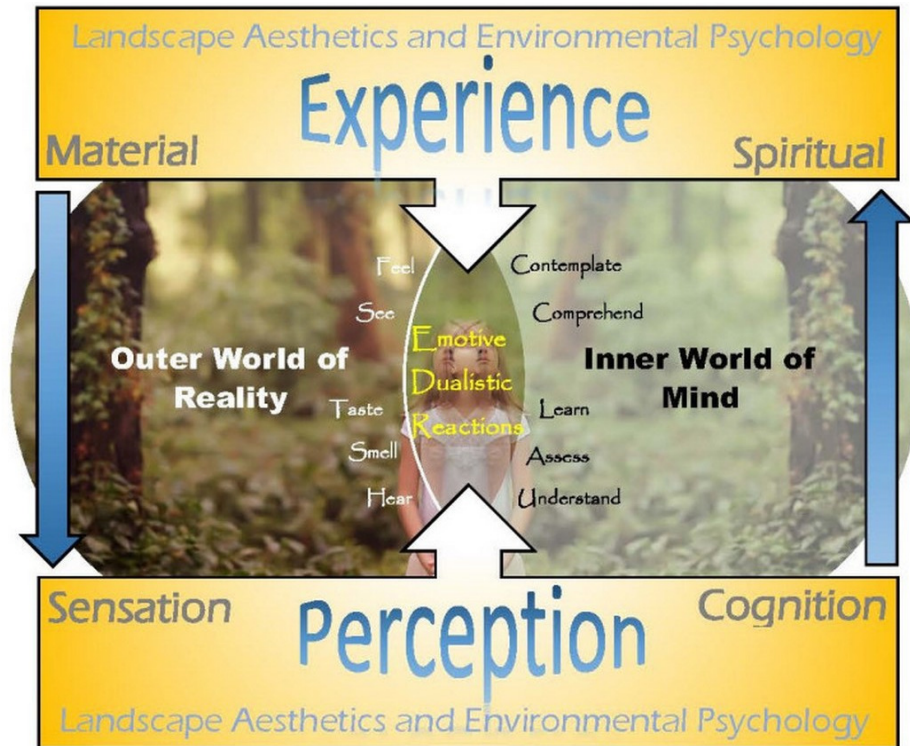


Figure 11 Interaction of our mind with the physical reality

2.8 Sports

Sport pertains to any form of competitive physical activity or game that aims to use, maintain, or improve physical ability and skills while providing enjoyment to participants. (LaNeve, 2022) There are tested and proven correlations between exercise and alcohol recovery. Research shows that exercise releases endorphins to the body, creating a natural high. These are the same type of endorphins people have released when they are abusing substances.

2.8.1 Benefits of Sports in Addiction Recovery

- i. Physical activity releases feel-good endorphins in the brain and improves circulation, both of which help with stress.

- ii. Regular exercise can improve both your quality and quantity of sleep.
- iii. Exercise releases endorphins in the brain, providing feelings of happiness and well-being.
- iv. If recovery has left you feeling tired and lethargic at times, regular exercise is one of the ways that you can put some spring back in your step.
- v. Regular exercise helps protect your body from certain serious conditions such as cancer, stroke, heart disease, depression, diabetes and osteoporosis.
- vi. Regular exercise in addiction recovery is that regular movement can help prevent a return to alcohol or drug use.

2.8.2 Types of sports and their mental health benefits

1. Individual sport

- a. Swimming
- b. Martial arts
- c. Archery

2. Dual Sport

- a. Badminton
- b. Table tennis
- c. Tennis

3. Team sport

- a. Basketball
- b. Volleyball

2.9 Basic Requirements for Rehabilitation Center

2.9.1 Environmental Requirement

2.9.1.1 Built Environment

- i. Effective site planning segregate zoning.
- ii. Avoid areas of crowd, exterior noise
- iii. Spaces of high sense of enclosure must be avoided
- iv. View and contact with outdoor and living plant shall be encouraged.
- v. Non-accessible negative spaces shall be avoided.
- vi. Environment shall help in spiritual growth through meditation, yoga etc .

- vii. Clear defined areas with maximum freedom of movement and circulation
- viii. Shall induce a sense of belonging and addict's privacy, safety and comfort.

2.9.1.2 Open Spaces Requirement

- i. Use of natural elements as an architectural vocabulary to create natural therapeutic ambience.
- ii. Environment that contribute to healing- comfort garden, therapy garden should be introduced. Large uninterrupted open spaces might be dreadful.
- iii. variety in open spaces for social interaction.

2.9.1.3 Circulation requirement

- i. Involves both vehicular and pedestrian traffic, buses, taxis, automobiles and services trucks must be considered.
- ii. Parking spaces should be located so that neither patients nor visitors need to cross driveways to enter the buildings.
- iii. The internal corridor should be accessible with wheelchair.

- iv. Separate areas of the parking space should be designated for patient, staff and visitors use. Appropriate directional signs shall be considered for the efficient control of traffic .
- v. Kitchen facilities, vocational training programs and a sheltered workshop will have a greatly increased service problem: and so, the service areas and its relation to other traffics must be studied accordingly.

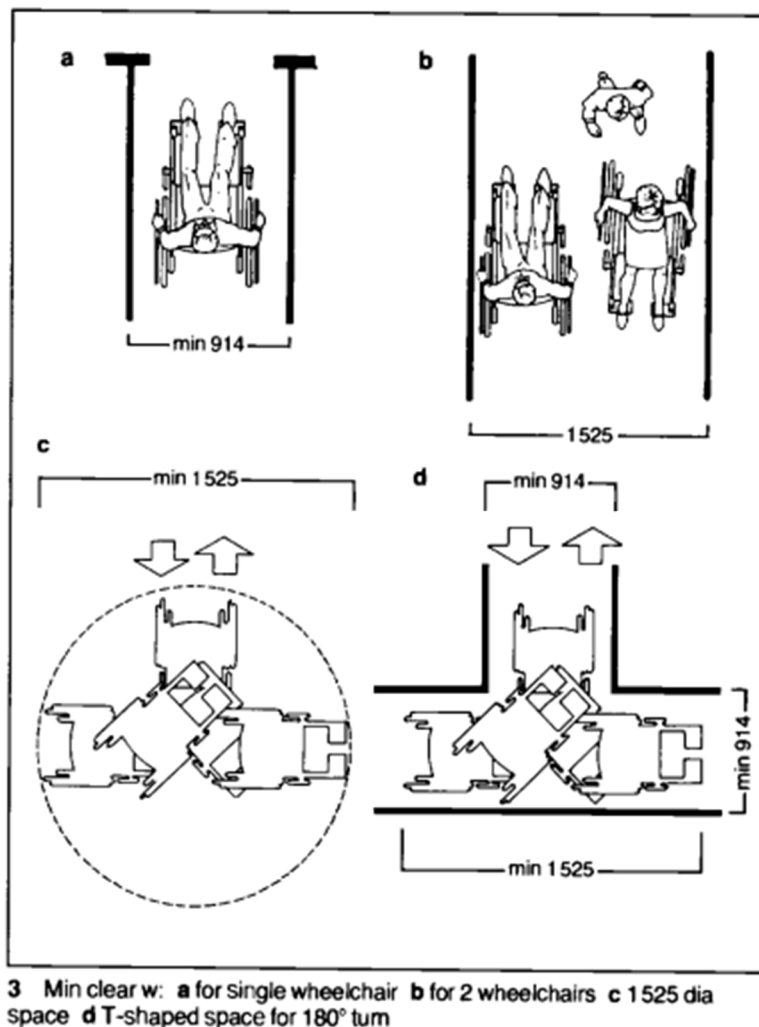


Figure 12 Corridor standard (Neufert, 1980)

2.9.2 Therapeutic Space Requirements

(Davies, 2018) While there is no single way to design a conducive therapeutic room, mental health professionals can help ensure that clients have a comfortable therapeutic experience by keeping the area a welcoming, cozy, warm, and safe environment for emotionally vulnerable individuals. Some factors to consider when creating or redesigning a counselling room include the following:

2.9.2.1 Color

Many therapists may not be able to control the type of paint or wallpaper that goes on the walls, but if they are able to choose colors, it is generally advisable to use light and soothing ones, such as shades of green or blue.

2.9.2.2 Seating

It is important to ensure that the seating area for therapist and service user is nonconfrontational and conducive to dialogue and supporting service user empowerment and agency in the space.” It is also essential that chairs have ample back support, be adjustable or easily moved around, and be heavy enough not to be picked up in cases when a client may have a history of violence. It may also be beneficial to place the client’s chair in a spot where they can see the door to add to their sense of free will and safety.

2.9.2.3 Nature

Research suggests that the presence of even small components of nature may be associated with better mental health.⁴ Keeping a few plants in the office, having views of serene landscapes, or having access to a courtyard or nearby garden can add to a positive therapeutic experience.

2.9.2.4 Materials

Research shows that for reasons that are not entirely clear, people prefer natural-colored wood with a grain rather than surfaces without a grain. They also feel more comfortable with wood than with sleeker options such as chrome or glass. However, when natural wood surfaces such as floors and walls take up more than 45% of the surface of a room, it starts to lose its stress-relieving effects.² People also do not want surfaces to leave traces of people in the room before them, such as fingerprints.³

2.9.2.5 Windows

Whenever possible, keep windows open to let sunlight in. This helps ensure the space looks and feels bright, open, and warm.

2.9.2.6 Adjustable lighting

One way to empower clients is to give them the option to make light fixtures or lamps inside the clinic as dim or as bright as they please. Adjust the light to a level that is most comfortable for the client. This also demonstrates the importance of their needs and strengthens their ability to express those needs.

2.9.2.7 Privacy

Ensure that conversations are not audible outside the room. Entrances and exits must also be as private as possible to make clients feel protected.

2.9.2.8 Age-appropriate furniture

If families, children, or the elderly are among the clients, it is essential to provide chairs or couches that are comfortable for all. If desks are used during sessions, round tables may facilitate more interactive communication.

2.9.2.9 Positive distractions

Some good “distractions” can help a client by allowing him or her to rest from discussing some emotionally uncomfortable topics. They can shift their focus to a piece of serene artwork, a soothing tabletop fountain, a calm spot away from the therapy space, or even comforting toys. Talking about weighty matters can bring about feelings of vulnerability, and it may be beneficial for clients to take a break every now and then.

2.9.2.10 Personalization

A few personal elements, such as small mementos or the therapist’s credentials, can be reassuring to the client. However, it is best to keep personalization to a minimum, to help the client feel “at home” within the space, and not like a visitor.

2.9.2.11 Layouts to Avoid

Some things to avoid when designing the therapeutic space include the following^{2,3}:

- i. **Closed-in Spaces.** Refrain from using “prison-like” spaces with hard surfaces and no windows. Rooms like these can imply punishment or make clients feel they are unable to escape.

- ii. **Clutter.** Keeping the therapeutic space tidy and neat helps maintain a sense of calm and orderliness.
- iii. **Potential Triggers.** Artwork that inadvertently depicts sadness, violence, or death may contribute to feelings of vulnerability or trigger other mental health issues the client is experiencing.
- iv. **Fixed Seating.** Allow the client to adjust the seating arrangement to give him or her a sense of agency. Clients may also be uncomfortable if the therapist's chair seems to be made from better materials or is built to be higher than their own chair. This can make the client feel inferior and the therapist seem unapproachable.
- v. **Neglected Waiting Rooms:** waiting room layouts are also significant. Poorly designed ones may increase client anxiety and can give the worrying impression that the individual will not get inadequate level of care. Administrative areas like reception and record keeping must also be incorporated in a way that does not affect the client's waiting period negatively.

2.9.3 Dormitory

- i. Separate single bed, seating, storage, window with sufficient ventilation and light for study and other work
- ii. Minimum size of room shall be 64sq.ft/person for single user and 50 sq.ft for two or more than two users
- iii. The common space within the suite
 - a. Reduces some of the pressure felt by two trying to share a single room
 - b. Provide for social activities as does a residential living room
 - c. Includes in social activities those with other students
- iv. Staff sleeping room shall not be part of the communal living area.
- v. One toilet per 4-6 adult addicts
- vi. Fire extinguisher in each floor.

- vii. Permanent balconies without supporting pillars should be constructed which would interfere in anyway with the playing or visual area.

2.9.4 ENVIRONMENT

2.9.4.1 THERMAL

- i. The environment is affected by temperature, ventilation, humidity, radiation and the quality of air.
- ii. It is important that students be able to open their windows to enjoy the soft, fresh morning and evening air and in the owner height buildings-to enjoy communication (but not access) through an open window

2.9.4.2 LIGHT

- i. High illumination levels are appropriate to study; lower levels to social functions.
- ii. Natural daylight may provide much of the necessary illumination if windows are well placed and glare eliminated.
- iii. However, high illumination levels are necessary in areas where concentrated study is to be done, but the brightness contrast between the work and its surroundings must be at a minimum

2.9.4.3 Acoustics

- i. Quiet is the most desired.
- ii. The best inhibitor of noise is good planning of the relationships between rooms. Wherever possible, social area should be suite.
- iii. The Therapy rooms should be insulated

2.9.4.4 Color, texture, materials

- i. Wall can be covered with safe, removable wall-covering panels that provide women with unrestricted freedom of color and decoration. At the same time, these wall coverings can still protect the underlying materials.
- ii. It was noted that carpeted residence halls are far quitter many social activities are performed on the floor; the comfort and quiet provided by carpeting are quite desirable.

2.9.4.5 Safety

The condition of being protected against physical, social, spiritual, financial, occupational, educational political, emotional, psychological, other types or consequences of failure, damage, error, accidents harm.

2.9.5 Physicians Unit

2.9.5.1 Location

- i. As all patients receive medical evaluation, the physician's unit should be near the center's main entrance.
- ii. For purposes of admission, and for the keeping of records, location of the unit near the administrative department is desirable.
- iii. If an in-patient nursing unit is included, the physician should have convenient access to the nursing unit.
- iv. Place the unit a quiet zone.

2.9.5.2 Organization of space

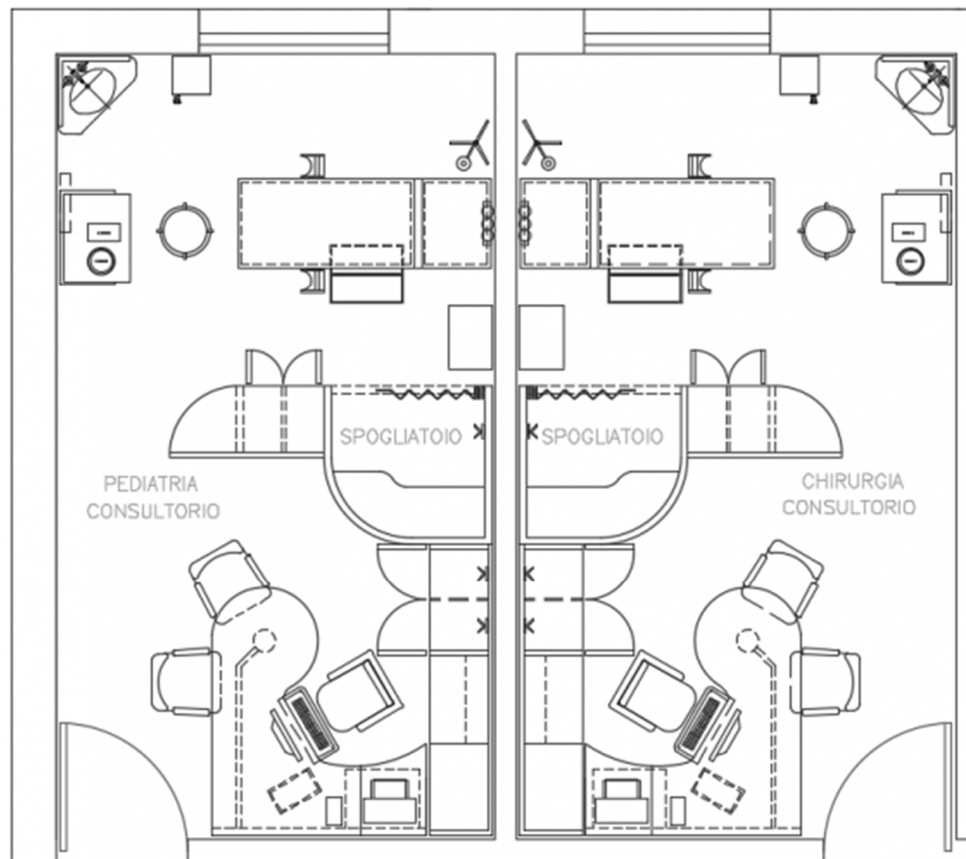
- i. The physician's unit should form a self-contained area, with access to the consultation room and the medical examination room by means of a sub corridor.
- ii. To make full use of the physician's time, there should be two examination rooms for each consultation room.
- iii. Recommended for the area is a toilet designed for wheelchair occupancy, accessible from the examination room.
- iv. Waiting rooms arrange the furniture to allow space for wheelchair patients.

2.9.5.3 Consultation room

- i. Include in the furnishings for the physician's office and consultation room an executive desk and chair, bookshelves, and film illuminator.
- ii. Allow space for two visitors' chair and a wheelchair.

2.9.5.4 Examination room

- i. Include in the furnishings for this room an examination table with clearance on all sides, an examination light, a lavatory and mirror, clinical scales, a film illuminator, an instrument and supply closet, a small electric pressure sterilizer (if no lab-utility room is provided), and a chair.
- ii. Standing bar are optional equipment.

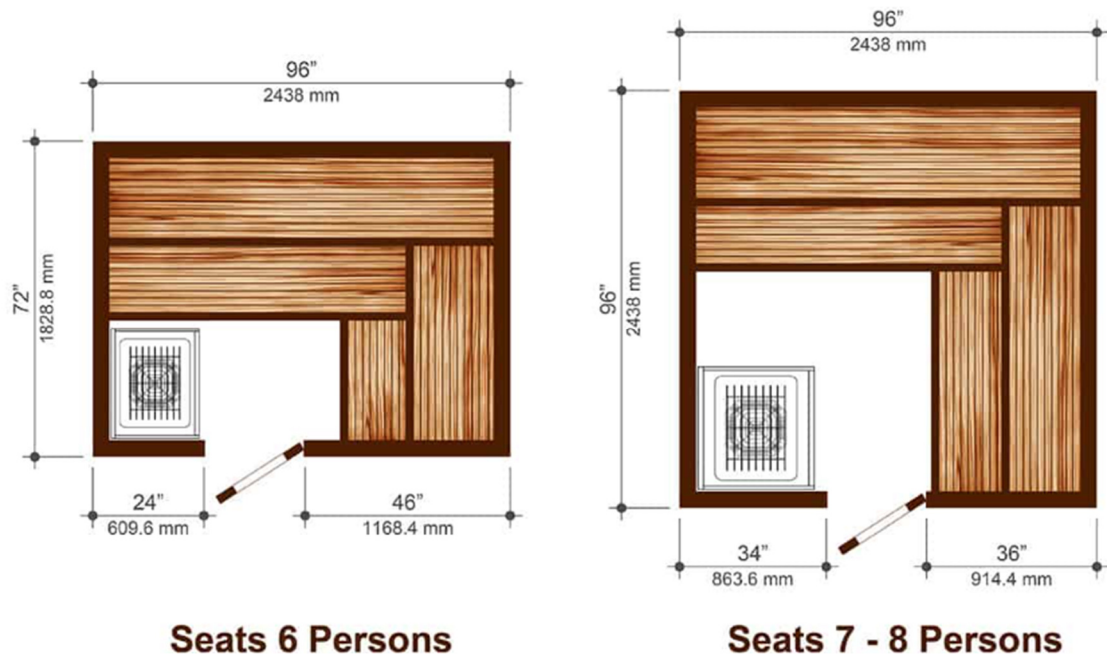


[Figure 13 Examination room layout](#)

2.9.6 Sauna:

The sauna is more than a method of bathing for many it is a type of physical cleansing, almost a ritual, and it is now an essential part of all modern sports facilities In Finland there's one sauna for every six people. They are built to a standard traditional design and used once a week, both communally within the family and also on public without segregation of the sexes. The classic location for saunas is next to a clear lake with woods

and meadows for air bathing between sweat baths. In this facility, Sauna is required for the process similar to new life detoxification.



[Figure 14 Sauna Standards for 6 to 8 people](#)

2.9.7 Meditation Hall:

The calculation of space needed for meditation hall is calculated on the basis of the posture a meditator uses while meditating. As cross-legged posture is best for doing meditation, mostly this posture is used. The person sits upright, back straight, and with their head and spine in alignment in this posture. Hands may rest in any position.

The seating should be provided in front of the meditation hall for teachers and there should be entry for them. Service rooms should be provided near the entry of teachers. Meditation space for male and female should be separated in meditation hall.

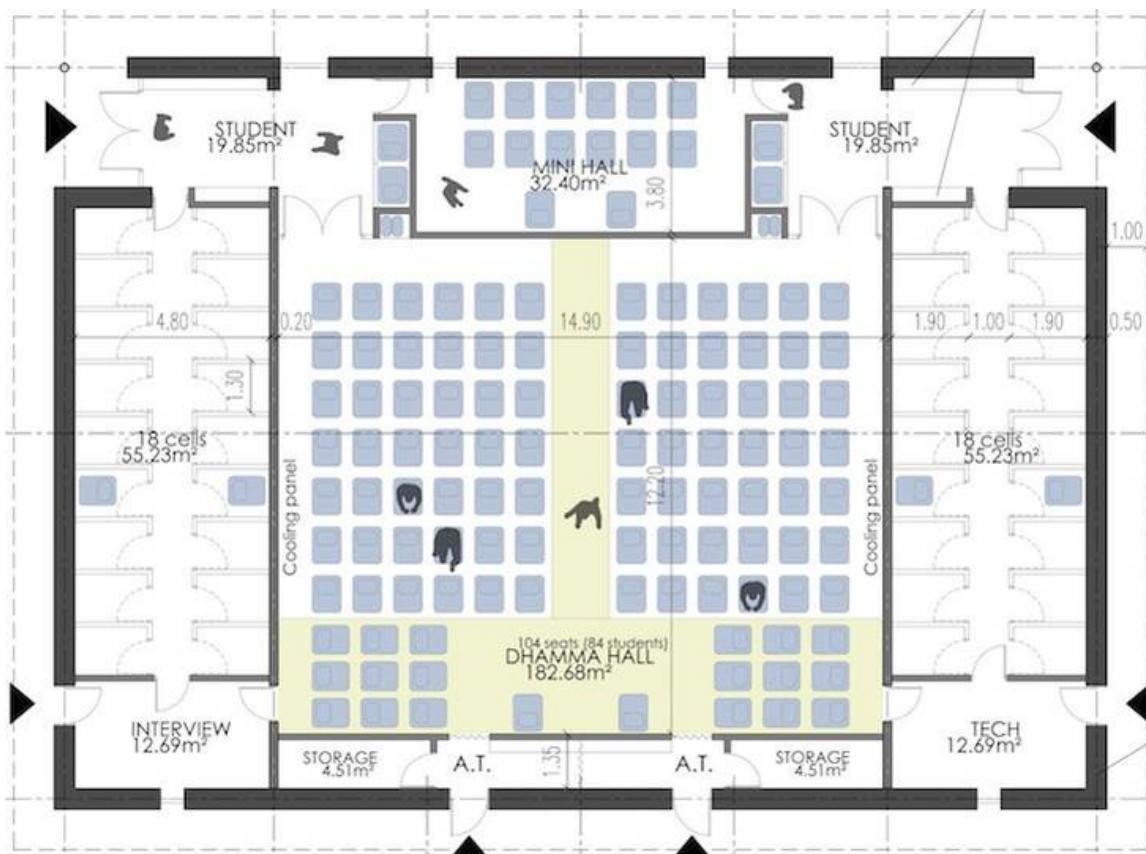


Figure 15 Vipassana meditation hall layout

The color of the interior is much more influenced by the technique of meditation. Bright colors like white color for meditation hall. Orange increases oxygen supply to the brain.

2.9.8 YOGA HALL

Yoga hall is healing system for mind and body. It is technique of controlling the body and mind through disciplined method to attain goal of a healthy physical and mental state. It was practiced for more than 5000 years. It is a combination of breathing exercises, physical postures and meditation. It comes from the Sanskrit word "yuj" which means union or to join.

2.9.8.1 Requirements

There are certain requirements that must be fulfilled in yoga hall which are as follows:

- i. Considering the movement of hands in all direction, the standards of mat of yoga is taken as size of mat 7'-0"x 3'-0"
- ii. Additional space should be provided in between two mats.
- iii. Proper light and ventilations are required with clean and peaceful environment

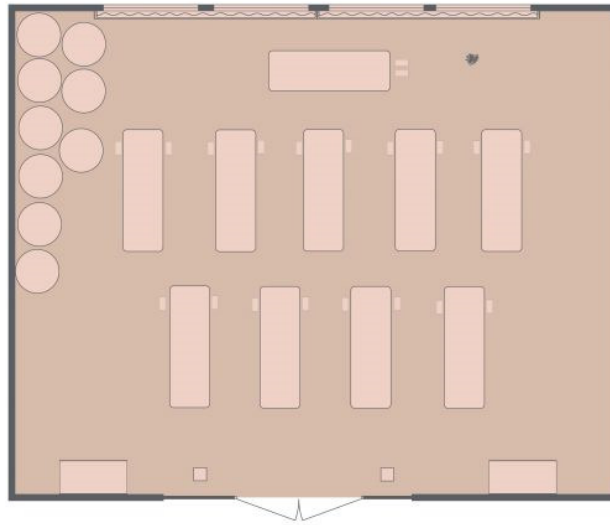


Figure 16 General Yoga Hall Layout

3 CASE STUDIES

Case study is an intensive study about a person, a group of people or a unit, which is aimed to generalize over several units. In case of architecture, case study is studying a built architectural structural. For this proposal, various case studies have been done to understand the project in detail. The case studies done are as follows:

- i. Sober Recovery Women's Rehabilitation Center
- ii. Narconan Nepal
- iii. Mukatangan De-addiction center
- iv. Groot Klimmendaal Rehabilitation Center

3.1 Sober Recovery Women's Rehabilitation Center



[Figure 17 Sober Recovery Women's rehabilitation center](#)

3.1.1 Study Objectives:

- To understand how the women's rehabilitation center is different from the men or mixed rehabilitation center

3.1.2 Profile

- Location: Arubari, Kathmandu
- Function: Rehabilitation center for drug addicts
- Area: 3 ropanis
- Capacity: 70

- Target Population: Female drug users

3.1.3 Brief Introduction

Sober Recovery Women's Rehabilitation Center is the rehabilitation center focused on serving the female drug users. It was established in 2066 B.S. In this treatment facility, the maximum recovery time is six months. It is a residential facility for the women to help them throughout their withdrawal period.

3.1.4 Architectural expression

- Residential building turned to rehab
- Vertically segregated zoning
- Exposed brick façade
- Huge green open space in front of the building for social interaction

3.1.5 Method of treatment and rehabilitation

3.1.5.1 Surrender

In this treatment facility, the women undergo medical detox and social detox. For the medical detox, women are taken to the detox facility and for the social detox, they are kept engaged with the other addicts in all the other time.

3.1.5.2 Rehabilitation

As rehabilitation is the process of making the addicts physically, psychologically and socially capable, in this treatment facility, women are taught about drugs, their side effects and are taught yoga, meditation to heal them. They are also engaged in various religious activities like singing religious songs and celebrating festival among one other to make them socially capable.

3.1.5.3 Reintegration

For the reintegration, the women are made capable enough to stand on their own feet. They are given training on Mithila painting, sewing, and some are also given the opportunities to do works like welding and carpentry.

3.1.6 Positive aspects

- A treatment facility dedicated just for women

- Women's gender-based needs like place for pregnant women are met
- Abundant open space

3.1.7 Negative aspects

- Overly crowded room for residents i.e. 6-12 person per room
- Residential building hence zoning and planning not done according to that of the rehabilitation center

3.1.8 Inferences:

- Gender based needs of the women must be kept in mind
- Social interaction spaces is needed
- Overly crowded rooms cause dispute among the roommates

3.2 Narconan Nepal

3.2.1 Study Objectives:

- To understand zoning and planning of the residential facility
- To understand the spaces of the residential facility

3.2.2 Profile



Figure 18 Narconan Nepal, Kakani

- Location: Kakani, Nuwakot
- Function: Rehabilitation center for drug addicts
- Area: 3.8 Acres
- Capacity: 105 Patients
- Target Population: Male drug addicts

3.2.3 Brief Introduction

Narconan Nepal is a treatment facility where addicts enter an environment dedicated to help to overcome addiction for good. They do not treat addicts as patients or victims or even addicts but they treat them as student are admitted to live a successful drug free life.

- Maximum treatment days 3-9 months to 5-6 years
- Residential treatment program

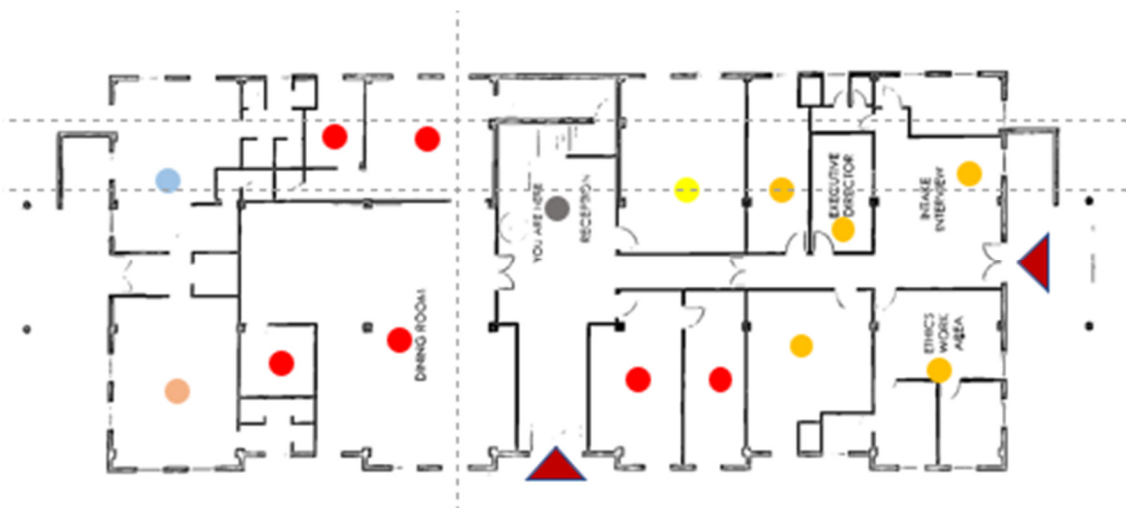
3.2.4 Architectural expression

- Vertically Segregated Buildings
- Symmetrical façade with traditional entrance

- Contemporary architectural style with contemporary touch
- Welcoming entry porch
- Huge open plaza in front of the building

3.2.5 Space analysis

- Waiting and reception area: 9.3m x 6m
- Administration: 11.9m x 17m
- Kitchen and dining: 12.12m x 17m
- Corridor: 1.9m Detox ward with staff room: 17m * 5.8m
- Bedroom: 5.9m x 7.6m for 8 people
- Sauna for 6 people: 2.9m x 3.5m
- Medical unit: 4.2m x 2.2m
- Counselling: 5.8m x 7.6m
- Gym: 5.8m 7.1m
- Classrooms: 5.8m x 7.6m



[Figure 19 ground floor plan](#)



Figure 20 First floor plan



Figure 21 Top floor Plan

- | | |
|---------------------|------------------------|
| ● DORM | ● MEDICAL LIAISON |
| ● RECREATIONAL HALL | ● BALCONY |
| ● MEDICAL ROOM | ● SECURITY CHECK POINT |
| ● COUNSELING ROOM | ● DRILL ROOM |
| ● STAFF | ● SAUNA |
| ● ACCOMODATION | ● RECEPTION AND LOBBY |
| ● ADMINISTRATION | ● GYMNASIUM |
| ● KITCHEN UNITS | ● LIBRARY |

3.2.6 Zoning



Figure 22 Analysis of zoning at Narconan

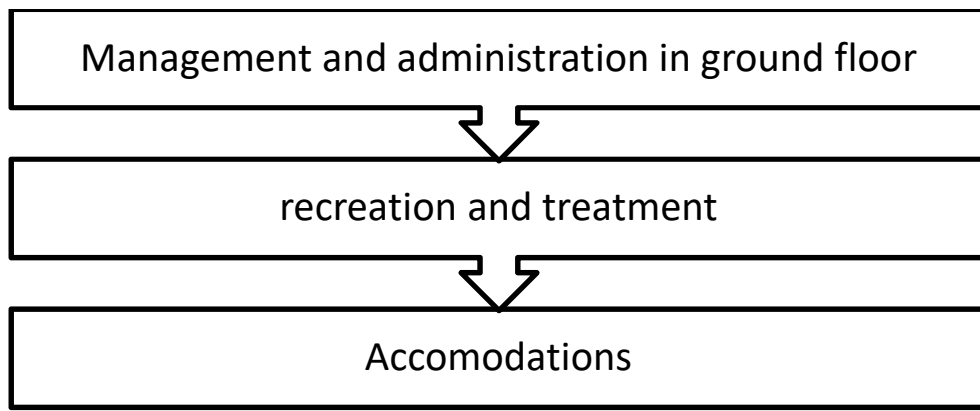
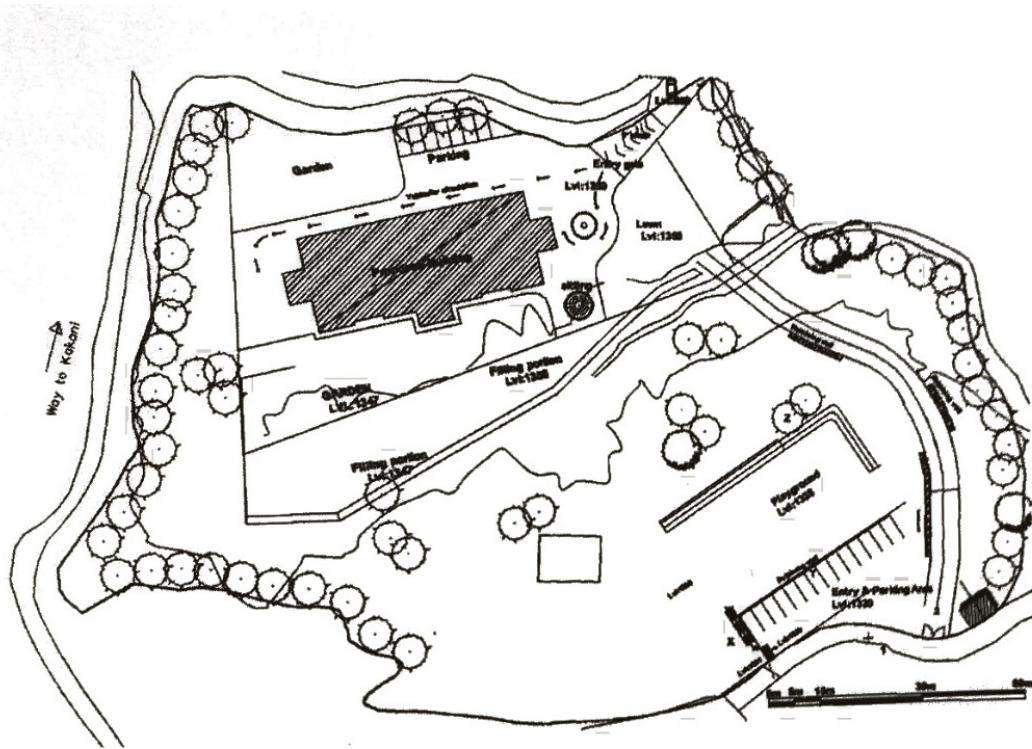


Figure 23 General Zoning

3.2.7 Planning



[Figure 24 Site plan of Narconan Nepal](#)

The entire facility is built on a single building focusing on the privacy and security. Built away from the hustle and bustle life of the city, it is successful to create tranquil environment. There is open plaza space in front of the building and open spaces surrounds the building. Maintenance rooms are placed away from the building to minimize the noise disturbance. Emergency exits have been provided.

3.2.8 Dormitories



Figure 25 Dormitories of the Narconan

- Provision of proper light and ventilation in the dormitory
- Provision of furniture for study as well as provision of a wardrobe for 2 ppl
- Toilets for 8 people in a room
- Parquet flooring
- Shades of green color used in rooms

3.2.9 Positive aspects

- located in a serene environment educational based treatment system
- storey buildings built on top of the hill incorporating natural beauty
- bedroom with 8 people/room (7 students and 1 volunteer) and 3-4 toilets per room
provision of wardrobe proper light and ventilation in the building
- day lighting is sufficiently provided throughout the building through large windows
- buildings with sharp corners or right angled edge spacious doubly loaded corridors with sufficient lightings variation in color designing, green and its shades
- high security alerts
- as the whole complex is surrounded on all sides by hills and mountains, thus a sense of healing through nature
- provision fire extinguisher in each floor wide staircase for easy accessibility

3.2.10 Negative aspects

- No proper landscaping sufficient open spaces no provision of meditation for speedy healing room
- No adequate recreational areas
- No variation in quality of spaces.
- No provision of such spiritual healing spaces for speedy recovery
- no provision of any common place for recreation
- highly focused on individual than on group therapy

3.2.11 Inferences:

- zoning: segregated
- site location effects the health of the people
- spaces and its connections affect the psychology of the people natural light and ventilation throughout the building
- dimension of the room and required room for dormitories
- solar panels on the roof and to the lamp posts as alternative energy source open plaza for socialization
- open spaces for active engagement and interaction

3.3 Mukatangan De-addiction center

3.3.1 Study Objectives:

- To learn about the components of the rehabilitation
- To study about design environment

3.3.2 Profile



Figure 26 Muktangam Rehabilitation Center

- Location: Pune, India
- Function: Rehabilitation Center for drug addicts
- Area: 522 sqm
- Capacity: 120 Residential units
- Target Population: Male drug addicts

3.3.3 Brief Introduction

Muktangan Rehabilitation Center founded in 1986, today has achieved the status of being one of the best institutes in the field of Drugs & Alcohol de-addiction. The facilities provided in this facility are residential treatment facility and daycare programs. It has treated more than 20000 addicts with 20-25% of relapse cases.

3.3.4 Architectural expression

- Horizontally segregated building
- Inward planning
- Natural stones, plants, creepers all part of architectural vocabulary to create a natural therapeutic space

3.3.5 Analysis

- i. Designed according to topography where natural form is not disturbed
- ii. Natural stone, plants, creepers, the sky, cloud all part of architectural vocabulary create a natural therapeutic ambience
- iii. Counseling room are provided with sound insulation
- iv. Enclosed landscape

3.3.6 Planning

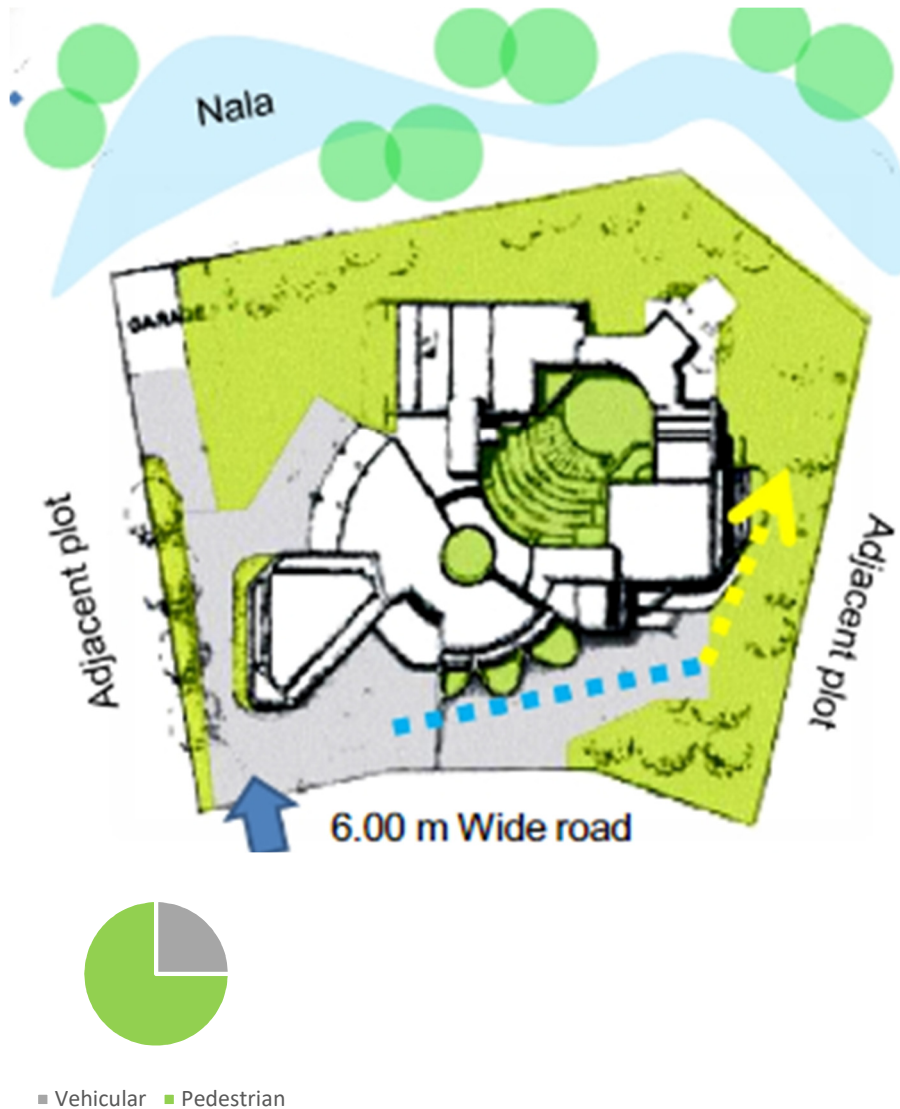


Figure 27 Planning of the Muktangam De-addictionCenter

3.3.7 Zoning



Figure 28 Floor Plans

3.3.8 Climate Compatibility

- i. Courtyard Planning is most suited for Pune climate by improving indoor comfort
- ii. External walls are clad with composite stone masonry which serves as thermal insulation for entire building
- iii. Flying buttress and shading devices are used for protection from solar radiation

3.3.9 Positive aspects

- i. Inward Planning
- ii. Incorporation of green spaces even in the spaces inside the building
- iii. Use of Stone, Plants to enhance therapeutic environment
- iv. Respect the topography

3.3.10 Negative Aspects

- i. Ward like planning form dormitories increasing dispute among residents

3.3.11 Inferences

- i. Topography of the site should be respected
- ii. Open spaces should be given priority for social interaction

- iii. Use of materials that reflect the nature such as stone and plants to enhance the therapeutic character of a place
- iv. Therapy rooms should be insulated for sense of privacy for the addicts

3.4 Groot Klimmendaal Rehabilitation Center

3.4.1 Study Objectives:

- To study about the requirements of the therapeutic spaces

3.4.2 Profile



Figure 29 Groot Klimmendaal Rehabilitation Center

Location: Arnhem, Netherlands

Function: Rehabilitation Center for drug addicts

Area: 3. Acres

Capacity: 76

Target Population: Male drug addicts

3.4.3 Brief Introduction

The Rehabilitation Centre Groot Klimmendaal designed by Koen van Velsen gradually fans out towards the top and cantilevers out over the surrounding terrain. Despite its size, the brown-golden anodized aluminum facade allows the nearly 14,000 sqm building to

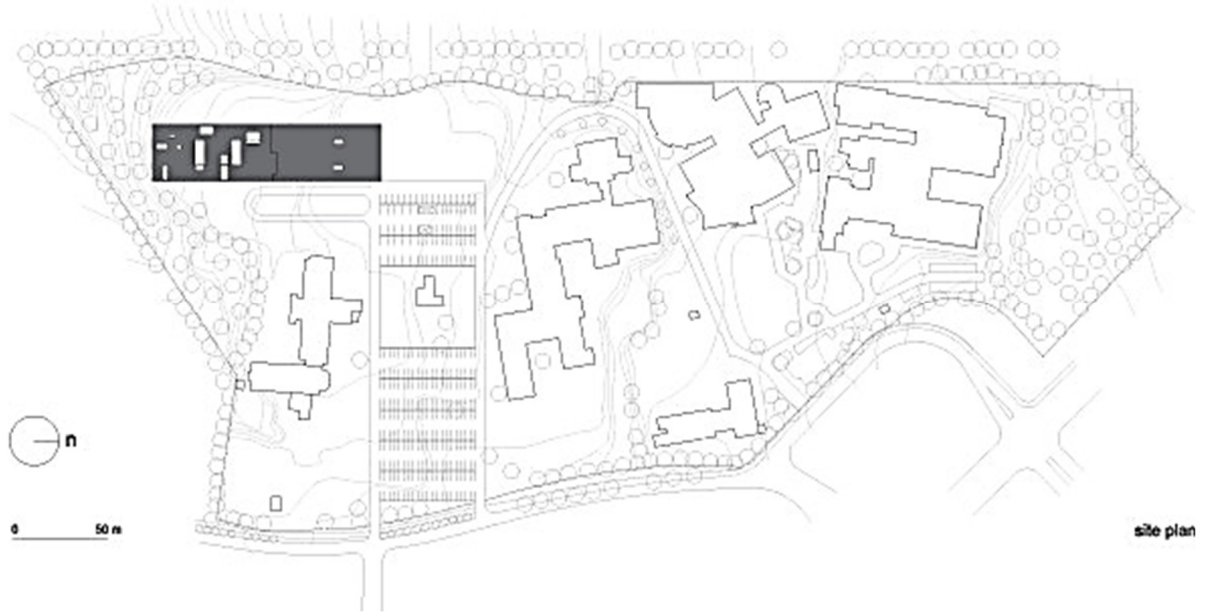
blend in with its natural surroundings. The care concept is based on the idea that a positive and stimulating environment increases the well-being of patients and has a beneficial effect on their revalidation process. The design ambition was not to create a center with the appearance of a health building but a building as a part of its surroundings and the community.

3.4.4 Design Concept:

- i. Aims to blend in with its surroundings to create a sense of peace and relaxation
- ii. attempts to bring the natural environment inside to the patients that occupy the rehabilitation center
- iii. Positive and stimulating environment increases the well-being of patients A strong sense of community and environment help to create spaces that are both positive and rejuvenating
- iv. To create a building as a part of its surroundings and the community
- v. To offer a natural habitat for care
- vi. All recreation, fitness and other common use spaces such as the gym, swimming pool, restaurant and theatre are located in close proximity at entrance level
- vii. Facilities used by residents families as well as the local community . Permeability and openness are key features of the Groot Klimmendaal Rehabilitation Centre

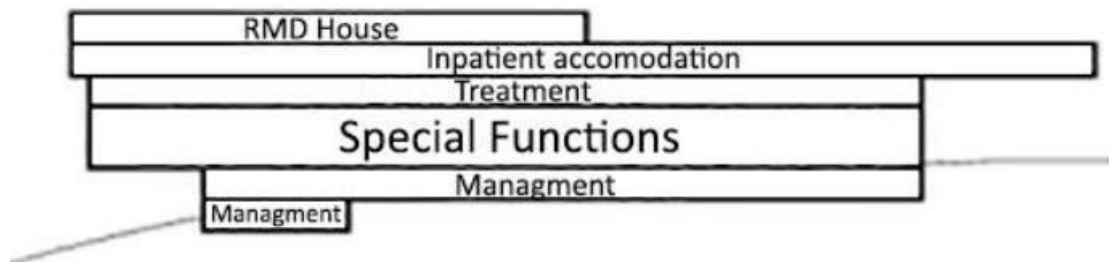
3.4.5 Planning

The building blends effortlessly with the surrounding forest, the filtered forest light permeating the building. The healthcare centre is open on another level too, being designed for use not just by patients but also by the local community. In fact it is part of a broader masterplan by architect Koen van Velsen to turn the area into a public park with three high-density buildings. (Etherington, 2011)The building merges into its forest setting thanks to its minimal footprint, slender stilts supporting the upper cantilevered levels, an almost fully glazed double-height ground floor, the bronze-colored anodized aluminum cladding on the upper levels that help camouflage and dissolve this 14 000 square metre volume in the forest.



[Figure 30 Master Plan of Groot Klimmendaal Rehabilitation Center](#)

3.4.6 Zoning



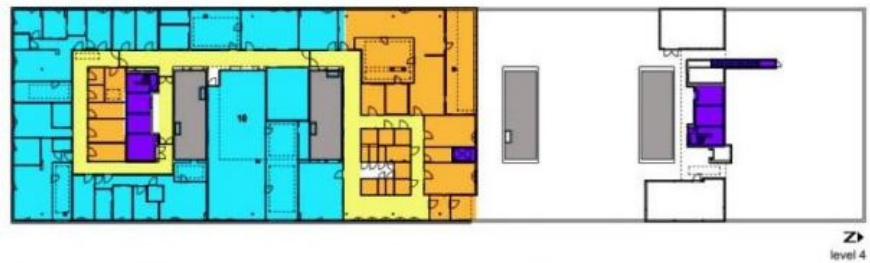
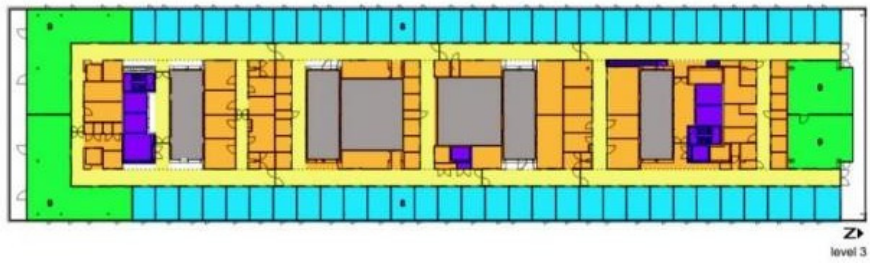
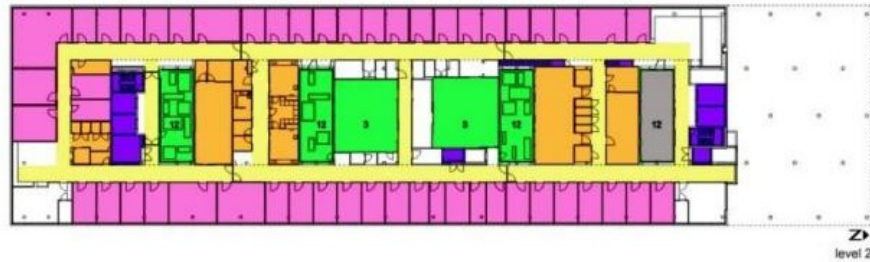
[Figure 31 Vertical Layering of the program](#)

The arrangement of the programme is clear. Below are offices, above are the clinical area's and on the roof a Ronald McDonald House with its own identity. The double-height ground floor at entrance level facilitates the special elements of the programme such as a sports facility, fitness, swimming pool, restaurant and theatre. Not only patients but also family members and members of the local community (schools, theatre groups etc) use these facilities on a regular basis. As a result, both patient and building are placed at the centre of the community.

3.4.7 Space analysis

(Etherington, 2011)The building serves different functions from four levels. The ground floor comprises a double-height canopy with access to administration, offices, recreation and leisure spaces which elevate to first-floor level. The second floor is a dedicated clinical area. However, part of the administration and leisure activities elevate to this level. The third floor is a designated inpatient accommodation, administration and leisure while the fourth floor is also inpatient accommodation, administration but with functional areas for charity. A set of wooden staircases connects all floors. Because the building is 30 metres wide, light voids of various sizes are provided to enable natural light into the building. Interior spaces are painted with distinctive colours to demarcate separate domains. Internal walls are set back from the glazed exterior wall on ground and first-floor levels, which create a well-lit passage between the two walls. 45 The high glazed window façade provides endless views to the outside landscaping and large trees.

therapeutic center- rehabilitation for the women involved in substance abuse



0 20 m

- 1 entrance
- 2 office
- 3 gymnasium
- 4 swimming pool
- 5 theatre
- 6 restaurant
- 7 fitness centre
- 8 room for patient
- 9 living room
- 10 small modernist house
- 11 void
- 12 patio

- Recreation and Leisure
- Administration, Staff, and Technical rooms
- Clinic
- Inpatients accommodation
- Double Height
- Vertical circulation
- Horizontal circulation

3.4.8 Positive aspects

- i. Patients and their families' have full access to sports facilities, fitness areas, a
- ii. swimming pool, restaurant, and even a theatre. The client is not restricted to patients and their families; community organizations often use the spaces such as schools, theatre groups, and a variety of community clubs and committee
- iii. Both direct and indirect routes are used in the circulation of the building Create both familiarity and also promotes mental stimulation as patients
- iv. explore the different spaces
- v. Sustainable materials were chosen for walls, ceilings, and facades which would require little maintenance.

3.4.9 Inferences:

- i. Provide recreation facilities accessible to the community to help in reintegration of the patient
- ii. Integrate natural daylight throughout design
- iii. Social detox by engaging family and community in the building
- iv. Bringing the nature inside the building with permeable façade
- v. Visual connection between indoor and outdoor spaces

4 PROGRAM FORMULATION

They do not contain many details on the activities to be carried out and the outputs expected by these activities: These are specified at the project specification level. A framework is provided by program formulation where different projects, sharing the same overall objectives, can be conceived and implemented in a coordinated manner.

We must ask ourselves what is the building purpose to establish a program. The establishment of the purpose helps in determining the spaces needed. After the literature review and case studies the goals of the building program was created to meet the following goals:

1. Holistic and homely environment
2. Spiritual healing and nature and human connection spaces
3. skill development programs to stand once again in the society
4. Encourage socialization through connection and creating spaces

The number of patients to be admitted for the proposal are

Types of patient	Female
Inpatient	80
Outpatient	20
Total	100

Figure 32 Table for number of patients

Inpatients:

- i. The people who are admitted in the rehab as the residential patients.
- ii. They can use new tools which help them to re-enter into the society and lead responsible, successful drug free lives.

Outpatients:

- i. Outpatients are those who offered only for the daycare treatment.
- ii. They can equally use the facilities as the inpatients except the residential facilities.
- iii. They are equally cared and provided training as the inpatient does.

ADMINISTRATION						Total
S.NO.	BLOCK	Type	Area(m2)	Number	area	Comment
1	RECEPTION	Open	40	1	40	Visible from the entrance
2	MEETING ROOM	Closed	50	1	50	For staffs
3	DIRECTORS OFFICE	Closed	25	1	25	
4	ADMINISTRATOR'S OFFICE	Closed	30	1	30	
5	GENERAL OFFICE	Closed	20	1	20	For 4 people
6	TOILET	Closed	20	1	20	Not visible but directly connected to main lobby
7	STORE	Closed	9	1	9	
8	RECORD ROOM	Closed	9	1	9	
					203	
	Total + Circulation(20%)		263.9 sq.m.			Circulation of 30%
S.NO. OUTPATIENT WARD		Type	Area	Number	Total area	Comment
1	RECEPTION	Open	9	1	9	Visible from entrance
2	WAITING AREA	Open	40	1	40	
4	TOILET	Closed	20	1	20	Not visible but

						directly connected to main lobby
5	LABORATORY	Closed	100	1	100	
6	PHYSICIANS ROOMS	Closed	20	2	40	Connected to waiting lounge
7	COUNSELLING OFFICE	Closed	20	2	40	Connected to waiting lounge
8	PSYCHIATRISTS ROOM	Closed	20	1	20	Connected to waiting lounge
10	SEMINAR HALL	CLOSED	200	1	200	For 100 people
					469	
	Total+ Circulation		609.7 sq.m.			Circulation of 30%
S.NO.	NEW LIFE DETOX WARD	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	40	1	40	Visible from entrance
2	CHANGING ROOM	Closed	50	1	50	2.5m ² per person: for 20
3	DIETICIANS OFFICE	Closed	25	1	25	
5	DOCTORS ROOM	Closed	25	1	25	
6	GYM	Closed	150	1	150	

7	SAUNA	Closed	30	1	30	1 rooms for 8-9 person per room
9	TOILET	Closed	20	1	20	
10	STORAGE	Closed	15	1	15	
					355	
	Total + Circulation		461.5 Sq.m.			Circulation of 30%
S.NO.	THERAPY BLOCK	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	40	1	40	Visible from entrance
2	COMMON ROOM	Open	40	1	40	
3	STORE	Closed	9	1	9	
4	TOILET	Closed	20	1	20	
5	CONSULTATION ROOM	Closed	25	1	25	
6	CLASSROOMS	Closed	50	2	100	
7	BEHAVIORAL THERAPY ROOMS	Closed	25	3	75	
8	Individual Therapy	Closed	25	2	50	
9	Group Therapy	Closed	50	1	50	
10	Family Therapy	Closed	26	1	26	Connected to the reception
11	ART THERAPY	Semi- Open/closed	100	1	100	

12	MEDITATIVE THERAPY	Semi- Open	50	1	50	Connected to the exterior
					585	
	Total + Circulation		760.5			Circulation of 30%
S.NO.	RECREATIONAL BLOCK	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	40	1	40	
2	COMMON ROOM	Open	40	1	40	
3	CHANGING ROOM	Closed	50	1	50	2.5m2 per person for 20
4	TOILET	Closed	20	1	20	
5	MULTIPURPOSE HALL	Open	700	1	700	5 court hall
6	salon	closed	35	1	35	
					885	
	Total + Circulation		1150.5			Circulation of 30%
S.NO.	INPATIENT ACCOMODATION BLOCK	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	40	1	40	
2	LOBBY	open	40	1	40	
3	STAFF ROOM	semi open	30	1	30	
4	KITCHEN	closed	60	1	60	

5	DINING	semi open	180	1	180	1.5m2 per person: 120
6	DOCTOR ROOM	Closed	25	1	25	
7	CRITICAL PATIENT WARD	Closed	16	8	128	2 PERSON IN ROOM
8	NORMAL WARD	Closed	30	20	600	3 PERSON PER ROOM
	MOTHER CHILD WARD	Closed	15	5	75	
7	NURSE STATION	Open	20	3	60	
9	SALON	closed	35	1	35	
12	STORAGE	closed	9	1	9	
13	TOILET	closed	20	1	20	
					1302	
	Total + Circulation		1562.4 sq.m.			Circulation of 30%
S.NO.	CHILDREN ACCOMODATION BLOCK	Type	Area	Number	Total area	Comment
1	RECEPTION	Open	20	1	20	
2	CHILDREN PLAY AREA	closed /semi open	60	1	60	
3	STUDY ROOM	Closed	20	1	20	
4	SLEEPING ROOM 2 PER ROOM	Closed	15	1	15	Attached bathroom
					115	
	Total + Circulation		149.5 sq.m.			Circulation of 30%

TECHNICAL AND UTILITY						
S.NO.	AREA	Type	Area	Number	Total area	Comment
1	LAUNDRY ROOM	Closed	100	1	100	
2	STORAGE	Closed	50	1	50	
3	ELECTRICAL ROOM	Closed	15	1	15	Ground floor
5	GENERATOR ROOM	Closed	25	1	25	Ground floor
7	TOILET	Closed	15	1	15	
8	SUPPLY AND UTILITY ROOM	Closed	20	1	20	Ground floor
10	TELEPHONE ROOM	Closed	6	1	6	Ground floor
11	MECHANICAL ROOM	Closed	60	1	60	ground floor
					291	
	Total + Circulation		378.3 sq.m.			Circulation of 30%
SKILL DEVELOPMENT						
S.NO.	AREA	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	40	1	40	
2	CONSULTATION ROOM	Closed	25	1	25	
3	POTTERY ROOM	Closed	30	1	30	
4	PAPER AND HANDICRAFT	Closed	30	1	30	
5	WEAVING	Closed	30	1	30	
6	DANCING CLASS					
8	GARDENING AND NURSERY	Closed	200	1	200	Need green house

					355	
	Total + Circulation		461.5 sq.m.			Circulation of 30%
S.NO.	STAFF QUARTERS	Type	Area	Number	Total area	Comment
1	RECEPTION WITH WAITING AREA	Open	20	1	20	
2	STAFF LOUNGE	Open	30	1	30	
3	BEDROOMS FOR 3 PEOPLE	Closed	25	4	100	
5	STORAGE	Closed	9	1	9	
6	PANTRY	Closed	15	1	15	
					174	
	Total + Circulation		226.2 sq.m.			Circulation of 30%
S.NO.	SUPPORT BLOCK	Type	Area	Number	Total area	Comment
1	GUARD HOUSE	Closed	15	1	15	
2	ENQUIRY ROOM	Semi Open	9	1	9	
3	TOILET	Closed	20	1	20	
4	GUEST QUARTER	Closed	100	1	100	
5	STORAGE	Closed	9	1	9	
					153	
	Total + Circulation		198.9 sq.m.			Circulation of 30%

4.1 AREA ANALYSIS

1	ADMINISTRATION BLOCK	203	60.9	20.3	284.2
2	OUTPATIENT BLOCK	469	140.7	46.9	656.6
3	DETOX BLOCK	355	106.5	35.5	497
4	THERAPY BLOCK	585	175.5	58.5	819
5	RECREATIONAL BLOCK	885	265.5	88.5	1239
6	INPATIENT ACCOMODATION BLOCK	1302	390.6	130.2	1822.8
7	CHILDREN ACCOMODATION BLOCK	115	34.5	11.5	161
8	TECHNICAL AND UTILITY AREA	291	87.3	29.1	407.4
9	SKILL DEVELOPMENT BLOCK	355	106.5	35.5	497
10	STAFF QUARTERS	174	52.2	17.4	243.6
11	SUPPORT BLOCK	153	45.9	15.3	214.2
		4887	1466.1	488.7	6841.8

From the above table,

Total area for functions: 4887 sq.m.

Area of circulation: 1466.1 sq.m.

Area of wall: 488.7 sq.m.

Total Built-up Area: 6841.8 sq.m.

Allowed Built-up area by the byelaws of the site: 40%

Site area = 25938 sq.m.(50 Ropani 15 anna)

5 SITE

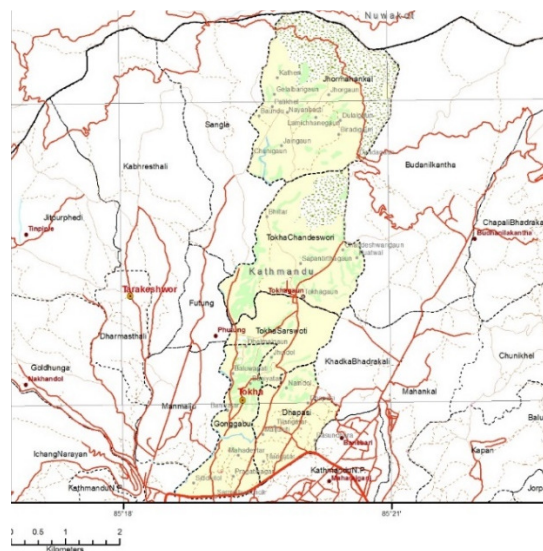
5.1 Site selection criteria:

The main purpose of the center is to provide holistic healing environment to the addicts. Hence, the criteria's for the site selection were established according to the goals and purposes of the rehabilitation. For that reason, connection with the nature is necessary but near to the community is at the top criteria which will help them a source of encouragement to rebuild their strength in society.

The nature can be brought into the built environment in creative ways whenever the site does not provide the natural features. Nevertheless, when the city provides good sites or site selection is flexible, a site that can satisfy the programmatic requirements and spiritual needs of the users is always the best one. Following are the major site requirements:

- i. The site should be away from city core area
- ii. Peaceful area nut not detached to the community
- iii. Easy access to transportation, school, hospital, police station
- iv. Exiting Greenery on the site

5.2 Site Location:



[Figure 33 Map of Tokha Municipality](#)

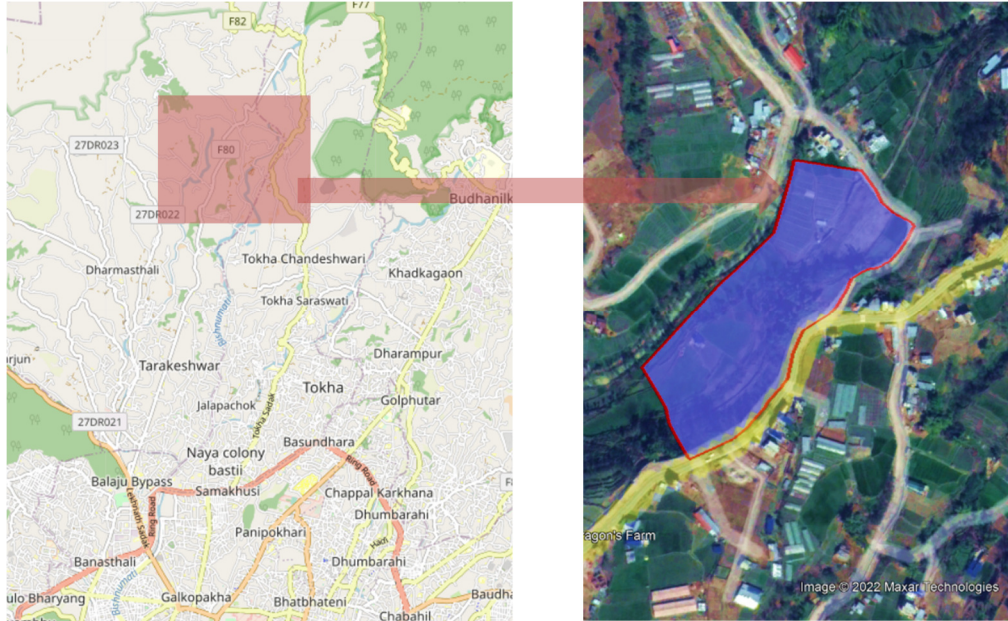


Figure 34 Location of Site

The Proposed site is located at Tokha municipality, ward no. 2. The land is partially agricultural land and partially barren with existing greeneries. The proposed site is 10km far from core Kathmandu, 7km from the ring road and about 2.2km from the core tokha settlement area.

5.3 Site specifications:

Site area: 50 ropanis

Orientation: East

Topography: slope land

Longitude: 85°19'34.11"E

Latitude: 27°47'6.26"N

Altitude: 4454ft above the sea level

The site is connected to the main road on the east and secondary road on the north. The site is enclosed by small stream on the west.

5.4 Site Justification:

- i. Close to nature and society: Tokha settlement is on the front of the site whereas on the other sides are the residential areas and to the rare part of the site is the Shivapuri National Park
- ii. Peaceful area but not detached from community: the site is on the side of
- iii. Tokha settlement from where the community is clearly visible. It will act as an
- iv. Encouragement to the addicts to be back to the community
- v. The site is away from noisy zones which is suitable for the project undertaken as the project has psychological, spiritual consideration together with other aspects of the project.



Figure 35 View of the site



Figure 36 Site surrounding

5.5 Topography:

Every site has its own topography and that makes every site unique in its own aspect. The site chosen has its own unique features.



Figure 37 Transverse section of the site

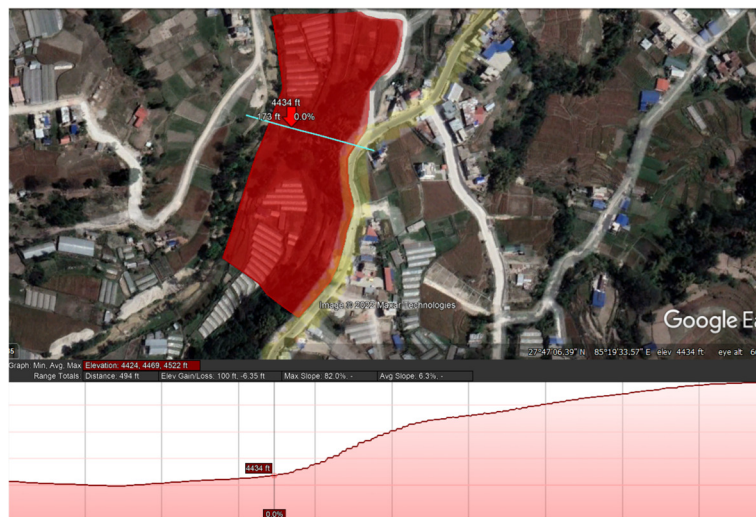


Figure 38 Transverse section of the site

The figures above show the transverse section of the site which shows the average slope of about 10% and 6% respectively. The site elevation clearly shows that there is slope on the eastern part of the site. The level difference between the highest and the lowest point in the

site transversely is about 47 ft which then acts as natural barrier for sound coming from the eastern main road.



Figure 39 longitudinal section of the site

The figures above show the transverse section of the site which shows the average slope of about 5.2%. The level difference between the highest and the lowest point in the site is 16ft.

5.6 Natural elements:

The site is chosen as per the criteria of the site that had been enlisted earlier. The site is enclosed by small stream on the western side which connects with Bishnumati River. There are trees on the eastern side of the site which acts a natural barrier of sound as it is adjacent to the main road.

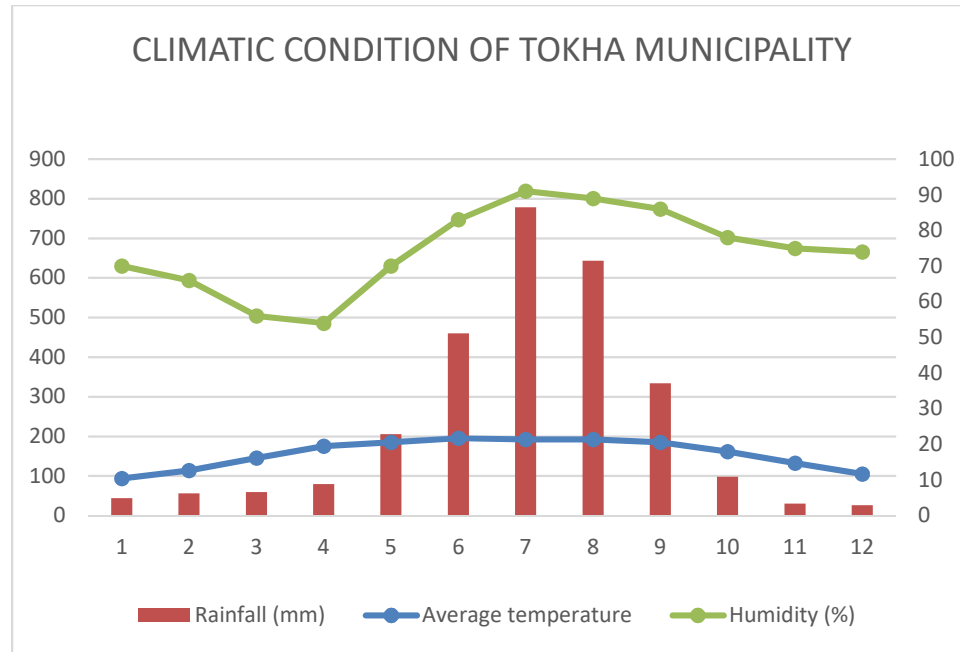


Figure 40 Existing Greeneries at the site



Figure 41 Stream on the west of the site

5.7 Environmental analysis:



On studying climatic condition of the site, the site has an average temperature of about 20 °C. There is maximum rainfall of nearly 800mm monthly and minimum rainfall of about 30mm monthly. The site exhibits the minimum humidity of more than 50% and maximum humidity of 90%. Source: climate-data.org

5.8 Accessibility:

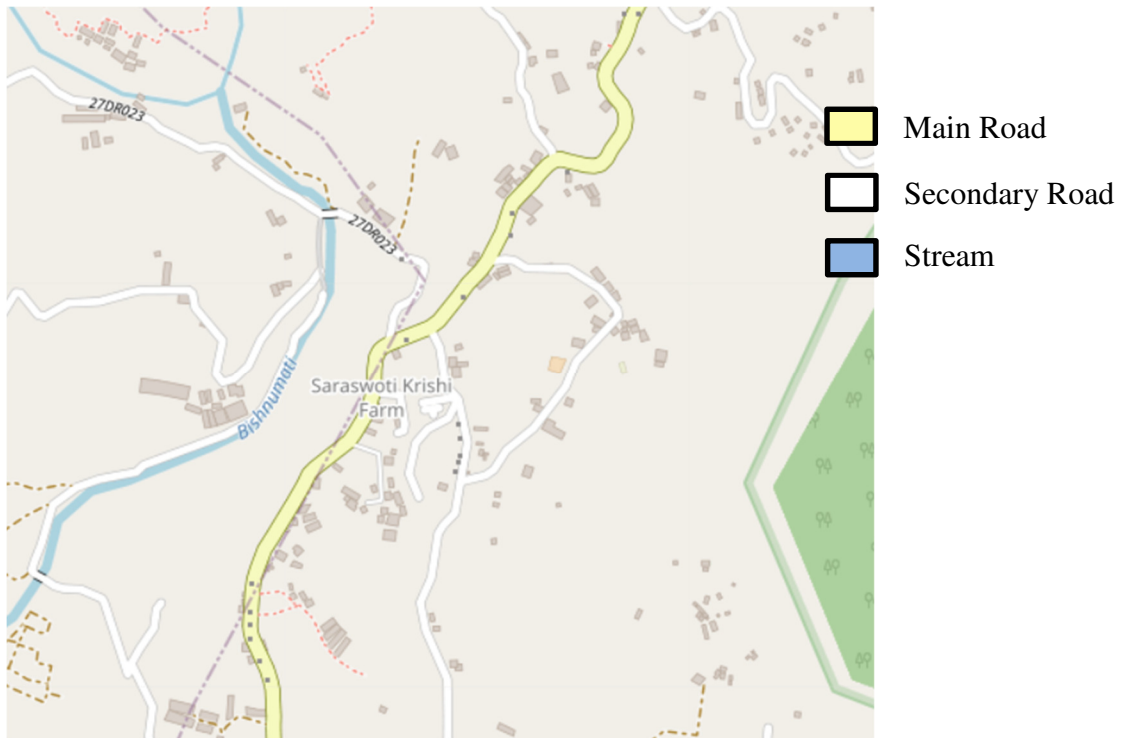


Figure 42 Accessibility of the site

The figure above shows that the site is accessible on the east from the main road and accessible on the north via secondary road.

5.9 SWOT Analysis:

1. Strength

- a. The site is away from the city
- b. The site has extraordinary views of the Shivapuri National Park
- c. Pollution free Environment
- d. Accessible by Public transportation
- e. The site has contour aiding to the natural drainage
- f. The stream nearby will help in spiritual healing

2. Weakness

- a. There is no facility of municipal sewerage
- b. The hills have been cut for plotting leading to deforestation
- c. Narrow Road

3. Opportunities

- a. Contour interplay
- b. Topography helping in the zoning
- c. Employment opportunities to the communities nearby

4. Threats

- a. Community might not accept such center
- b. Extreme contour might lead to the soil erosion
- c. Flooding in the future

5.10 Facilities:

- Main road: 8m wide
- Secondary road: 6m wide
- Shivapuri National Park to the north and west
- Electricity: NEA
- Water supply: Public
- Telephone: NTC, Ncell
- No municipal Drainage
- Facility for storm water drainage

6 CONCEPT AND DESIGN DEVELOPMENT

6.1 ZONING

The rehabilitation center has been designed with the idea of segregating the functions according to the stages of rehabilitation being surrender, rehabilitation and reintegration. Outpatient wards, administration and new life detox ward comes under the stage surrender. Therapy and recreation come under the stage rehabilitation and skill development unit and accommodation comes under reintegration phase.

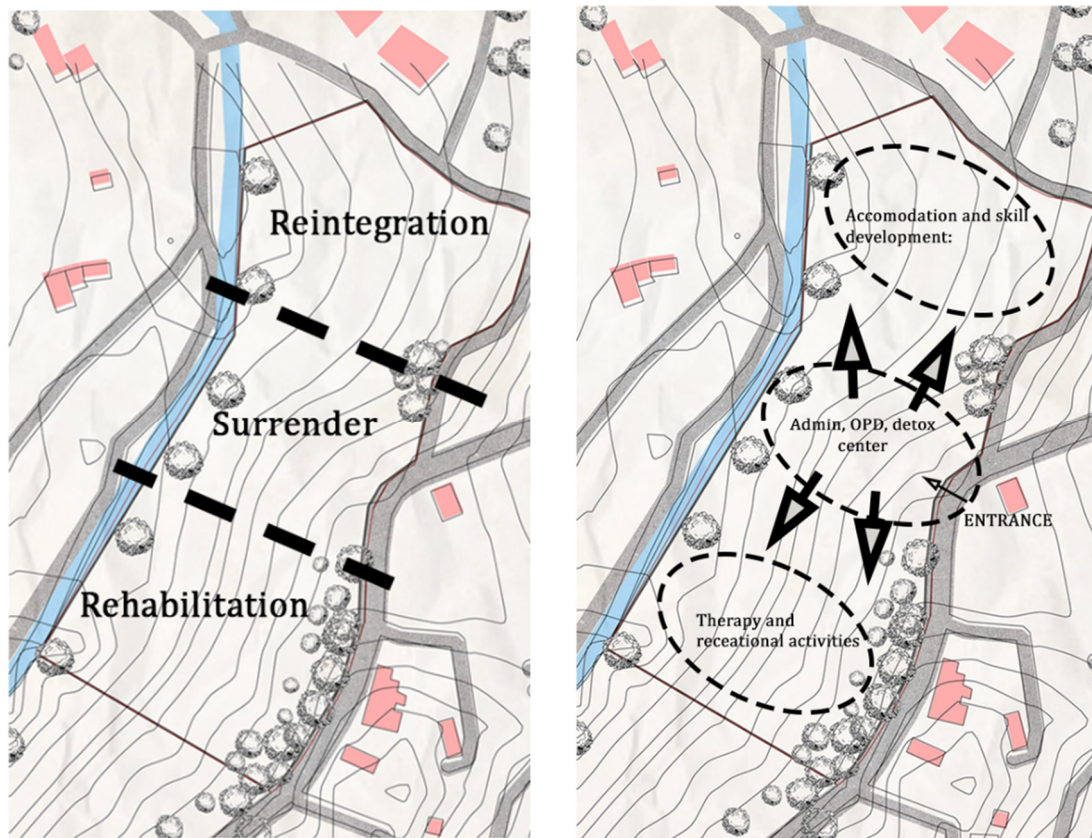


Figure 43 Zoning of the site in accordance to the phases of rehabilitation

The other thing that influence positioning is the site context. Therapeutic spaces are design where the is access to the greenery and accommodation is places nearer to the community.

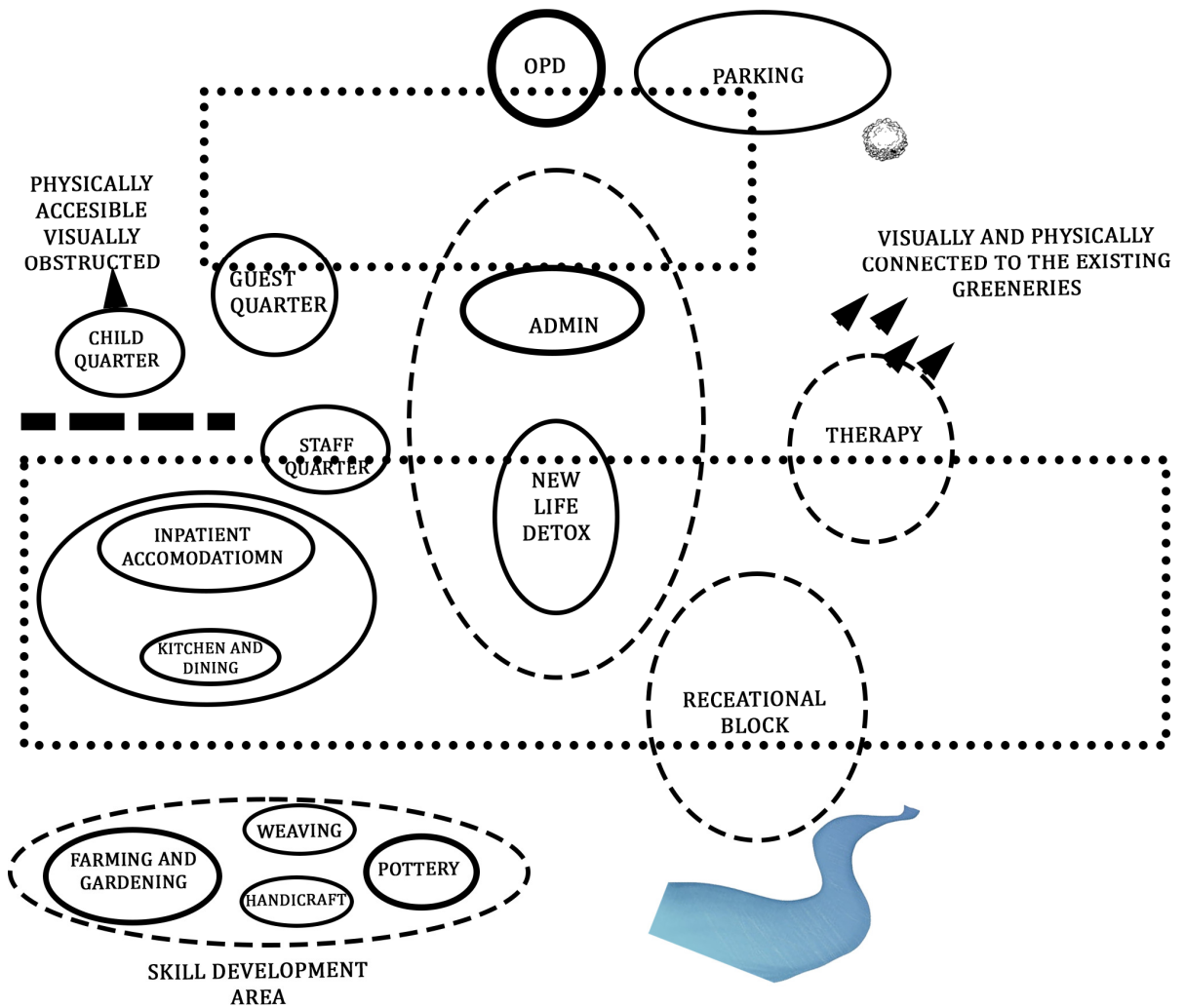


Figure 44 Zoning adopted

6.2 AXIS

The major axis runs through the center from the entrance and there is secondary axis: spine of the rehabilitation center that connects the various functions under different categories.

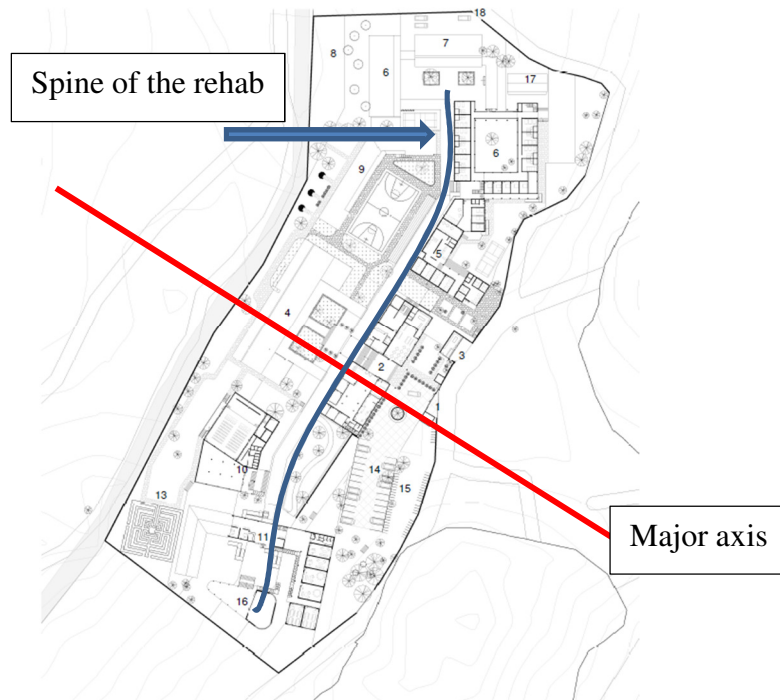


Figure 45 Major and Secondary axis

The spline helps in connecting various functions that runs throughout the site. It is designed as a covered promenade with various open space on the adjacent side making the journey of the person from one side of the side to the other more pleasant.

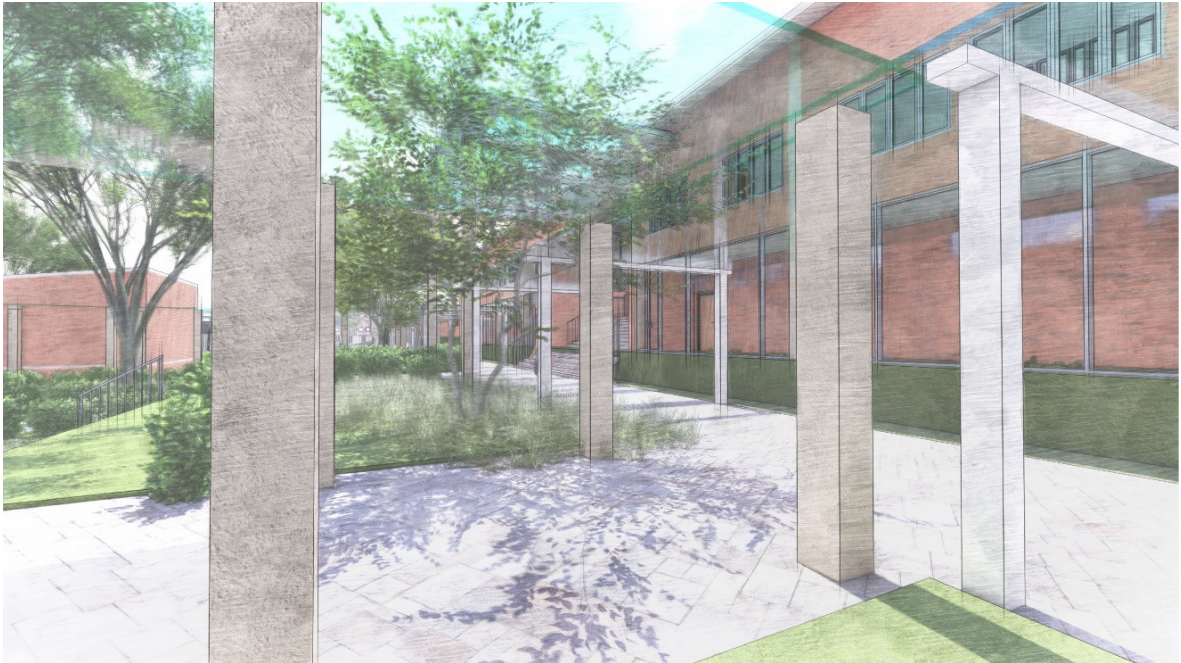


Figure 46 view of the corridor with basketball ground on the background

6.3 INTRODUCING SOCIALIZING SPACES



Figure 47 Courtyards as a socializing space

Derived from the various literatures, socializing is the key to proper recovering of any addicts as the addicts not only see other women going through same phase but they can also help in recovering each other by sharing their pains and what they have gone through. In our context, we see bahals and chowks where the people get out of their homes and socialize. In the similar manner, courtyard have been provided in most of the building .

6.4 RESPECTING THE SITE

The site chosen slopes towards the west and ends in a river. Hence, the contour of the site is respected by building the building over the pilotis which allows free movement of the water and helps in minimizing the chances of the building being overflowed by water. Not only that the slope roof have been used in the building for the proper flow of the water to the drains.

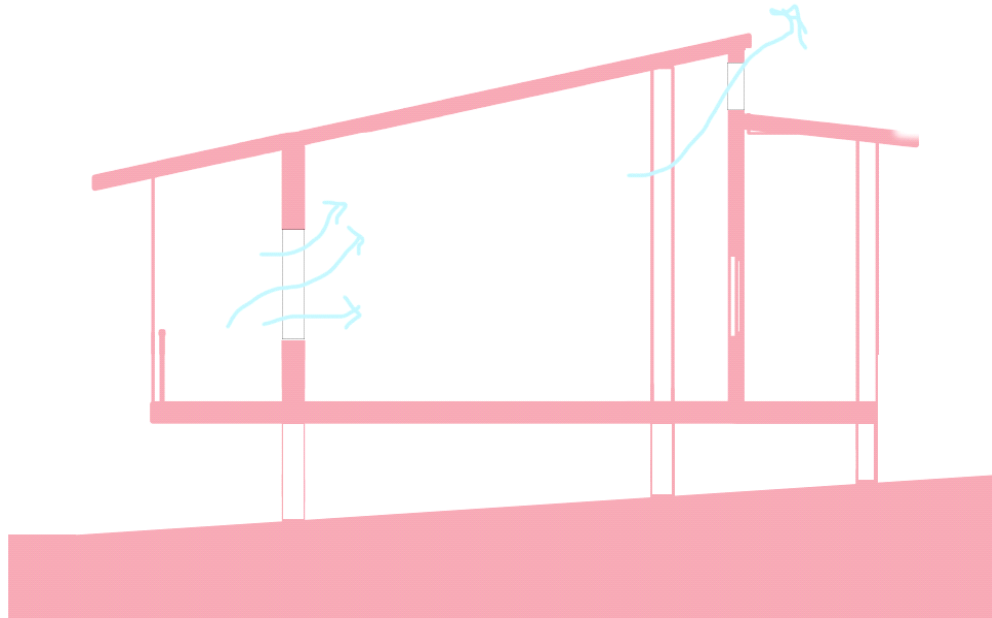
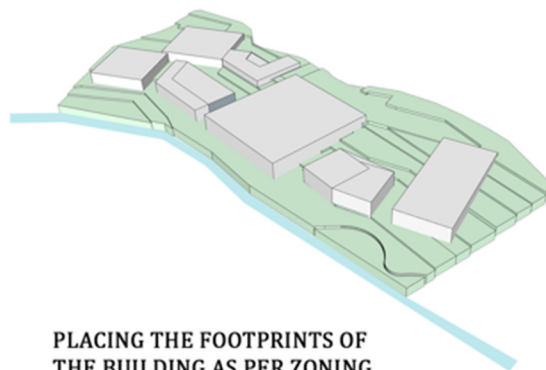


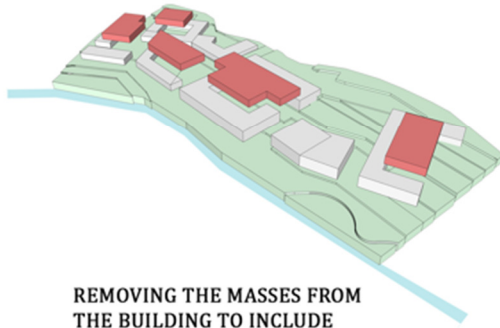
Figure 48 Building built over pilotis

6.5 FORM DEVELOPMENT

STAGE 1

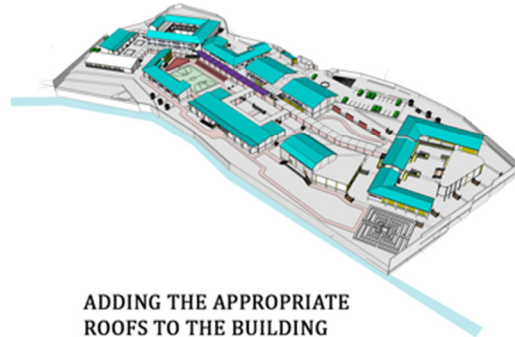


STAGE 2



REMOVING THE MASSES FROM THE BUILDING TO INCLUDE COURTYARDS

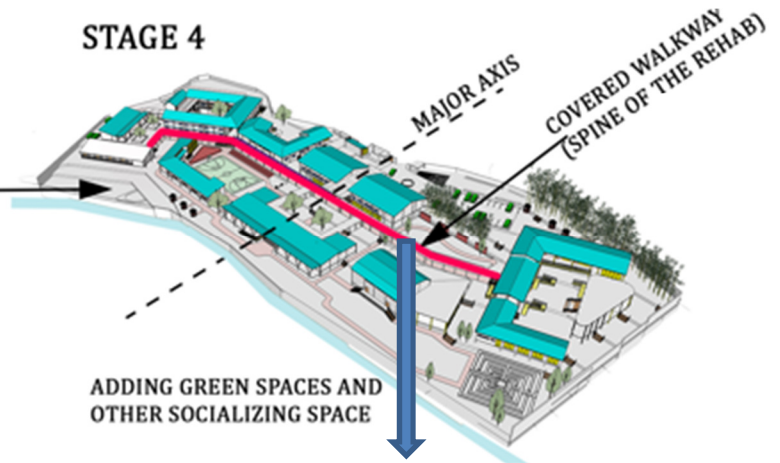
STAGE 3



ADDING THE APPROPRIATE ROOFS TO THE BUILDING

STAGE 4

SPACE FOR ORGANIC FARMING ADJACENT TO THE RIVER IN THE FORM OF TERRACE FARMING



ADDING GREEN SPACES AND OTHER SOCIALIZING SPACE

DERIVED FROM THE CONTOUR LINES TO CONNECT VARIOUS BLOCKS THROUGH SINGLE LEVEL



FINAL OUTPUT

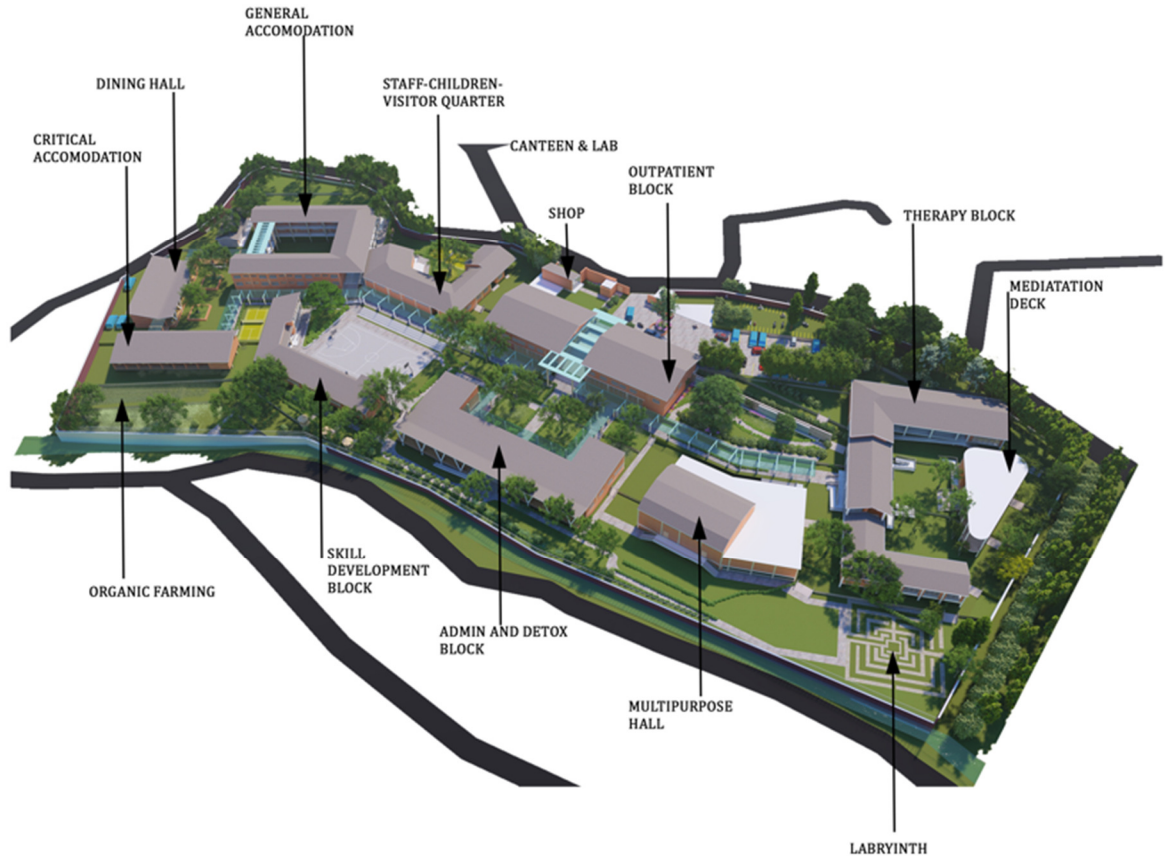


Figure 49 FINAL OUTPUT OF THE REHABILITATION CENTER

6.6 VARIOUS BLOCKS AND THEIR PLANNING

6.6.1 OUTPATIENT BLOCK



Figure 50 Front view of outpatient block

The foremost block in the center is the outpatient block which is designed in the form of two different wings which is connected by a large semi-open lobby. The building on the left side hosts functions like psychiatric room, physical examination room and other counselling rooms whereas the right side of the wing host functions like laboratory and canteen. The laboratory connects to the lowers so the upper laboratory is dedicated for the outpatients whereas the lower level laboratory is dedicated to the inpatients in the center.

6.6.2 ADMINISTRATION AND DETOX BLOCK

The administration block is deliberately placed after the outpatient block to minimize the noise and for the privacy from the outpatients. Adjacent to the administration, a detox block is planned. The detox block consists of a room for dietician, gym and sauna and their supporting facilities. A semi-open deck has been designed on the rear side of the block that

faces the stream on the west whereas on the front side it open to huge courtyard where the inpatients as well as the staffs to hangout and enjoy the nature.



Figure 51 View from the admin and detox block toward the outpatient block

6.6.3 ACCOMODATION

Accommodation facilities has been divided into various classes as:

Critical accommodation: It is designed for the women in critical state where they can socialize or spend their time in solitary as their choice. The solitary side faces the stream on the west where an oat is also designed but trees will be used as screening. They can socialize through the courtyard connected to the other living places.

Normal accommodation: It is for the patients who have already passed the critical state and they are encouraged to socialize with the provision of pocket spaces.

Accommodation for single mother: for the single mother with child below 5 years, separate room are designed to accommodate both mother and child. For the mother having child

older than 5 years, a separate child quarter is provided with faces away from the actual rehab function so that they wont be negatively impacted. The child quarter has a day care where the mother can leave their child during the day to attend their classes and therapy sessions.

Two courtyards have been provided as a socializing place for the recovering addicts as socializing is the key to successfully rehabilitate. And also an open ground facing east has been planned to conduct morning activities like praying.

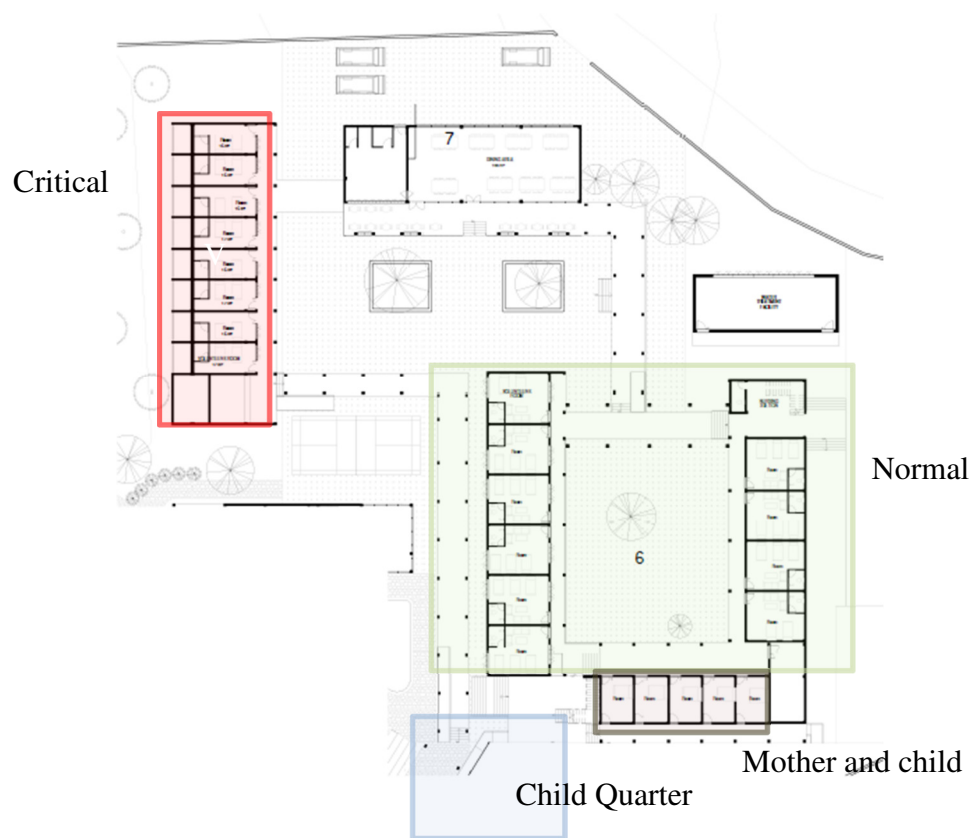


Figure 52 Planning of accommodation block

6.6.4 THERAPY BLOCK

Therapy is the most important part of this center as the center focuses on healing women with the help of therapy and therapeutic environment. Therapy block is situated at the

southern side of the site which has abundant greenery. Due to that sole reason, therapy block has been design with the thought of nature aiding in healing a person's mind. The therapy block is planned in such a way that the individual therapy and group therapies are segregated. It also has been provided with a courtyard that open toward the south to receive ample sunlight and a meditation hall is also provided in that courtyard which lies on the axis.



Figure 53 Entrance of the therapy block

6.6.5 MULTIPURPOSE HALL

A multipurpose hall is designed to provide the function of indoor games. The size of the hall is equivalent to size of two court hall. The hall is also designed to hold functions like seminar so store and green rooms are provided accordingly. The hall is also provided with two emergency doors as the capacity of the hall is 150 people. The emergency hall opens towards open lawn towards the west.



Figure 54 view of multipurpose hall

6.6.6 SKILL DEVELOPMENT BLOCK

Skill development block has been designed with the idea of making the women independent when they recover and head out. Basic skill are taught such as pottery, weaving which not only aids to developing skill in women but also acts as a healing medium. On top of that, the women are given computer training and entrepreneurship training so that they could be equal to the other women out there. In front of the skill development block, a basketball ground is also provided as it also is a programs that helps in developing sportsmanship in women who are interested.



Figure 55 view of skill development block from the corridor

6.7 Structural System

Rcc structures are proposed for the given center. It is because as the site is sloping towards the west and on the west side there is a stream. To prevent the overflowing the building during rainy season the building are raised on pilotis for free movement of water. Due to this reason, rcc structural system is proposed.

6.8 Water supply and sanitation

6.8.1 Water supply

For the water supply, there is provision of water supply from the Nepal water supply corporation. Along with that another source of water will be water from the borehole. The water from the borehole is reserved in the underground water tank of the water capacity needed for the center for a day. It will be treated in the water treatment facility located on the northern side of the site then it is stores in the underground water tank with the 1.5 times the water capacity needed in a day. There will be no provision of overhead tank so the water will be supplied from the underground water tank with the help of pneumatic water pump.

6.8.2 Calculation of size of water tank

Description	users	quantity(lpcd)	total
OUTAPTIENT BLOCK	80	45	3600
ADMIN AND DETOX BLOCK	15	45	675
SKILL DEVELOPMENT BLOCK	40	20	800
STAFF QUARTER	12	100	1200
CHILDREN QUARTER	6	100	600
INPATIENT ACCOMODATION	86	100	8600
DINING HALL BLOCK	100	50	5000
THERAPY BLOCK	100	45	4500
MULTIPURPOSE HALL	150	30	4500
SERVICE BLOCKS	10	100	1000
			30475

Water requirement for the rehab: 30,475 litres per day

Tank for Untreated water : 31 cu.m.

Tank for treated water: 46 cu.m.

6.9 Sanitation

6.9.1 Storm water drainage:

As the site is sloping towards the west, the water will be directly connected to the river. To prevent the over flooding of the water, the building are built on the pilotis.

6.9.2 Sewerage Management:

There is a need of septic tanks and soak pits for proper sewerage management. Two septic tanks are placed in the site. The septic tanks are then connected to the series of soak pits then the overflow from the farthest soak pit is then connected to the stream after treatment.

7 CONCLUSION

Hence, we concluded that drug addiction among females has become a serious problem residing in our community and it not affects the individual and her health but it affects the family and the community. These problems can be solved by treatment of addicts both physically and psychologically so that the problem can be solved from the root. While designing the rehabilitation center we came to know that not only physical environment affects the process of healing but every small detail like colors, acoustic performance and surroundings also plays vital role. Not only this, but there should be a treatment facility solely focused on women where their gender specific needs are also taken into consideration. Therefore, we must consider all the parameters like health care aspects, physical aspect, psychological aspects in order to design rehabilitation center for addicts.

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APPENDIX I

PICTURES OF THE MODEL



Figure 56 VIEW FROM THE SOUTH

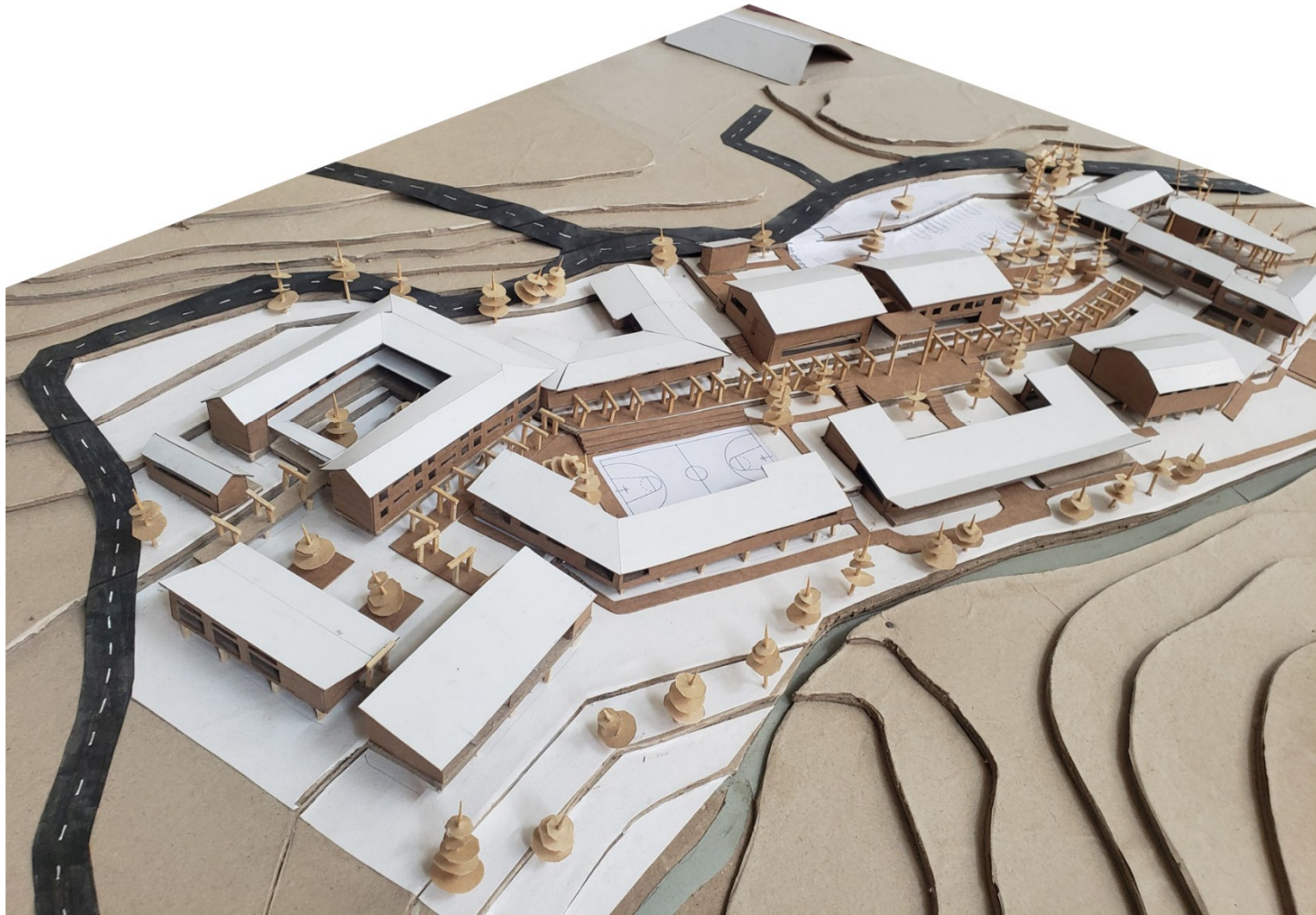


Figure 57 VIEW FROM THE NORTH-WEST



Figure 58 VIEW FROM THE EAST



Figure 59 VIEW FROM THE NORTH



Figure 60 TOP VIEW

3D VISUALIZATIONS/ RENDERS

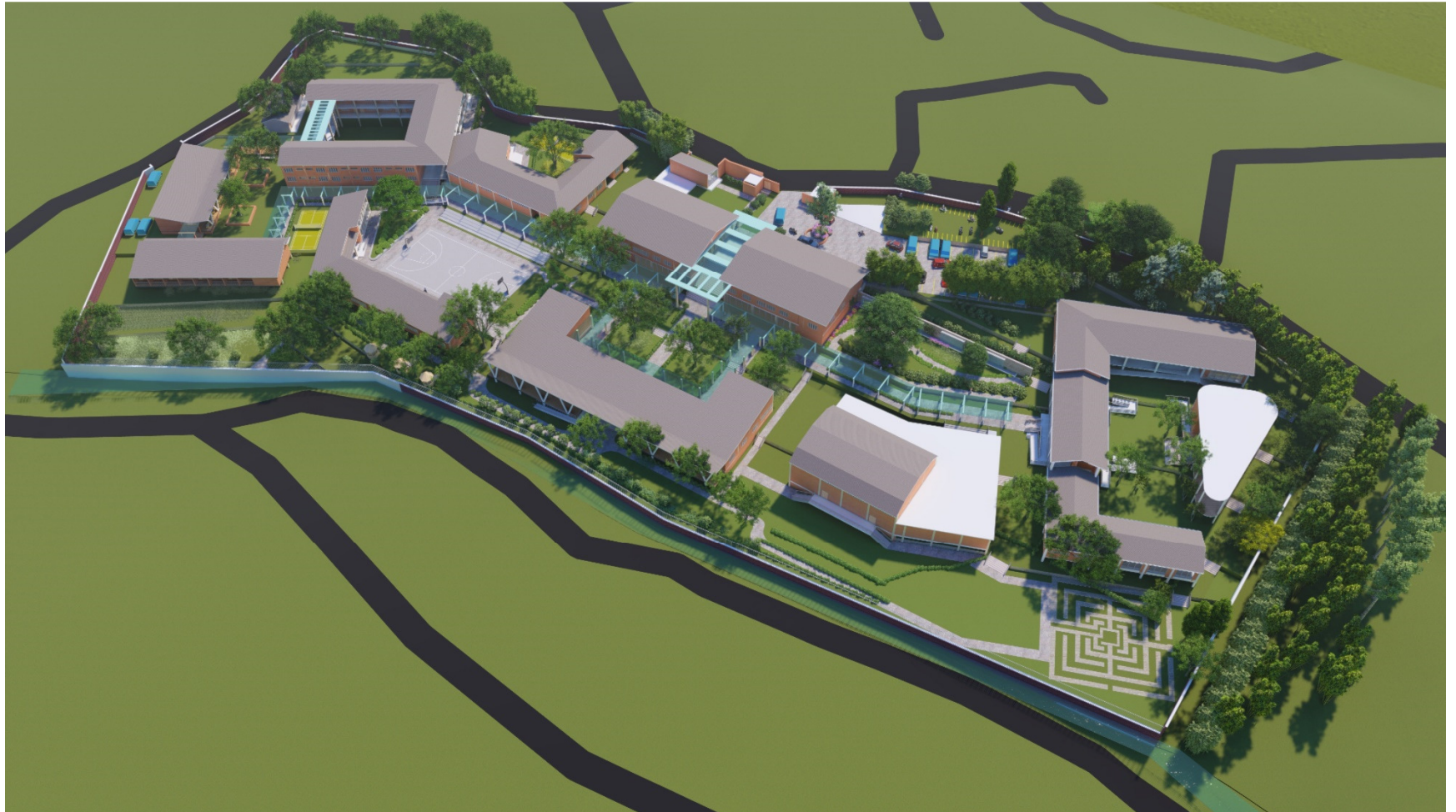


Figure 61 AERIAL VIEW



Figure 62 VIEW OF THE ENTRANCE



Figure 63 VIEW OF THE ENTRANCE

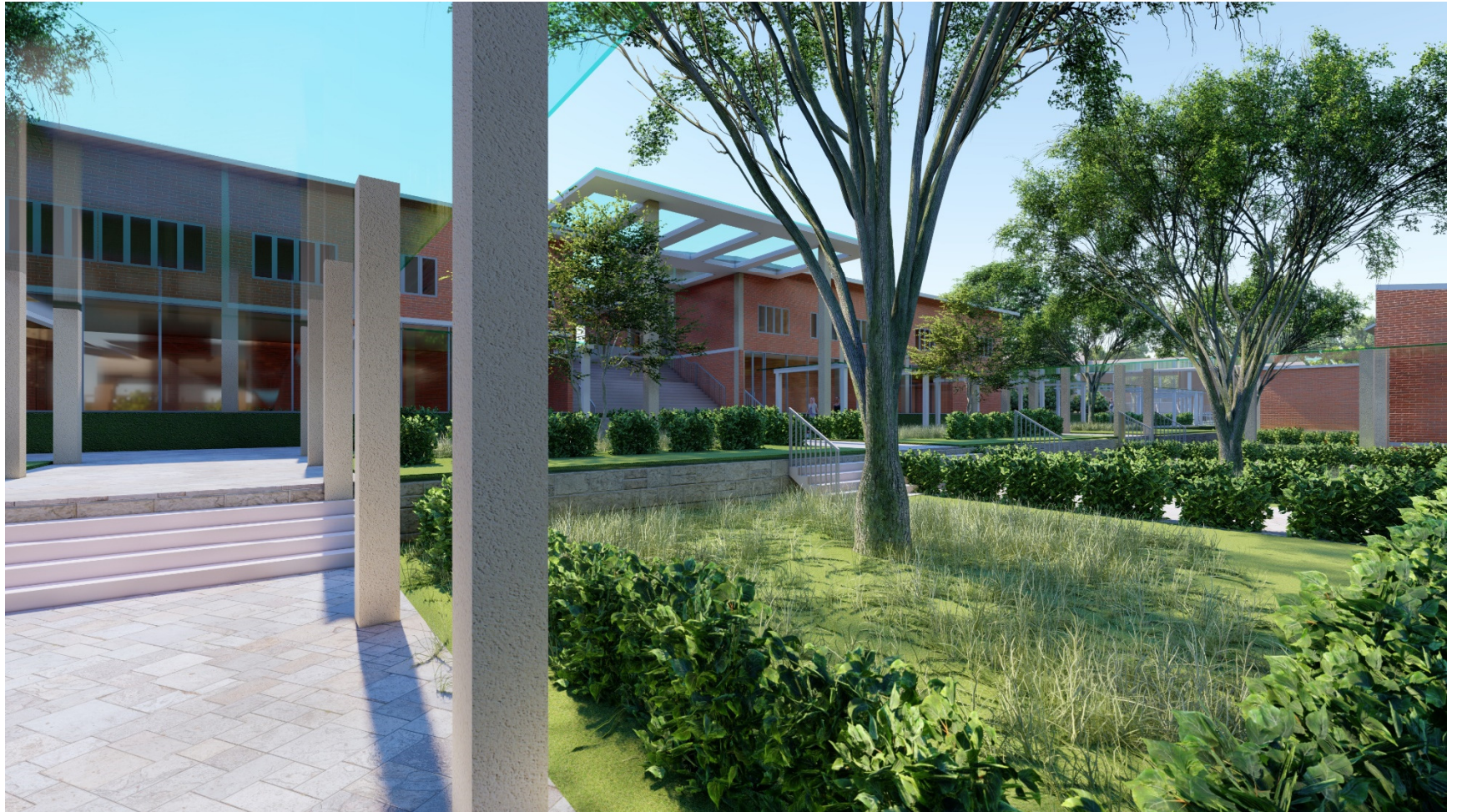


Figure 64 VIEW OF THE CENTRAL PLAZA



Figure 65 REAR VIEW OF ADMIN AND DETOX BLOCK



Figure 66 MOTHER AND CHILD BLOCK



Figure 67 VIEW OF OPEN SPACE FOR CHILDREN AND STAFF QUARTERS ALONG WITH GUEST QUARTER



Figure 68 VIEW OF BASKETBALL COURT AS A SKILL DEVELOPING PLACE AND SKILL DEVELOPMENT BLOCK



Figure 69 VIEW OF GENERAL PATIENT ACCOMODATION



Figure 70 VIEW OF DINING HALL FOR THE INPATIENTS



Figure 71 VIEW OF MULTIPURPOSE HALL

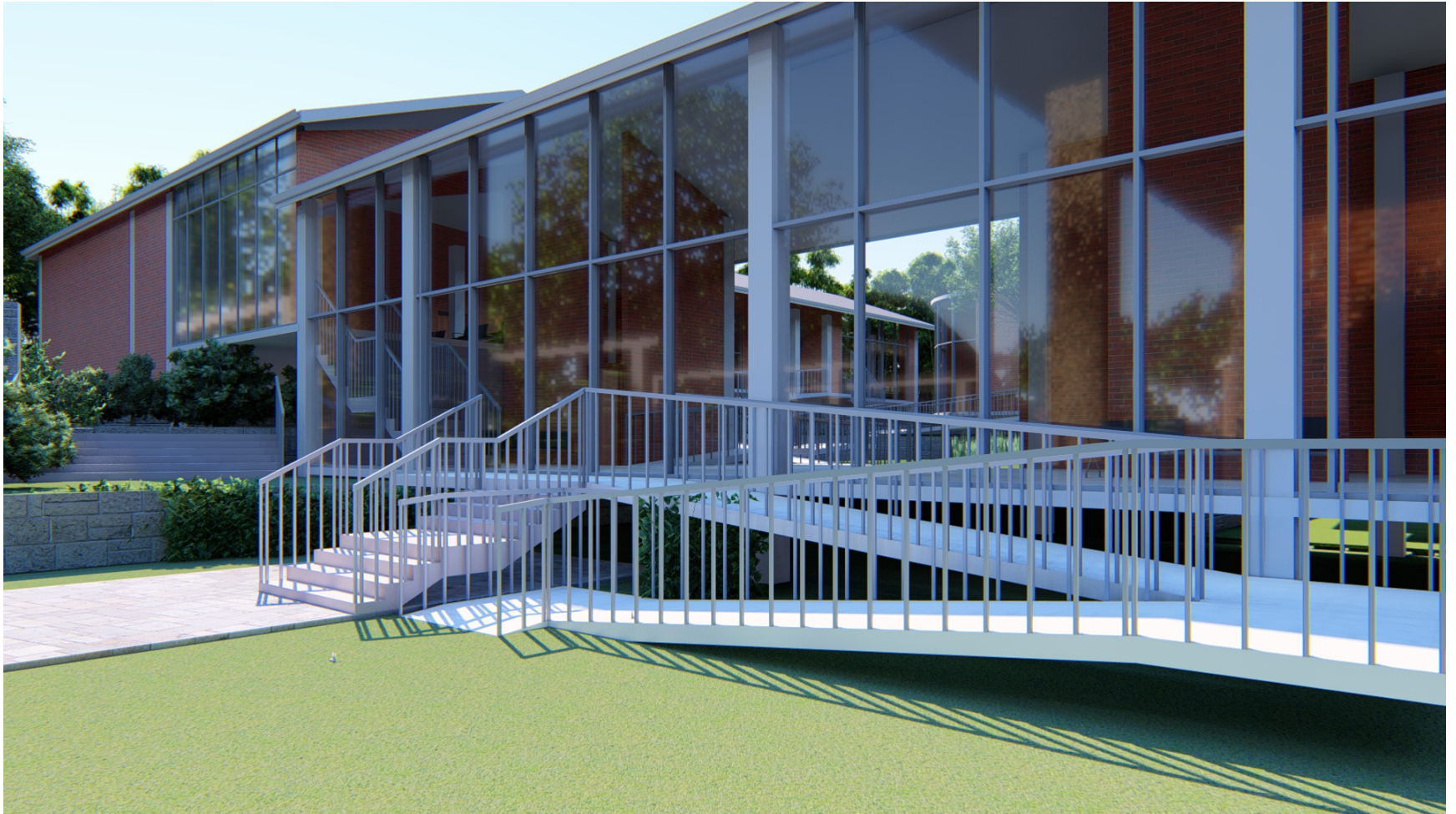


Figure 72 VIEW OF THERAPY BLOCK



Figure 73 VIEW FROM THE MEDITATION DECK



Figure 74 VIEW OF THE MEDITATION DECK FROM THERAPY BLOCK



Figure 75 RESTORATIVE HEALING G ARDEN IN FRONT OF THERAPY BLOCK

**TECHNICAL ARCHITECTURAL
DRAWINGS**