



PROTTOY HEALING SANCTUARY
PSYCHIATRY AND DE-ADDICTION REHABILITATION CENTER
NARSINGDHI, BANGLADESH



Inspiring Excellence

SUBMITTED BY
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“God,
Grant us the Serenity,
To Accept the things we cannot Change,
Grant us the Courage,
To Change the things we Can,
And Grant us the Wisdom,
To Know the Difference.”

Amen

[The serenity prayer]

Reinhold Niebuhr, 1943 CE.

ACKNOWLEDGEMENT

First and foremost, I would like to express my love and gratitude for the Almighty Creator, for breathing this beautiful life into me, my Prophet Mohammad (PBUH) for his gift of the Holy Quran and an ideal way of life, which has provided me with a constant source of guidance and motivation during my times of need.

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And last but not the least, I am grateful towards myself – a recovering addict, who, as his writing of this statement, is sober for over a year and three months and still going strong. I am grateful for the clarity, focus, and sobriety with which I am currently leading my life, and I hope to retain this discipline for the years to come.

ABSTRACT

It was a hot, humid summer of the year 2018 CE. The monsoon clouds drifted early on towards the Himalayas, as they brought about occasional downpours across the sun-scorched plains of the fertile Bengal delta. Amidst the green grasses of this fertile plain, a boy lay down on the ground, staring up at the clouds passing over, as the pouring rain washed away the stream of blood gushing out from his wounded chest. He gasped for his dying breath, as the last thing he remembered was the sound of gunshots drowned by a rumble of thunder drifting across the serene landscape. He had a package to deliver, but alas, if only he knew that doomed package would be the one to bring about the demise upon his shoulders.

On the south-eastern regions of the Asian subcontinent, a small but densely populated country has declared a war within its borders. Within the span of a week, 90 people were killed, and 7,000 arrested, and the numbers continue to escalate with every passing day. On the month of May, the prime minister of the people's republic of Bangladesh issued an approval to launch a crackdown on drug-trafficking. And this very proclamation allotted Bangladesh as another nation to join the decades of an enduring globally acclaimed war – the war on drugs.

Keywords: addiction, addictive personality, mental health, behavioural disorder, depression, prevention, recovery, rehabilitation, life-management, relapse.

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CHAPTER 1 INTRODUCTION

1.1 Background of the Project

The biggest obstacle to overcoming addiction is fear – fear that you cannot change, fear that you will give into your cravings, fear that your family and friends will never love you again. According to Dr Yusuf Merchant, a resident psychiatrist and president of D.A.I.R.R.C (Drug Abuse Information Rehabilitation & Research Center), humans are social animals and they feel the need to have connections with others, to live happy and meaningful lives. Addicts are human beings as well, but they suffer from a disease termed as addiction, which causes a deficiency of connection with other humans. This causes an addict to be perpetually on the run because he wants to get away from where he is. Sometimes the escape is geographically, and sometimes, he seeks to numb the throbbing void he experiences by existing as himself. He is uncomfortable in his own reality. Any place; both internally and externally, other than his reality is a safe place for him.

Dr Merchant, who established his first formal rehab centre in the late nineties at Mumbai, has been working with drug addicts for close to three decades. According to the doctor, a drug addict feels isolated, one of the primary reason which pushes him towards the use of drugs in the first place. At times, in order protect and not to hurt the people they love, they masquerade as someone else and cloak the real person within. At times, they hide their insecurities, fears, guilt or shame with a facade of robust projections. The addict views the drug as a solution to all his problems and uses it as an escape from his emotional dilemmas.

Give him another solution, replace the drug with it, and it will help him overcome the addiction, says the doctor. Therefore, it's important to build strong, personal connections to ensure the patient does not seek those connections in substance abuse.

Dr Merchant further adds that it's important for the family and friends to approach the patient with love and care and not view him as an outcast. It's important to look at him as an unwell person and get him professional help, he concludes.

Treatments that merely focus on separating an addict from his substance, are seldom effective. To achieve success, a methodical treatment process must be facilitated in making the reality of an addict comfortable to his own self. And it should aid to stir up the courage in him to deal with his fears and emotions rather than escaping away from it.

1.2 Project introduction and brief

A psychiatric and de-addiction rehabilitation center within a community caters to the professional objectives of providing the state-of-the-art services and continuity of care, for the prevention, identification, treatment, rehabilitation, research, and follow-up care of mental illness and addictive-personality disorders, within a designated population.

The comprehensive center is essentially a program, rather than a building complex; it is a program that seeks to plan and co-ordinate the range of mental health and de-addiction services required to meet the needs of the targeted population admitted into its facility. It is a combination of services usually under a single administration in a discrete physical entity, or under various administrations who work together through contracts and agreements, to provide the continuity of services required for the treatment process.

The design and construction of the physical plant should be appropriate to the type of services it houses, to the staff and organizational pattern of the facility, and to local geography and style. According to the *Standards of Psychiatric Facilities*, American Psychiatric Association, the physical plant shall provide a safe and sanitary environment with adequate diagnostic and therapeutic resources. It will, therefore, be unique for each facility, but it must be safe and make a positive contribution to the efficient attainment of the facility's goals. It must satisfy the physiological as well as the psychological needs of patients and staff.

To be truly comprehensive, the rehabilitation center must be responsible for the management and adequacy of services to its patients who are suffering from mental and/or chronic addictive disorders, which leads to severe emotional stress and subsequent alienation from their respective social systems. According to American Psychiatric Association, psychiatrists within the rehabilitation center assumes responsibility for providing diagnostic, consulting, and therapeutic services for the patients, with the help of a professional staff which includes people from various disciplines of psychiatry, psychology, and social work.

It may not be feasible for the center to provide all the clinical services necessary in managing the difficult biological problems presented by the drug dependent patients, or the many other special problems in which mental disorder is suspected of playing a special role. Private psychiatric and de-addiction rehabilitation centers, therefore, vary greatly. Each follows the program determined by its medical and psychiatric staff, its approach to treatment and its goals. While it is recognised that variations in the usual types of rehabilitation organizations are suitable in certain localities, the essential professional, diagnostic, treatment, administrative and maintenance services described in

the general standards can be applied to all rehabilitation centers by individual interpretation. Therefore, it is crucial for the centers to have an affiliation with nearby medical schools and medical centers in the area for the necessity of providing emergency medical services, and for establishing formal programs of participation in cooperative educational and research efforts.

Most private psychiatric and de-addiction rehabilitation center serve their geographic communities - local, state, and regional, and, because of their unique treatment programs for specific categories of patients, they receive referrals from wherever in the world these patients come. The rehab centers should be large enough to meet the community's need for psychiatric and de-addiction services, but not so large as to compromise its ability to meet the needs of each patient for individual treatment. Optimal size might be described as the most efficient and effective balance between the facility's ability to meet the unique needs of the community and its ability to meet the unique needs of each patient.

The length of stay in a private rehabilitation center should be appropriate with the goals of therapy and the patient's illness. In keeping with the current concepts, the average length of stay varies from around 90 days to 180 days in three-fourths of the private psychiatric rehabilitation centers. To meet the ultimate needs of the patient, many rehabs maintain medium or long-term intensive treatment programs as well. The primary goal of treatment is not the shortest possible stay but the most effective therapy. Within the limits of therapeutic goals, the rehabilitation center should provide the type and amount of treatment that will result in the patient's continuation of healthy functioning within the society. Regardless of how long he stays, each patient is admitted, treated, and discharged within the same unit of treatment which is the responsibility of the same group of administrative staff, medical staff, and psychiatric counsellors from admission to discharge and aftercare.

1.3 Aims & Objectives of the Project

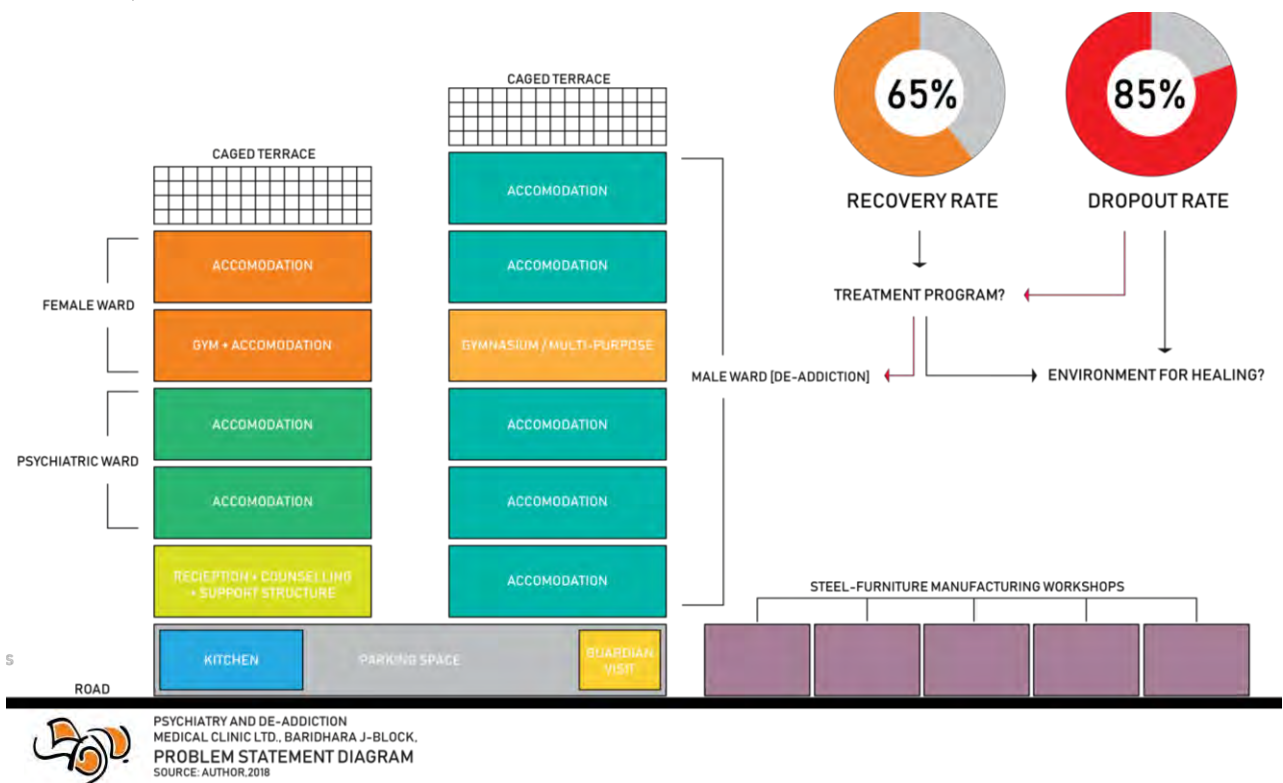
Addiction as a disease affects every aspect of the afflicted person's life; at the physical and mental level, in relationships, and even causes the person to lose all sense of morality. This project aims at understanding the terms of psychological treatment to recover or rehabilitate people who suffer from mental illness and chronic addiction. This will form the base to design a psychiatric and rehabilitation center which will facilitate the psychological treatment process through the building envelope and its incorporation with the surrounding nature.

For the suffering individuals and their family alike, the solace offering of an environment which evokes the feeling of a home away from home would bring about comfort and security within the facility's premises. With this objective in mind, the designed environment would fulfil the purposes of a large extended family providing love and kindness through psychosocial rehabilitation programmes and medical care by experts in respective areas. Furthermore, the incorporation of eco-therapy and healing gardens as part of the existing programs will add further value to the therapeutic environment desired by the individuals seeking the path to recovery and rediscovering themselves in life.

1.4 Problem statement

Prottoy Medical Clinic Ltd. is the only 9001-2008 ISO certified Psychiatric and De-addiction rehabilitation hospital in Bangladesh. Since its humble inception in 2002, they have developed considerably over the years and with their enduring and evolving unique program adapted from the D.A.I.R.R.C to suit the needs of the geography and social status of Dhaka city. They have helped to pave the way to a better lifestyle and provided treatment for patients suffering from psychiatric illness, alcohol and drug addiction, which have enabled them to provide a consistent effort in leading a healthy, sober, and productive life.

At present, their facility is a private Psychiatric and De-addiction Hospital, located in the Baridhara Residential area, of Dhaka city, Bangladesh. Owing to the rapid urban development of the surrounding neighbourhood, it has become a prime concern for them to reconsider their environment of the treatment facility. The facility at present is built into two adjacent residential apartment building of six-storeys height, with a capacity to board a total of 100 patients, inclusive of the male, female and mental ward.



Speaking in sense of architectural spaces, the two buildings have not been designed to equip the unique program they follow for the treatment of patients, neither do they have any scope for extension of their existing ward facilities. The surrounding roadside steel-manufacturing furniture shops add to a constant noise pollution which has an adverse effect on the serene environment the facility hopes to achieve within its premises.

With the onslaught of the recent crackdown of drug-trafficking in Bangladesh, it has given rise to many serious concerns regarding the safety of the emerging youth population of Dhaka city who have had a profound dependency on using drugs as a social norm. As a result, the citizens will look forward to professional help in aiding the addicted personalities to recover from their disease and lead a sober, productive life out of harm's way.

To address this growing concern of environmental degradation and the rise of a conscious society who wants to be free of addiction, Prottoy Medical Clinic Ltd., has taken on an initiative to extend their facilities to house the growing demand for rehabilitation facilities for psychiatric and drug-addicted patients, and incorporate further eco-therapeutic methods within its adapted program through the aid of nature and serene landscapes of Itakhola, in the district of Narsingdhi, Bangladesh.

1.5 Given programmes

- i) De-addiction accommodation facility for male and female patients
- ii) Psychiatric accommodation facility for male and female patients
- iii) Support facilities for treatment programs
- iv) Administration facilities
- v) Activity based facilities
- vi) Therapeutic landscapes for eco therapy programs

CHAPTER 2 LITERATURE REVIEW

2.1 Addiction and addictive personalities

Addiction is a chronic brain disease that causes compulsive dependency on mind-altering substance and other psychoactive material use, characterized by obsession, compulsion, physical or psychological dependence, psychosis and paranoia. It is termed as a brain disease because the abuse of substance and materialistic-dependency leads to changes in the structure and function of the brain. Nowadays, addiction is common in almost one in three persons we meet, and its mainly affecting the age group of young teenagers. The World Health Organization estimates that there are 2 billion alcohol users, 1.3 billion tobacco users and 185 million illicit drug users worldwide. Eventually, this leads to unwanted crimes, as well as problems in daily relationship and social life as the addicts lose their ability to maintain a status within their community.



Figure: Adapted infographic - DRUG USE STATISTICS OF BANGLADESH. According to Family Health International (2017), an estimated 9 out of 100 people from the urban population in Bangladesh suffer from chronic addiction related to drug abuse.

Source: Author, 2018

According to Forhad, a recovering-addict, he claims that it is true that the initial decision to take drugs was voluntary for him. But over time the changes in his brain caused by repeated abuse of substances affected his thought process, self-control and his ability to make sound decisions, and at the same time, created intense and uncontrollable impulses to use substances while he was working in his office, or spending time at home with his family.

It is because of the drastic changes in the brain and other neuron structures that it is so challenging for a person to stop abusing their addicted substance. It becomes difficult for the addicts to identify between problems which have been caused due to the chronic use of substances, while creating dependency on the use of substance to escape from their daily responsibilities. The problems which arise due to the chronic use vary from neglecting responsibilities at workplace, school, colleges or at home, leading to low performance academically and staying away, or alone, for most of the time. It results in indifferences in relationships of an individual, such as fights with family members or close

associates and friends. It creates change in behavioural attitude, such as not being the same person when being with friends or family or partner. Other problems arise due to losing temper easily and facing anger-management issues which leads to frequently getting into fights, accidents and illegal activities. And above all, the lack of motivation and constant feelings of anxiety, irritation, and lethargy causes the addicts to use the psychoactive substances, which they believe helps them to deal with their unwanted feelings and suppress their emotions of a harsh reality around them.

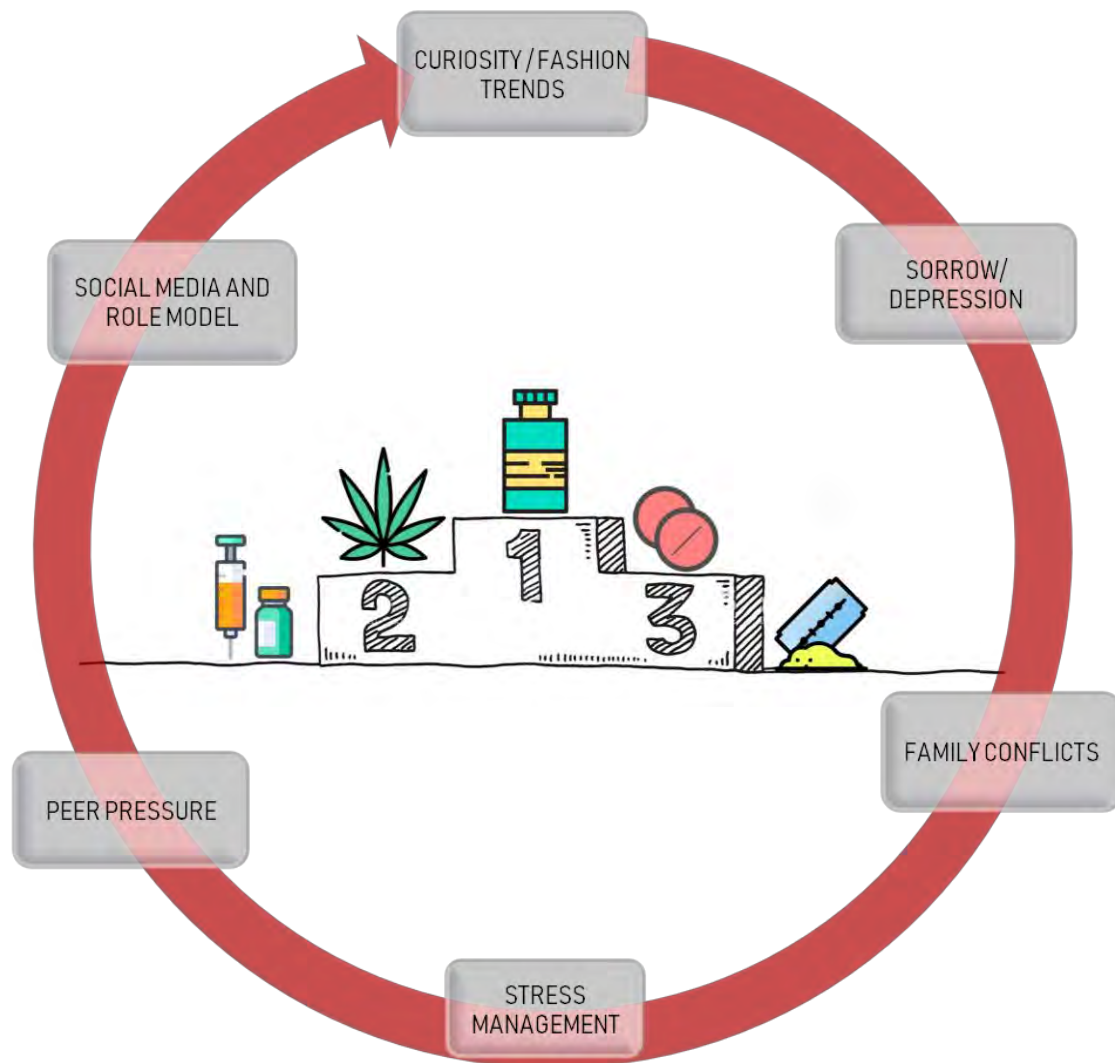


Figure: Adapted infographic- DRUG USE AND ITS IMPACT ON BANGLADESH

According to research articles on Drug use and its Impact on Bangladesh (2017), surveys conducted on drug users have revealed Phensidyl and other cough syrups as the leading addiction in drugs type at 94%, followed by Cannabis at 82%, Amphetamines at 79%, and others such as Opioids and Pethedrine following close by.

Source: Author, 2018

“There’s an image that is often brought to mind when it comes to people who are addicted to drugs or alcohol. In popular culture, this image has become the subconscious image of the **addictive personality** – that is, the individual who is considered all but destined to abuse and develop addictions to psychoactive substances.” – American Addiction Centers

According to Saudha Saha, (Chief of Operations at Prottoy Medical Clinic Ltd.), many of us are born with the traits of an addictive personality. It’s something which can be determined through the passing of genes from our ancestors. Now, addictive personality does not necessarily mean that the person will always be addicted to psychoactive substances. The traits of this personality tend to be super-achievers, with examples of famous personalities such as Albert Einstein, who had all the traits of an addictive personality, yet, he managed to channel all of that towards productive work instead of distracting himself towards substance use.

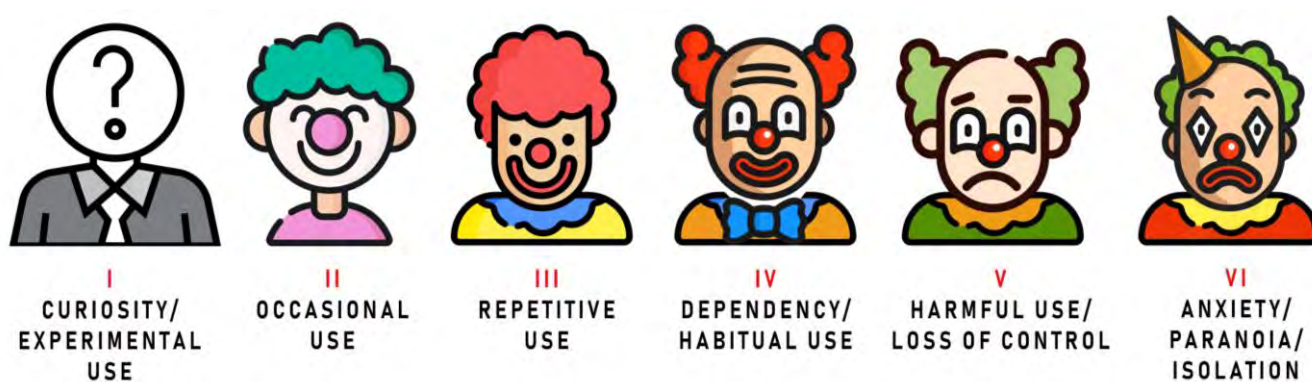


Figure: Adapted infographic- STAGES OF DRUG ADDICTION

Source: Author, 2018

Most researchers today have thrown a wind of caution to people thinking that a single, generic personality would be prone to addiction. Many people tend to blame it on a specific character defect or personality disorder which leads to the substance abuse. According to article on the Scientific American, researchers believe that the idea of a general addictive personality is a myth. George Koob, the director of the National Institute on Alcohol Abuse and Alcoholism, says that the findings on addictive personality reveals that it is ‘multifaceted’. “It doesn’t really exist as an entity of its own.” says Koob. On further study, the Scientific American states that only 18% of addicts have a personality disorder characterized by lying, stealing, lack of conscience, and manipulative antisocial behaviour.

Sometimes, addictive personality doesn’t always lead to addiction in people. According to Maia Szalavitz, who recalls her behaviour as a child in school and at home as someone anxious, bright and slightly obsessive, she didn't seem to fit the stereotype of the “addictive personality”.

Nevertheless, in college she would become addicted to heroin and cocaine, forcing her to re-examine her assumptions about addiction and its treatment.



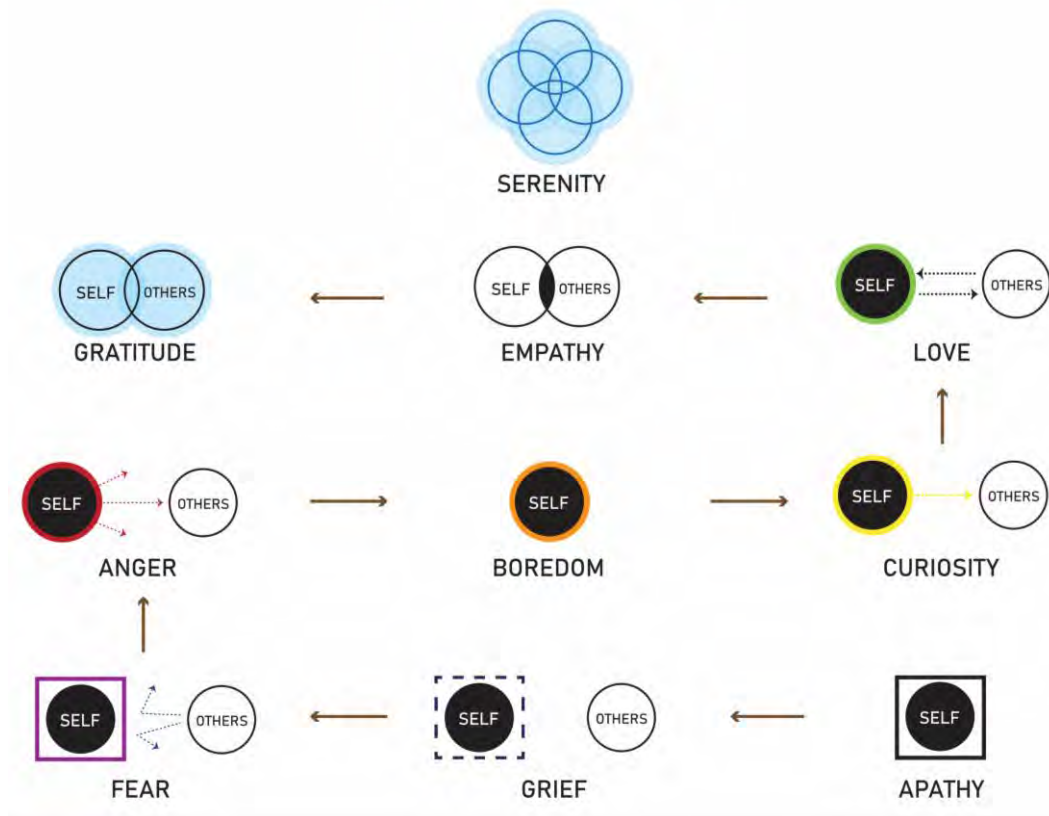
Figure: Abstract etching and aquatint art titled 'Catharsis-Expulsion Of Addiction'

Original artwork by Tarun Sharma, Delhi, 2017

Image source website: www.mojarto.com

At present, during these times of a rapidly growing competitive era, many factors lead to psychoactive substance use within teenagers and adolescents. Peer pressure and performance enhancement issues play a major role in contributing to the ever-increasing demand of substance abuse. Sometimes curiosity triggered by the influence of role models, as well as social pressure play a factor in the use of substances to maintain a social status among friends and colleagues. Chief among these are a general lack of awareness and wilful ignorance of the facts about addiction and the potency of drugs, and the contentment about the danger of using these illegal substances which makes one feel like a rebel against the unjust social systems.

2.2 Discovering a Road to Recovery

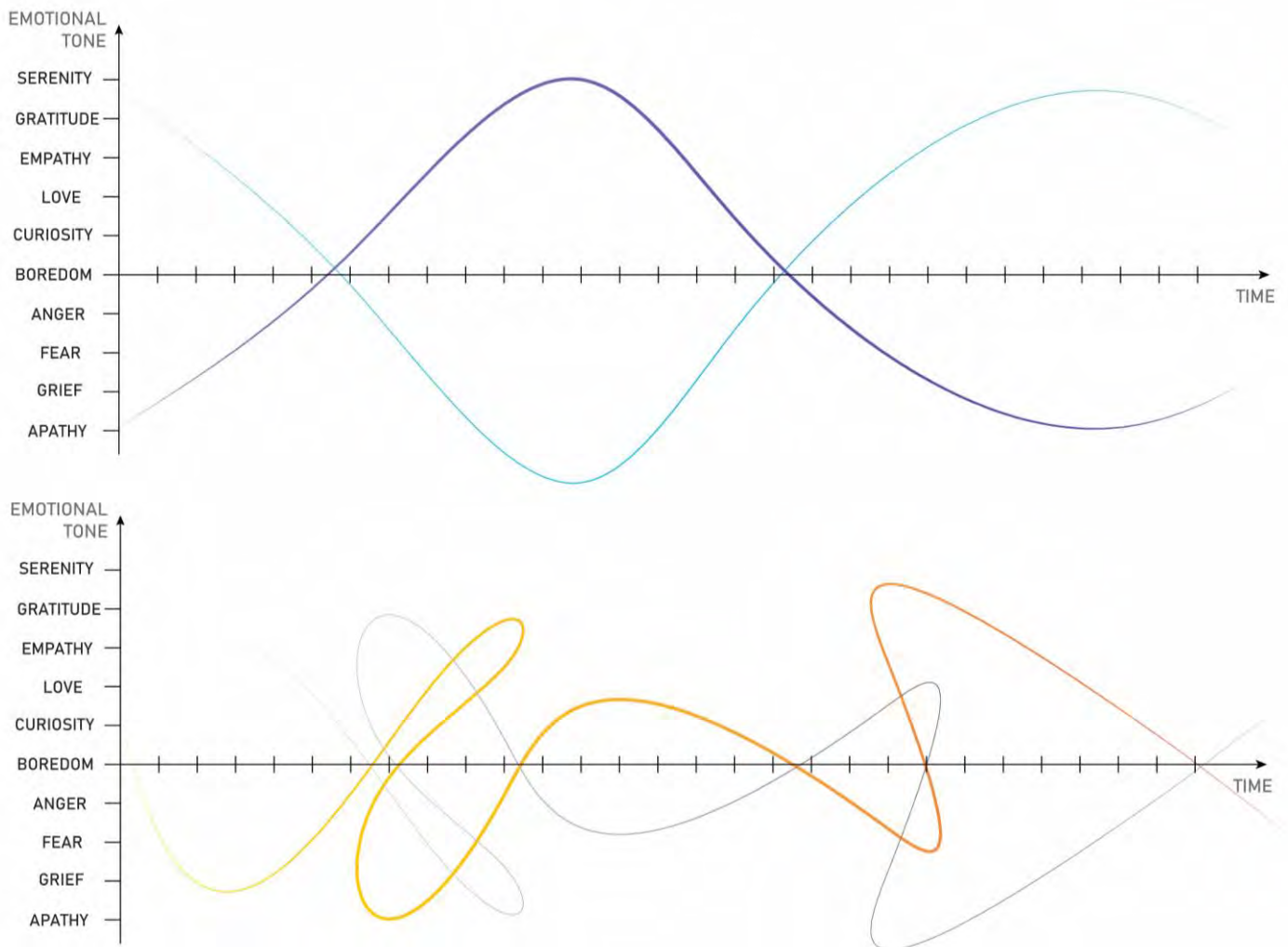


*Adapted infographic: EMOTIONAL TONE SCALE DIAGRAMS
Information source: Hubbard, L (2011), Scientology Handbook*

Diagram source: Author, 2018

Doctors say there is a link between the repeated uses of an addictive substance and how the human brain experiences pleasure. Use of psychoactive substances triggers certain neurotransmitters in the brain, which makes the user feel that it is a type of reward for them brought about by the suppression of cognitive emotions. The user enjoys the pleasures of relaxation and develops a carefree attitude which makes them ignore the daily responsibilities, while they escape to an imaginative world of their own. This sometimes leads to the creation of subconscious barriers within themselves, causing isolation from the surrounding environment, and leading to a growing sense of detachment from their reality, as well friends and family. But what most users do not realize is the fact that the addictive substance, be it nicotine, alcohol or any other psychoactive drug, causes physical changes within specific nerve cells in the brain.

And as the saying goes, it is always the first dose which does the inevitable damage. Curiosity leads to occasional use, and after a period of prolonged use, the user of the potentially addictive substance does not get the same pleasure as the first doses. This leads to an increase of the dose – and simultaneously, their body's tolerance to the substance increases. Experts say that when tolerance increases, the risk of addiction is much greater.



*Abstract infographic: EMOTIONAL SCALE PROGRESSION
GENERAL VS ADDICTED BEHAVIOR
Source: Author, 2018*

Eventually, the user no longer experiences pleasure from the substance. After that, they take it simply to prevent withdrawal symptoms, which can range from physical convulsions to mental stress, and hence, taking the substance just makes them feel normal, as it imposes itself to be a part of their daily routine. By the time the user reaches this stage, the disease has already started to affect them. At this stage, their thought-process goes through a pre-contemplation stage - they will not acknowledge that there is a problem, and they won't see a need for bringing about change from the life-threatening habit they have developed through the prolonged use of substances.

Like any other psychiatric disease, there is no fool-proof guaranteed cure for addiction. Research conducted by the American Psychiatric Association shows that combining addiction treatment medications, with behavioural therapy and community support is the best way to ensure success for most patients. Treatment approaches that are tailored to each patient's drug abuse patterns and any concurrent medical, psychiatric, and social problems can lead to a sustainable way for a patient to recover from the chronic disease.

2.3 The Four-plane Healing Process

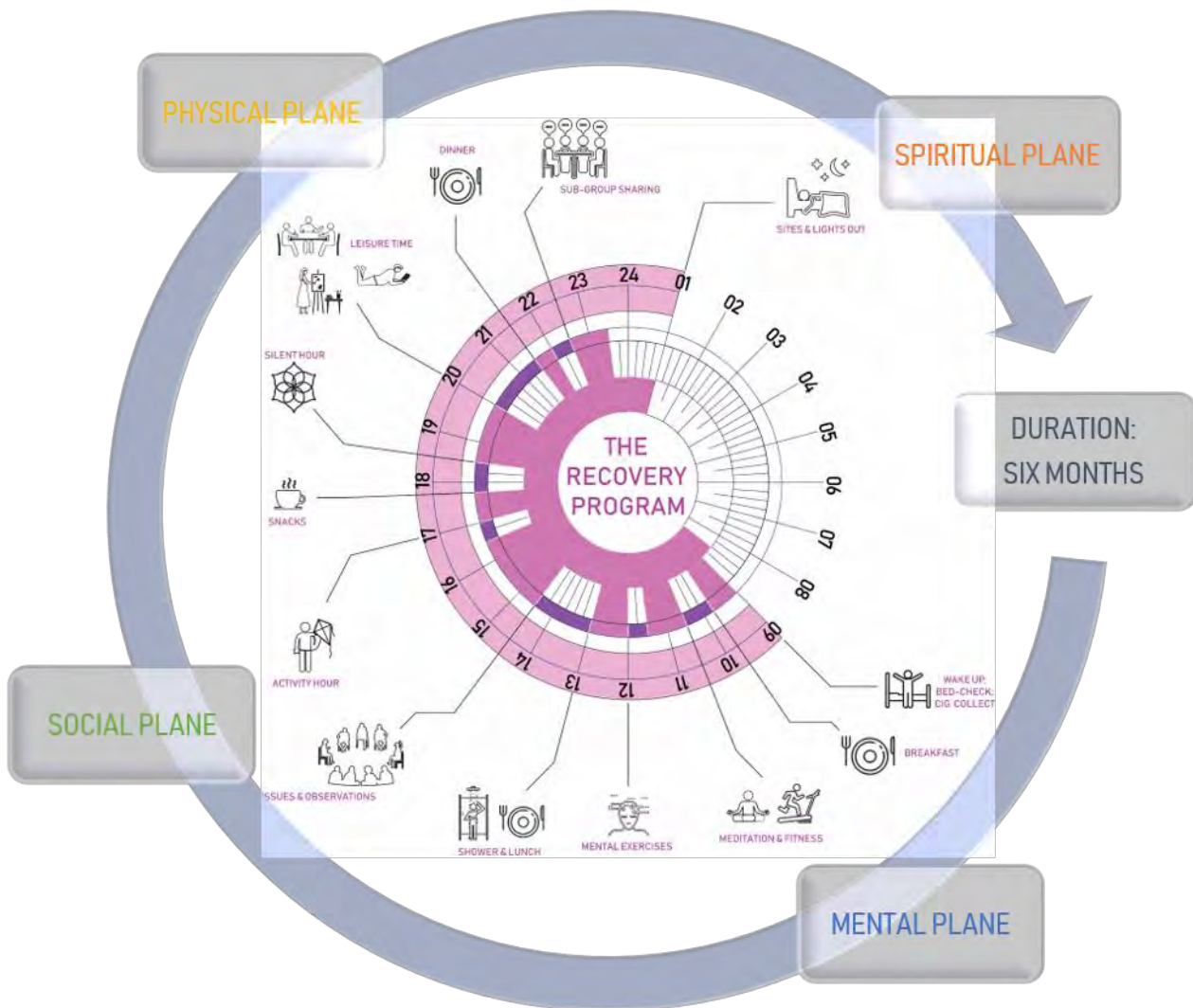


Figure: Adapted infographic - THE RECOVERY PROGRAM
Daily routine chart at Prottoy Rehabilitation Center

Source: Author, 2018

As stated earlier, the comprehensive center is essentially a program, rather than a building complex; it is a program that seeks to plan and co-ordinate the range of mental health and de-addiction treatment tailored to suit the needs for every patient. But modern rehabilitation facilities are sometimes referred as synonymous with the regional prison system in terms of the treatment process, in which the centers function by isolating the addicts from their society and imposing an abstinence from the substance abuse. However, sometimes the exact opposite is accomplished through these methods, because the isolated and confined environment of the rehabilitation center causes disorientation and confusion within an individual, which leads to the build-up of undesirable stress, creating future psychological imbalances that in many cases results in addiction relapse.

To avoid the undesirable casualties of the time-intensive treatment process, Prottoy Medical Clinic has adapted a program based on the researched and experienced treatment methods of Dr. Yusuf Merchant of D.A.I.R.R.C, Mumbai, India. The adapted program aims at the action process treatment through the development of the four planes of human cognitive attributes, which are as follows:

i) *the Physical plane* – it aims at the development of the physical attributes of an individual, through awareness-based activities which include physical fitness programs such as aerobic exercises, gym workouts, and developing a healthy, self-hygiene consciousness.

ii) *the Mental plane* – it aims at the development of the mental attributes of an individual, through sharing-based activities designed to bring about a development in the conscious and sub-conscious realms of their thought process. It helps the individuals to overcome psychosis and paranoia through mental-exercises related to sharing weak & strong moments, confrontation, anchoring, and catharsis.

iii) *the Social plane* – it aims at the development of the social attributes of an individual, through communication-based activities which include creating strong bonding with fellow patients and building friendships through honest sharing of personal issues without the fear of being judged by others.

iv) *the Spiritual plane* – it aims at the development of the spiritual attributes of an individual, through communication and awareness-based activities facilitating a spiritual growth through helping other patients, taking responsibilities, meditation therapy, and various religious practices. It develops an individual’s subconscious realm which aids to the growth of self-confidence and courage to break away from the lone shackles of their barriers and reach out to friends and family.



Figure: ANTI-DEPRESSANTS -DISCOVERING A ROAD TO RECOVERY WITHIN ONE'S SELF
Watercolour on paper and mixed media artwork

Source: Author, 2018

CHAPTER 3 CASE STUDIES

Rehabilitation Centre Groot Klimmendaal, Arnhem, Netherlands.

Architects: Architectenbureau Koen van Velsen VB

Total area: 1,50,694 sq.ft

User groups:

Primary: In-house patients

Secondary: Healthcare professionals

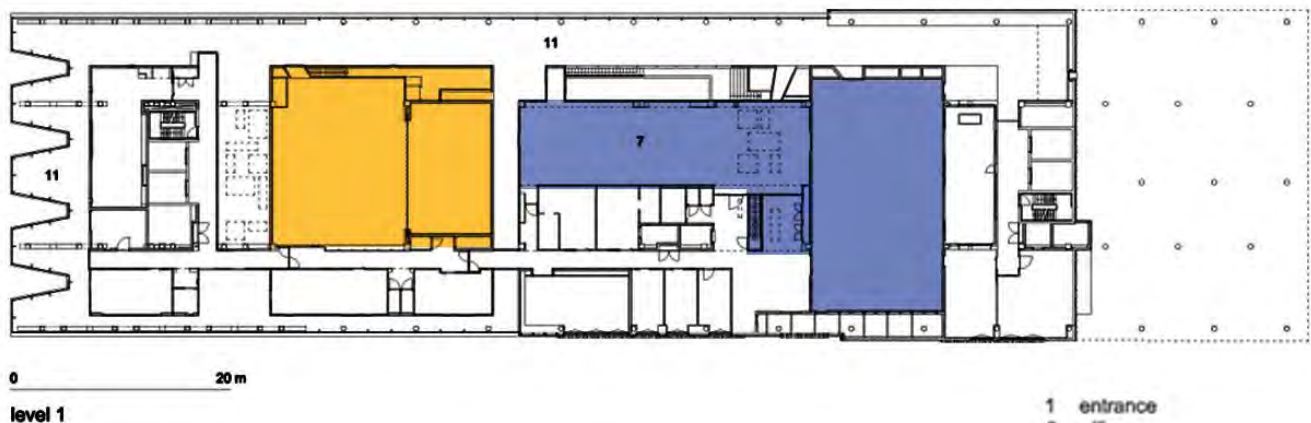
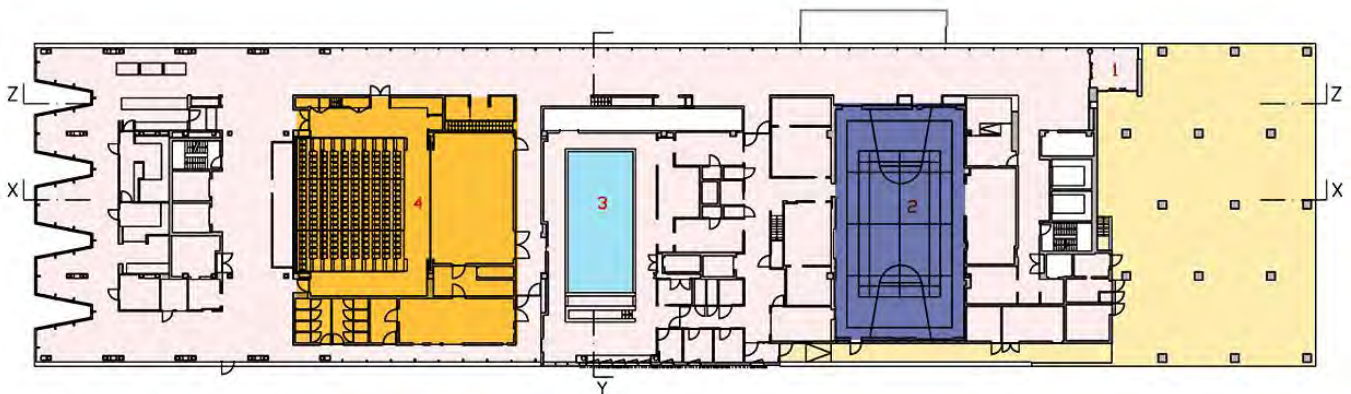
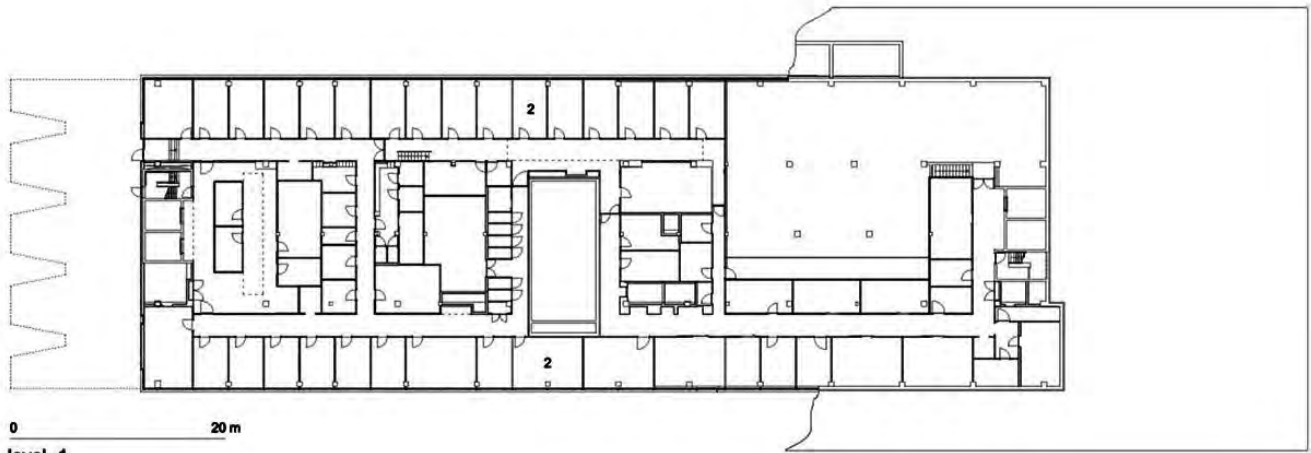
Tertiary: Members of local community

“The care concept is based on the idea that a positive and stimulating environment increases the well-being of the patients and has a beneficial effect on their revalidation process. The design ambition was not to create a building with the appearance of a healthcare center, rather a building as a part of its surrounding nature and community.”



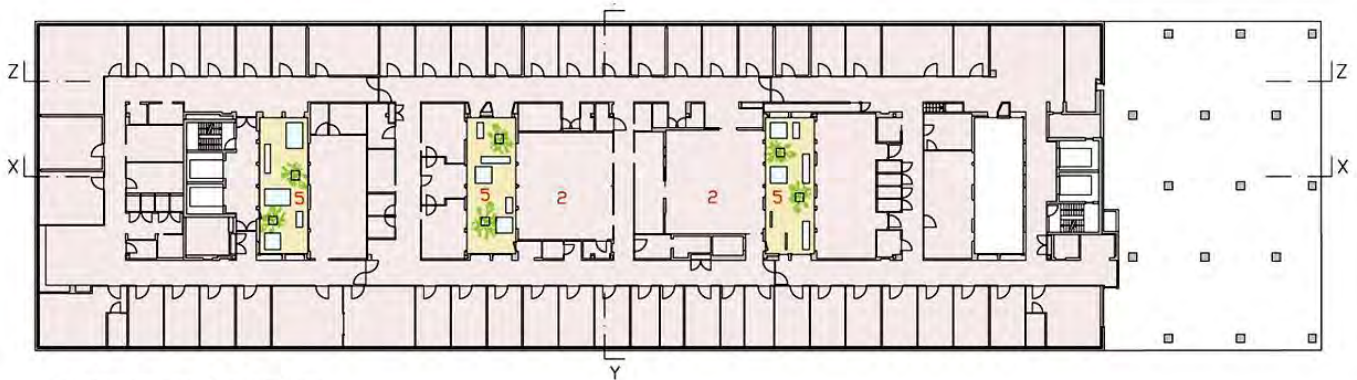
Levitating over the contoured terrain

An entry of a hearty welcome

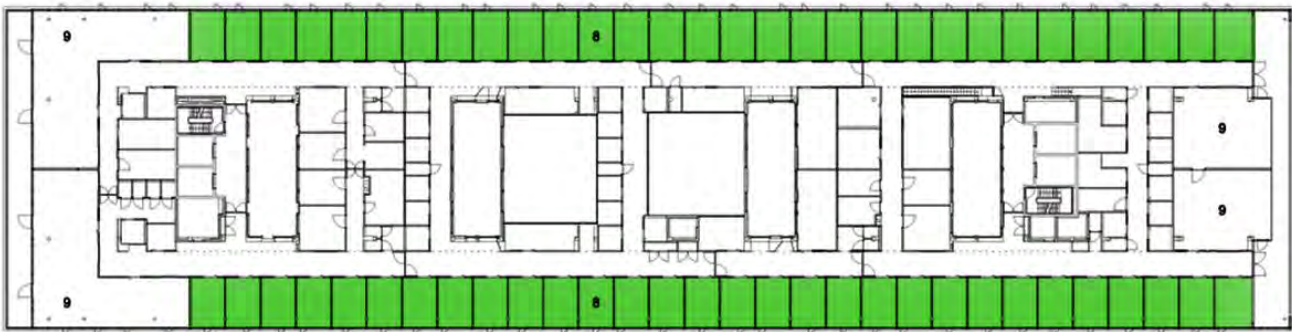


- 1 entrance
- 2 office
- 3 gymnasium
- 4 swimming pool
- 5 theatre
- 6 restaurant
- 7 fitness centre
- 8 room for patient
- 9 living room
- 10 ronald mcdonald house
- 11 void
- 12 patio

Floor plans and associated functional flow



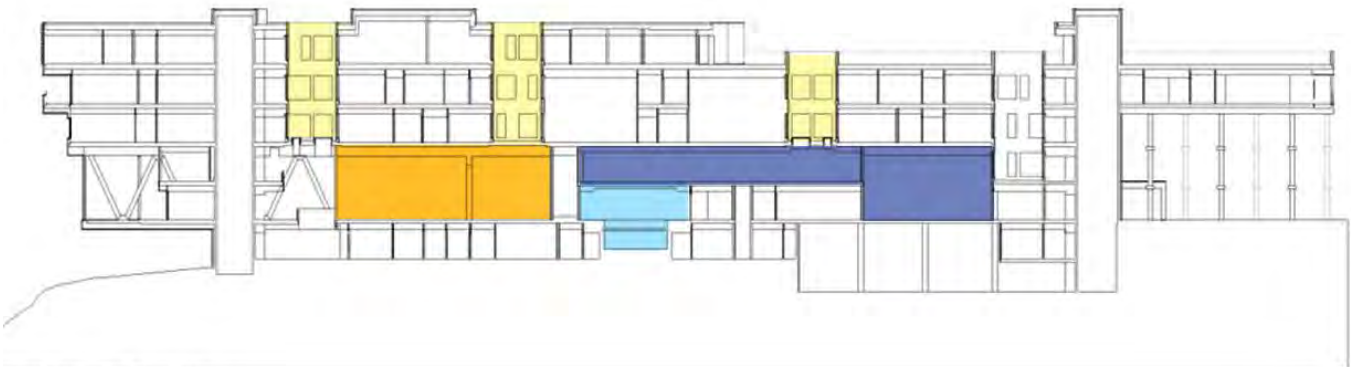
■ PIANTA PIANO SECONDO - SCALA 1:600
2nd FLOOR PLAN - SCALE 1:600



0 20 m

level 3

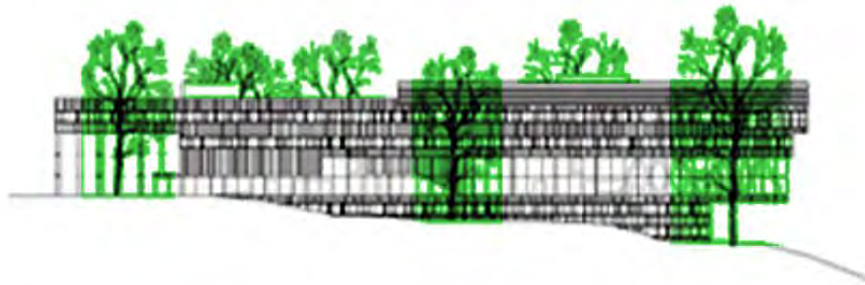
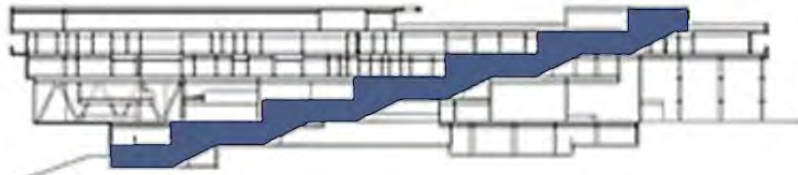
- | | |
|-----------------|--------------------------|
| 1 entrance | 7 fitness centre |
| 2 office | 8 room for patient |
| 3 gymnasium | 9 living room |
| 4 swimming pool | 10 ronald mcdonald house |
| 5 theatre | 11 void |
| 6 restaurant | 12 patio |



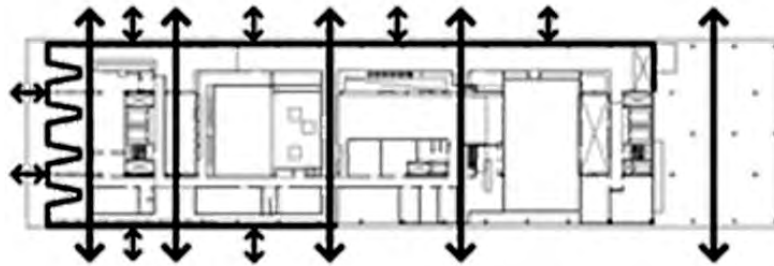
longitudinal section



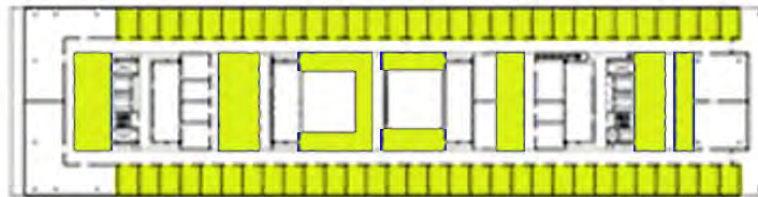
continuous staircase enables visual relation from roofgarden into the valley



strong relationship between building's facade and immediate surrounding



glazed facade at entrance level results in an abundance of natural daylight, prospect, and transparency



programme in need of daylight positioned along facade and lightwells

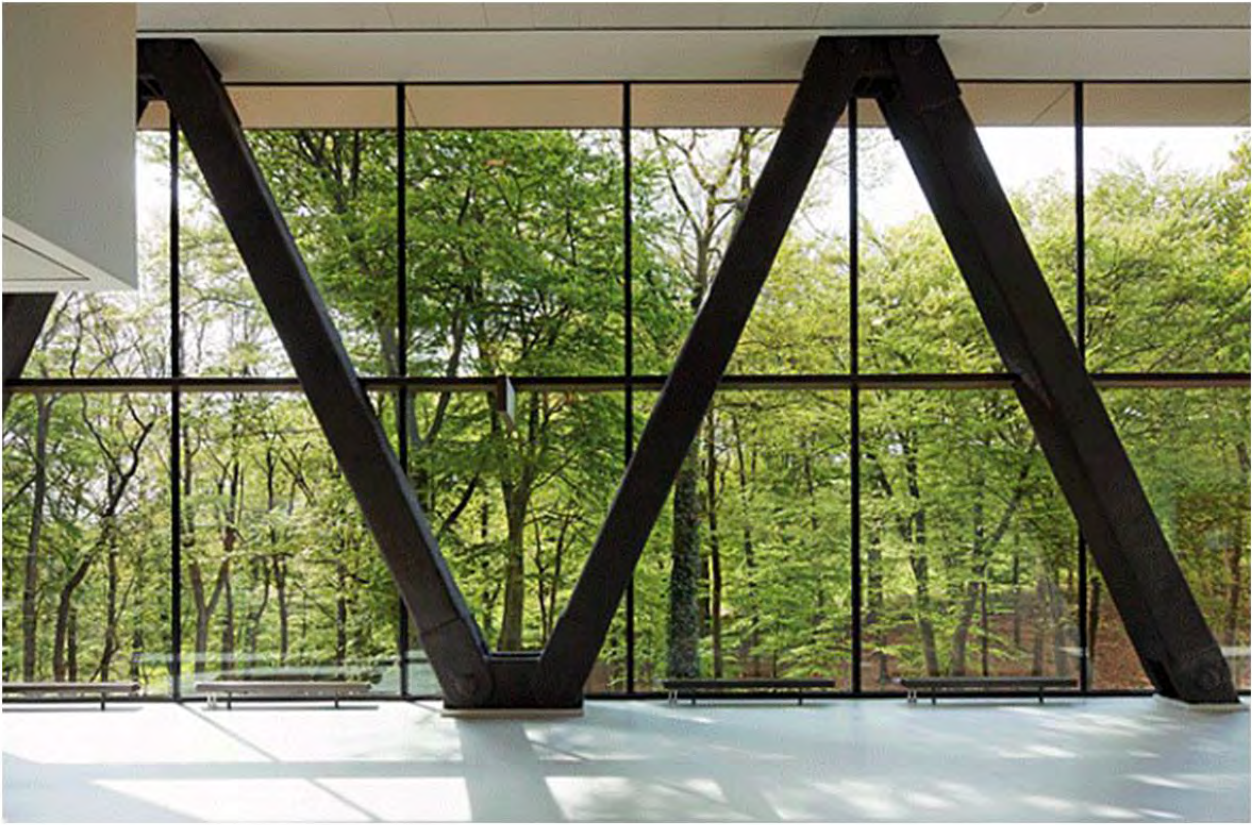


mimimum footprint



use of emotional color wheel patterns to create ambience for patients in-house



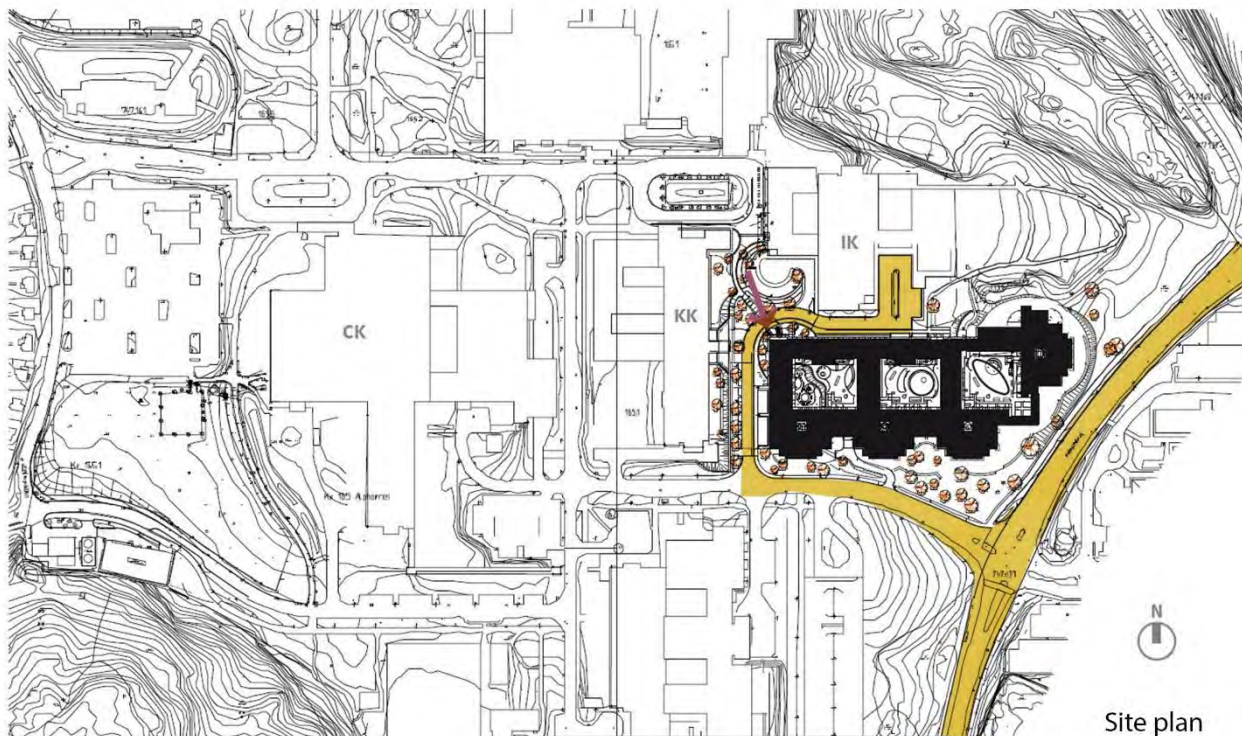


Large fenestration, windows and play of colors to create more exposure and remove unwanted feelings of confinement

Psychiatry Department building at the Sahlgrenska University Hospital/Östra Hospital, Göteborg, Sweden

Facts about the buildings:

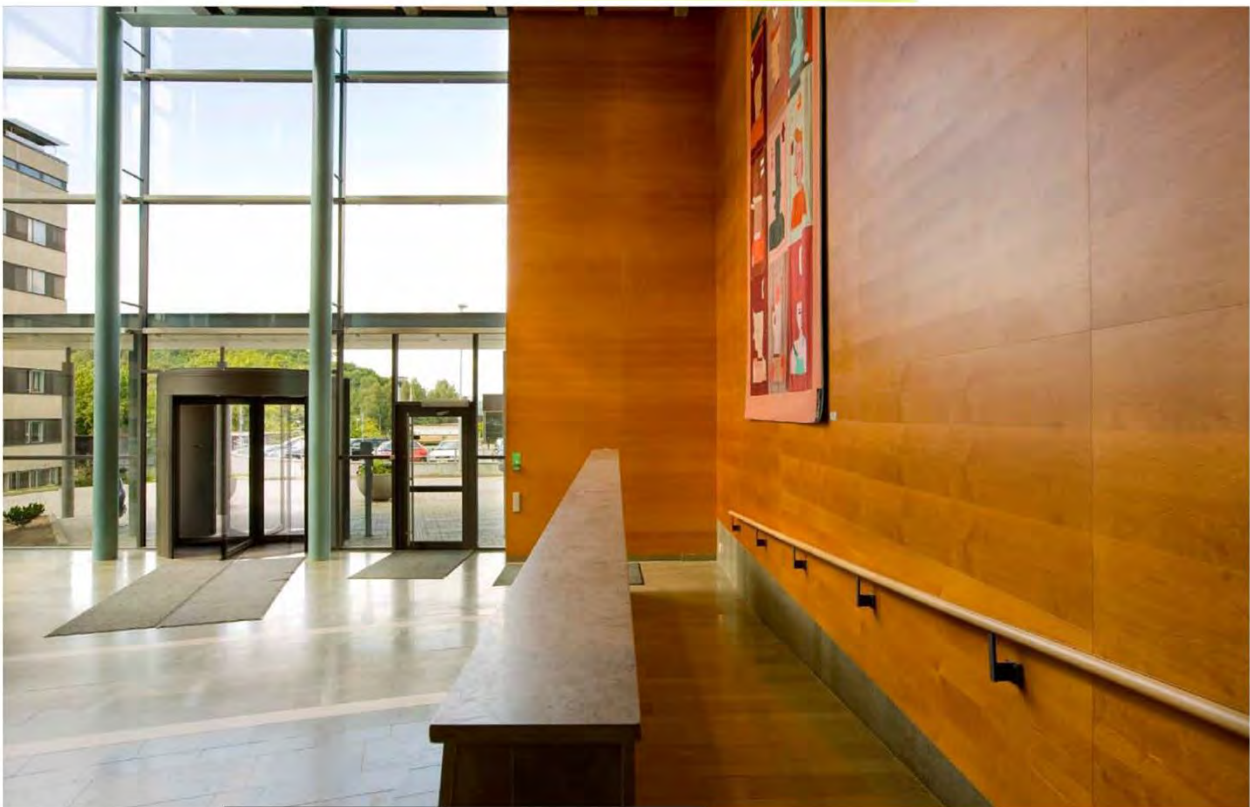
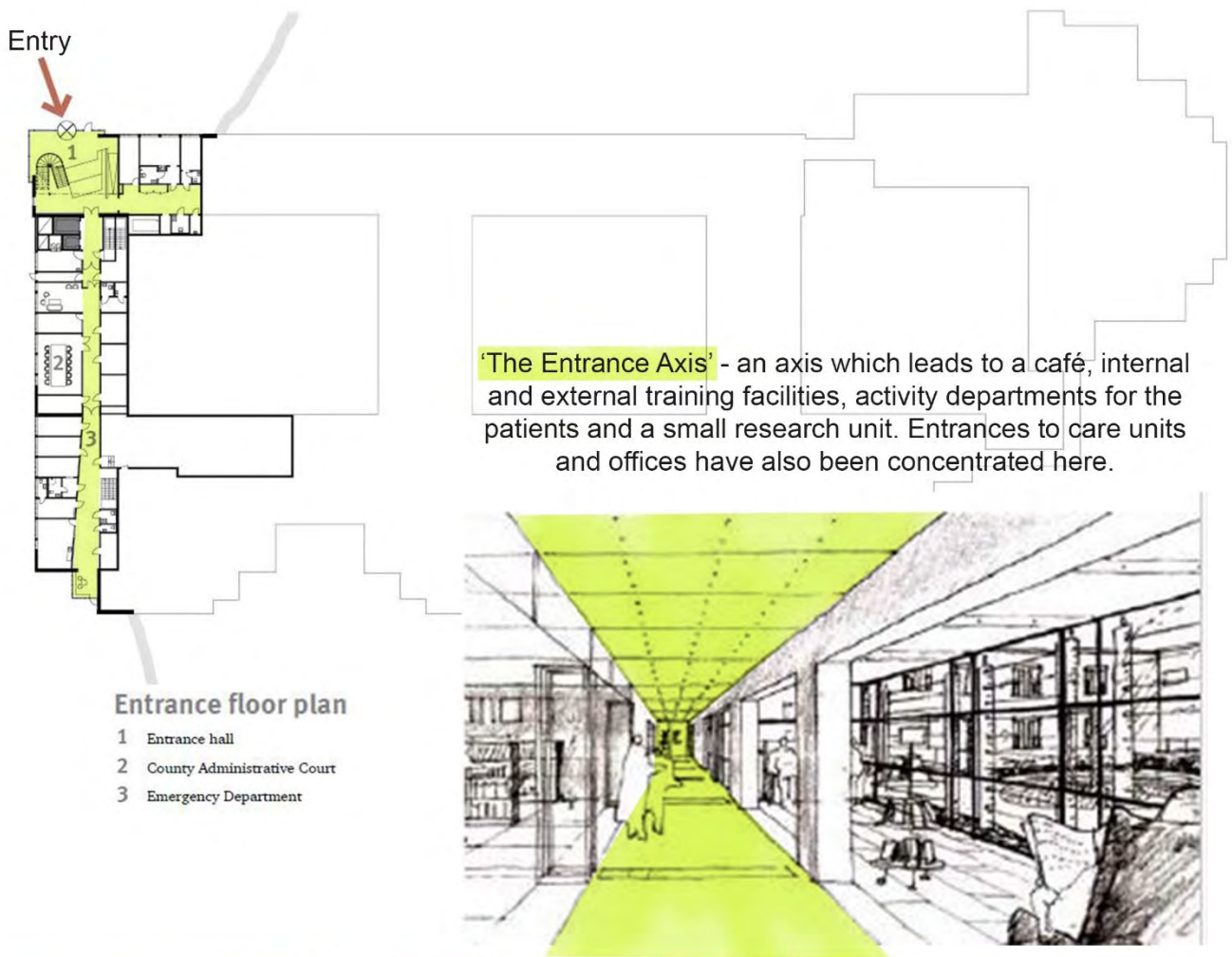
- Gross floor space: 18,800 sq.m / 202362 sq.ft
- No. of care units: 09
- Patient/ care unit: 14 (1 care unit with 8)
- Total no. patient equivalents: 120
- Utility floor space/care unit: 1,080 sq.m / 11625 sq.ft
- Utility floor space/patient: 77 sq.m / 829 sq.ft
- Architect: Stefan Lundin, White Arkitekter AB



Courtyard seats



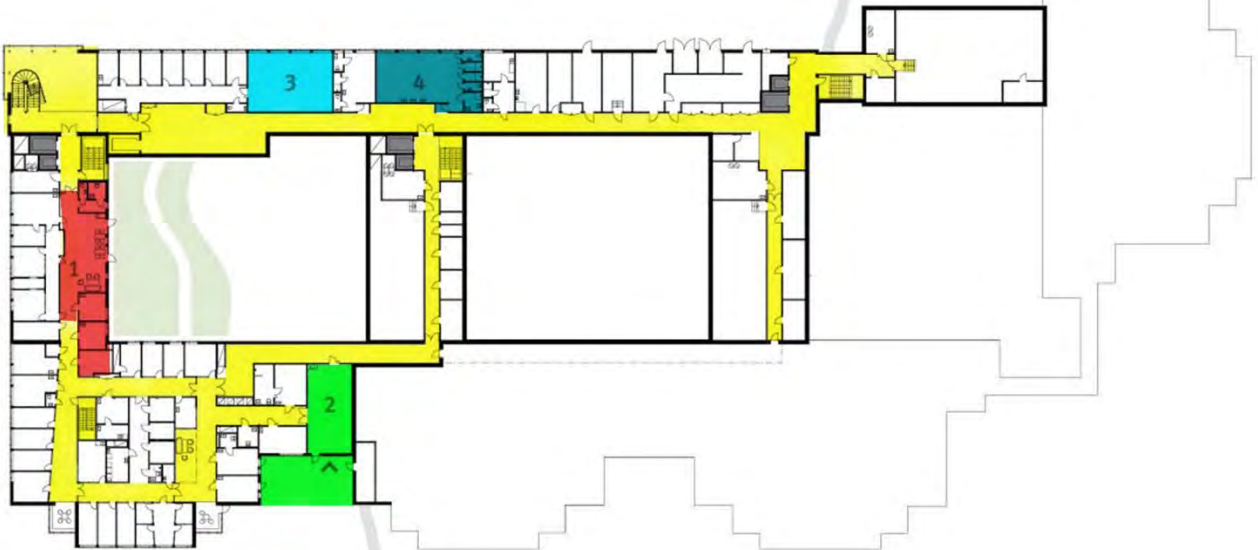
Sun-shades



The Entrance Hall

First floor plan

scale 1:800



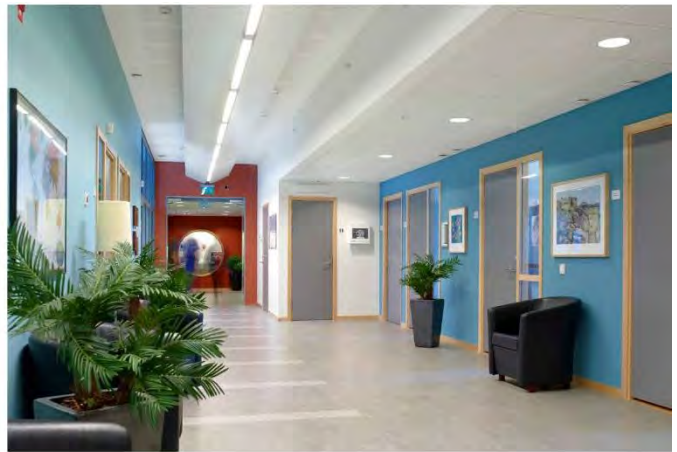
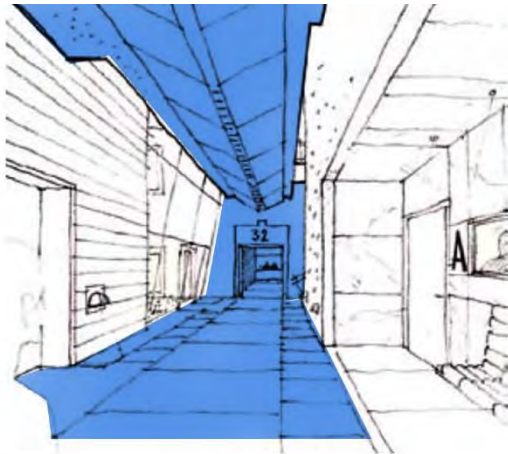
- 1 Emergency Department ■ Circulation ■
- 2 Ambulance entrance ■
- 3 Archives ■
- 4 Changing room ■

Second floor plan

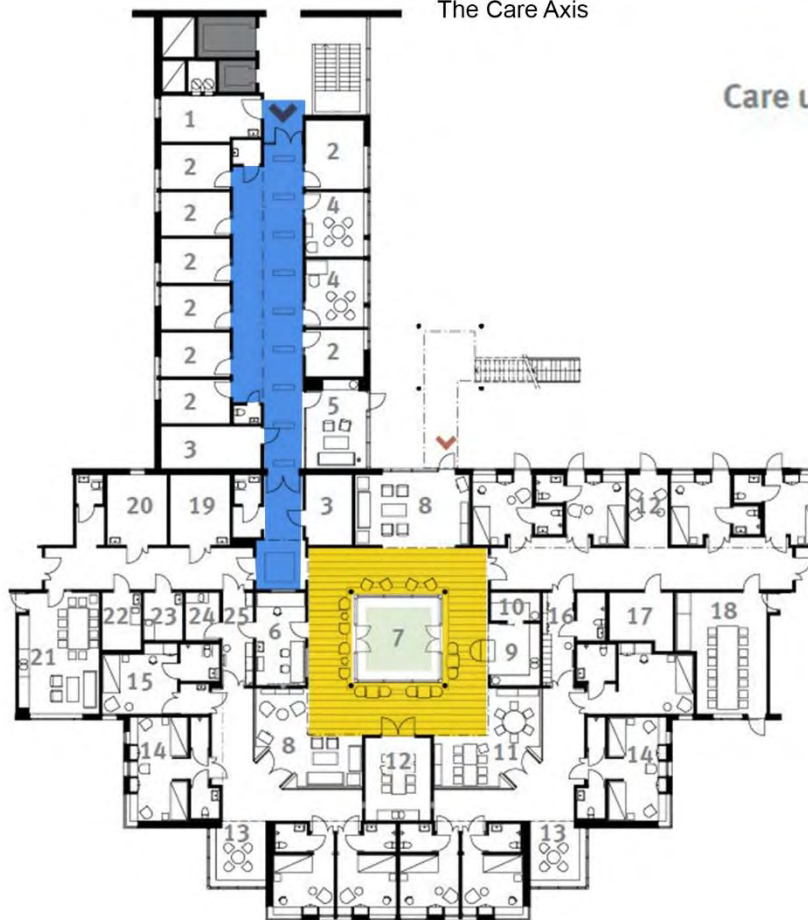
scale 1:800



- 1 Café
 - 2 Kitchen
 - 3 Care unit
 - 4 Teaching facilities
 - 5 Occupational therapy, training
 - 6 Drug evaluation
 - 7 Contemplation room
- Circulation ■

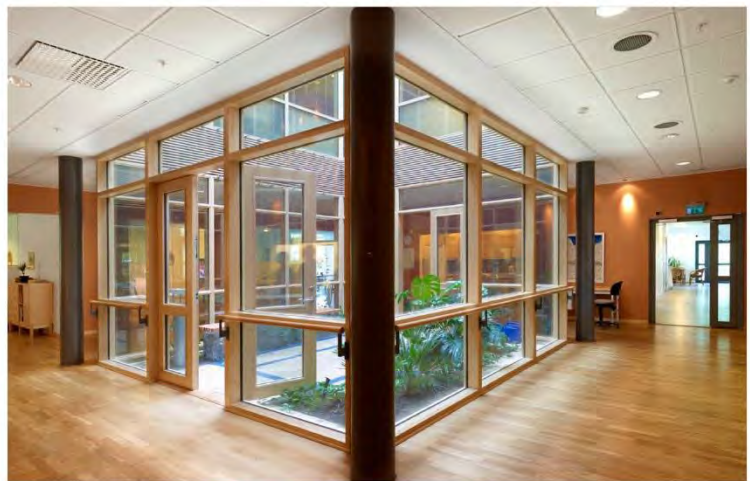


The Care Axis



Care unit

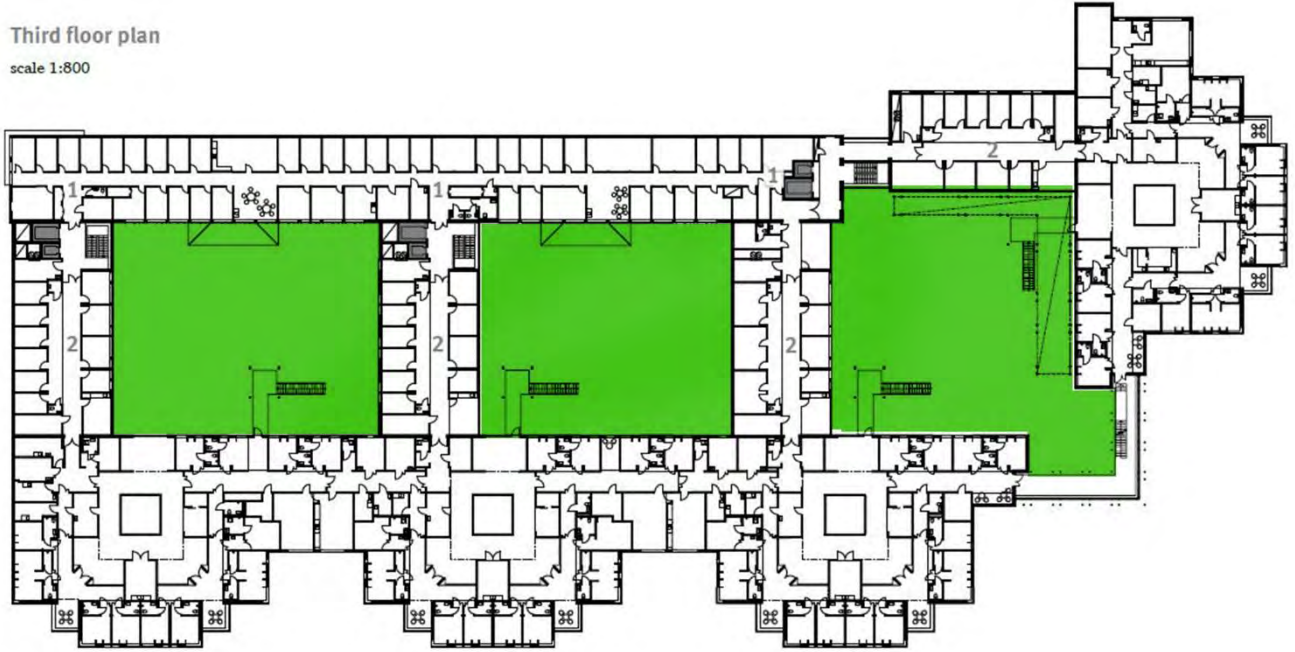
- 1 Recycling room
- 2 Office etc.
- 3 Services
- 4 Therapy/consulting rooms
- 5 Reception room
- 6 Care unit station
- 7 Atrium
- 8 Lounge
- 9 Kitchen
- 10 Larder, lockable
- 11 Dining area
- 12 Activity room
- 13 Common room
- 14 Patient room (2 beds)
- 15 Patient room, with isolation sluice
- 16 Cloakroom
- 17 Store
- 18 Team room/conference room
- 19 Treatment room
- 20 Restraint room
- 21 Staff room
- 22 Dirty utility room
- 23 Laundry
- 24 Clean utility room
- 25 Storage




The Atrium / Cloister space

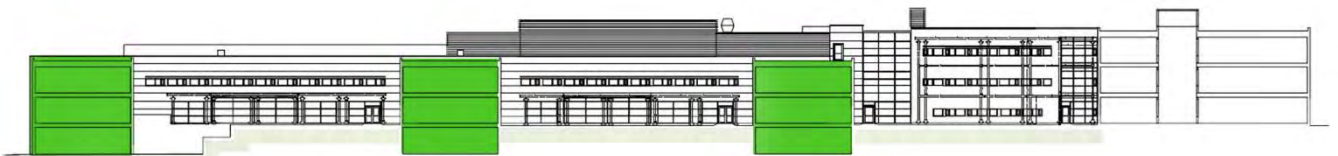
Third floor plan

scale 1:800

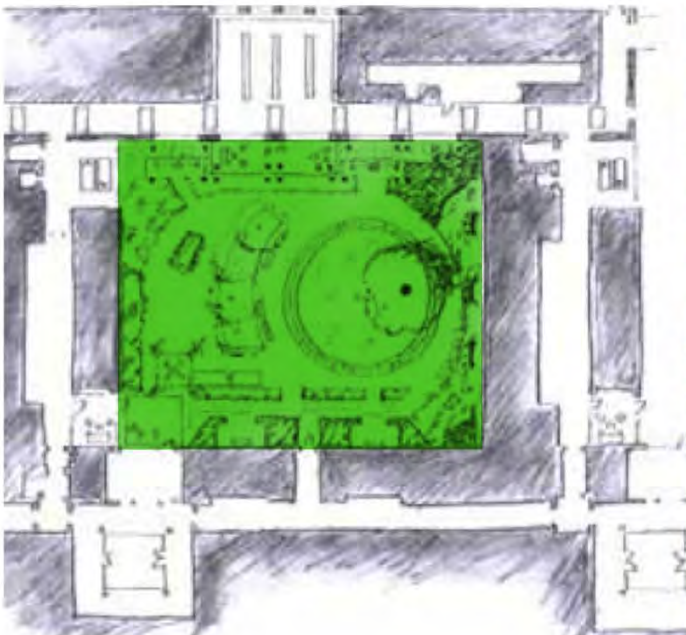


- 1 Administration/management/training
- 2 Care unit

 Courtyard spaces



2 Section showing Courtyard spaces



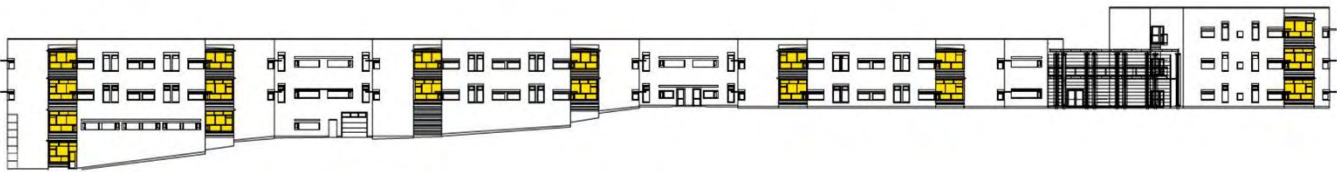
Finding solitude in nature
- landscape elements in courtyards



Patient's room



View from Patient's room



1 Elevation showing facade of Patients room



Indoor social spaces



Exterior view of facade

CHAPTER 4 PROGRAMME AND DEVELOPMENT

4.1 Programme Detail

There are total four (4) different accommodation dormitories in the rehabilitation center for Prottoy Medical Clinic Ltd, categorized according to gender and the treatment procedure required. Here, the detailed program of the existing facilities is provided, which include the services and other amenities required to facilitate the treatment process program which is followed by the doctors and patients to be accommodated within the center.

1. ACCOMODATION (De-addiction facility)										
no	Position	Space	Unit	Quantity	Space Area	Total Area	Person	Remarks	AC	Security
1	Patient (male)	Bed Rooms	Sft	15.00	350.00	5,250.00	45.00	3 patient per room	Yes	N/A
2	Patient (male)	Bed Rooms	Sft	5.00	150.00	750.00	5.00	1 patient per room	Yes	N/A
3	Patient (female)	Bed Rooms	Sft	15.00	350.00	5,250.00	45.00	3 patient per room	Yes	N/A
4	Patient (female)	Bed Rooms	Sft	5.00	150.00	750.00	5.00	1 patient per room	Yes	N/A
5	Duty Doctors	Bed Rooms	Sft	4.00	200.00	800.00	5.00	Doctors chamber with Attached Bathroom	Yes	N/A
6	Office Staff and Others	Bed Rooms	sft	2.00	350.00	700.00	10.00	Dorm bed , excluding bathrooms	N/A	N/A
7	Security and maintenance	Bed Rooms	sft	5.00	250.00	1,250.00	20.00	Dorm bed , excluding bathrooms	N/A	N/A
Total Area						14,750.00	135.00			

2. ACCOMODATION (Psychiatric facility)										
no	Position	Space	Unit	Quantity	Space Area	Total Area	Person	Remarks	AC	Security
1	Patient (male)	Bed Rooms	Sft	8.00	400.00	3,200.00	32.00	4 patient per room	Yes	N/A
2	Patient (male)	Bed Rooms	Sft	8.00	350.00	2,800.00	24.00	3 patient per room	Yes	N/A
3	Patient (male)	Bed Rooms	Sft	4.00	150.00	600.00	4.00	1 patient per room	Yes	N/A
4	Patient (female)	Bed Rooms	Sft	8.00	400.00	3,200.00	32.00	4 patient per room	Yes	N/A
5	Patient (female)	Bed Rooms	Sft	8.00	350.00	2,800.00	24.00	3 patient per room	Yes	N/A
6	Patient (female)	Bed Rooms	Sft	4.00	150.00	600.00	4.00	1 patient per room	Yes	N/A
5	Duty Doctors/ Nurse	Bed Rooms	Sft	5.00	200.00	1,000.00	5.00	02 Doctors with Attached Bathroom	Yes	N/A
3	Office Staff and Others	Bed Rooms	sft	2.00	350.00	700.00	8.00	Dorm bed , excluding bathrooms	N/A	N/A
4	Security and maintenance	Bed Rooms	sft	5.00	250.00	1,250.00	20.00	Dorm bed , excluding bathrooms	N/A	N/A
						Total Area	16,150.00	153.00		
3. SUPPORT FACILITY										
no	Position	Space	Unit	Quantity	Space Area	Total Area	Person	Remarks	AC	Security
1	Consultation unit	Room	Sft	5.00	150.00	750.00	4.00	Doctor-parent-patient counselling space	Yes	CCTV
2	Support structure	Lounge	Sft	1.00	400.00	400.00	20.00	Space for meetings and discussion	Yes	CCTV
3	Multipurpose Hall	Hall	Sft	1.00	2,000.00	2,000.00	100.00	Event space for patients+doctors	Yes	CCTV
4	Group Therapy	Rooms	sft	1.00	500.00	500.00	40.00	Scope for creating partitions	Yes	CCTV
5	Library	Hall	Sft	1.00	1,000.00	1,000.00	-	Space for reading, reflection	Yes	CCTV
6	Computer Café	Room	Sft	1.00	400.00	400.00	10.00	Connected with office, security	Yes	CCTV
7	Pharmacy	Room	Sft	1.00	300.00	300.00	-	Connected with office, doctor's office	Yes	CCTV
8	General Store	Room	Sft	2.00	200.00	400.00	-	Connected with office, kitchen	N/A	CCTV
9	Dining	Hall	sft	4.00	600.00	2,400.00	40.00	All patient dine at a time	Yes	CCTV
10	Kitchen	Room	sft	4.00	300.00	1,200.00	5.00	Provides all the dining halls	N/A	N/A
						Total Area	9,350.00			

4. ADMINISTRATION FACILITY										
no	Position	Space	Unit	Quantity	Space Area	Total Area	Person	Remarks	AC	Security
1	Office Room	Room	Sft	15.00	200.00	3,000.00	10.00	Regular office Space for admin, security, bursary, director, managers	N/A	CCTV
2	Doctor's Chambers	Room	Sft	5.00	200.00	1,000.00	5.00	Resident / Visiting doctor's space	Yes	CCTV
3	Emergency medical service	Room	sft	1.00	400.00	400.00	5.00	First-aid, preparation for transfer	N/A	CCTV
4	Conference	Room	sft	1.00	1,000.00	1,000.00	20.00	For psychiatrists, doctors and admins	N/A	CCTV
5	Reception	Lobby	sft	1.00	1,000.00	1,000.00	20.00	includes waiting area+admission for visitors/parents	N/A	CCTV
6	Medical records	Room	sft	1.00	300.00	300.00	2.00	Restricted area, only doctors/admins permitted	N/A	CCTV
7	Mechanical services	Room	sft	2.00	300.00	600.00	5.00	Boiler, air conditioner, water pump, maintenance	N/A	CCTV
8	Parking Space	Hard court	Sft	1.00	3,000.00	3,000.00	20.00	20 cars	N/A	CCTV
						Total Area	10,300.00			

5. ACTIVITY BASED FACILITIES										
no	Position	Space	Unit	Quantity	Space Area	Total Area	Person	Remarks	AC	Security
1	Futsal field	Green field	Sft	1.00	8,500.00	8,500.00	16.00		N/A	CCTV
2	Basket Ball	Hard Court	Sft	1.00	4,700.00	4,700.00	10.00		N/A	CCTV
2	Sober-living	Lounge	Sft	2.00	3,000.00	6,000.00	10.00		N/A	CCTV
3	Swimming Pool	Artificial pool	sft	1.00	3,000.00	3,000.00	20.00	include changing cubicles, maintenance service	N/A	yes
4	Indoor Game	Room	sft	2.00	1,000.00	2,000.00	40.00	Table-tennis, Billiard, Carrom, Board games	Yes	CCTV
2	Spa/Massage	Room	Sft	5.00	300.00	1,500.00	10.00		N/A	CCTV
2	Meditation/Yoga Studios	Shaded Courts	Sft	2.00	1,500.00	3,000.00	40.00		N/A	CCTV
5	Gymnasium	Semi Outdoor	sft	2.00	3,000.00	6,000.00	30.00		N/A	CCTV
						Total Area	34,700.00	176.00		

		SFT
1. ACCOMODATION FACILITY		30,900.00
2. SUPPORT FACILITY		9,350.00
3. ADMINISTRATION FACILITY		10,300.00
4. ACTIVITY BASED FACILITIES		34,700.00
GRAND TOTAL	85,250.00	excluding landscape, circulation and services

4.2 Programme Rationale

Programme of Prottoy Psychiatric and De-addiction Rehabilitation Center, Narsingdi, was generated on the detailed requirements of the medical and psychiatric authorities of Prottoy Medical Clinic Ltd, Dhaka, who are the governing body of the institution.

Treatment Program routine and the Four-plane Action process for the admitted patient has been generated based on the prevailing administrative body structure of Drug Abuse Information Rehabilitation & Research Center (D.A.I.R.R.C), Mumbai, India.

Further programmes for the incorporation of eco-therapy and spiritual guidance through religious learnings has been added to the existing treatment process by the author, with due consultation with residing psychiatrists, doctors in-charge, and through personal experience of the author, who, as a recovering-addict, endured and completed the six-month treatment program in Dhaka, Bangladesh during 2017-2018.

The specified program is detailed for each individual patient who will be rehabilitated within a period of 6 months according to the Prottoy Medical Clinic Ltd. standards.

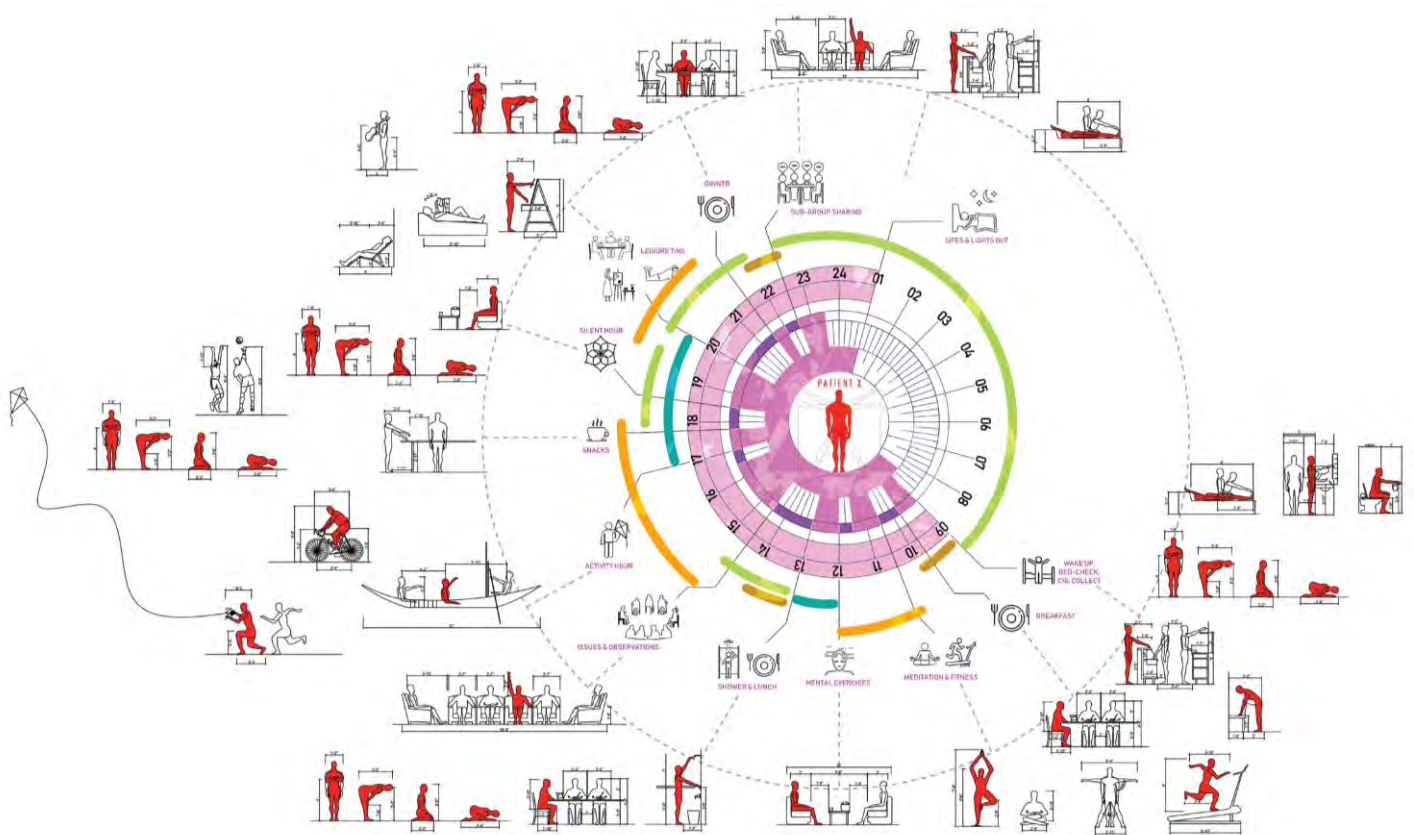


Figure: EVENTS IN TIME AND SPACE
The recovery program standards for patient X

Source: Author, 2018

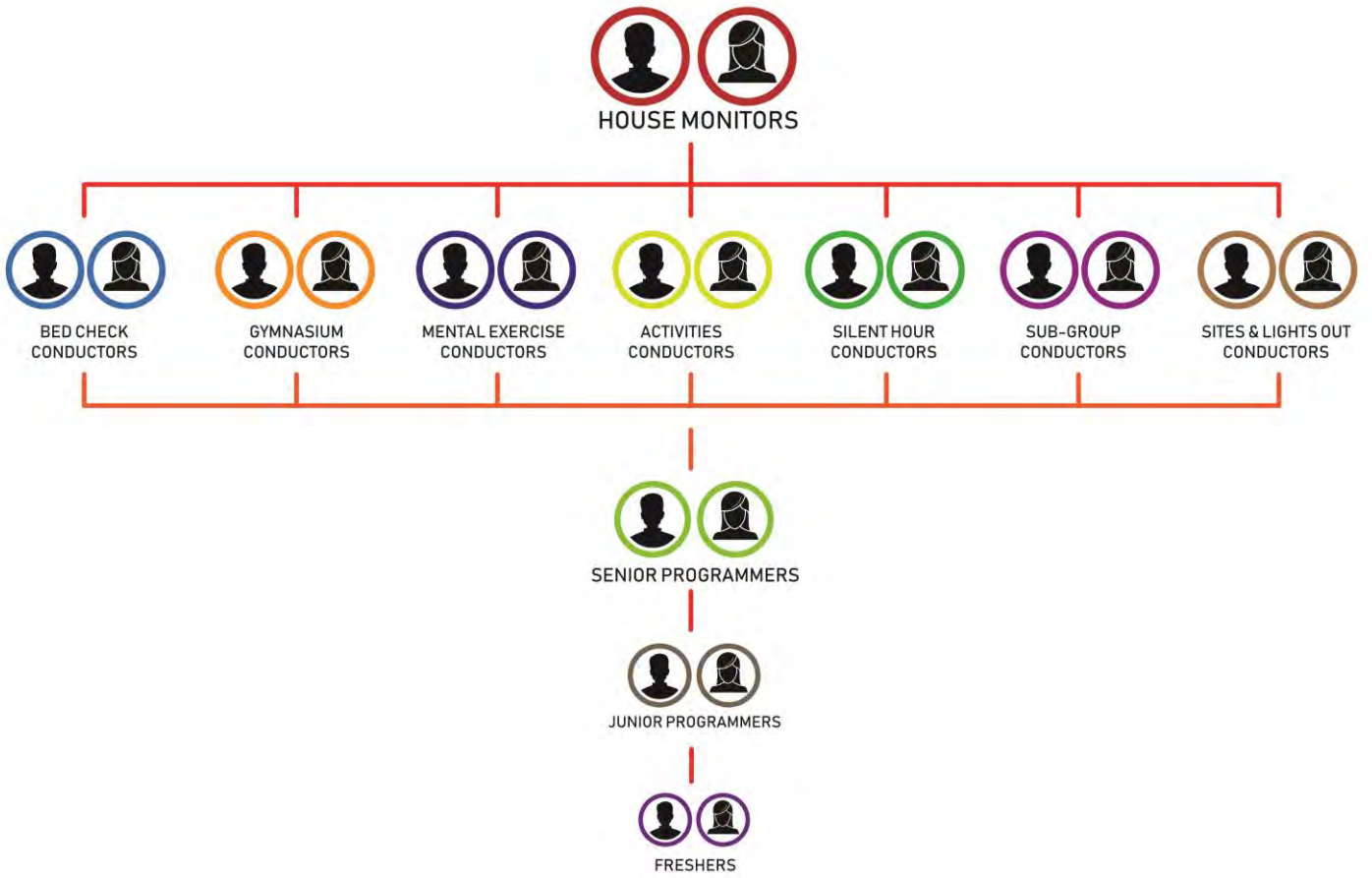
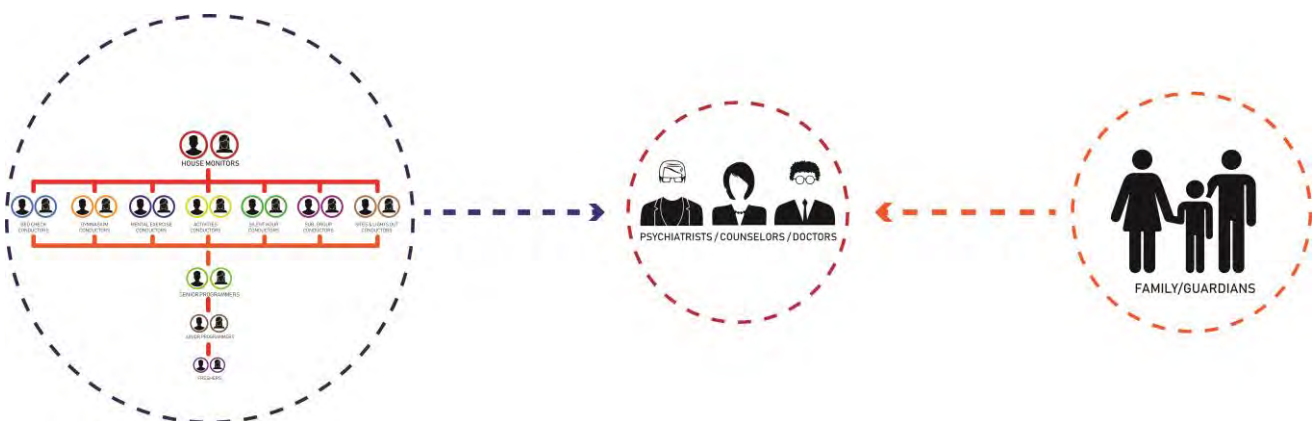


Figure: PATIENT HIERARCHY WITHIN THE RECOVERY PROGRAM.

Source: Author, 2018



Figures: DOCTOR-PATIENT CONFIDENTIALITY – bridge of communication between patients and family members.

Source: Author, 2018

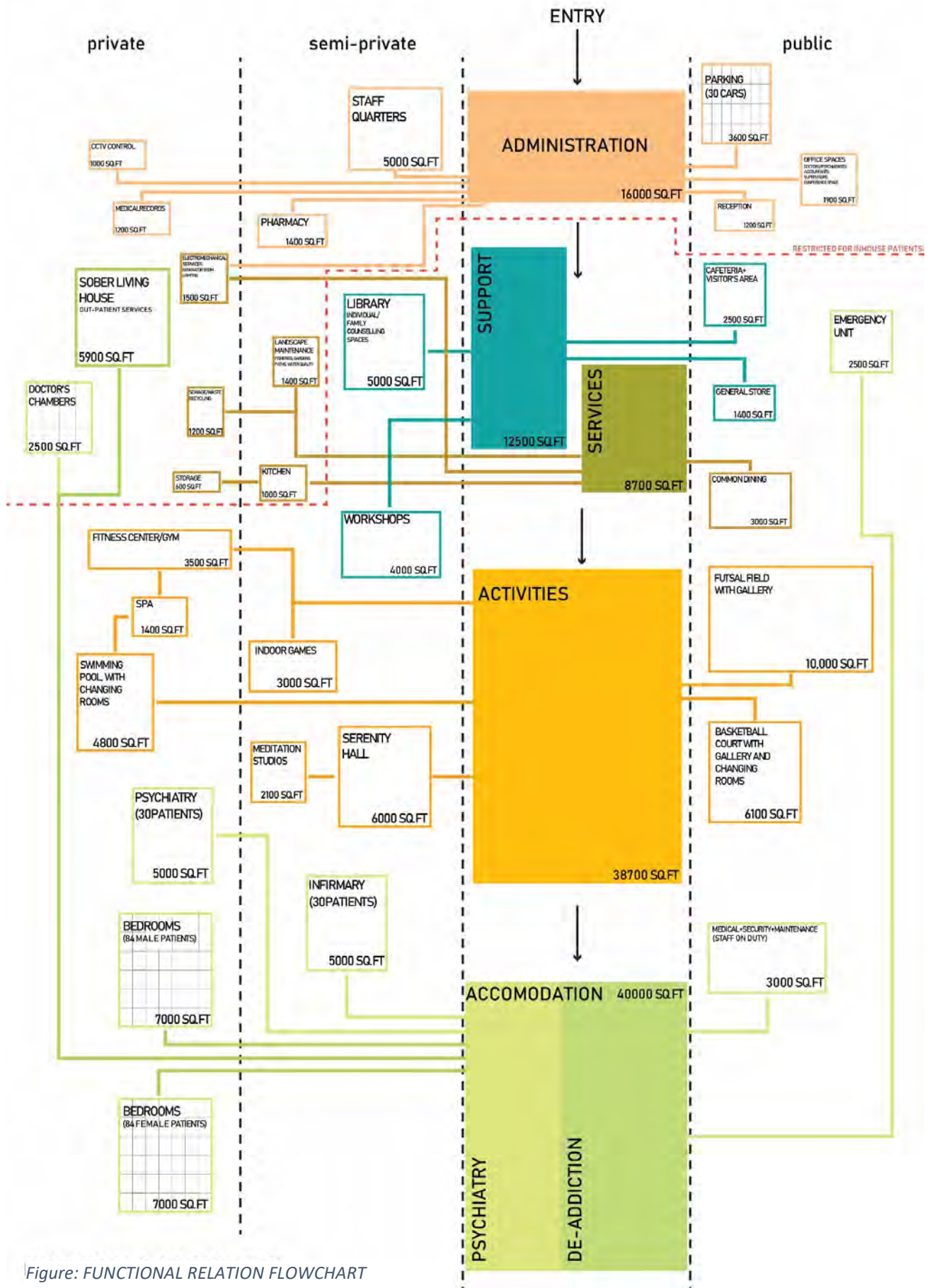


Figure: FUNCTIONAL RELATION FLOWCHART
Schematic derived from programme detail

Source: Author, 2018

CHAPTER 5 SITE APPRAISAL

5.1 Site Location



Figure: LOCATING NARSINGDHI
Source: Wikipedia, 2018

The site is located north-east of the Itakhola Circle of Monohardi upazila at Narsingdhi district, Dhaka division, Bangladesh.

The site can be reached by a five minutes' walk after stopping at the Itakhola Circle bus stop, and the location is referred to as 'Colonel's pukur' by the local inhabitants of the Itakhola bazar area.

At present, it serves the purposes of Fu-wang Plastic manufacturing factory, private fisheries, as well as recreational spaces for the owners of the land and the public on request.

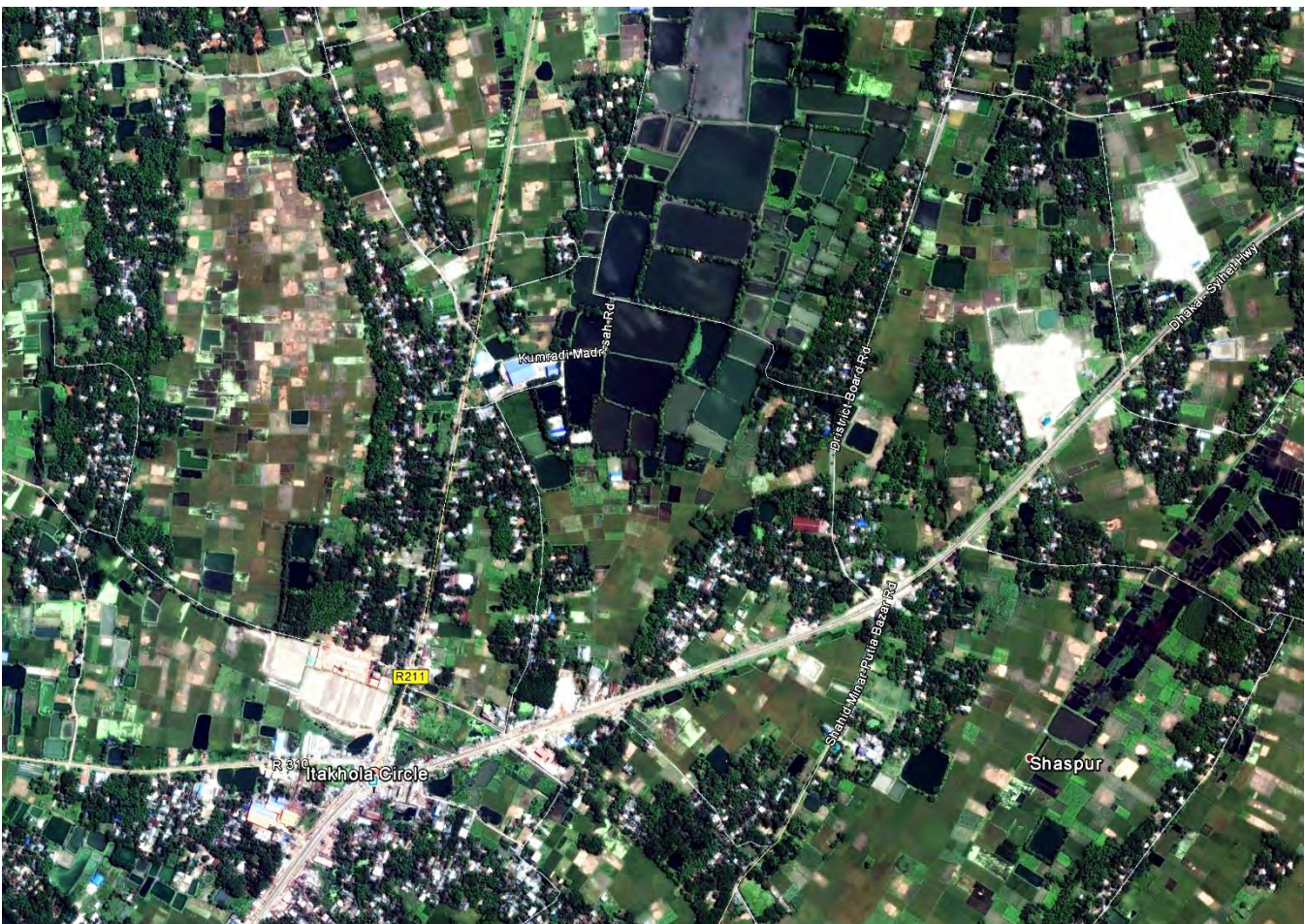


Figure: SATELLITE IMAGE OF SITE AND SURROUNDINGS
Source: Google Maps, 2018

5.2 Site and surroundings

Site area: 95-acre approx., where land: water = 1:10, or

9.47% land area allocated for building purposes; 90.53% constitutes of waterbodies.

A 20' wide highway road to Shibpur, emerging from the Itakhola circle node, runs adjacent to the site. A secondary road of 100' length and 10' width connects the entryway of the site to this primary road.

The surrounding area primarily constitutes of agricultural lands, followed by homesteads of respective landowners. Small shops situated in serene backdrop of greeneries are scattered along the highway, where one can catch a quick break with a cup of tea and local bakery goods.

The Itakhola circle is a communication node for people and transportation. It serves as a bazaar where the locals sell their daily goods produced from their agricultural fields. The highway bifurcates into the four primary directions, and several bus stoppages allows for the passengers to transit between traveling to Dhaka (south artery), Sylhet (east artery), Shibpur (north artery), and Charsindur (west artery).



Figure: OVERLAID SITE HIGHLIGHT REPRESENTING THE ITAKHOLA CIRCLE NODE, SECONDARY AND TERTIARY ROAD NETWORKS, AND WATERBODY EXPANSE OVER SITE.

Source: Author, 2018

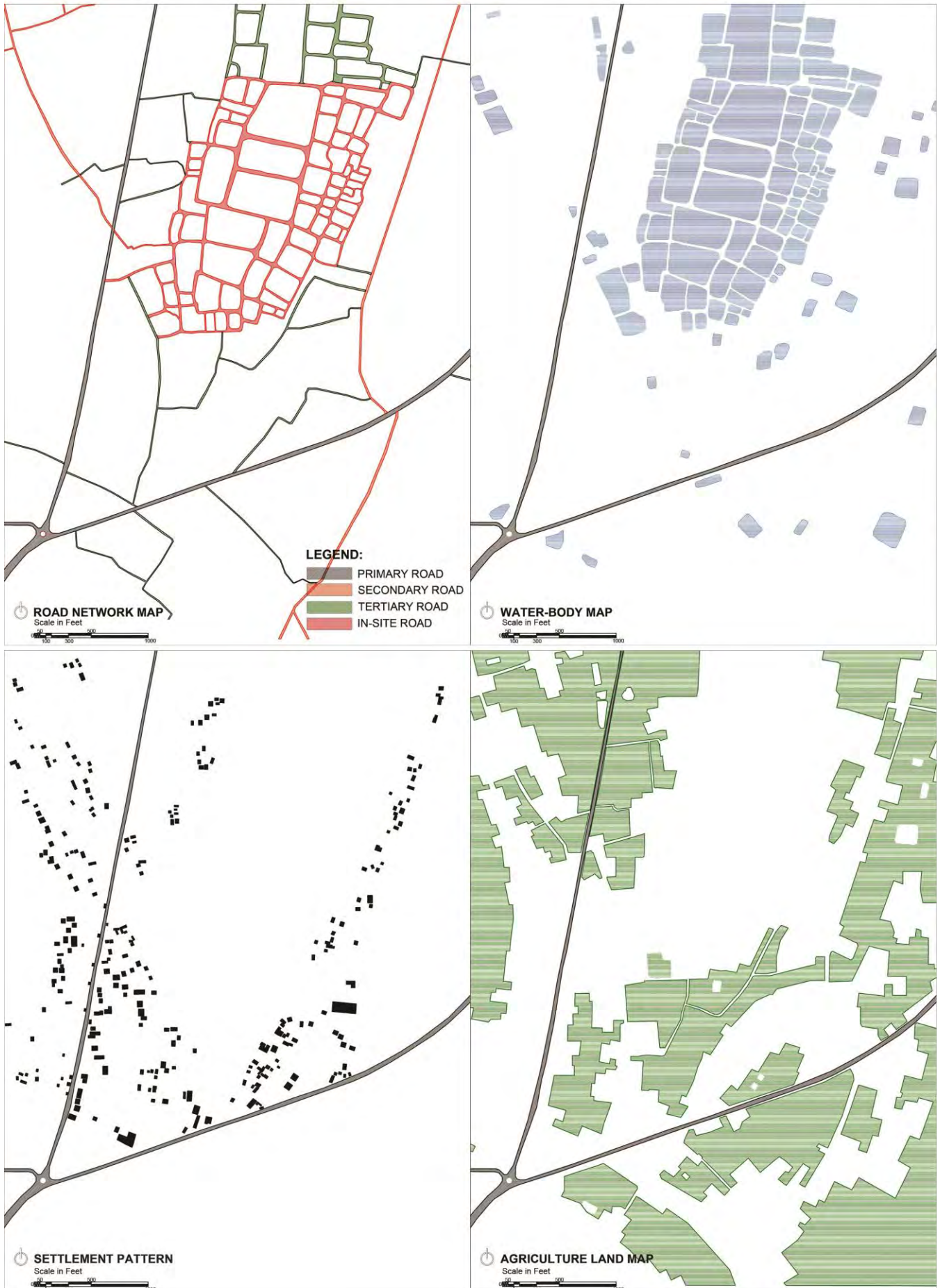


Figure: SITE ANALYSIS MAPS.

Source: Author, 2018

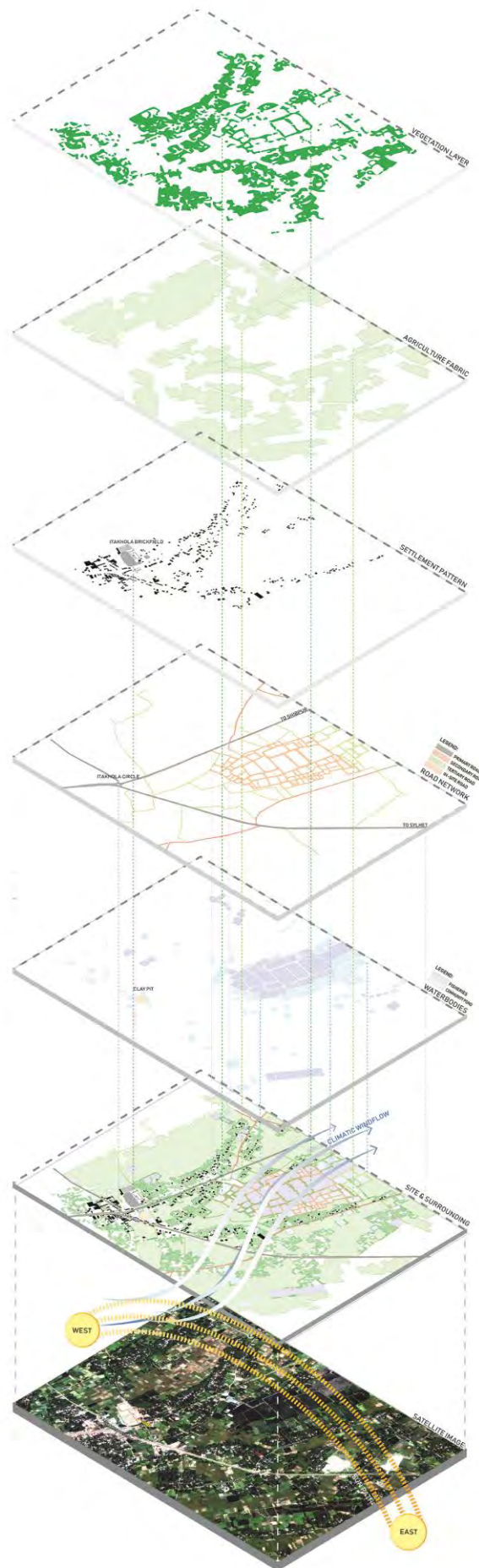


Figure: PROCESSING THE CULTIVATED LANDSCAPE.

Source: Author, 2018

5.3 Site Images

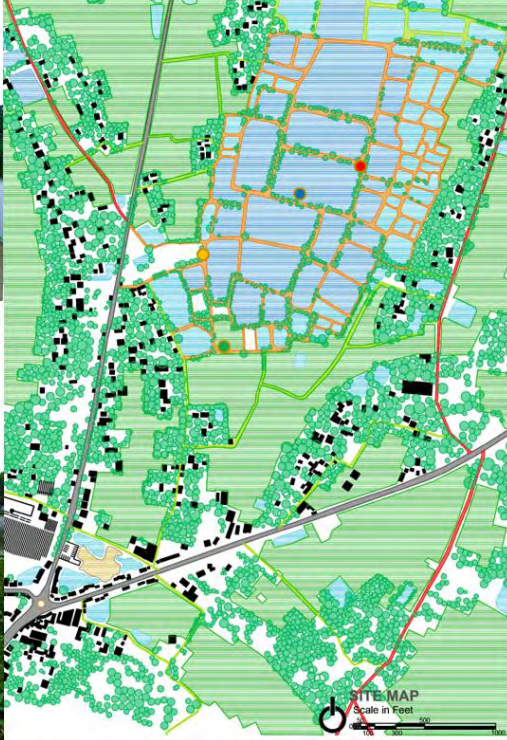




Figure: TRANQUILE WALKWAYS

Source: Author, 2018



Figure: SERENE WATERSCAPES

Source: Author, 2018

5.4 SWOT Analysis

Strength:

- Adequate site area to accommodate all facilities with ease
- Serene environment with lush greenery
- Open areas with cool seasonal breeze flowing across the waterbodies
- Restricted public access
- Decentralized from urban chaos

Weakness:

- Accessibility across the waterbodies are not designed with safety considerations.
- Site ownership affiliated within two groups. May hinder future expansion plans.
- Large area will require additional staff members for management.
- Site location detached from proximity to urban medical facilities

Opportunity:

- Multipurpose use of waterbodies within the site, such as
 - existing fisheries
 - boat rides
 - scenic beauty
 - spiritual reflection spaces
- scope for designing eco-therapeutic landscapes with the incorporation of water
- site is a low land area which creates seasonal variation with water in rainy seasons and agricultural fields in the dry season.

Threat:

- Open area prone to lightning strikes.
- Site area is sometimes used as recreational spaces on public request.
- Difference of heat gain on land and water creates drastic micro-climatic changes.
- High quality pest-resilient measures need to be considered for patient safety.



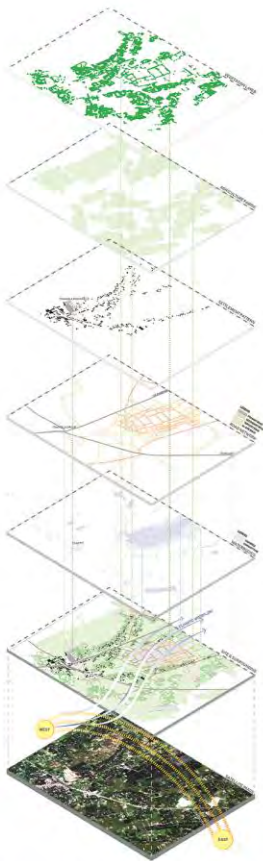
CHAPTER 6 DESIGN DEVELOPMENT

6.1 Concept Derivation



Figure: Conceptual Visualization - DISCOVERING A ROAD TO RECOVERY

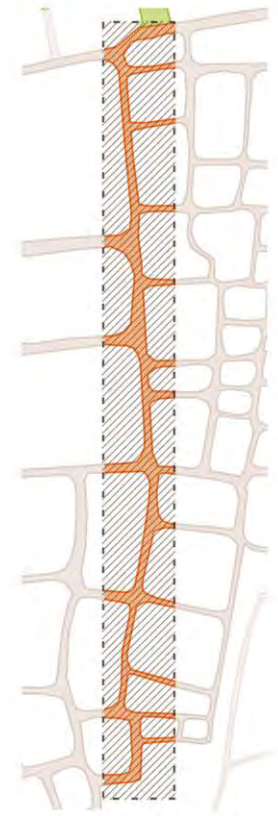
Source: Author, 2018



I: PROCESSING THE CULTIVATED LANDSCAPE



II: ADAPTING TO EXISTING SITE FORCE



III: DEMONTAGE - IDENTIFY ELEMENTAL FORCE



IV: EXTRACTION OF ELEMENTAL SPINE



V: INTRODUCTION OF AXIAL ROAD TO RECOVERY



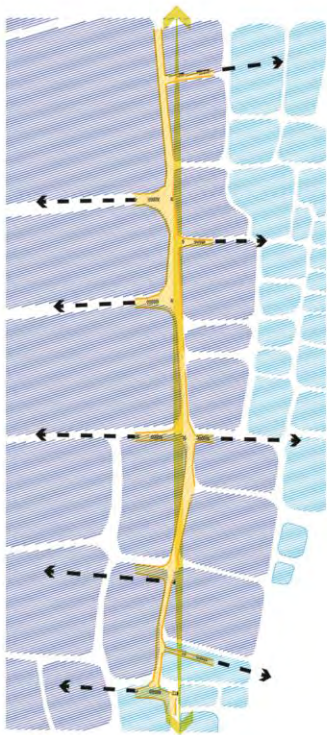
VI: ADDITIVE INTEGRATION



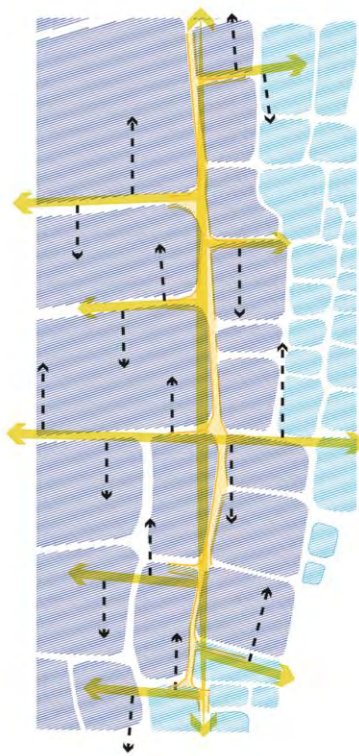
VII: OVERLAPPING HIERARCHIES CREATE SHIFTING AXES

Figures: Diagrammatic derivation - FORMULATING THE ROAD TO RECOVERY FROM EXISTING SITE FORCES (I)

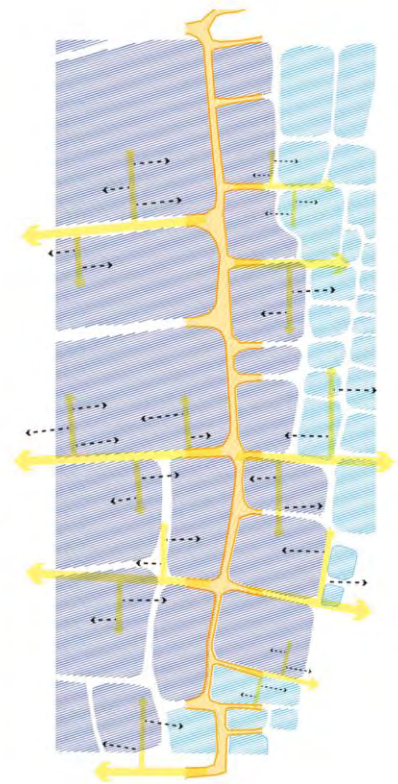
Source: Author, 2018



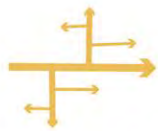
VII: ASSIMILATING THE IMMEDIATE SURROUNDING



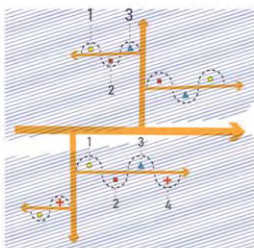
IX: ADDITIVE AXIAL MOVEMENT



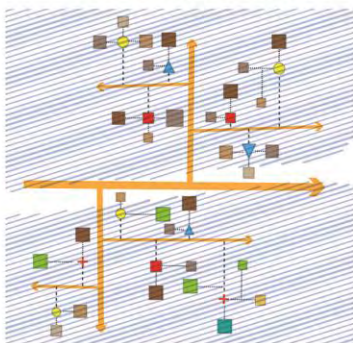
X: ADDITIVE REPETITIONS OF SHIFTING AXES



XI: SEPARATE CLUSTER UNITS



XII: GIVING SHAPE TO THE INDETERMINATE



XIII: ORGANISATIONAL CLUSTERS IN SCHEMATIC ZONES



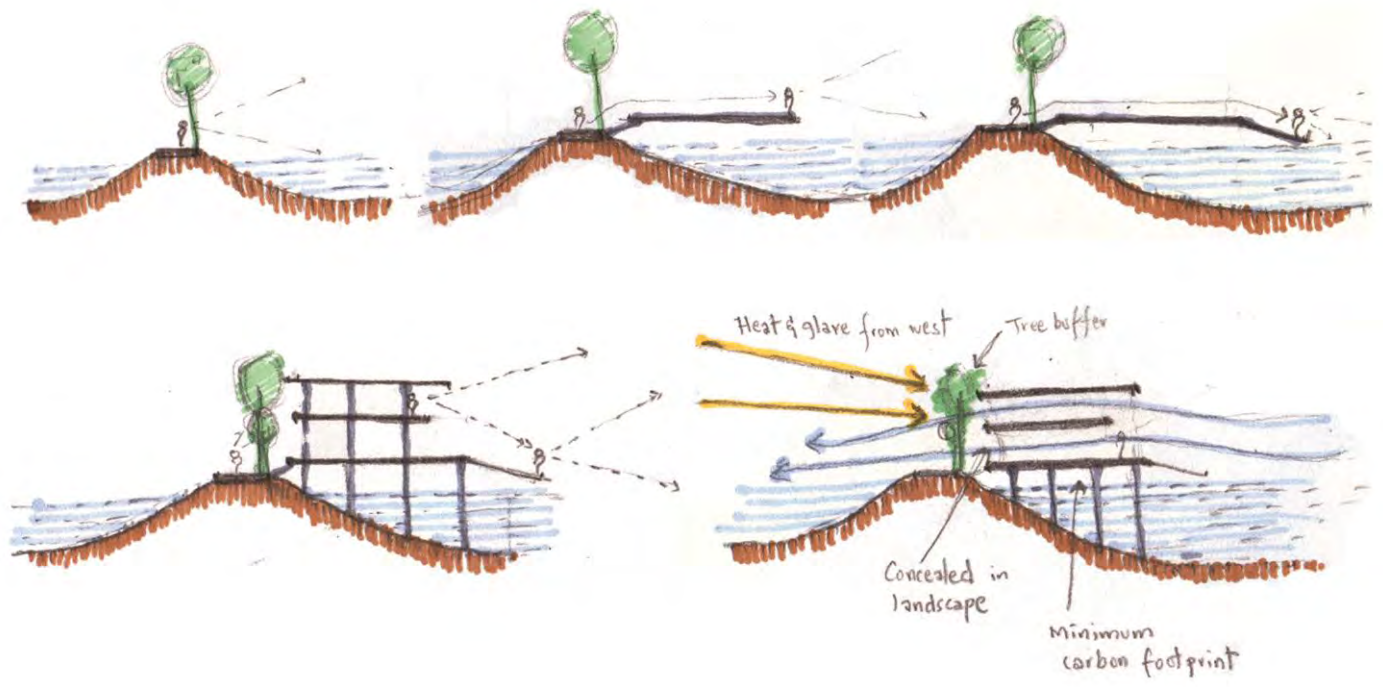
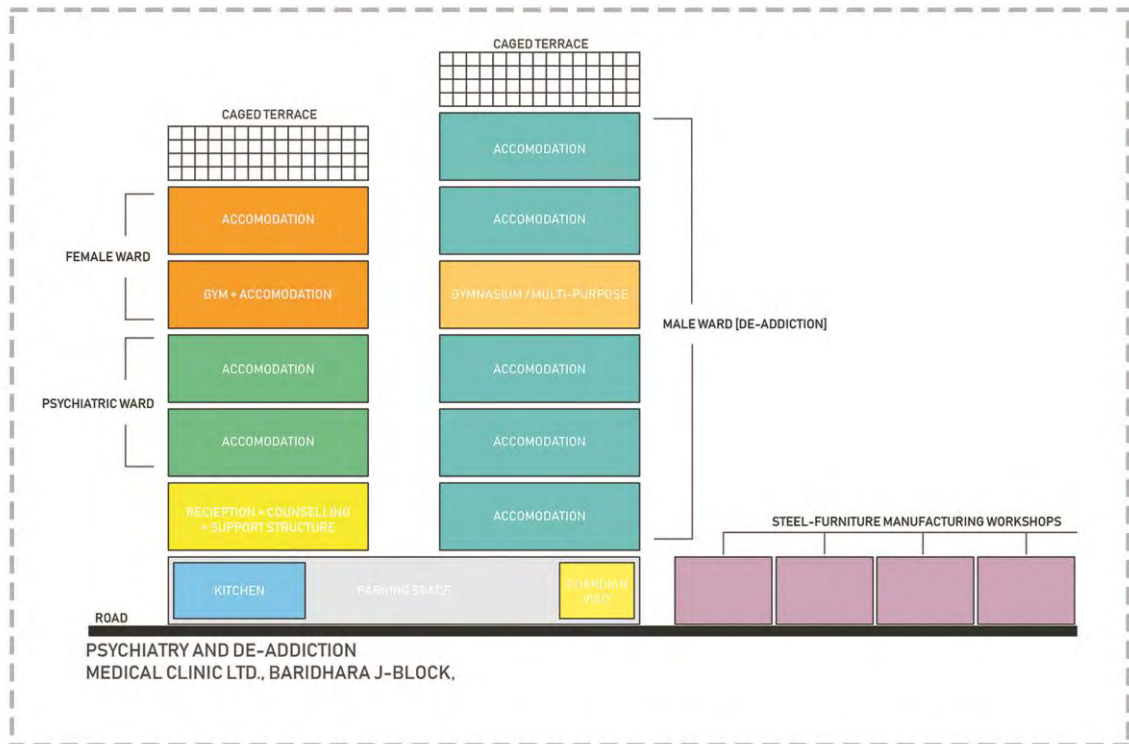
XIV: RHYTHM OF REPETITIONS



XV: MORPHOLOGICAL TRANSFORMATIONS:
UNIQUE WHOLE DEFINED BY
REDUCTIONS, ADDITIONS AND REPETITIONS OF CLUSTER ORGANISATION

Figures: Diagrammatic derivation - FORMULATING THE ROAD TO RECOVERY FROM EXISTING SITE FORCES (II)

Source: Author, 2018



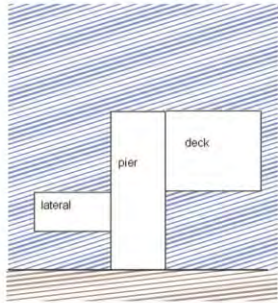
Figures: BREAKING AWAY FROM THE SHACKLES OF URBAN CONFINEMENT THROUGH THE ADAPTATION OF ECO-THERAPEUTIC LANDSCAPE AS PART OF THE HEALING PROCESS.

Source: Author, 2018

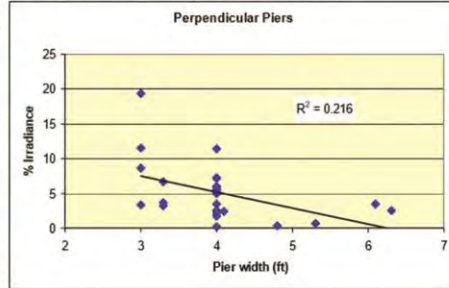
EXISTING FISHERIES ECOLOGY ENHANCEMENT



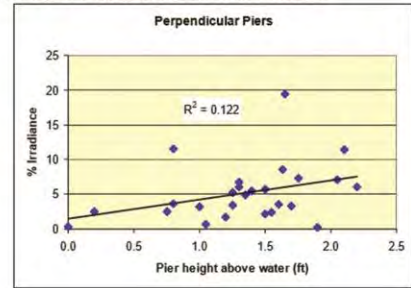
UNDERSTANDING DESIGNATED "STILLWATER SENSITIVE AREAS," WHICH ARE IDENTIFIED AS CRITICAL TO FISH AND WILDLIFE AND WATER QUALITY, AS THEY ARE THE AREAS WHERE THE BEST DIVERSITY OF FISHES CAN BE FOUND.



Percent light availability under piers as function of width.



Percent light availability under piers as function of height.



FISH MAY SEEK SHELTER UNDER PIERS/SHADED REGIONS IF NOTHING ELSE IS AVAILABLE, BUT THEY'RE MOST LIKELY FOUND ALONG VEGETATED SHORELINES UNBROKEN BY PIERS OR FEW PIERS WHERE THEY'LL FIND THE DIVERSE AQUATIC PLANTS THEY NEED FOR SPAWNING, FEEDING AND OTHER NEEDS.

IMPACTS OF PIERS/SHADED STRUCTURES ON STILLWATER ECOLOGY



Average sunlight intensity

under piers/docks
open areas



Aquatic Plant growth rate

under piers/docks
open areas



Plant dominance under piers

shade tolerant species
other aquatic plants



Insect growth rate

under piers/docks
open areas



Dead Areas

under piers/docks
open areas

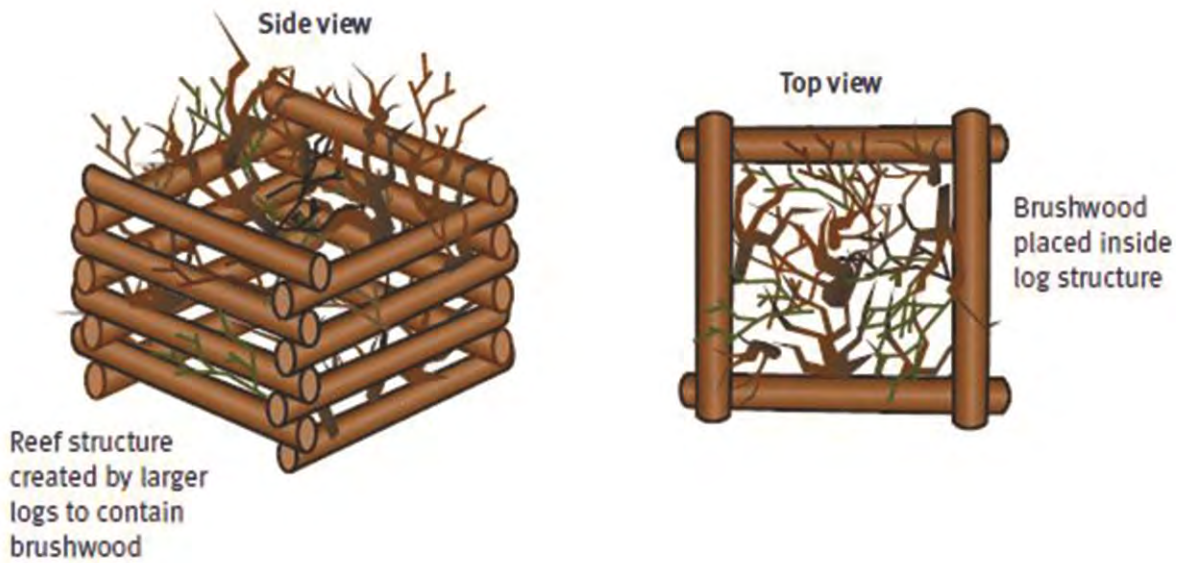
Figures: UNDERSTANDING AND ADAPTING TO EXISTING SITE CONDITIONS

Information source: Garrison, P. J., Marshall, D. W., Thompson, L. S., Cicero, P. L., & Dearlove, P. D. (2005). *Effects Of Pier Shading On Littoral Zone Habitat And Communities In Lakes Ripley And Rock, Jefferson County, Wisconsin.*

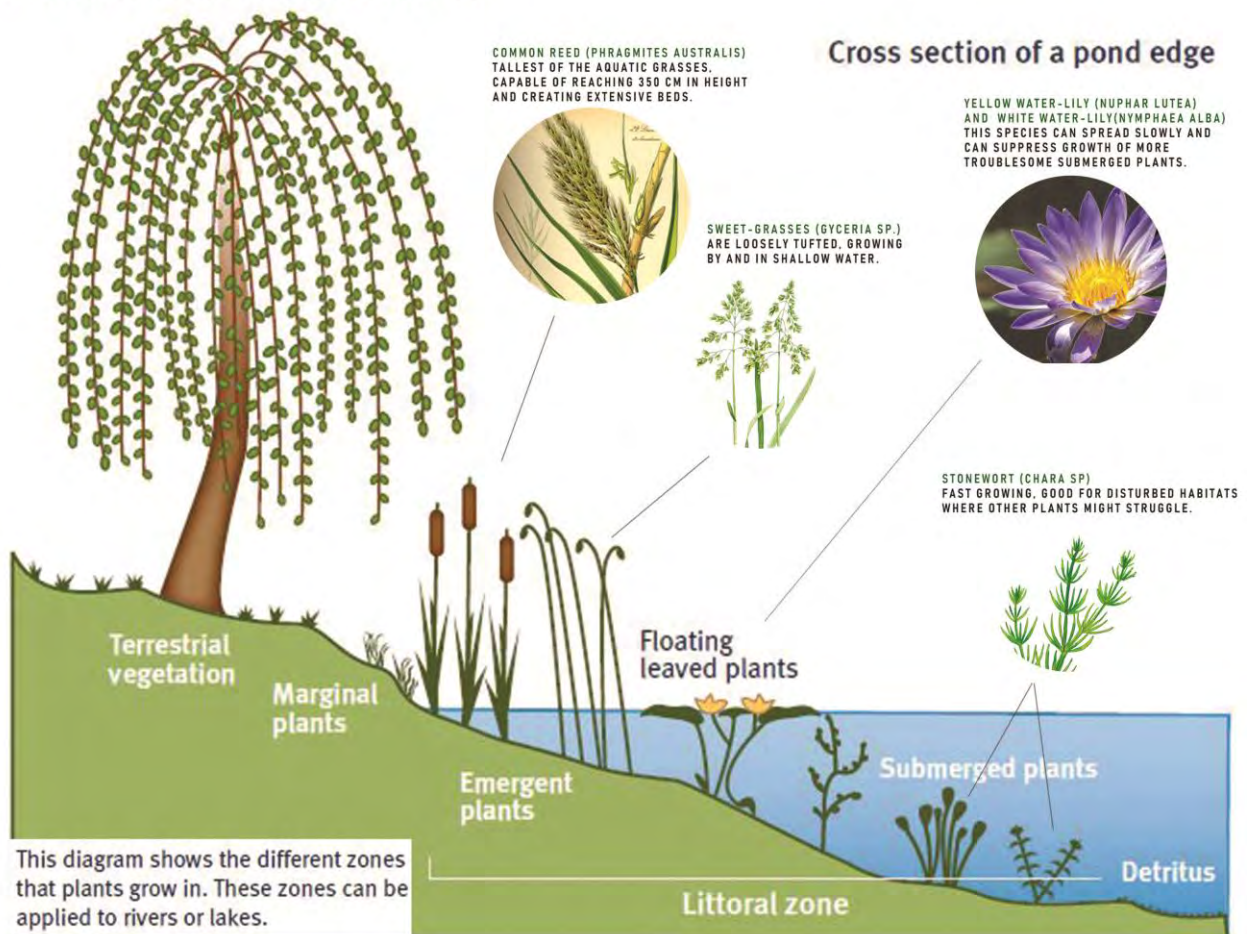
Diagram Source: Author, 2018

DESIGN OF SENSITIVE AREAS TO COUNTER BALANCE STILLWATER ECOLOGY

1. PHYSICAL ENHANCEMENTS:



2. BIOLOGICAL ENHANCEMENTS:



Figures: LANDSCAPE ENHANCEMENT FOR EXISTING SITE CONDITIONS

Information source: Environment Agency. (n.d) Better Habitat Means Better Fishing. Fisheries Habitat Improvement.

Adapted Infographics: Author, 2018

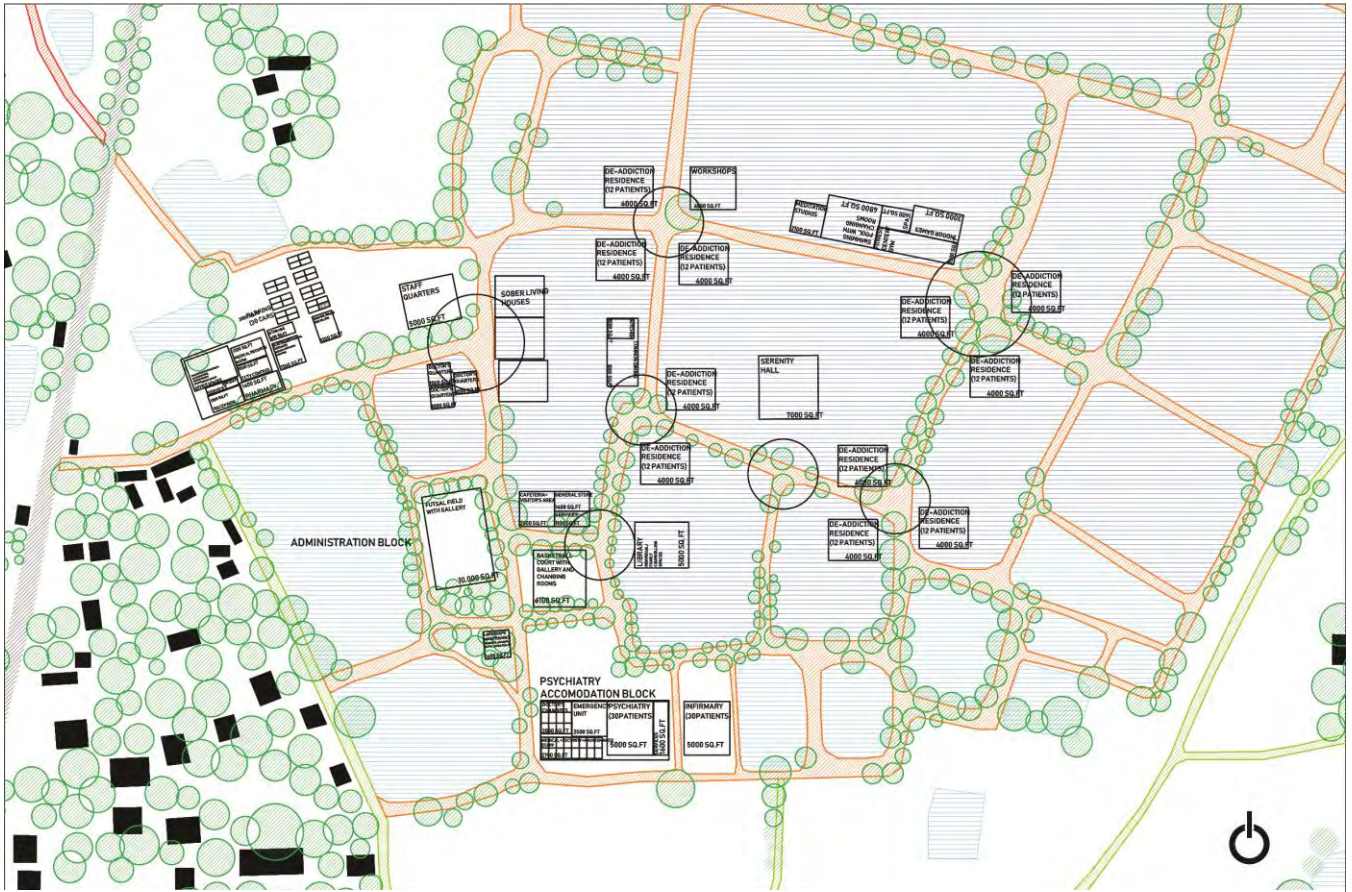


Figure: SCHEMATIC PLAN PHASE 2
 Source: Author, 2018

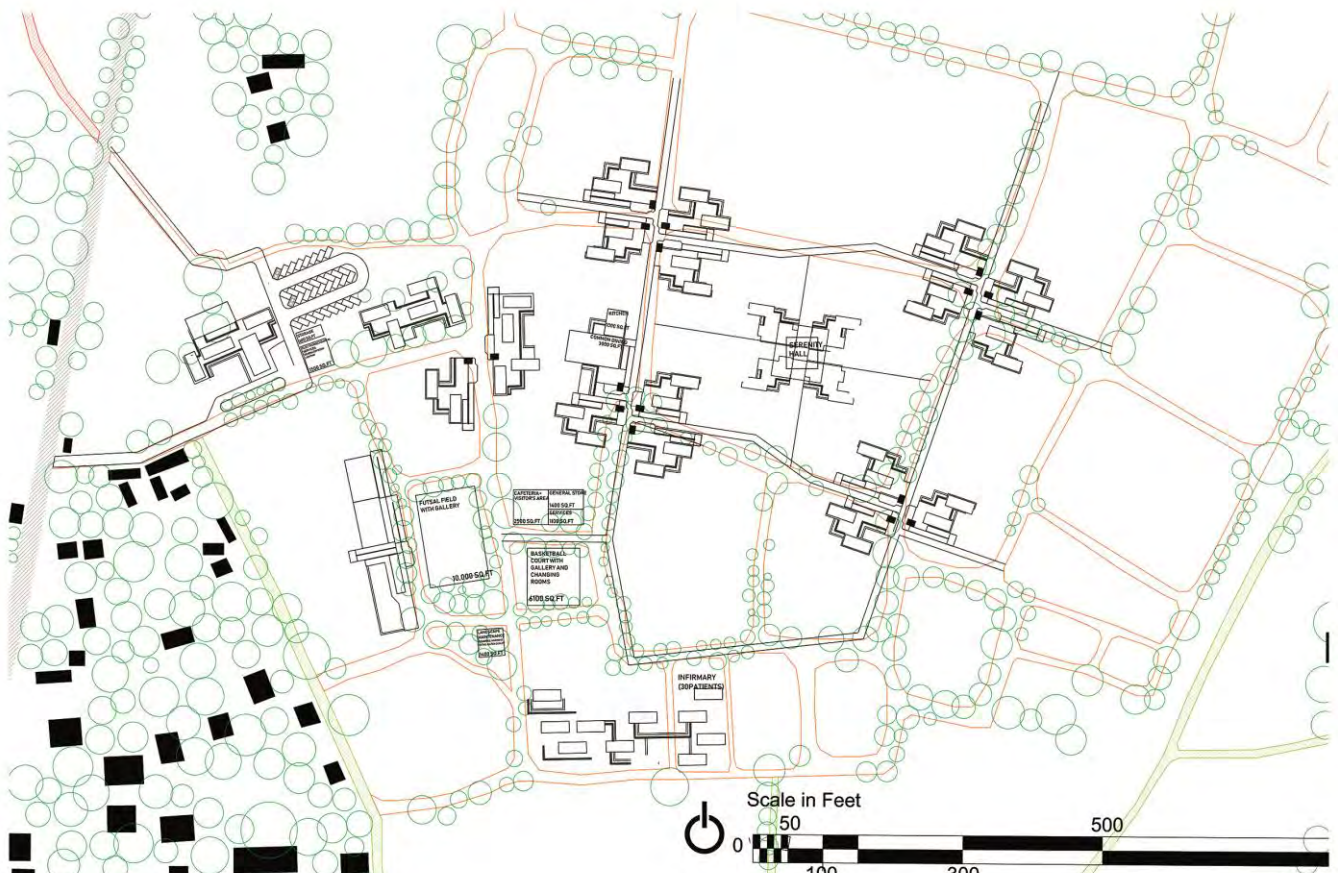


Figure: SCHEMATIC PLAN PHASE 3
 Source: Author, 2018



Figure: MASTERPLAN MASS DEVELOPMENT PHASE 4
 Source: Author, 2018

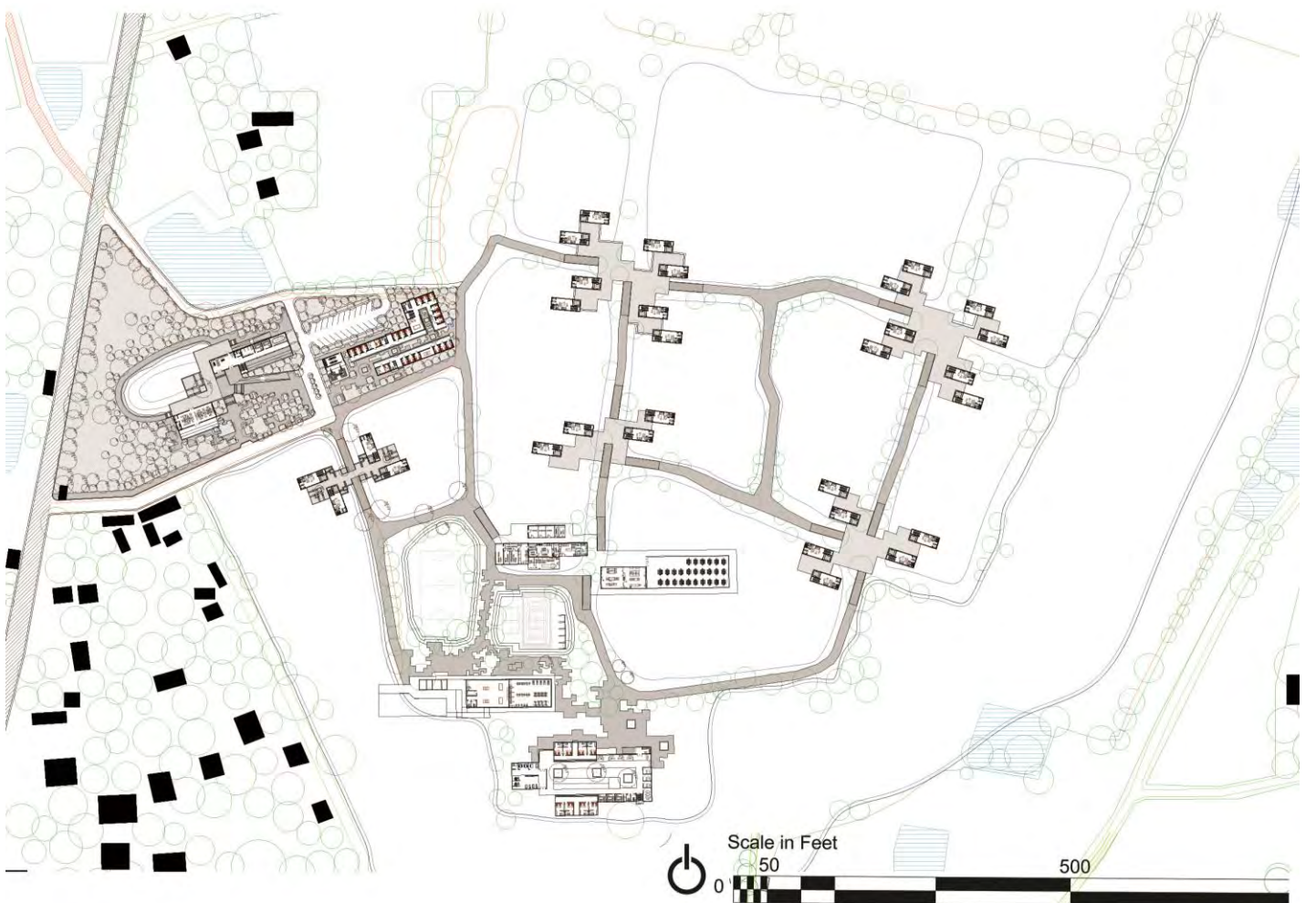


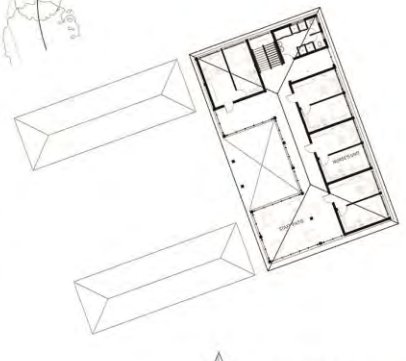
Figure: MASTERPLAN DEVELOPMENT PHASE 5
 Source: Author, 2018

6.3 Final Design Documents



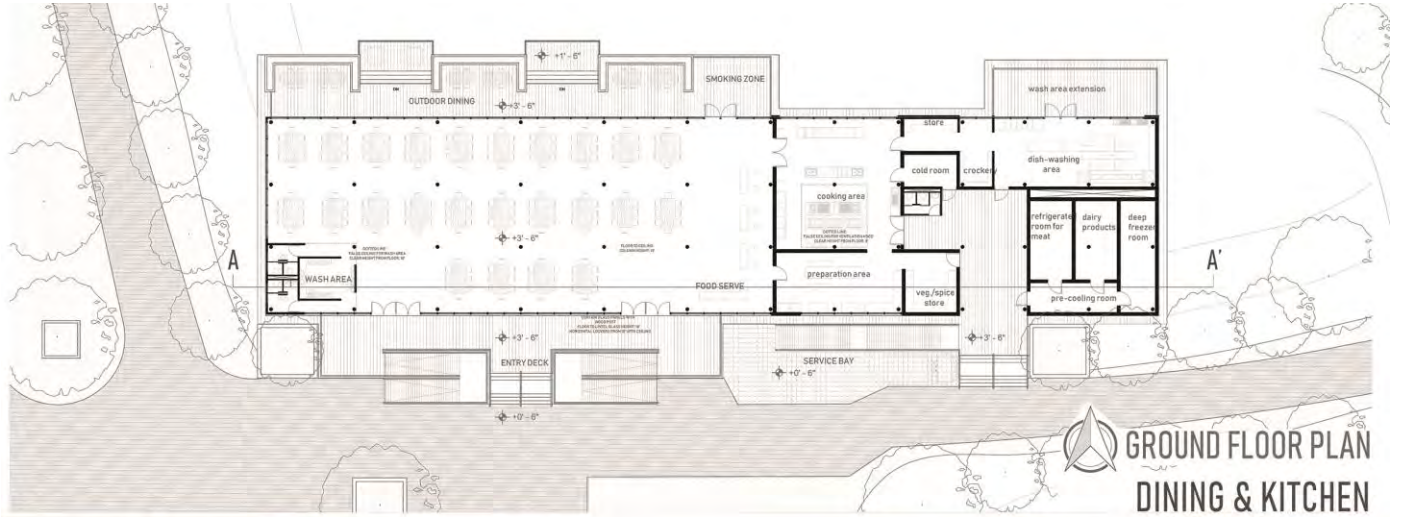


GROUND FLOOR PLANS

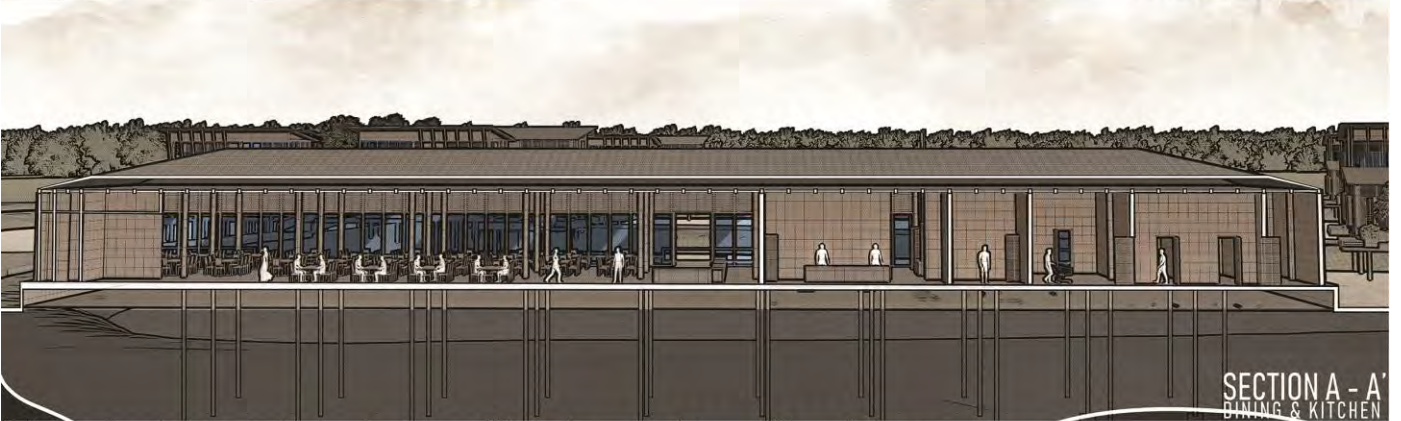


FIRST FLOOR PLANS
ADMINISTRATION & STAFF QUARTERS

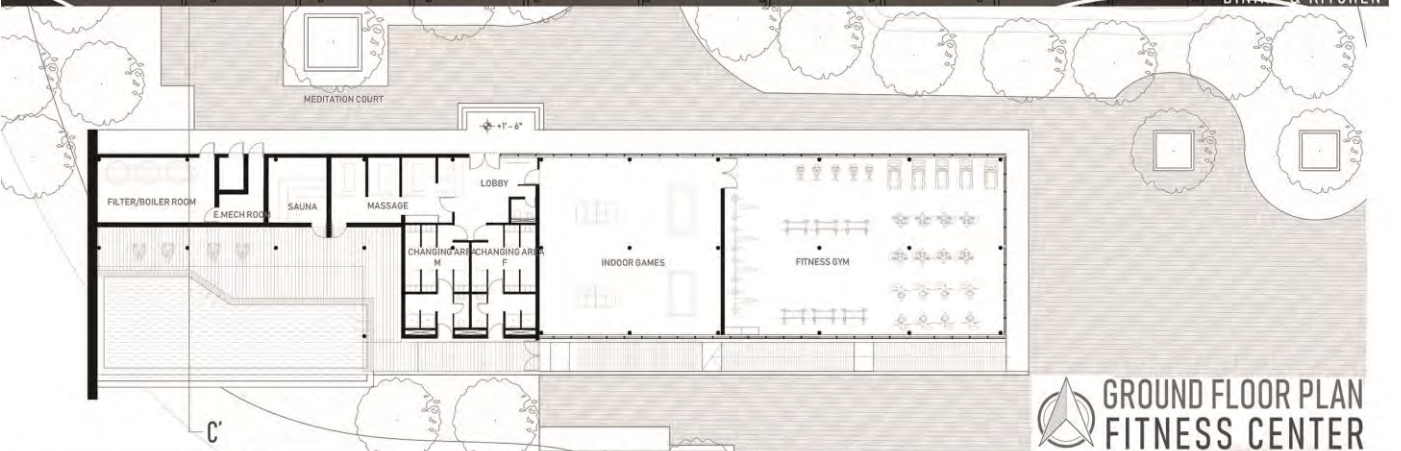




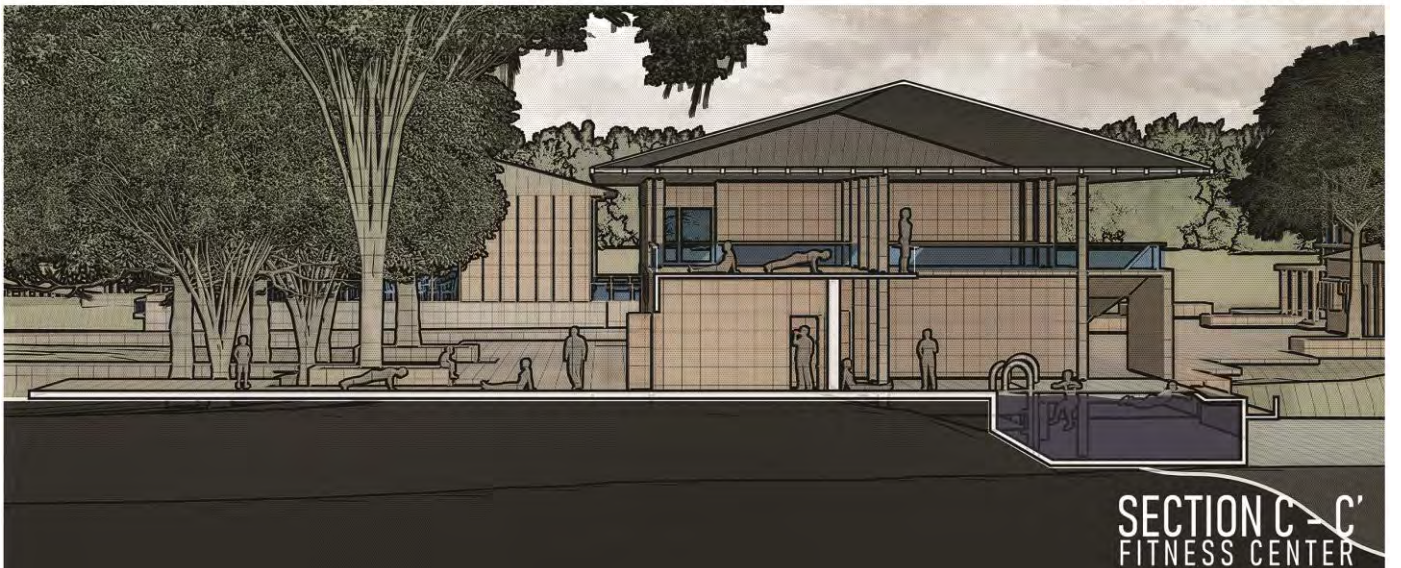
**GROUND FLOOR PLAN
DINING & KITCHEN**



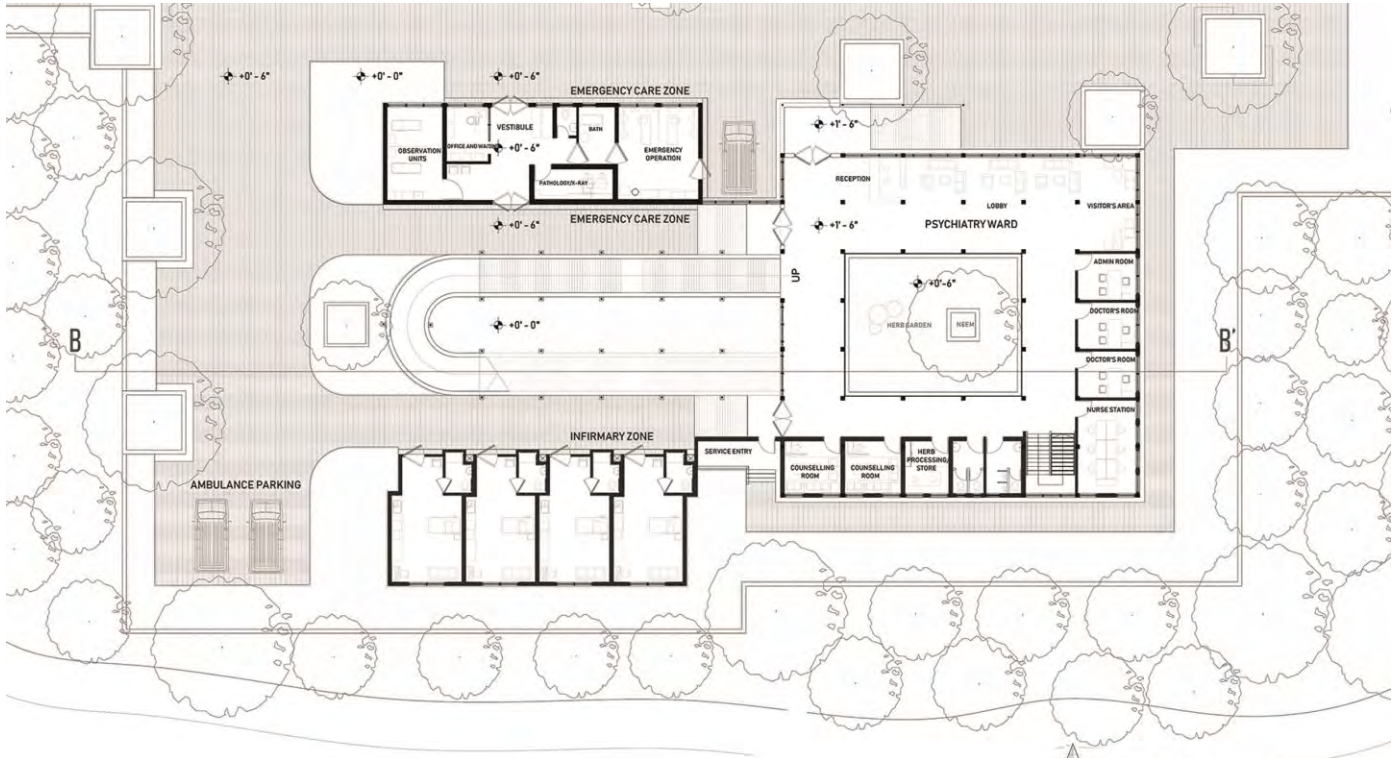
**SECTION A - A'
DINING & KITCHEN**



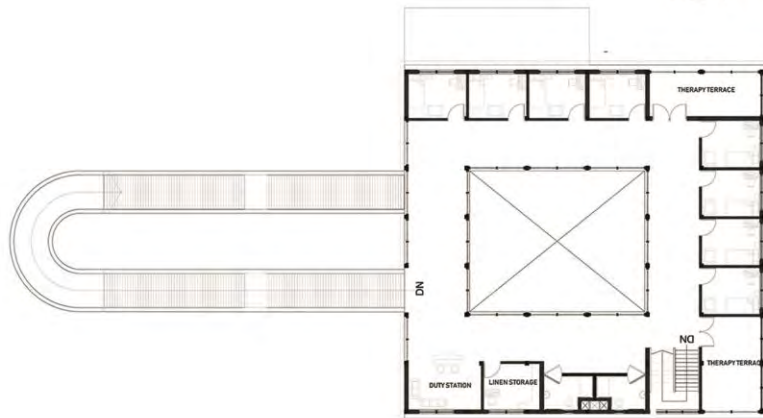
**GROUND FLOOR PLAN
FITNESS CENTER**



**SECTION C - C'
FITNESS CENTER**



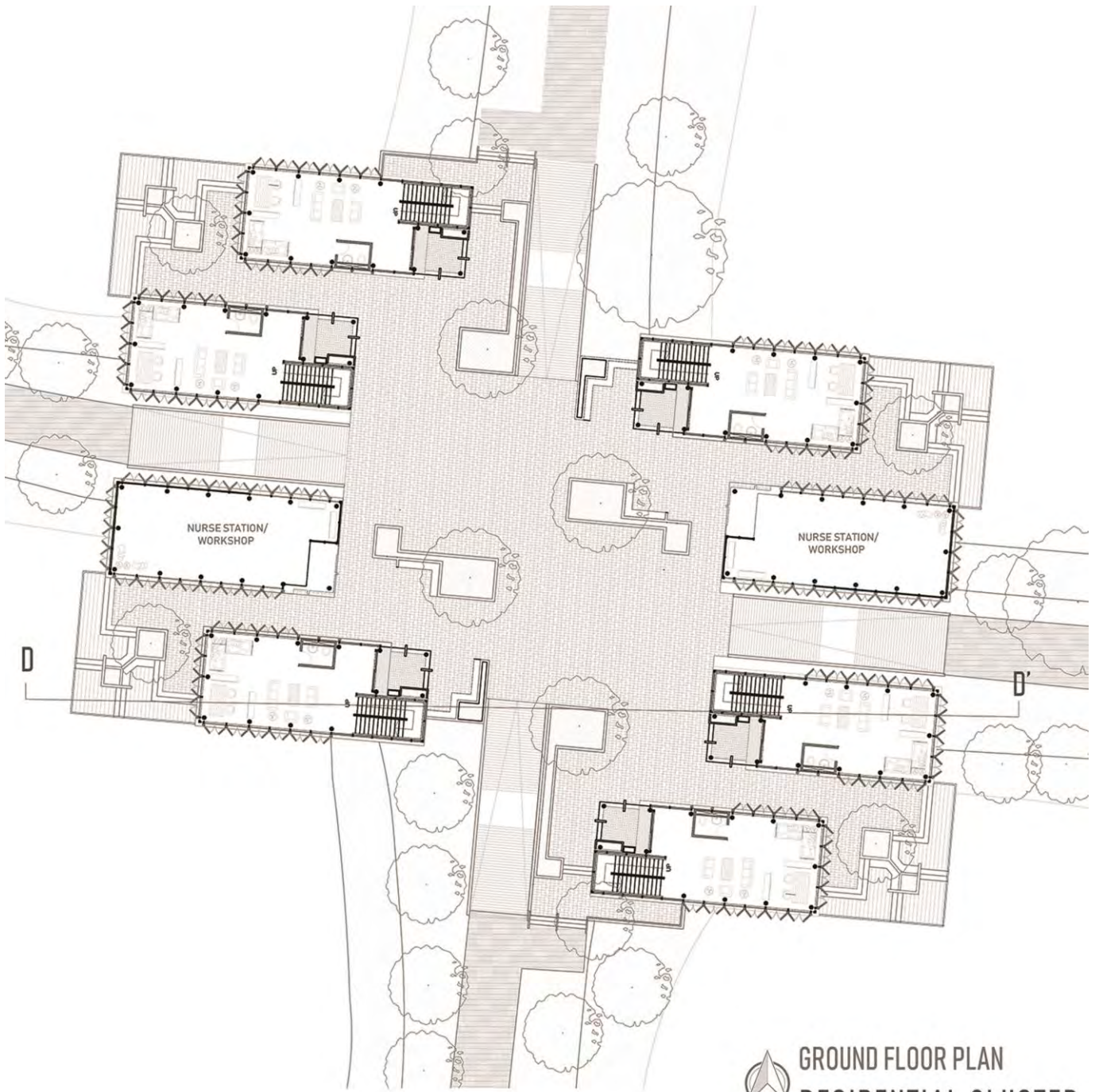
 **GROUND FLOOR PLAN**



 **FIRST FLOOR PLAN
PSYCHIATRY WARD**



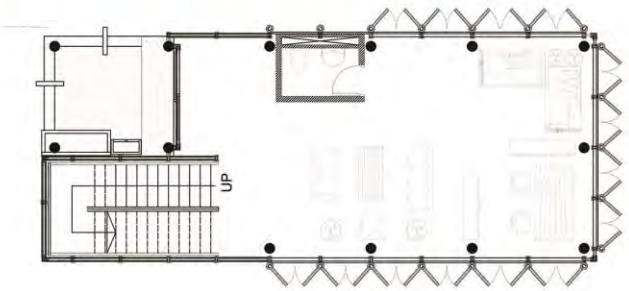
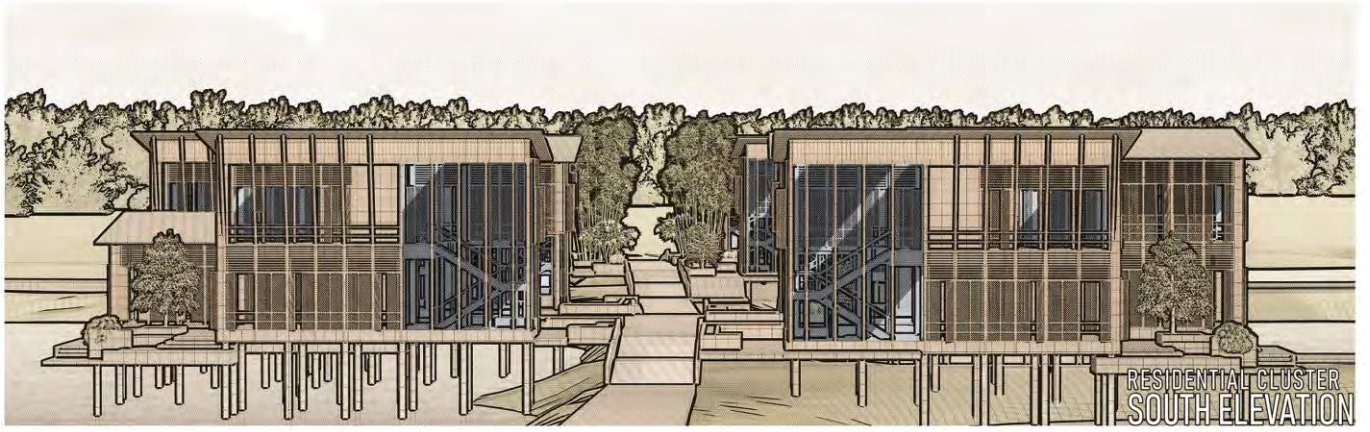
**SECTION B - B'
PSYCHIATRY WARD**



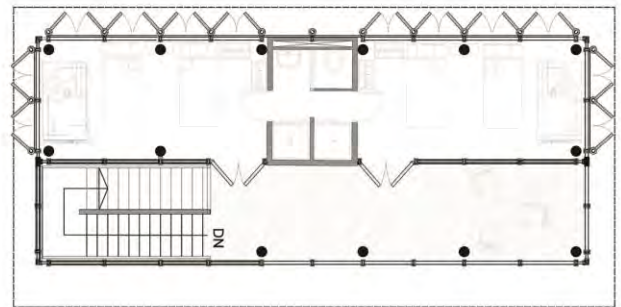
 GROUND FLOOR PLAN
RESIDENTIAL CLUSTER



SECTION D - D'
RESIDENTIAL CLUSTER



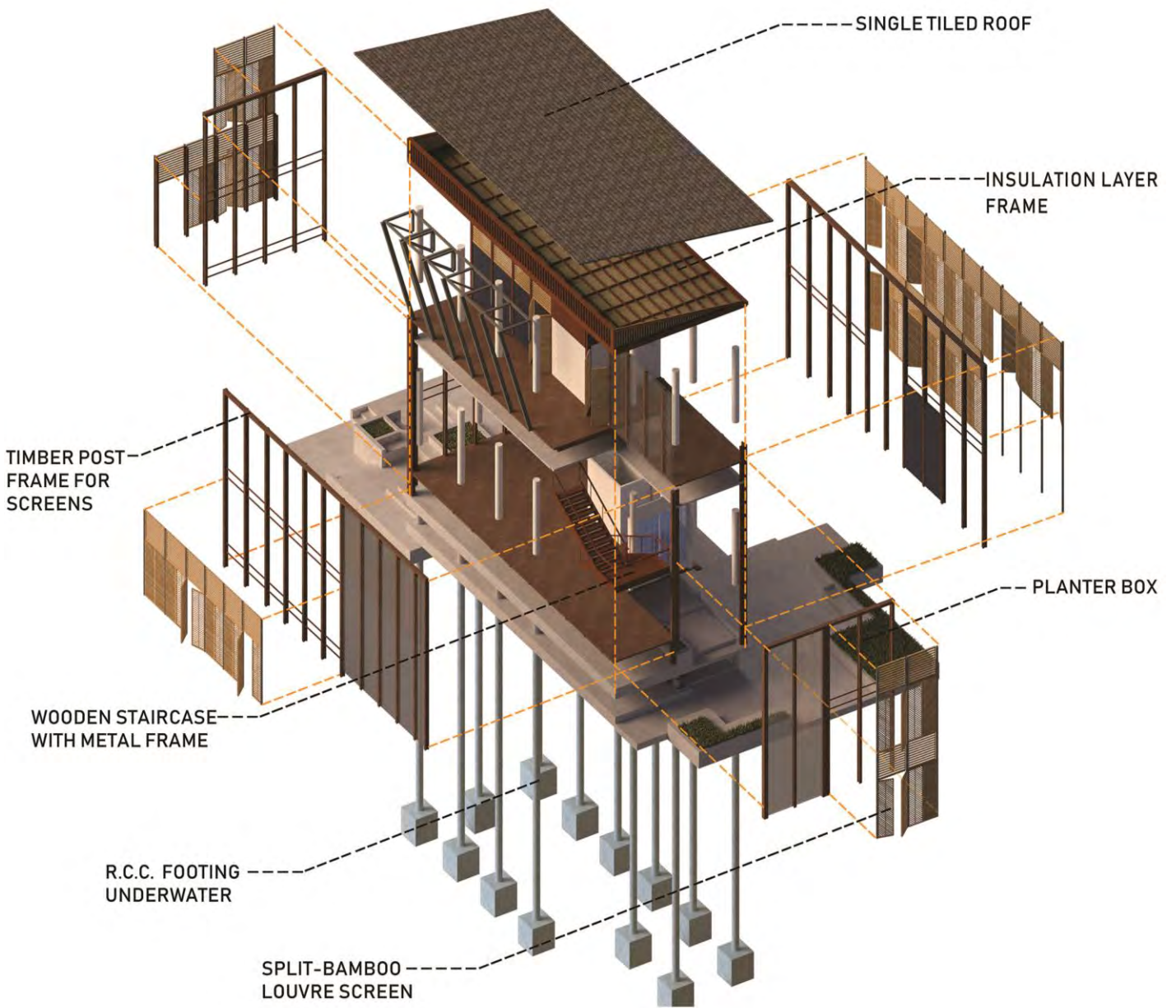
GROUND FLOOR PLAN



RESIDENTIAL UNIT

FIRST FLOOR PLAN

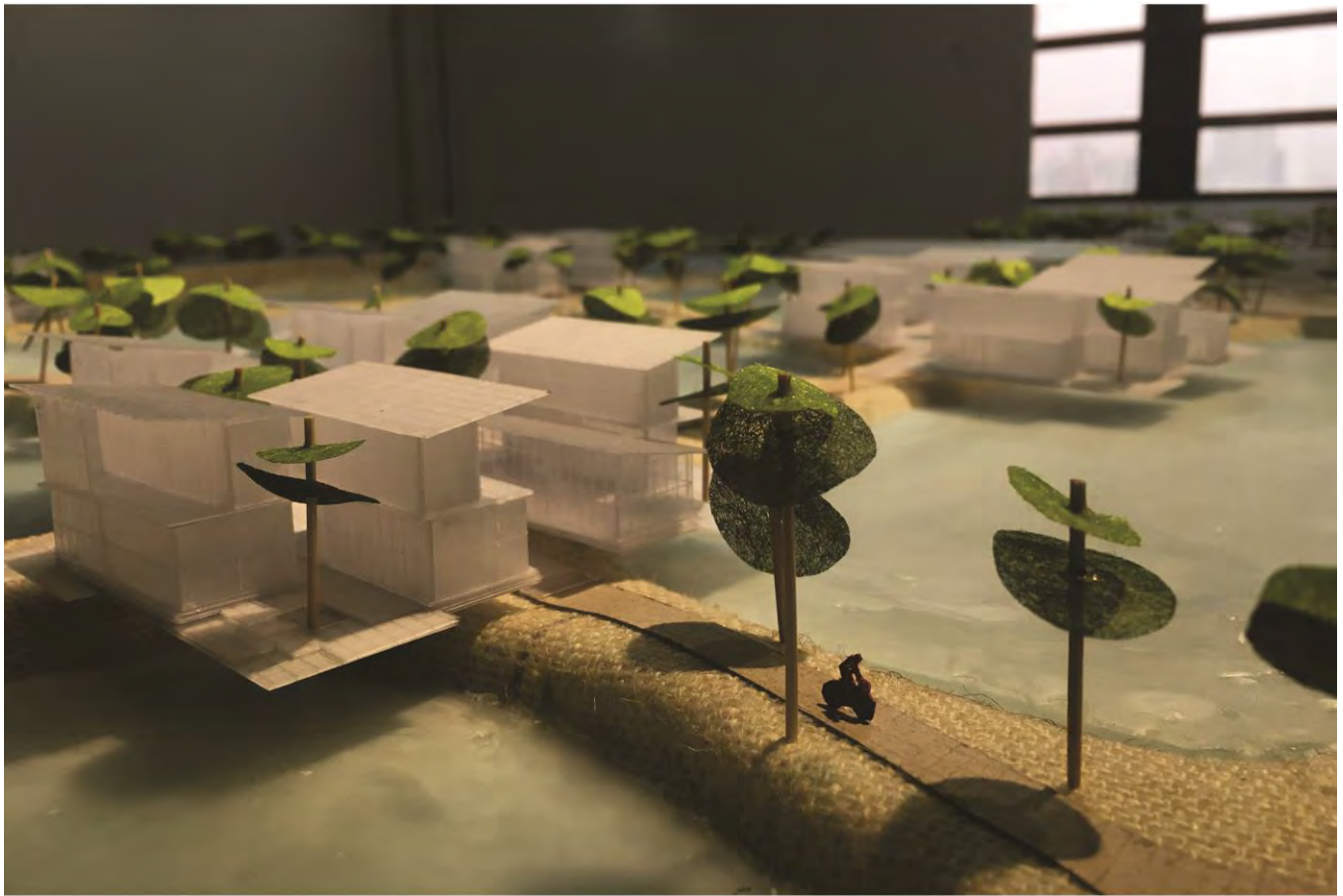




RESIDENTIAL UNIT AXONOMETRIC VIEW



6.4 Final Model Images







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