

# THE AFFECT OF ARCHITECTURE: DETAILS FOR MEDITATION AND WELL-BEING

RESPIRE TIME FOR THE OTTAWA REHABILITATION CENTRE

by

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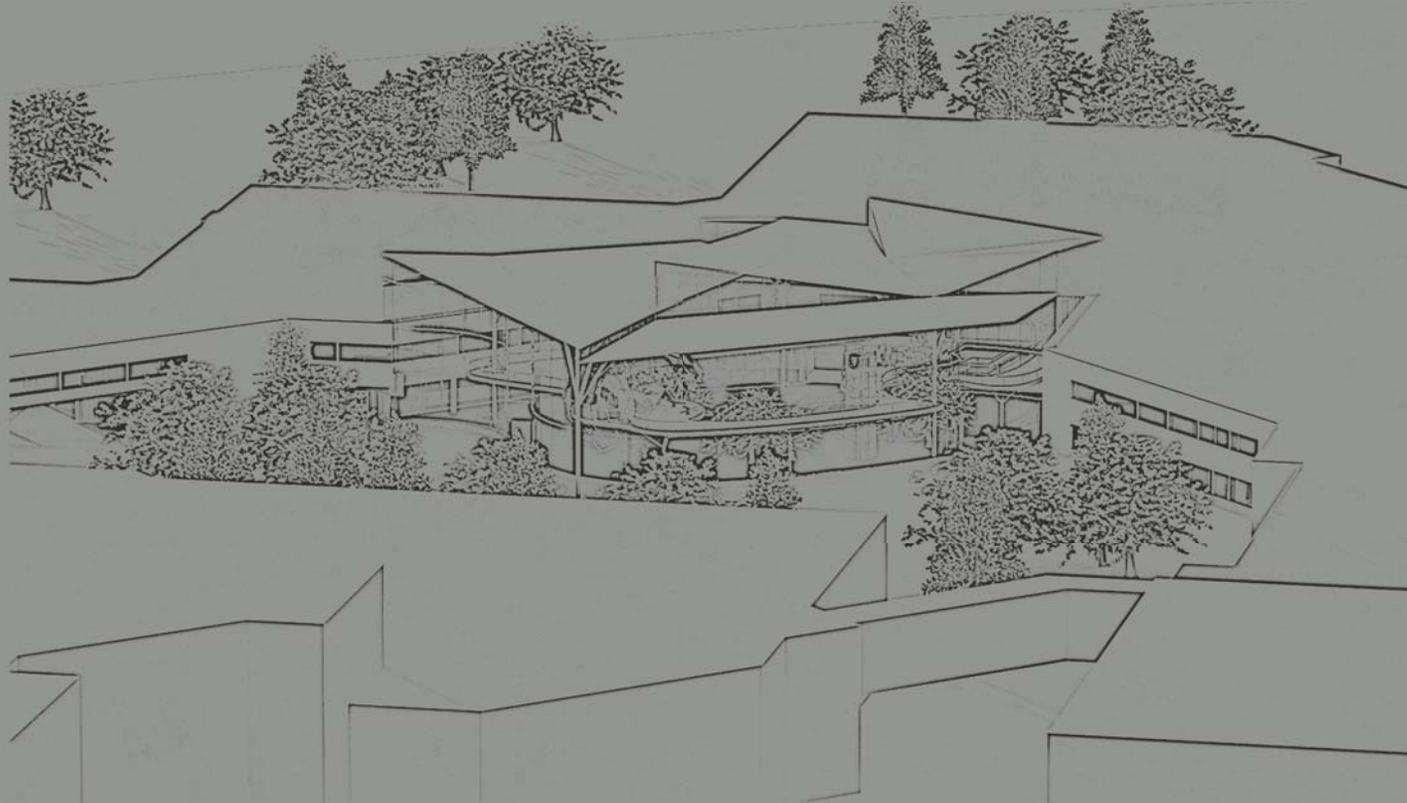
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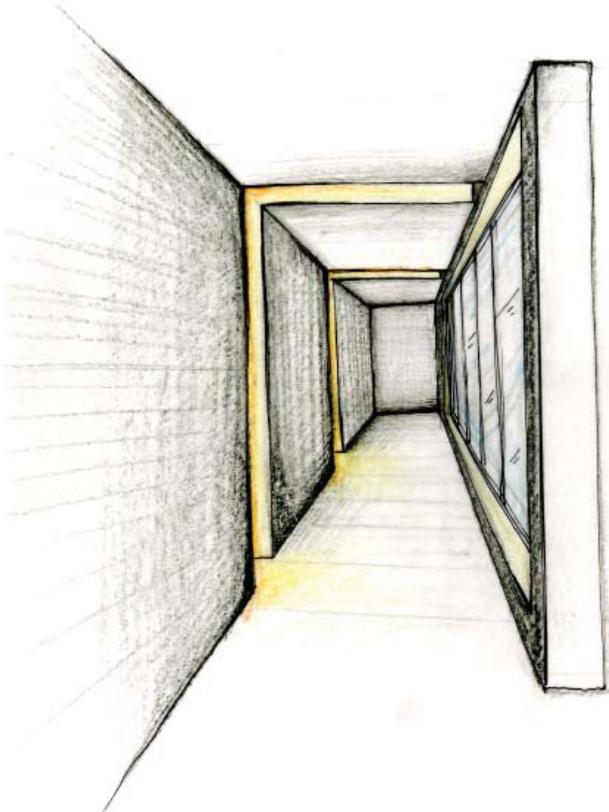


Figure 1: Main inspiration, Sketches by: S. Ezatpanah

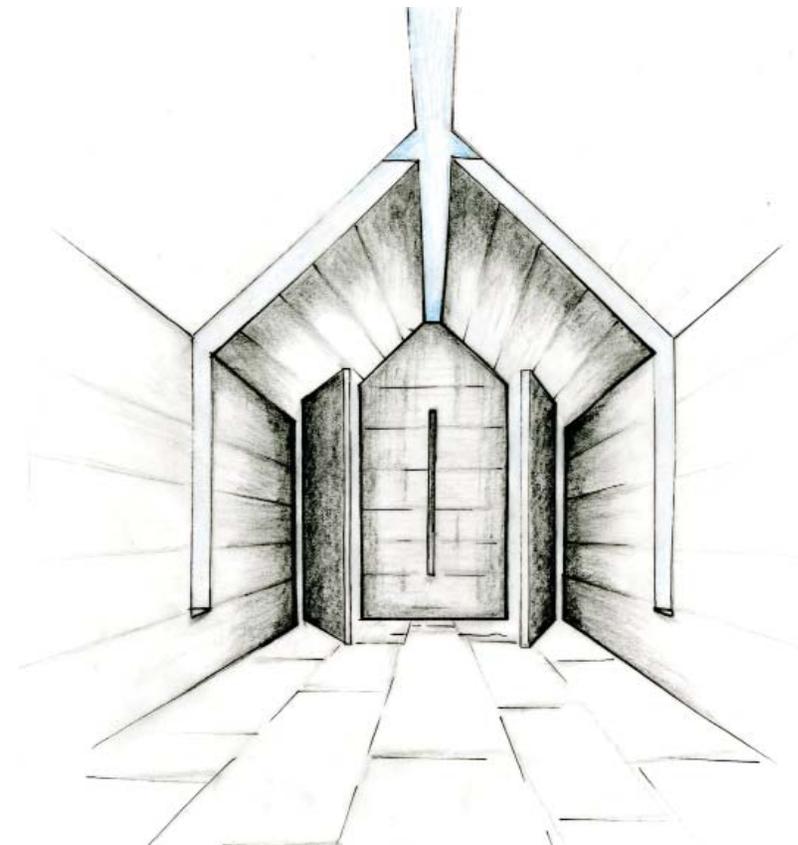


Figure 2: Main inspiration, Sketches by: S. Ezatpanah

## ABSTRACT

This thesis investigates the idea of designing for meditating in healing spaces in order to foster well-being. In this regard, the Rehabilitation Center of The General Hospital, in Ottawa, Ontario, has been chosen as the primary location of the project.

The goal of this thesis is to design a space that can support spirituality and sustain happiness in such a way that when passing through and spending time in one such space one would feel different from when they entered. These spaces are created to purify one's mind and to advance it. They can be simple in design, yet impact wellbeing and mood. Nature has a catalyst role in the project and will be introduced into the space to settle people's mind and to realize the benefits of practicing Dharma.

Such space may affect a user's mind and emotions and bring happiness to the visitors. This project is sustainable not only in its use of resources but also in the spaces and its relation to the surrounding community. The project which is integrated with nature while providing a meditative environment for people to learn, contemplate, and to validate the Dharma. It also emphasizes the development of wisdom, facilitating a connection between spirituality, art, and sense of place.

## **ACKNOWLEDGEMENT**

First and foremost I would like to express my sincerest gratitude to my thesis advisor, Prof. Federica Goff , for all of the guidance and encouragement to pursue this topic during the past year. I must thank her for the valuable comments and directions she has provided along the way, which have greatly assisted in the production of this document.

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As well as unconditional love and support from my friends and family. I would not have been able to complete this thesis without their help and am extremely grateful for everything they have done.

Finally, I owe my deepest gratitude to my parents whose continuous support has lead me here. I am so grateful for all of the endless love, support, and encouragement throughout my lifetime.

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Samira

## INTRODUCTION

**W**ellness is not just defined as being free from an illness but also as a state of emotional well-being, that may foster spiritual development. Happiness plays an important role in wellness and different people have different ideas about how to achieve it. Healing places are real spaces where people find ways to become happier and find support in reducing the stress induced by various causes.

Health includes four categories: physical, mental, emotional and spiritual well-being. One of the most important issues in curing illness is the way patients think and cope with their sickness. Unfortunately, modern and contemporary health centers and hospitals often do not provide appropriate environments for recovering and coping with illnesses. High stress and high blood pressure increase insomnia, headaches and chest pains. By creating spaces for meditating, we will be able to contribute to reducing the negative impact of stress on the immune system and potentially improve well-being. One of the most effective ways to make people happier and less stressed is through a proper design of the place that surrounds them which is claimed to have an effect on their health. Nature offers a natural healing space. Colors, smells, noise and light are all major elements that affect wellbeing. By designing spaces that reduce stress and anxiety, we can improve the healing process and enhance well-being. This project will also design areas catered for social support where residents and visitors may feel a sense of peace and serenity.

One of the most important spiritual tools for mindfulness is meditation, which has been defined as a mind-body method through the centuries. In meditation,

one learns to focus their attention generating and relaxation strategies, which helps people to treat stress and promote general health. Through meditating, one achieves relaxation by listening and breathing. Unpleasant conditions will be gradually taken down until they no longer exist. The balance of people's mentality plays an integral role in their health and this release of resistance will produce positive changes. The impact of stress is obvious in our lives. It increases blood pressure, cholesterol, and may also lead to heart disease. Meditating is a way to treat people and potentially prevent heart attacks and strokes while also preventing them from getting worse.

Often people claim to have no time, too many lists, and lists upon lists and decide that it could not be possibly for them to find respite time to relax and meditate. Yet the importance to find respite time cannot be understated, because of the effects of stress that are well documented by medical studies including High blood pressure, an inability to sleep, headaches, chest pain—that all have been cited as consequences of high levels of stress.<sup>1</sup>

Meditating is an effortless way to achieve concentration and control of the mind; it does not involve any change in lifestyle or diet, and there is nothing that an individual is asked to believe in. Meditation is not a religious activity and people from different cultures can easily do it to improve their health. Among the benefits of meditation are Lower stress and anxiety level, feelings of social connectedness, boost in immunity, happiness, creativity, concentration and improved attention.

#### **FOOTNOTES**

1. Daniel, Zandt, "How Meditation Makes You Healthier According to Science," elephant journal, Mar 11, 2015, accessed on Jun 25, 2016, <http://www.elephantjournal.com/2015/03/how-meditation-makes-you-healthier-according-to-science/>

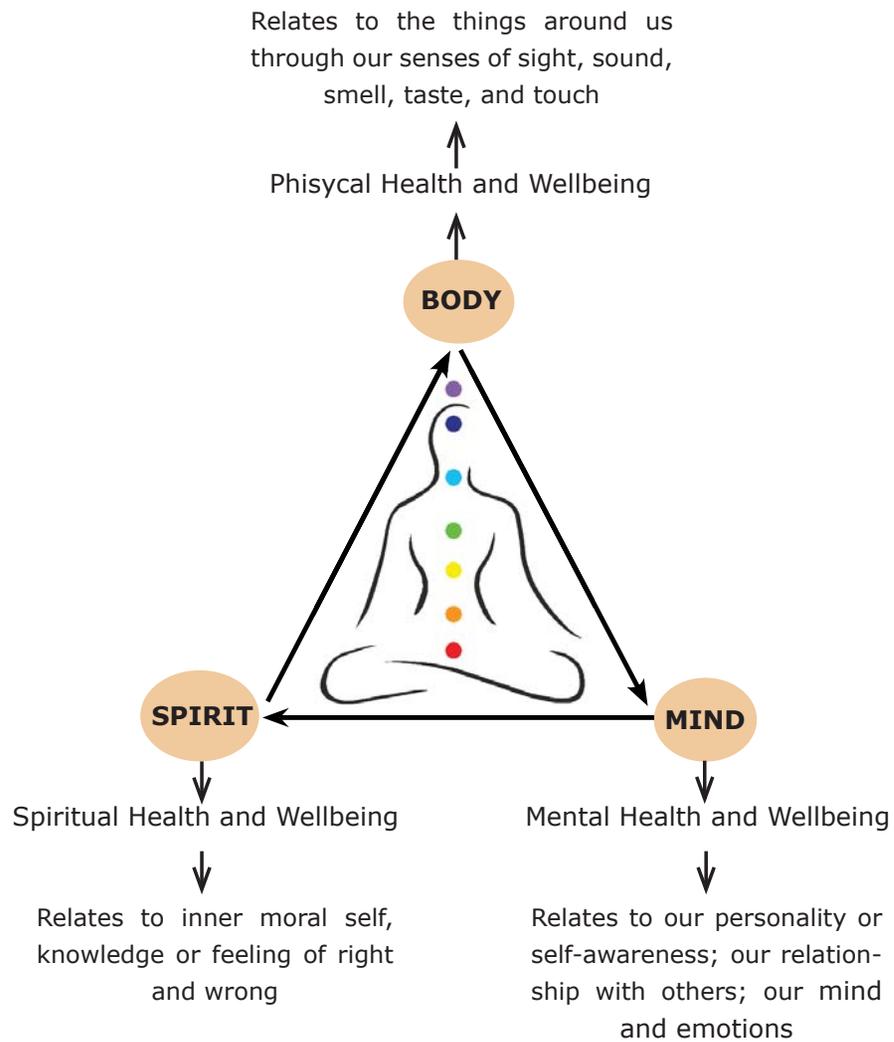


Figure 3: Relation between Body, Mind, and Spirit

# CHAPTER 1 .

THE BODY AND WELL-BEING

## **Def nition of Meditation**

**M**editation has been used in the East for thousands of years. It is a way of life which is not dependent on place and time and has a direct effect on health, happiness, sleep, and longevity. Meditation is not just about improving the mind's state; there are possible results which are quite beyond expectations. The def nition of meditation in the modern dictionary states that it is a form of "contemplation", which is related to thinking. In meditation, personal concerns, plans, fears, and other thoughts that continually pass through the mind are contained and brought to a halt. This objective is challenging to achieve as simply stopping the mind from thinking is not an easy task. However, thinking about the past and the future must indeed be stopped in order to meditate deeply. It entails stopping concerns from entering the mind and living in the moment with no specif c ideas or conscious thoughts; that is the whole art of meditation. Even concentrating on an object is not truly meditating because one is still connected to the world. Meditation is an insight; it is all about understanding ourselves. Through meditation, people learn how to face fear by accepting and expressing it as a natural occurrence.

### **Meditation and breathing:**

Breathing is an inherent part of life which is vital to staying alive, and is in a connection with emotions and moods. It changes pace when we are angry (faster) and when in love (deeper); it slows when we are happy, and might even disappear temporarily when we are afraid. Breathing is a tool used in some techniques, including Yoga and Meditation, which steadies the emotions or expresses them in order to detach from them.

Indeed, meditation is centered on developing an awareness of breathing and watching oneself breathe. While breathing, one is taking all the sufferings of the world inside the body, transferring the energy to the heart, and finally bringing blissfulness.<sup>2</sup>

**Vipassana:**

Vipassana is a method of meditating which facilitates examination of the mind, body, emotions, and environment, and helps a person to know himself honestly and authentically. There are three ways to reach this goal: the first one is being aware of all the actions and movements of the body and being the watcher of the mind and whatever we are thinking about. In other words, being aware of all emotions that pass through the heart. The second way is becoming aware of how our breathing is rising and falling. This results in a silent mind, a silent heart, and erases moods. Finally, the third step is being aware of the journey which breath takes from the beginning - how it feels from the nose... breath going in, breath going out. In the end, everything can become a meditation. It does not matter which activity is involved; all we need is awareness of anything that we are doing in the moment and to watch it as a witness.<sup>3</sup>

**FOOTNOTES**

2. Charles E. Tuttle Company, Inc. The everyday meditator, Osho. First published in the United State in 1993: 7-146

3. Ibid, p.174-189.

## Chakras and Meditating

Character	1st Chakra (masculine)	2nd Chakra (feminine)	3rd Chakra (masculine)	4th Chakra (feminine)	5th Chakra (masculine)	6th Chakra (feminine)	7th Chakra (unified)
Color	Red	Orange	Yellow	Green	Blue	Indigo	Violet
Sanskrit Name	Muladhara	Svadhithana	Manipura	Anahata	Vissudha	Ajna	Sahasrara
Meaning	Root Support	One's Own Place	Lustrous Gem	Unstruck	Purity	Command	Thousand-spoked
Location	Perineum Base of Tailbone	Pelvis Sacrum	Solar Plexus	Heart Center	Throat	Brow Center	Crown
Element	Earth	Water	Fire	Air	Sound	Light	Thought
Sense	Smell	Taste	Sight	Touch	Hearing	Intuition/ESP "6th Sense"	None (Beyond Senses)
Seed Sound	Lam	Vam	Ram	Yam	Ham	Om	Silence
Food Type	Proteins, Meats	Liquids	Carbohydrates	Vegetables	Fruit	Beauty (visual feast)	Fasting
Stones	Garnet Hematite Tourmaline	Coral Carnelian Moonstone	Topaz Citrine Tiger's Eye	Jade Emerald Rose Quartz	Sodalite Coeselite Turquoise	Opal Azurite Lapis Lazuli	Diamond Amethyst Clear Quartz
Essential Oils	Vetiver Patchouli Sandalwood	Jasmine Geranium Orange Blossom	Basil Ginger Bergamont	Rose Benzoin Eucalyptus	Hyssop Clementine Blue Chamomile	Rosemary Clary Sage Ylang Ylang	Myrrh Violet Frankincense
Main Focus	Physical Existence	Emotions & Intimacy	Power & Identity	Love & Connection	Self Expression & Life Purpose	Clear Perspective & Psychic Abilities	Connection to Spirit & Wisdom
Right	To Have	To Feel	To Act	To Love	To Express	To Perceive	To Know
Positive Qualities	Stability Vitality Loyalty Prosperity Patience Tenacity Career Success	Joy Creativity Adaptability Sensuality Fertility Pleasure Sexuality	Power Confidence Charisma Strong Will Humor Leadership Mental Clarity	Love Trust Healing Equanimity Compassion Connection Surrender	Truth Purpose Expression Artistry Service Synchronicity Communication	Vision Intuition Dreams Insight Perception Equanimity Clairvoyance	Unity Wisdom Awareness Intelligence Understanding Miracles Bliss
Malfunction (Deficient or Excessive)	Bowel, blood or bone disorders, obesity, anorexia, anxiety, spaciness, financial problems, chronic fear, materialism, instability	Genital issues, sexual or fertility problems, rigidity, isolation, hip or sacro-iliac joint problems, de-realism, instability	Digestion issues, sexual or liver problems, timidity, rage, diabetes, ulcers, domination chronic fatigue, low self-esteem	Asthma, apnea, heart or lung problems, breast cancer, allergies, immune disorders, lonely, anti-social, thymus issues	Thyroid or hearing problems, teeth or gum issues, lying, tonsillitis, stiff neck or shoulders, TMJ, lack of purpose, fear of speaking	Vision problems, migraines, nightmares, bi-polar, sleep disorders, sinus issues, hallucinations, lack of intuition	Alzheimer's, confusion, spaciness, mental illness, over intellectualism, depression, apathy, learning disabilities
Affirmations	I am grounded, safe, and secure. I make a good living doing what I love. I am stable, strong and healthy.	I am creative, and adaptable.. I am a sensual and sexual being. I am able to enjoy the pleasures of life.	I can do anything I set my mind to. I am powerful and use power wisely. I have a good sense of humor and laugh often.	I am loving and lovable. I am deeply compassionate. I am a source of healing in the world.	I know my truth and I share it. I am guided by my deepest purpose. My life is guided by divine synchronicity.	I am intuitive and follow my inner guidance. I always see the big picture. I vividly follow my dreams.	I am intelligent and aware. I am one with everything. I have endless, great ideas.

Figure 4: Chakras and Meditation Table <sup>4</sup>

### FOOTNOTES

4. Mark, "Chakra," Mar 18, 2016, accessed on August 10, 2016, <http://www.liberallifestyles.com/?p=142160>

## Designing a Place for Thinking

In the modern world, many places are designed for a variety of activities but very few are devoted to thinking. However, although considering an area for break-time where we can treat ourselves may appear to have less importance than other productive activities, these spaces can make a better life for humans by providing happiness and quietness as its main features. The combination of mind and body makes an individual complete and reveals the spiritual side of humanity. This means the physical mind is used for obtaining knowledge; while the moral part of the mind is in contact with neuro-systems and emotions, helping a person to reach a higher level of consciousness and well-being.<sup>5</sup>

Nelson Goodman one of the most influential philosophers of the post-war era of American philosophy observes, "The world is not merely the physical universe, but also a sum of cultural artifacts, the systems of organization and meanings created by a group of people at any one time." This demonstrates that the most important factor in the formation of an intellectual space is the structure and design of the building and the feeling that it gives to a person. This is called architectural sense-making. In this way, sense-making illustrates how architectural features like texture, color, and materials can have an effect on an individual's senses through touching, hearing and looking. The reconnected body and mind interpret the built environment by looking for both well-made and worthwhile spaces, helping us to make a physical and spiritual connection to the world.<sup>6</sup>

In designing a space for thinking, it is the architect's responsibility to respect both meaningful and functional aspects in their design and create buildings,

### FOOTNOTES

5. Frascari, Marco. De Beata Arbitettura. Places for Thinking. In: The Culture Role of Architecture: Contemporary and Historical Perspective. Edited by Paul Emmons, John Hendrix and Jane Lomholt, Routledge 2012: 83

6. Ibid, p.85.

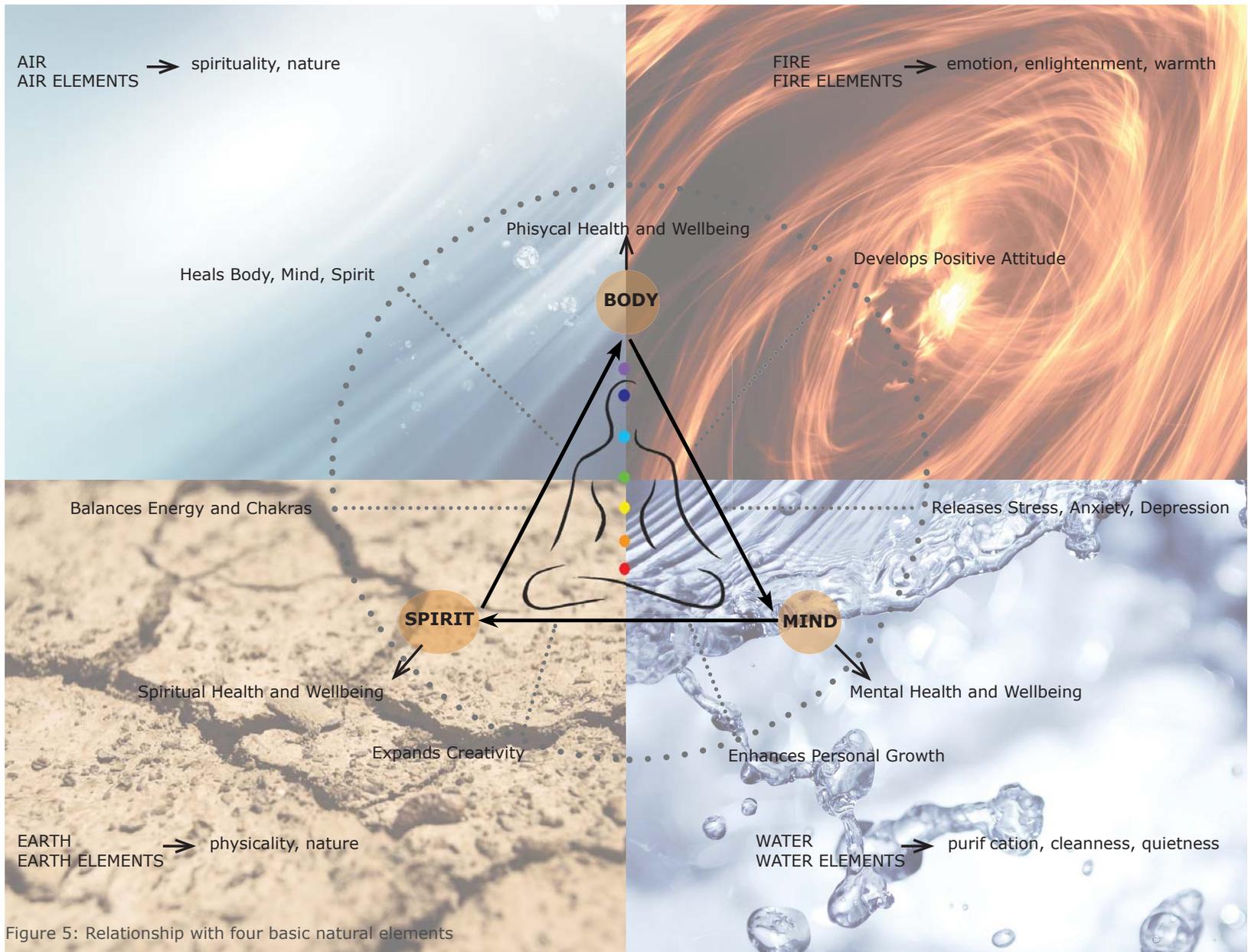
which respond to both requirements. George Lakoff is an American cognitive linguist who stated that in the process of thinking, "properties of certain categories are a consequence of the nature of human biological capacities and of the experience of functioning in a physical and social environment."<sup>7</sup>

Every building triggers individual sensations and produces specific feelings in its dwellers. An authentic architecture improves life for people because our body and mind work as a union that is connected to the built environment. The goal of this union is to make life not only possible, but also happy, where everybody is able to improve their well-being and spiritual mood through a sustained collaboration of mind and body through the architectural design circumstances. One of the main factors in this combination is understanding the neuro-architecture that explains the relationship between neuroscience and the structure of buildings, that is, the reaction of people to these places and the surrounding environment. By being aware of the influence of the building structure on the human body, brain, emotions, and neuro system, architects can design for happiness by using materials and elements that sustain emotional development. We must question how we can sustain and foster simple, yet essential, everyday activities that people are interested in such as sitting, listening to music, talking and having time to rest and think.<sup>8</sup>

A place for thinking encourages people to relax and not worry about what has happened in the past and what is going to happen in the future. In summary, people are emotionally connected to a building and its environment through architectural design that assists them in enhancing well-being and improving the remedial process in healing spaces.<sup>9</sup>

#### **FOOTNOTES**

7. Frascari, Marco. De Beata Architettura. Places for Thinking. In: The Culture Role of Architecture: Contemporary and Historical Perspective. Edited by Paul Emmons, John Hendrix and Jane Lomholt, Routledge 2012: 86
8. Ibid, p.87-90.
9. Ibid, p.93-96.



# CHAPTER 2 ..

HEALING PLACES

## Qualities of Healing Places

One of the most significant elements in the healing process is the physical surrounding. Designing places to enhance healing properties through green design would be beneficial to both individuals' health and the planet's. A natural environment is essential for promoting calm and comfort as a means to heal and it needs to be properly integrated into the built environment and truly 'make room' for it.<sup>10</sup>

The idea that physical space contributes to healing was first published in a science magazine in 1984. It explained that having windows looking out to nature in hospital rooms could affect healing and that there are differences in the speed of recovery of patients whose beds were located in a room with a view of nature, as opposed to a view of a wall. In the mid-twentieth century, the focus moved away from the patients towards a treatment of the disease. The surrounding environment was often ignored while most of the focus was placed on using technology to improve healing. However, in the nineteenth century, the use of large windows and skylights in hospitals had a remarkable impact on the treatment of illnesses by providing more natural light, air flow, and access to the sounds and smells of nature.<sup>11</sup>

The mind-body connection to physical places can contribute to our well-being. The built environment can affect our emotions and the design of places plays an integral role in this regard. A built environment can be a simple physical space or it can be a place to stimulate the brain's responses. We create an image in our minds of a place based on the sense of place. This is accomplished by receiving the information through what we see, feel,

### FOOTNOTES

10. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 165

11. Sternberg, Esther. The Balance Within. The science Connecting Place and Emotions. Times Book 2001: 5

smell, and hear, that is, through all of our senses. The sense of place is created in our brain-body and it is further influenced and conditioned by memories. It can change based on location, weather, time, physical elements of space and our moods, and can have an impact on our health. Indeed, physical surroundings can change the mind-set and, consequently, the speed of healing. In this context, there is a fundamental connection between the brain and the immune system and through this communication our understanding of space results in a positive impact on illness and healing.

Many features of the environment can affect our brains and bodies to improve healing. Absorbing motivation by the sensing of surrounding places helps an individual to see, hear, touch and smell, which in turn stimulate nerve cell connections that can affect the immune system and its ability to heal. <sup>12</sup>

#### **FOOTNOTES**

12. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 24

## **Techniques for feeling better in healing spaces design**

### **Sound and healing:**

There is much unwanted noise in the hospital setting such as the sound of heels on floors, phones ringing, and daily conversations between doctors and nurses. Sound and silence have a major influence on the brain, both electrically and chemically, by having an effect on the nervous system, emotional responses to the world, and to the nerve chemicals and hormones. Listening to music can affect emotions and the ability of immune cells to deal with illness. Music is not only a useful healer in the therapeutic sense but also eliminates noises that cause stress in the hospital environment.

### **Senses and healing:**

Aromatherapy is a healing treatment that combines two senses: touch and smell. In the healing process, aromatherapy improves mood. Being close to an object is fundamental in order to touch it and to feel its texture. The sense of touch is a vital one to develop in order to connect with the world around us. However, gathering information about the surrounding area requires using all our senses, such as vision, hearing, smell, and touch. Each of these senses has a particular role in defining what we perceive. Vision and hearing are the most important senses for finding our way.<sup>13</sup>

### **Meditation and healing:**

Dalai Lama at the Society for Neuroscience and the Mind and Life released an article in 2005 called: "The Use of Meditation in the Healing Process and Curing Stress Related Illnesses". In this paper, he describes the three main goals of

### **FOOTNOTES**

13. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 75-125

meditation for the improvement of health. These are increasing ethical discipline, comprehension, and concentration; enhancing positive emotions like warmth, love, peace, compassion, and reducing negative emotions. Meditation is a unique brain activity which affects consciousness by focusing on breathing and improving immune functions.<sup>14</sup>

### **Gardens and healing:**

Gardens have been a peaceful place of respite for people for centuries. This is seen in such examples as the myth of the Garden of Eden, the gardens along the ancient Silk Road of Persia, and in India, China, and Japan. Both positive and negative emotions can be attached to a place. We are all part of the world and we can create places to help us live in harmony with the environment. Surrounding areas have a huge effect on people's moods and their behavior. Architects can design places that can work with our bodies to reduce stress and disease, and improve healing.<sup>15</sup>

### **FOOTNOTES**

14. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 170-200

15. Ibid, p.291.

## The effect of placebo

**B**ased on logic and perhaps human nature, believing in something can help people feel better. In the 1970s, Norman Cousins concluded that some patients get better by laughter and a positive attitude as a healing therapy. He noted that even if their illness was not eliminated through this technique, at least the patients could become stronger and better able to fight the disease. The surrounding environment is one of the main elements responsible for igniting positive responses by being supportive, nurturing, and rewarding. Therefore, we can see that the physiological response that we get from the body affects our health. The placebo effect is the improvement in illness through the belief that is placed in the expectation that a certain technique or method of meditation can improve our well-being. It is a significant method used in curing illnesses as one-third of the therapeutic effect is the placebo effect.<sup>16</sup>

In summary, the power of the aspiration improves human health through meditation, deep conviction, or even a set of assumptions. Indeed, the common element in all these forms of believing is the importance of belief. The belief that something has an effect on the healing process is extremely powerful. The placebo effect is the notion of believing in something that will heal. It could be a drug, an action, a person, a place, or even meditation. It has a great effect on pain, which in some situations does not include physical changes, but rather, it helps a person feel better and be stronger in dealing with pain. One of the most important factors in the placebo effect is the expectation that comes from personal experience, general knowledge, culture, and history. This expectation could be a pill for curing illness or a place for calming patients.

### FOOTNOTES

16. Sternberg, Esther. The Balance Within. The science Connecting Place and Emotions. Times Book 2001: 159-165

On the whole, a particular place can help in the healing process and people might get benefits from just being in these places not only by associating with a positive feeling but also, by having hope that the place will heal. Positive emotions can improve health and meditation is one of the best activities for this purpose, particularly because it helps to reach spiritual goals, which are associated with better health outcomes.<sup>17</sup>

There are three main categories which have impact on hospital care:

1. A patient's safety; meaning the reduction of risk of infection, injuries, and medical errors;
2. Environmental stress, which includes the minimizing of environmental noise in the hospital environment;
3. Ecological health, which is connected to green spaces and comfort zones for patients.

Hospitals are amongst the most stressful places for patients, family members, friends and even medical staff. Since stress is harmful to health, hospitals should consider incorporating nature and appropriate design elements. Indeed, positive social interactions are important to reduce stress and positive emotions have a significant effect on disease. This knowledge is helpful in designing hospitals. Unfortunately, attending to the physical environment which supports a healthy mind is generally applied only to psychiatric hospitals in the treatment of mental illness. In other healthcare institutions, the focus rests primarily on taking care of the physical illness, leaving patients at risk of becoming depressed throughout their healing process.

#### **FOOTNOTES**

17. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 193-204

According to the Pennsylvania Hospital Newsletter of the Friends of the Hospital, "Dr. Kirkbride ... believed that the beautiful setting ... restored patients to a more natural balance of the senses."<sup>18</sup>

Therefore, designers may consider the affect on emotions of a physical environment for the benefit of patients undergoing either or both physical and mental suffering due to various causes. They should also create spaces with the ability to affect moods and physiological responses to affect the health of patients, visitors and staff.

"It is really in ourselves, in our emotions and in our memories, that we can each find our healing space. For the most powerful of healing places are in the brain and in the mind."<sup>19</sup>

Furthermore, healthcare places have to enhance comfort and consider the spiritual and social aspects of a patient's life by adding gardens, nature sounds, and spaces where patients can gather with their families. This category would be an environmentally friendly space with green features and natural elements to improve air quality and water elements while providing motivation for movement and encouragement for patients to exercise in open spaces, balconies, and under skylights. According to neuroscience research, considering brain functions in designing a healthcare environment can aid the body in the healing process. These functions include working with sensory perception through the creation of landmarks, sound-marks, silence, aromatherapy and aid navigation, as well as through the fostering of meditation. All of these are significant in reducing stress, anxiety and medication dosages, enhancing a sense of well-being, and speeding healing.<sup>20</sup>

#### FOOTNOTES

18. Sternberg, Esther. Healing Spaces. The Science of Place and Wellbeing. Belknap Press 2010: 233

19. Ibid, p.296.

20. Ibid, p.215-250.

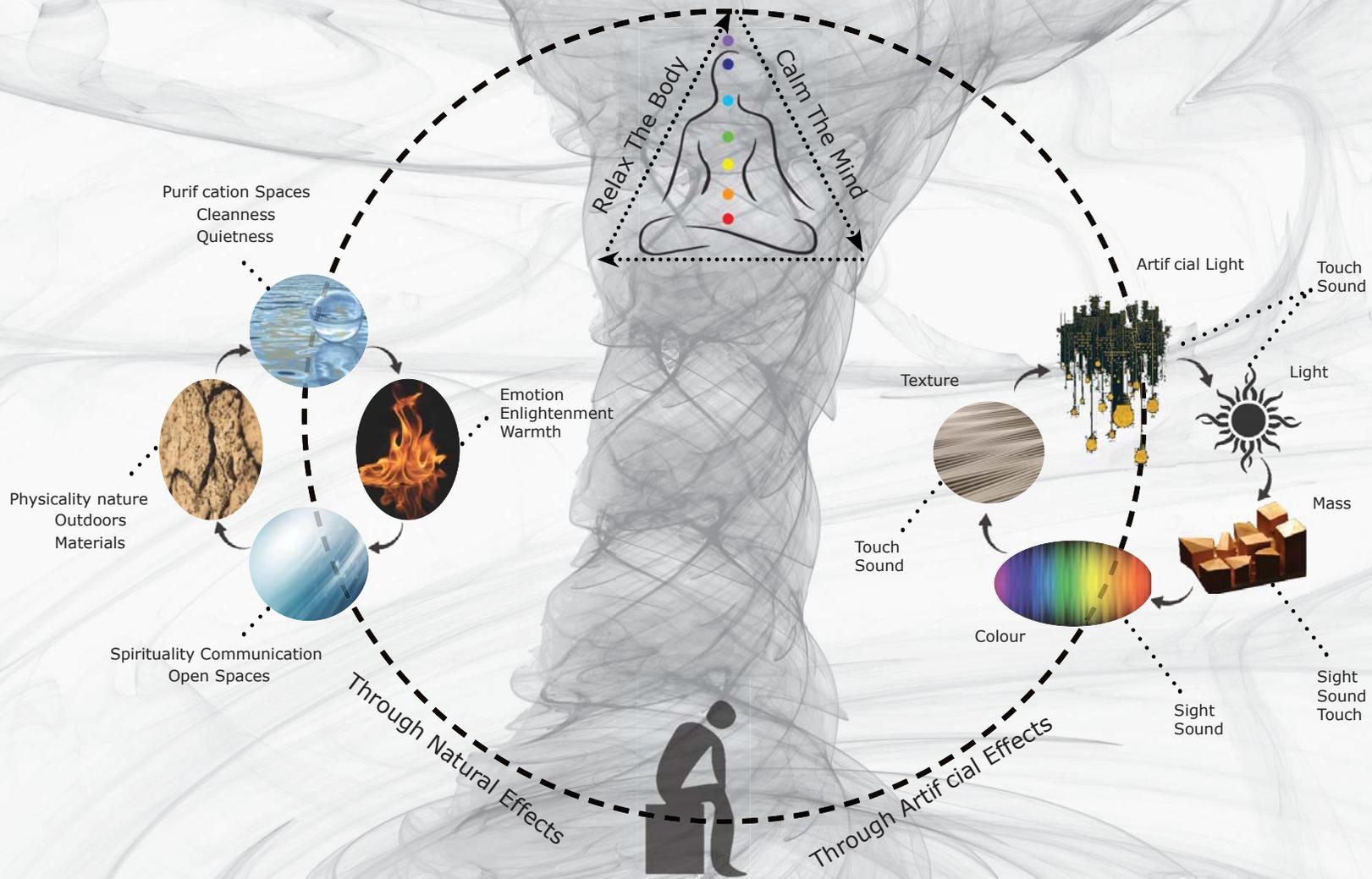


Figure 06: Programmatic Diagram

# CHAPTER 3 ...

NATURE AND HUMAN WELL-BEING

## The evolving role of site, landscape, and nature

Until recently, few hospitals and healing places used natural elements in their design. Creating a relationship between site, landscape and a building has concrete healthcare implications. It is essential to offer a connection between the interior and the exterior of a building, this conjunction must break down the unnecessary barriers between a healing area and the natural environment. There are some strategies that can be used to achieve this goal, such as water, roof capping, surrogates, therapeutic gardens, and transparency.<sup>21</sup>

Water is a symbol of quietness and cleanliness. Water sound and its features affect movement, motion, and reflection. Water can give the sensation of relaxation to the inhabitant and is useful for generating spiritual moods as well. In addition, these water features create positive and memorable experiences. In the past decade, water has been commonly used as a sculpture at the entrance of buildings to provide a soothing sound or as fountains, ponds, and waterfalls in the lobbies and outdoor courtyards for visual, auditory and aesthetic reasons. The Sarah-Fortaleza (1988\_1991) is a 61-bed rehabilitation hospital. It includes an open-air physical therapy space in a landscape covered courtyard setting, with a therapeutic pool at its center for strengthening and conditioning programs. Another important element in the rehabilitation center is the roof surface, which can be used by patients or for any other therapeutic purposes, such as the incorporation of a healing garden, in rainwater harvesting, for solar collectors and for providing a gathering area overlooking nearby views.<sup>22</sup>

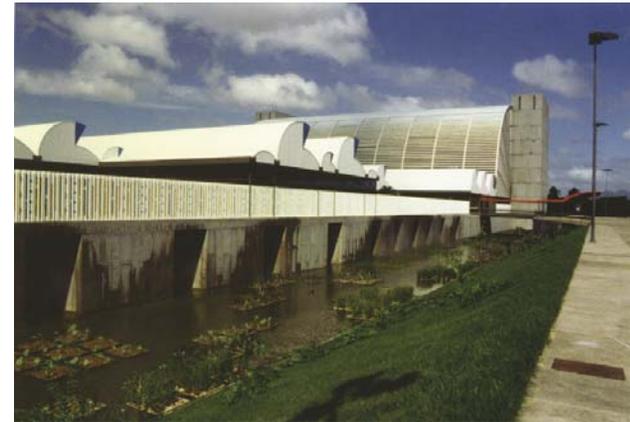


Figure 7: Reflecting pond adjacent to main entrance, Sarah-Fortaleza, Rehabilitation Hospital, Brazil (1988-1991)

### FOOTNOTES

21. Verderber, Stephen. *Innovations in Hospital Architecture*. First published in 2010: 52

22. *Ibid*, p.56.

Hospitals and health care centers often make for extremely stressful environments. They are often noisy places because of the corridor traffic, alarms and the sound of equipment. By proper use of natural elements, this area can potentially improve health outcomes. Healing gardens are usually part of the surrounding landscape on a medical campus and they are designed for human engagement and remedial use. These spaces help in stress reduction which in turn helps the body to achieve a more balanced psychological condition while also assisting patients in calling on their own inner healing resources for dealing with medical conditions. They also provide relaxing moments for both patients and staff in affording an opportunity to be removed from daily pressures. The therapeutic garden can have a view of the garden through a window, and provide a place for various activities such as gathering, meditating in a quiet area, exercising, studying and visiting with the patient's family. Therapeutic gardens offer respite to patients and families, regenerating the mind and body through simple and sometimes planned therapeutic mental and physical exercises. It is essential to consider the conditions that will help provide an appropriate area for thinking, rest, activity, and social interaction. Using different levels of transparency between the exterior and interior space is one way to create these areas. Exterior landscape spaces work like a healing garden which affords respite and an opportunity to break away from the stress of the institutionalized hospital environment. In other words, a well-designed healthcare center provides visibility, accessibility, familiarity, quiet, comfort, and a positive environment by using nature and green spaces towards the improvement of well-being.<sup>23</sup>



Figure 8:  
Exterior and interior,  
meditation space, Banner  
Estrella Medical Center,  
Phoenix



#### FOOTNOTES

23. Verderber, Stephen. *Innovations in Hospital Architecture*. First published in 2010: 58

One of the elements which is essential in creating a spiritual environment is the courtyard. This architectural space can provide respite, light, and views, promote social interaction, and gathering places for people to come together. The courtyard is also a transition space, as it leads to the main hospital beyond. The gathering area is a multipurpose space, which may be used for studying, talking or dining. It can be an ideal place to celebrate a birthday or a holiday. It provides a break-time from the in-patient area when things are not going well and plays an important role in improving health for both patients and their families. This space can open to a balcony or a terrace and integrate with nature to create a more peaceful environment while being able to control ambient conditions.<sup>24</sup>

#### **FOOTNOTES**

24. Verderber, Stephen. *Innovations in Hospital Architecture*. First published in 2010: 163



Figure 9: Angled roofplates atop the subterranean parking deck at the Pudong Huashan Hospital (2003-2006) in Shanghai, China, double as green spaces and transmit natural light to below



Figure 10: Theraserialized courtyard, Bon Secours St. Francis Medical Center

## Nature and Human Experience

In the modern world, there are many pressures which are due to three major interacting forces: technological development, the multimedia knowledge explosion, and the increasing population. Mental exhaustion is a result of these trends which lead to some common consequences such as reduction in tolerance, affect, and health. One of the most effective ways to reduce these negative effects is to create natural environments. Pressures and stress cause mental exhaustion and a restorative experience is one of the most significant ways to reduce this problem. It does this by incorporating the natural environment, with nature playing an integral role in human well-being.<sup>25</sup>

The main aspect of human functioning is attention, which is mostly affected by pressures. "Involuntary attention" is identified by William James (1892) and is evoked by the environment. Involuntary attention is uncontrollable and is dependent on how interesting the environment is; however, Stuss and Benson (1986) recognized another type of attention called "directed attention". It allows individuals to focus upon the environment and reach a higher level of mental processing. Directed attention is under voluntary control and it needs effort; while involuntary attention is drawn simply by something interesting and exciting in the environment.<sup>26</sup>

The restorative experience helps an individual improve well-being and move away from mental fatigue. It means the thinking process in restorative settings is different from the thinking that happens in daily life. The pattern of the world has a main effect on people's behavior and when people can find a way to stay

### FOOTNOTES

25. Kaplan, Stephen. The Restorative Environment: Nature and Human Experience. In: The Role of Horticulture in Human Well-Being and Social Development. Edited by Relf Diane 1992: 134

26. Ibid, p.135.

away from the world pattern and surrounding pressures, they can give their mind a break and overcome fatigue. There are four main components in restorative experiences which include: being away, extent, fascination, and compatibility with environmental patterns. Sometimes people need a change and they would like to be in a different situation that makes them think about other things, however, this change needs to be in a completely different world where connectedness and scope are two main properties for this purpose.<sup>27</sup>

In addition, in order to create motivation and stimulation, it is necessary not only to attract attention but also to allow one to function without using direct attention. Discovering and being unable to predict certain events is fascinating for people and can encourage them to seek out a variety of new experiences.

“Nature is not merely nice, it is not just a matter of improving one’s mood, and rather it is a vital ingredient in healthy human functioning.”<sup>28</sup>

Since nature is the most accessible place for relaxation, the natural environment is the best place to apply the restorative concept. In addition, natural settings are suitable spots for getting away from daily stresses. Nature is a great resource to provide a space with a feeling of being in a different area, which combines a sense of scope, hope, and connection, and is full of fascinating objects to attract people. Clouds, sunsets, water, the motion of leaves and other pleasurable patterns in nature are effortless and they create an opportunity for thinking about other things. Now we can understand the relationship between natural environments and human health and how it enhances healing in hospitals.

#### **FOOTNOTES**

27. Kaplan, Stephen. The Restorative Environment: Nature and Human Experience. In: The Role of Horticulture in Human Well-Being and Social Development. Edited by Relf Diane 1992: 137

28. Ibid, p.141.

## Precedent Studies

### Maggie's Centre Gartnavel

Architects: OMA architects

Client: Maggie Keswick Jencks cancer caring centres trust

Status: 2007\_2011

Location: Glasgow, Scotland

Site: a green knoll on the grounds of Gartnavel hospital.

Program: 534 m2 comprising counseling rooms, sitting rooms, offices and a large multi-purpose space.

partners in charge: rem koolhaas, ellen van loon

The aim of a Maggie's centre is to provide an environment of practical and emotional support to those affected by cancer, their families and friends. The first Maggie's Centre opened in Edinburgh in 1996 and since then Maggie's has continued to grow, with 17 Centres at major NHS cancer hospitals in the UK, Online and abroad designed by world class architects such as Richard Rogers, Frank Gehry, Zaha Hadid and Rem Koolhaas. The goal of each Maggie's center - whether in Glasgow, London, or Hong Kong - is to provide a space where people feel at home and cared for, a space that is warm, receptive, and welcoming.

Maggie's center Gartnavel is a single-level building, which is designed on the grounds of Gartnavel hospital in Glasgow, close to the Beatson West of Scotland Cancer Centre. In 2007, OMA designed this center in a natural setting making sure that each space has a view to the internal courtyard and surrounding area. Indeed, the internal courtyard provides a place of respite and certain moments of pause for each of the spaces.<sup>29</sup>



Figure 11: Maggie's Center Gartnavel

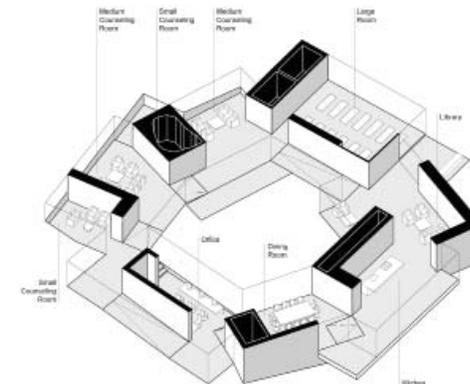


Figure 12: Diagram of certain moment in the center

#### FOOTNOTES

29. "Maggie's Gartnavel by OMA," Dezeen magazine, Oct. 05, 2011, accessed on July 02, 2016, <http://www.dezeen.com/2011/10/05/maggies-gartnavel-by-oma/>



Figure 13: glass boundary between corridor and courtyard  
image courtesy of OMA; photography by philippe ruault

## Precedent Studies

### **G**root Klimmendaal

Architects : Architectenbureau Koen van Velsen BV

Location : Arnhem, the Netherlands

Area : 14,000 square meters

Year : 2011

Rehabilitation Centre Groot Klimmendaal was winner of the first Hedy d'Ancona Award 2010 for excellent healthcare architecture. The main concept of designing Groot Klimmendaal was to create a positive environment that increases the well-being of patients and has a beneficial effect on their healing process.

The brown-golden aluminium facade allows the building to blend in with its natural surroundings. Also the Full height glazing is a connection between exterior and interior and invites the forest inside the building.

Offices are located below and the above are the clinical area. Some special facilities are considered on the ground floor such as sports facility, fitness, swimming pool, restaurant and theatre, which are for patients, their family members and members of the local community.

By using transparency, colour, diversity of activities, light, shadow, and nature, patients are exposed to a range of interactive moments that enhance their rehabilitation.

Groot Klimmendaal entices users to walk and investigate the entire building, thus enabling them to participate in physical activities while enjoying their built environment.<sup>30</sup>



Figure 14: View of the West facade



Figure 15: View of the Full height glazing along the central space

#### FOOTNOTES

30. "Rehabilitation Centre Groot Klimmendaal," archdaily, Apr. 08, 2011, accessed on May 12, 2016, <http://www.archdaily.com/126290/rehabilitation-centre-groot-klimmendaal-koen-van-velsen>



Figure 16: Images capturing the interior conditions of the rehabilitation center

## Precedent Studies

### High Line (New York City)

Architects: James Corner Field Operations with Diller Scofidio + Renfro

Status: 2006\_2014

Location: In Manhattan on an elevated section of a disused New York Central Railroad spur called the West Side Line

The High Line is a linear public park and a highway for pedestrians in New York City, which boasts stunning architecture and cultural attractions. The aim was to preserve the structure and to possibly reuse it as public open space. Even though this is not per se what would traditionally be conceived as a health care architectural intervention, there is much to be learned from it. First and foremost, each and any architectural intervention should consider health. The highline invites to 'take time' from the frantic pace of New York and enjoy landscapes and hardscapes. At the same time, this precedent is a good example of something that should be achieved in a health care setting, where one should not feel institutionalized, rather in a place of real respite.

In addition, The High Line Park has positive effects on real estate values. This project is a physical attraction for visitors from other parts of the city, the country or the world. It will attract users to spend time and explore the complete park. For instance, enjoying the sundeck and water feature at 14th street; entering to 23rd St. to lounge on the open lawn and seating steps; or enjoy the viewing area on 26th St.<sup>31</sup>



Figure 17 : elevated urban linear park; public park  
Aerial View of High Line Park, photo – Iwan Baan 2011

#### FOOTNOTES

31. "The New York High Line officially open," archdaily, June 09, 2009, accessed on May 25, 2016, <http://www.archdaily.com/24362/the-new-york-high-line-officially-open>



Figure 18: High Line New York, Washington  
Grasslands, photo – Iwan Baan 2009



Figure 19: Final Phase of  
High Line at Rail Yards Fea-  
tures Lush  
Sheltered Outdoor Room

# CHAPTER 4 ....

PROJECT DESCRIPTION

# Site Analysis

The adjacent map indicates major health care facilities in Ottawa. The four campuses that make up the Ottawa Hospital include the Civic Campus, the General Campus, the Irving Greenberg Family Cancer Centre, and the Riverside Campus.

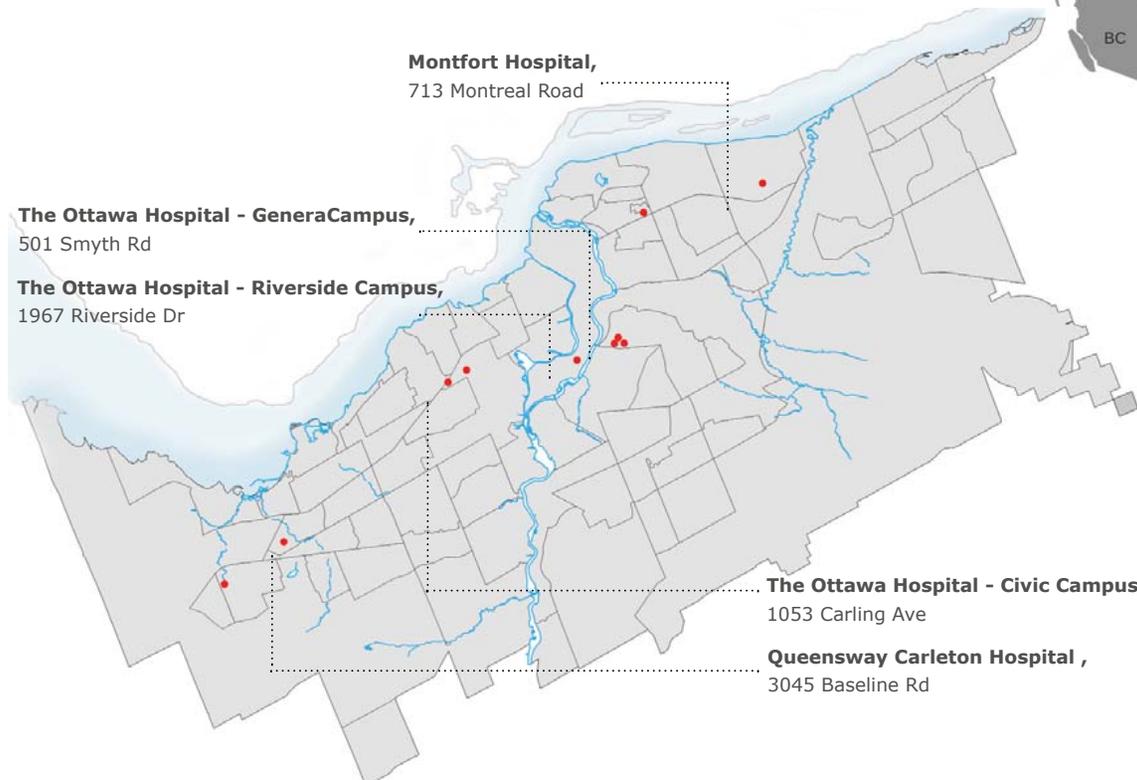


Figure 21: Map of existing hospitals in Ottawa



Figure 20: OTTAWA, ONTARIO, CANADA

## Respite Time for the Ottawa Rehabilitation Centre

This thesis investigates the idea of designing for meditation in healing spaces in order to achieve well-being. In this regard, the Rehabilitation Center of The General Hospital, in Ottawa, Ontario, has been chosen as a primary location for the project.

The goal of the design is to give patients a place for thinking and healing. For this purpose, the design will be based on four guiding principles which include:

1. Incorporating the respite indoor garden and pathway within the existing building to promote the healing process.
2. Attempting to minimize the negative impact of stress on the immune system and potentially improve well-being.
3. Incorporating known features of healing environments that may contribute positively to a resident's well-being, both physically and psychologically.
4. Using natural elements in order to provide a meditative environment for people to learn, contemplate, and to validate the Dharma.

The selection of the site was based on an analysis of the existing Ottawa Rehabilitation Center in the General Hospital Campus. This physical rehabilitation is for people who have experienced a disabling physical illness or injury and have different kinds of treatment such as physical therapy, pool therapy, and psychotherapy. Further analysis identified areas which provide activity services for patients.



Figure 22: Rehabilitation Center, General campus, Ottawa, Ontario



Figure 23: Perspective view of Rehabilitation Center

## Ottawa Rehabilitation Center Site Analysis

In 2005, The Ottawa Hospital Rehabilitation Centre (TOHRC) was added to General Hospital which is located in Smyth Road based in Ottawa, Ontario. TOHRC specializes in the physical rehabilitation of people who have experienced a disabling physical illness or injury. Part of this centre serves the residents of eastern Ontario and western Quebec in both English and French languages and is a fully accredited teaching hospital related with the University of Ottawa. Both inpatient and outpatient treatment services are provided in TOHRC for people who are suffered from illnesses such as: amputations, spinal cord injuries, acquired brain injuries, strokes, lung disease, multiple sclerosis, chronic pain, and communication disorders. The Ottawa Hospital Rehabilitation Centre is designed to provide not only on the physical care but also in mental health issues such as psychological, social and spiritual needs of patients with respect in an environment that encourage and improve well-being. Eventually, TOHRC helps patients to maximize their independence, to re-adapt and to rebuild their lives.<sup>32</sup>

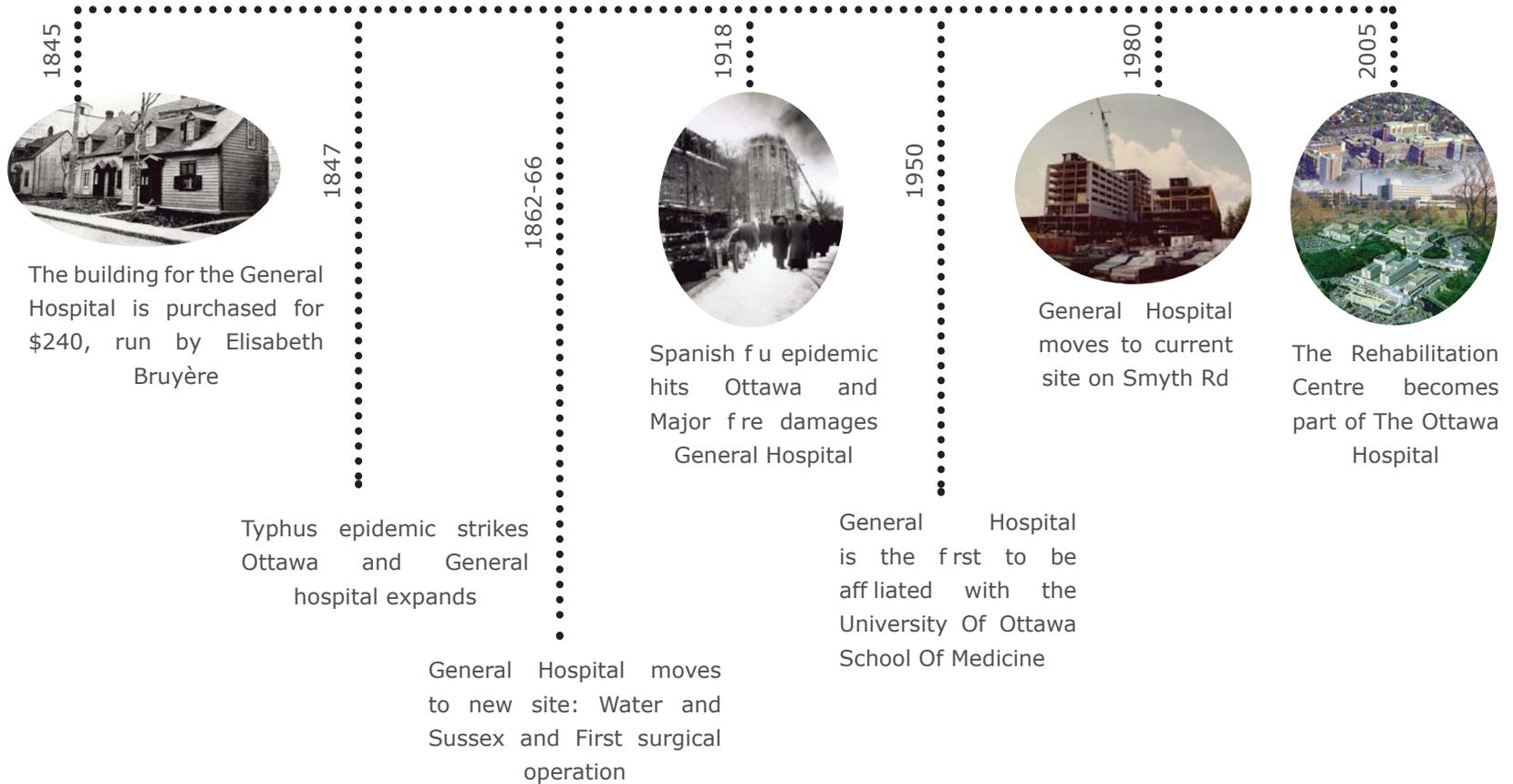


Figure 24: Perspective view of Rehabilittion Center

### FOOTNOTES

32. "Rehabilitation Center," The Ottawa Hospital, accessed on April 10, 2016, <https://www.ottawahospital.on.ca/wps/portal/Base/TheHospital/ClinicalServices/DeptPgrmCS/Departments/RehabilitationCentre>

## Ottawa Rehabilitation Center Timeline <sup>33</sup>



### FOOTNOTES

33. Library of the Catholic Health Alliance of Canada, "Heritage Hospitals," July 2005, accessed on March 03, 2016, <https://www.ottawahospital.on.ca/wps/wcm/connect/4cca34804dcfbba09157df62660efeb4/Our+History+EN.pdf?MOD=AJPERES&useDefaultText=0&useDefaultDesc=0>

# Surrounding Area of Rehabilitation Center

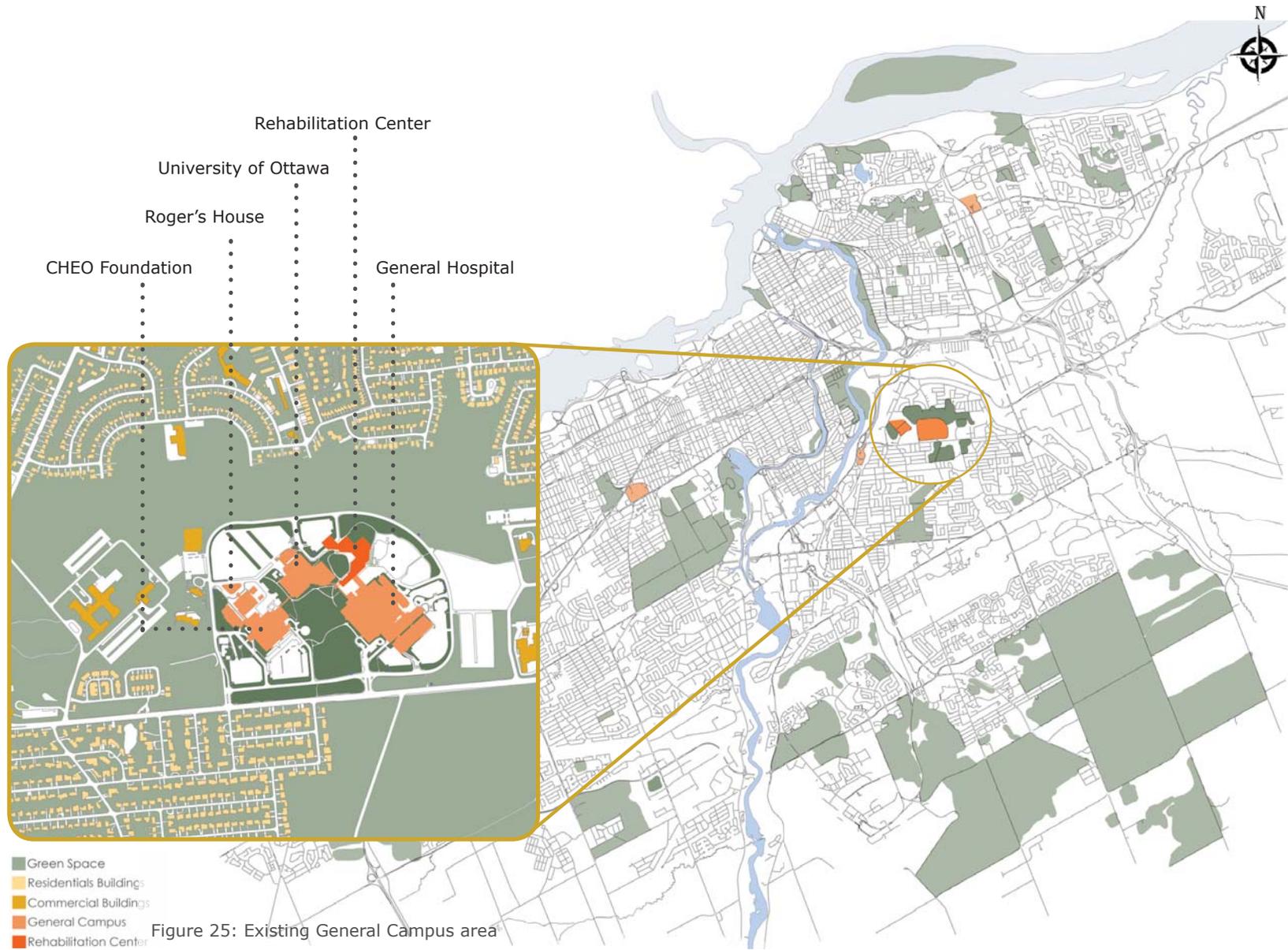


Figure 25: Existing General Campus area

# Accessibilities of Rehabilitation Center

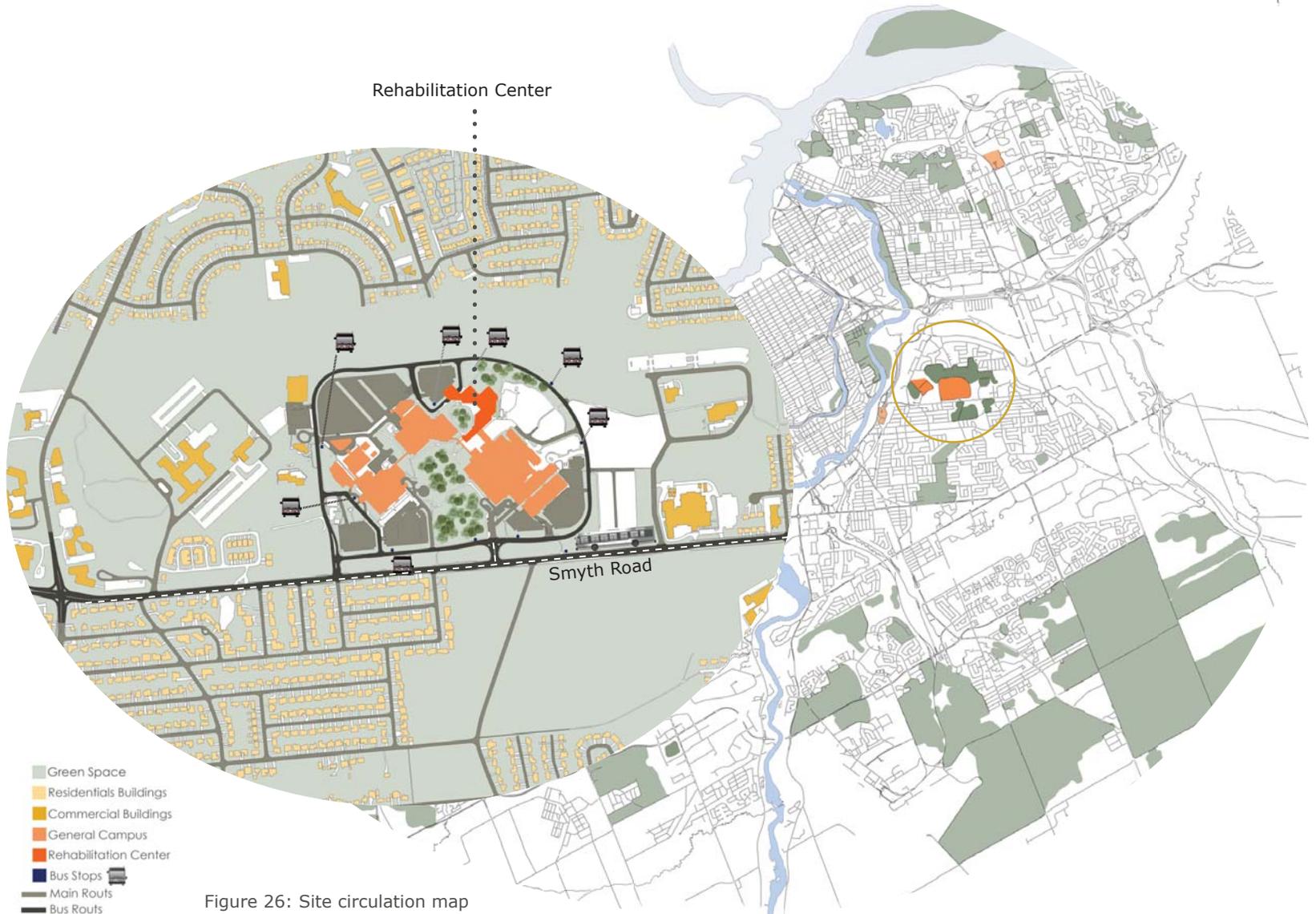


Figure 26: Site circulation map

## Proposed Site and Site Views

Figure 27: Proposed Site for Meditation Therapy in Rehabilitation Center

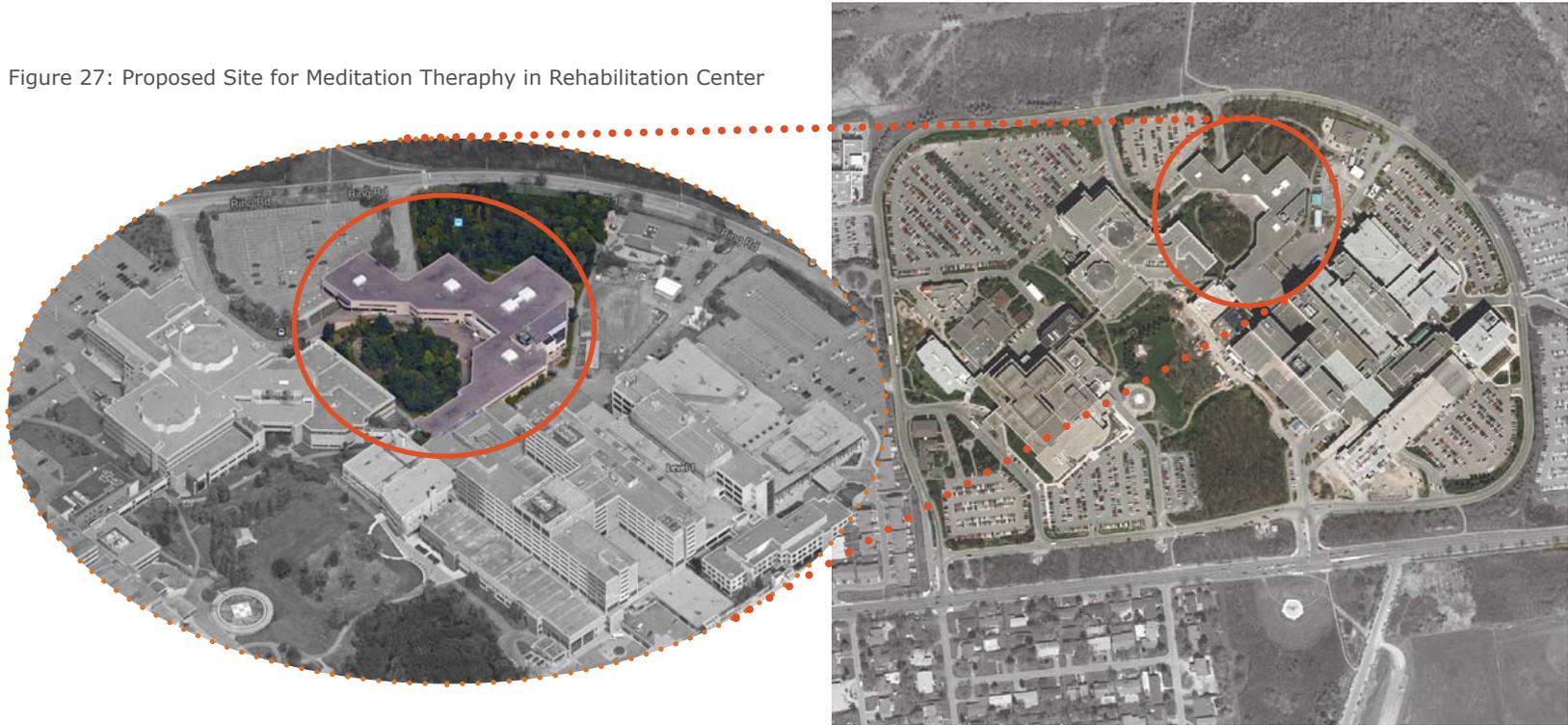


Figure 28: Facing Courtyard from Ground Floor, Second Floor, and Main Entry



## Proposed Design

**How to promote learning, better health outcomes, and better mood?**

**How can architects design a place to support people with deficits in physical or mental function?**

“For thousands of years, humankind has been fascinated by the apparent connection between emotions and disease.”<sup>34</sup>

Emotions are in contact with parts of the brain that control stress which leads emotions to have an effect on the immune system and illnesses.

This thesis project illustrates and puts forward the practical application of meditation as a tool to reduce stress in a medical facility. The main idea is designing and presenting new dynamic therapy spaces which allow patients to practice physical therapy within the circulation spaces to receive a more dynamic and spatially perceptive form of treatment.

The design project proposes the Rehabilitation courtyard as a space for meditation therapy which is a place for healing, thinking, and a respite time for relaxation. This central area is not only meant to stimulate emotional experiences but also to foster a sense of hope and freedom allowing residents to find a way to cope with their stress and to stimulate them to move into and through this place.

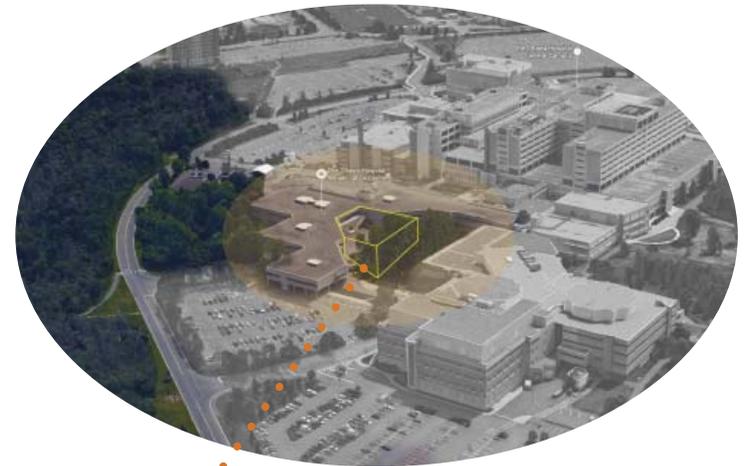


Figure 29: Proposed Site for Meditation Therapy in Rehabilitation Center

### FOOTNOTES

34. Sternberg, Esther. The Balance Within. The science Connecting Place and Emotions. Times Book 2001: 8

# Design Strategies

The program of the building will reflect the required care necessary to sustain physical well-being. There are different therapeutic treatments that are used to address patients' physical and psychological needs. These include occupational therapy, which consists of creating job opportunities for patients; recreational therapy which consists of creating a friendly environment; physical therapy, which, in this case, consists of pool therapy. A new form of psychological therapy and spiritual therapy are introduced here by designing an area for thinking and for meditation.

To provide temporary patient living and physical rehabilitation care, this rehabilitation center consists of two floors, each housing these functions. However, the goal of this project is to develop the central area of the Rehabilitation Center to incorporate natural light through the use of glass walls allowing the indoor space to merge with the outdoors.

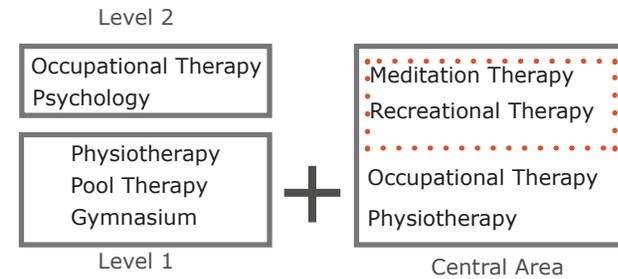


Figure 30: Programmatic concept of the RHB



Figure 31: Profession Relationship Diagram

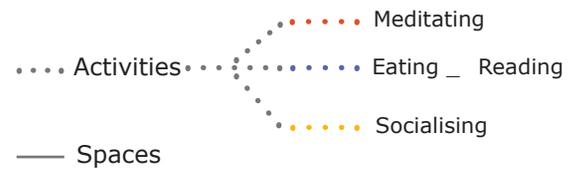
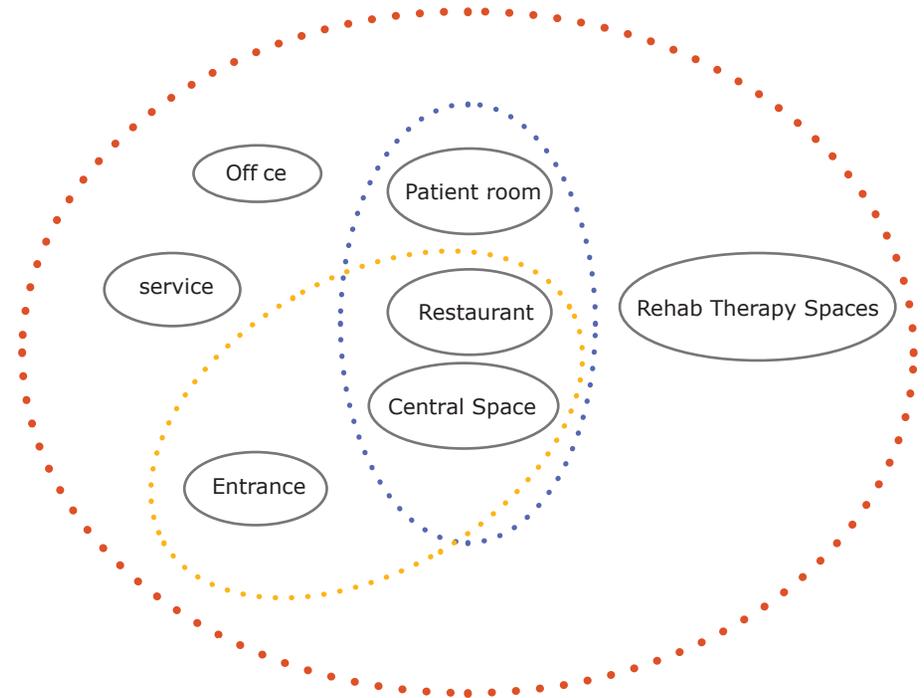


Figure 32: Relationship between activities and spaces

## Designing Through Natural Effects

Physical features in the hospital must support emotional and mental health by creating spaces for patients to enjoy themselves and provide a place where their emotions can be soothed. Walking or strolling on the walkway and indoor courtyard can help them to deal with their illness. The central space of the Rehabilitation Center is chosen to reach this purpose because all the natural key elements are significant to create a friendly environment which includes green features and natural elements to sustain both body and mind. In addition, a gathering place that gives family members a pleasant area to sit is incorporated to increase the social support that is essential in the healing process. Moreover, this area has different views of the garden and patients can smell the flowers and other plants. The trees provide symbolic value. Bamboo is introduced to convey a sense of flexibility and strength, while pine conveys endurance (stays green in all seasons) and courage.

Incorporating trees in the design has an influence on our emotions and promotes the healing process by providing color, particularly the soothing greens of nature. Movement and activity are encouraged by introducing natural and vegetal life to observe, providing a calming and relaxing effect.

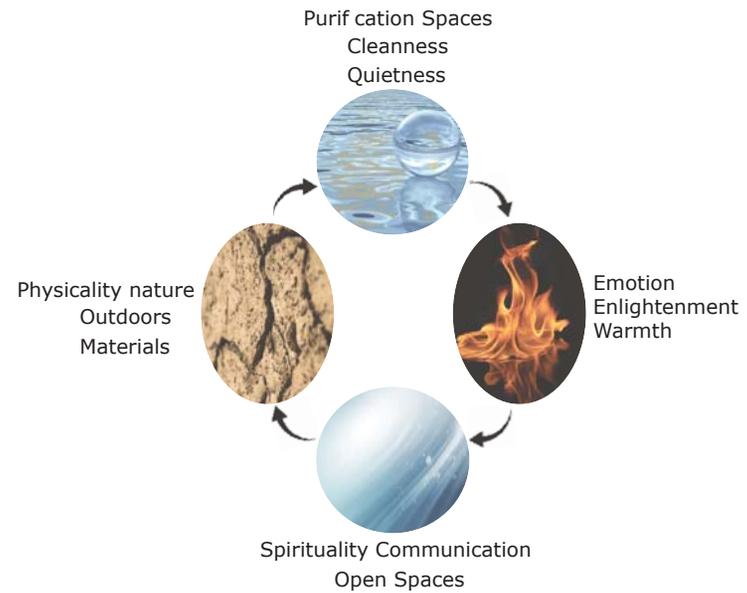


Figure 33: Nature key elements in design

## Designing Through Artificial Effects

The meditation therapy space is located in the main courtyard and has views from all surrounding windows and activity rooms such as the physical therapy area and the gym where patients can congregate during the day. In this central space, patients can produce vegetables for their meals or even grow flowers to be picked daily to decorate the halls and common areas of the hospital.

Patient safety and comfort would be improved by using sound-absorbing ceiling tiles and flooring materials that are easy to clean. Natural lighting would create a pleasant environment for patients and their families by reducing stress and creating a comfort zone.

The design provides areas to sit, think, meditate, and talk to families or friends.

Exercise and physical activity are addressed to improve well-being and encourage social interactions. It is also a friendly environment where patients can meet with their family. Healthcare staff can also use it during their break time.

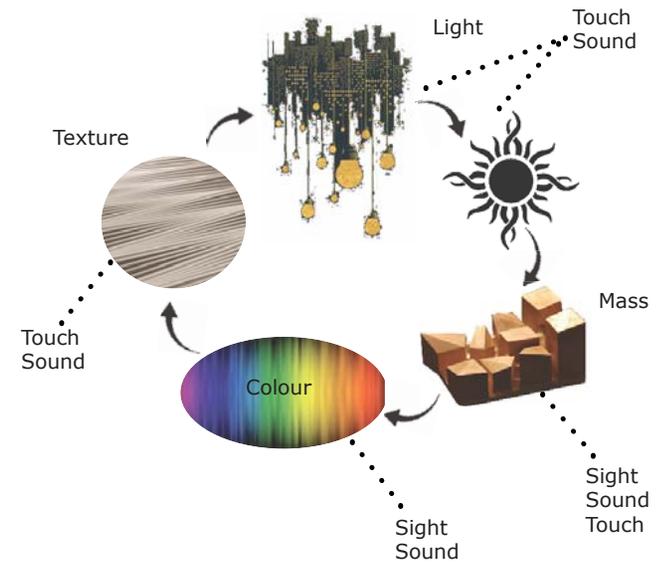


Figure 34: Artificial elements in design

## The Activity Walkway

In order to promote exercise main activity walkways revolve around the green space in the central yard while some dynamic therapy spaces will be incorporated to provide appropriate movement and encourage patients to think and improve their healing process. Patients start their rehabilitation journey on the second level and gradually ascend to the balcony for more practical treatment.

The activity walkway is one of the main features of the project. On it, residents embark on a spiritual journey, beneficial for all who need to find respite from a hectic day. It is a shared element amongst all the residents. Concentrating on the path ahead and breathing deeply are essential while walking on the pathway. Focusing on breathing is also an important technique in meditation as it helps a person to move at a comfortable pace and release stress. Walking on this route also provides a method of exercise which improves mood by enhancing nerve cell connections. It also protects a person against depression by increasing connections with others thus reducing the stress response.

A person starts walking on this path gradually. At each landmark, a profound moment of release and pause happens to help the individual to navigate their environment and to make a respite time. These landmarks are very important for the creation of memories of places and spaces. Their design strategy is to make a person move toward it. In this way, patients gradually become aware of receiving positive energy from their senses of vision, hearing, smell, and touch. By following the path, they will come out feeling better than when they began.

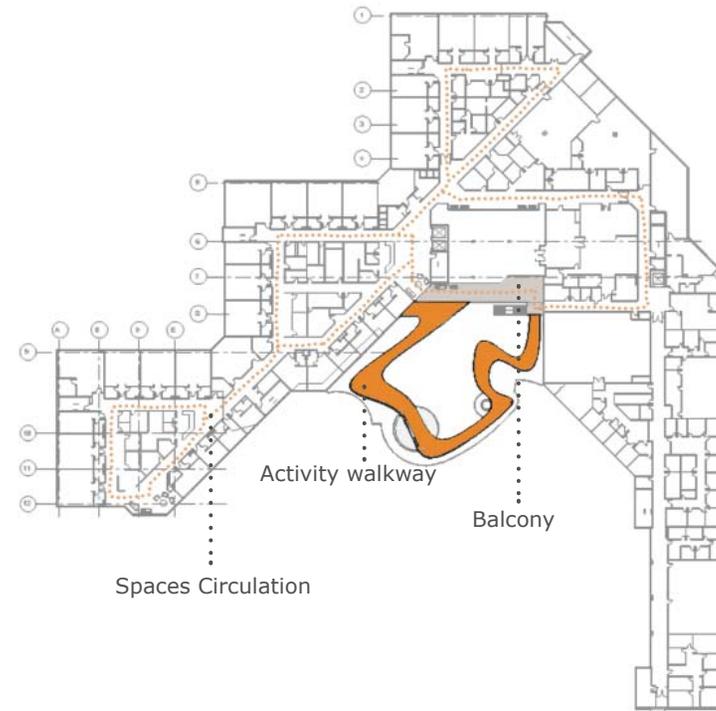


Figure 35: Activity walkway and circulations

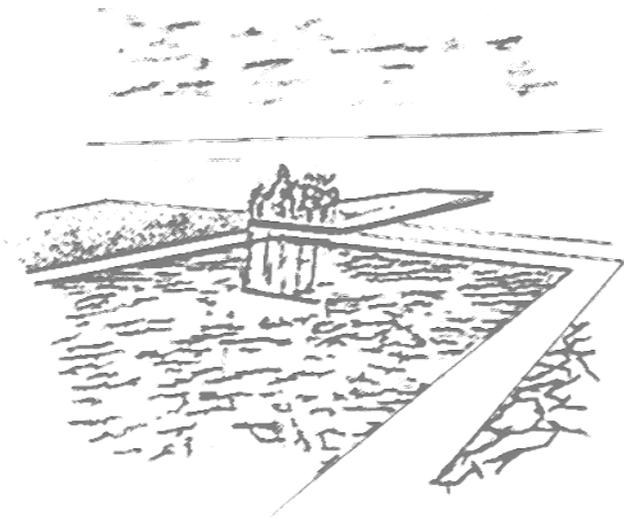


Figure 36: Natural elemets, sketches by S. Ezatpanah

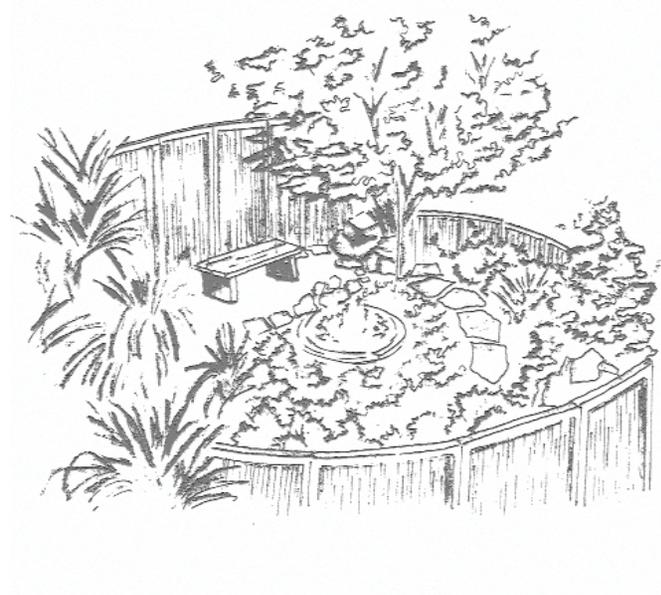
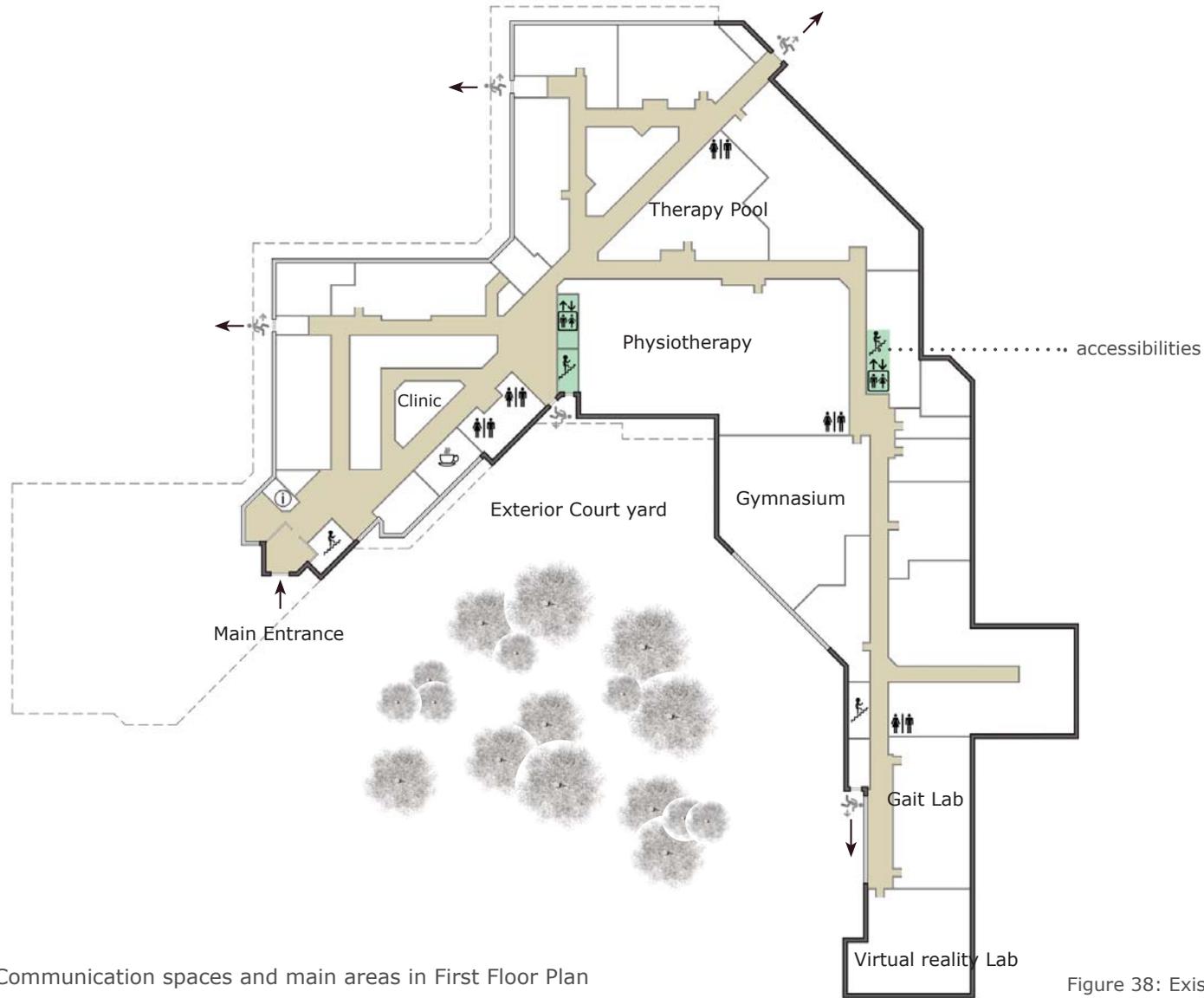


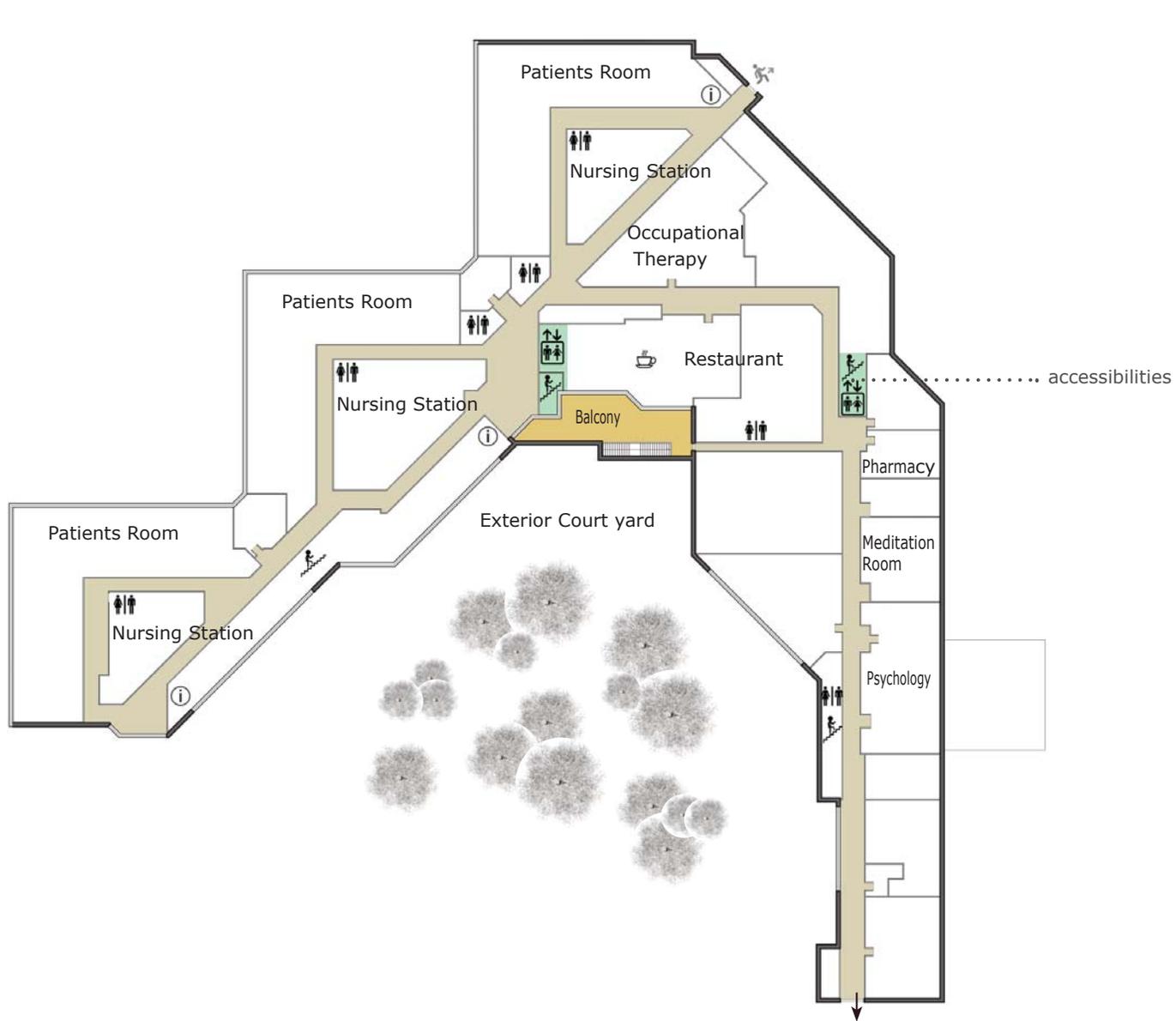
Figure 37: Artif cial elemets, sketches by S. Ezatpanah

# Architectural Drawings



Communication spaces and main areas in First Floor Plan

Figure 38: Existing First Floor Plan



Communication spaces and main areas in Second Floor Plan

Figure 39: Existing Second Floor Plan

Main entrance from the Lobby to the central therapeutic space

Main circulation between Gymnasium and Physiotherapy through the central therapeutic space

Connections between outdoor and central therapeutic space

-  Main Entrance and Exit to the Therapeutic area
-  Circulation



**Proposed First Floor Plan Circulation Diagram**

Figure 40



**Proposed First Floor Plan**

Figure 41

Patients can use the central area as an area for respite, gathering and meditation. The elevator located in the central area serves as an alternative circulation between the two floors connecting the walkway and the gathering area on the ground floor. The walkway also connects the patient rooms to the psychology area and other therapeutic spaces.

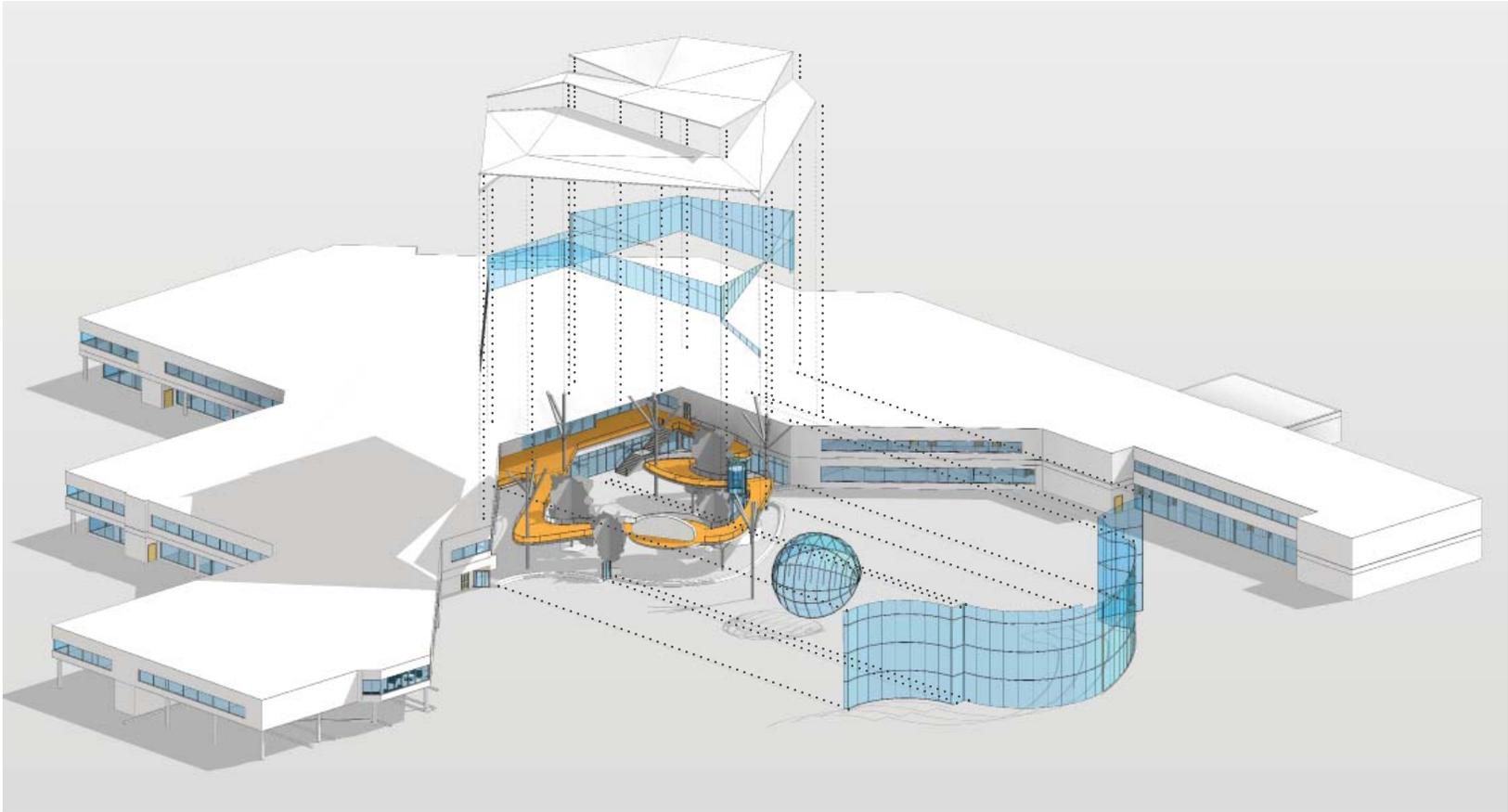
→ Visually connected spaces through the curtain walls



**Proposed Second Floor Plan Circulation Diagram**

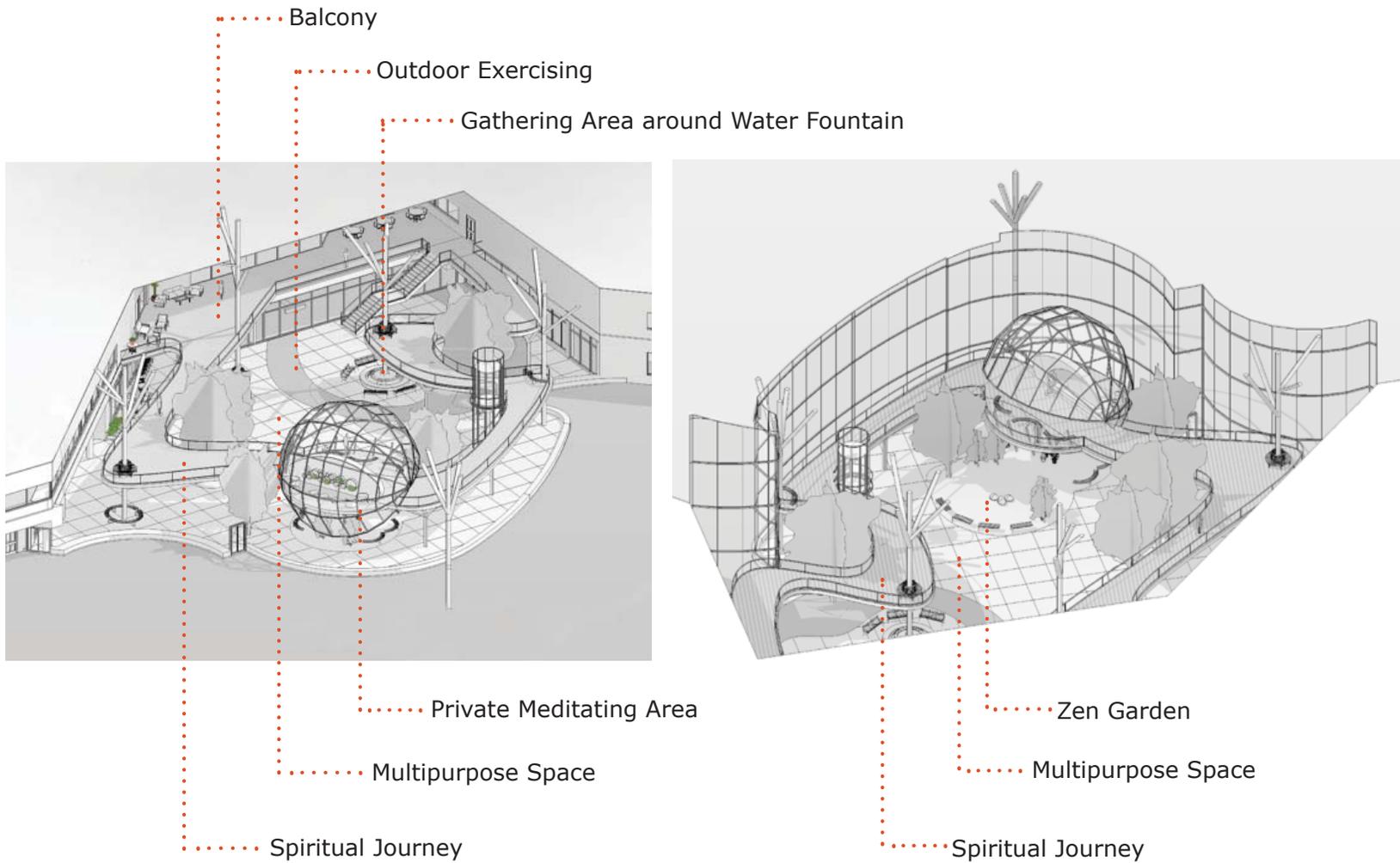
Figure 42





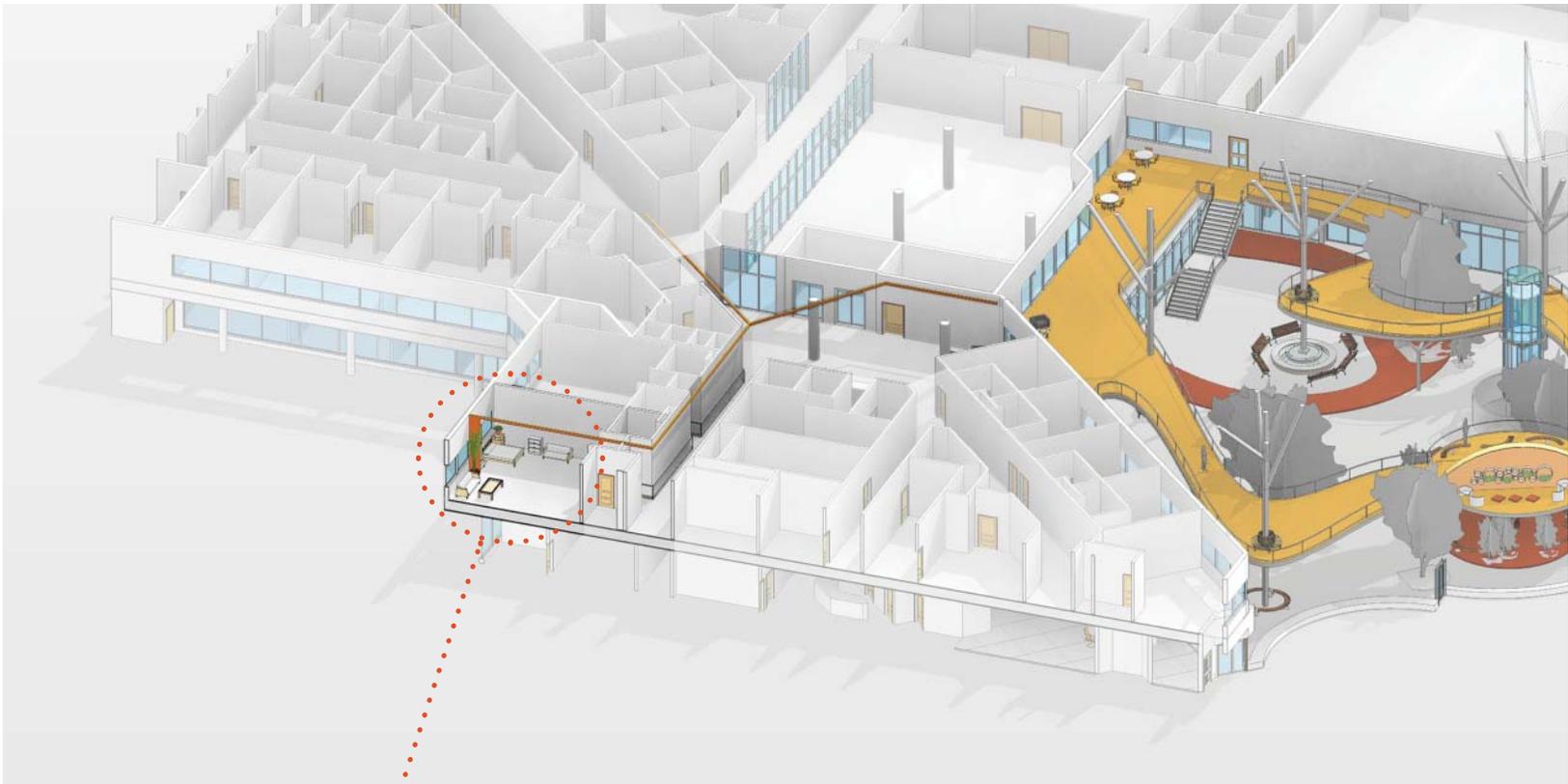
**Exploded Axonometric**

Figure 44



**Exploded Axonometric Interior View**

Figure 45



**Section through continuing material from Patient Room to common Therapeutic Space**

Figure 46

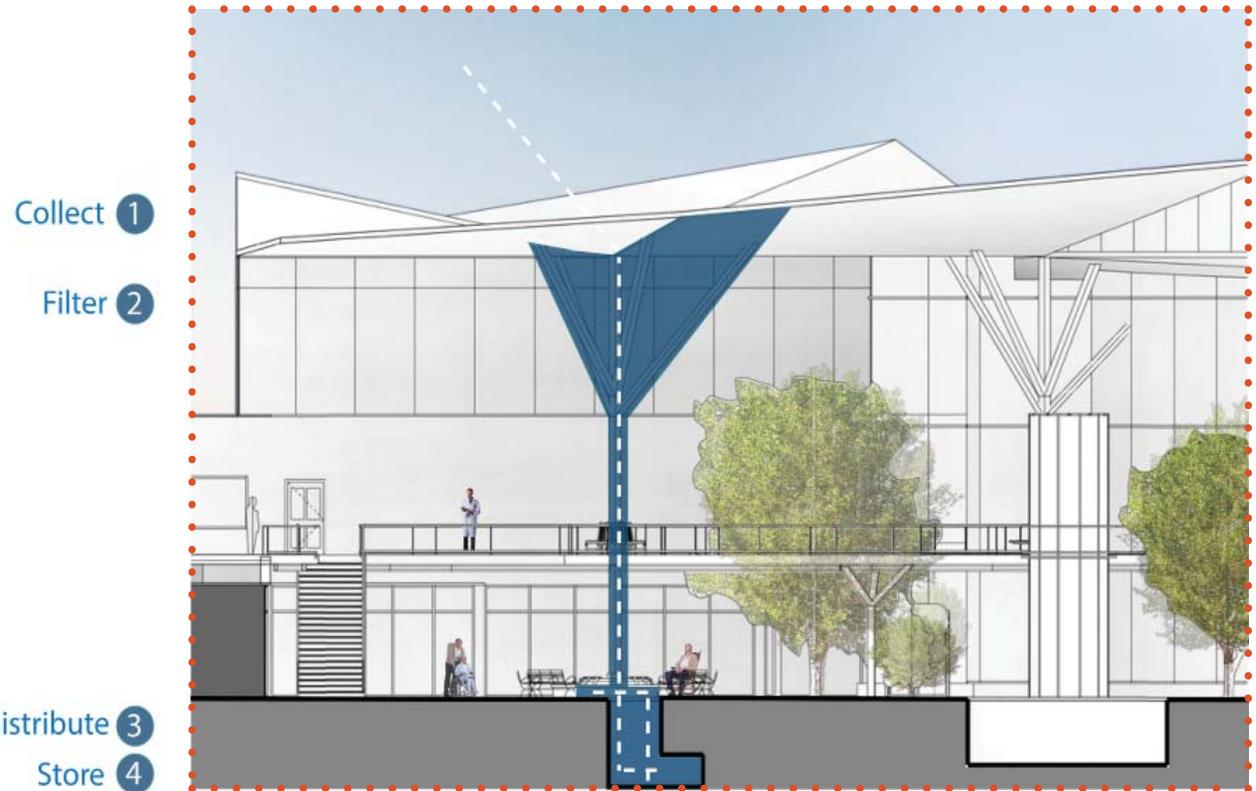
1. An average of XX ml of rain falls each year in Ottawa

2. The roof collects the rain water and directs it to pipes

3. The harvested water is brought down the pipes, that goes from the second floor to the first, creating a sound barrier (white noise) and a cooling effect, contributing to a wholesome space for rehabilitation

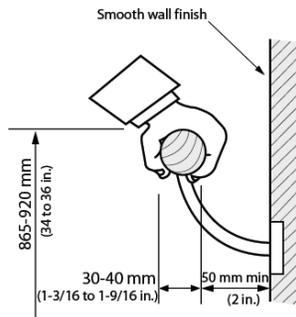
4. The water goes through a pump to feed the water fountain, which is at the centre of the gathering space

Re-distribute 3  
Store 4



Section through the Water System

Figure 47

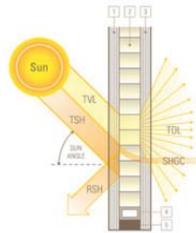


Bendywood is a solid wood that is easily bent into curved shapes without heat or moisture. During the production process, the wood is treated with steam and compressed lengthwise. This process folds the walls of the fiber cells and permits them to soften into curving forms without entering into tension. Small-section pieces can be curved by hand and larger pieces with the application of mechanical force. The minimum radius of curvature is 10 times the thickness of the element. Bendywood® profiles are available in beech, ash, oak and maple. The profiles can be re-bent, but not repeatedly. Their use is restricted to interiors.



Section through the Meditation Space and Zen Garden and Handrail Detail

Figure 48



Panelite is almost like the common air vented insulating material sandwiched within transparent facing.

The advantages are:

1. Lightweight hence frame structure may not be elaborate.
2. Reduce glare and transmit up to 65% of the daylight entering through the building envelope.
3. Energy efficient as allows easy heating and cooling due to insulation against loss of energy.
4. Easy to install.
5. High strength is achieved when the honeycomb is sandwiched between the facings.
6. Visual privacy- it allows complete perpendicular vision but curbs it at an oblique direction.
7. Acoustical properties.



**Section through the Meditation Space and Zen Garden**

Figure 49



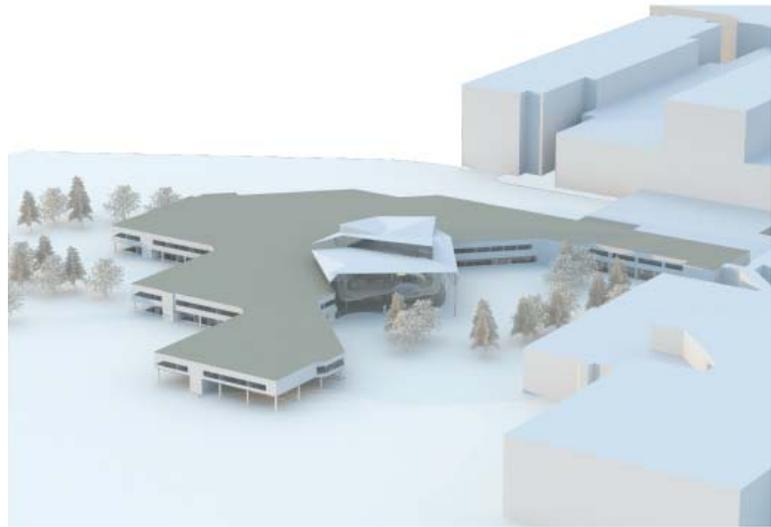
**Perspective**



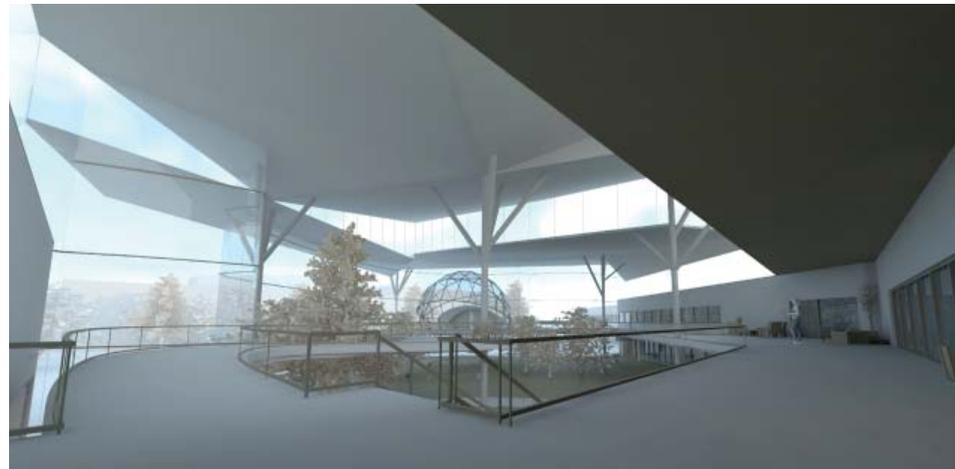
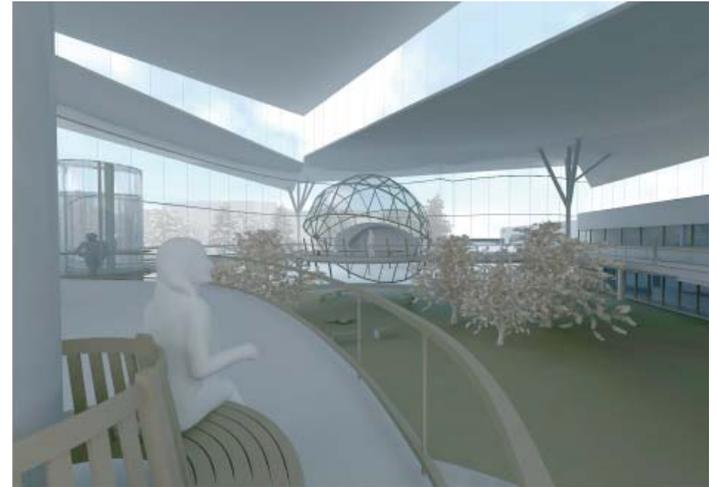
View to Outdoor Exercising and Gathering area around the Water Fountain



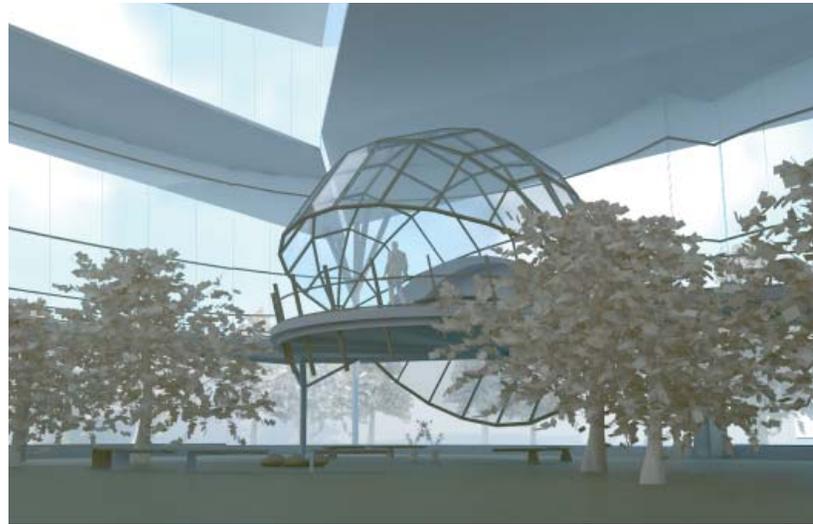
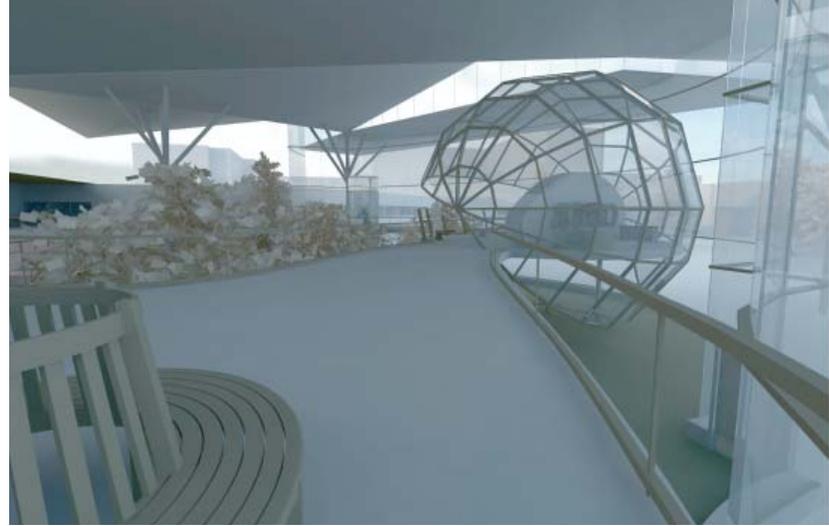
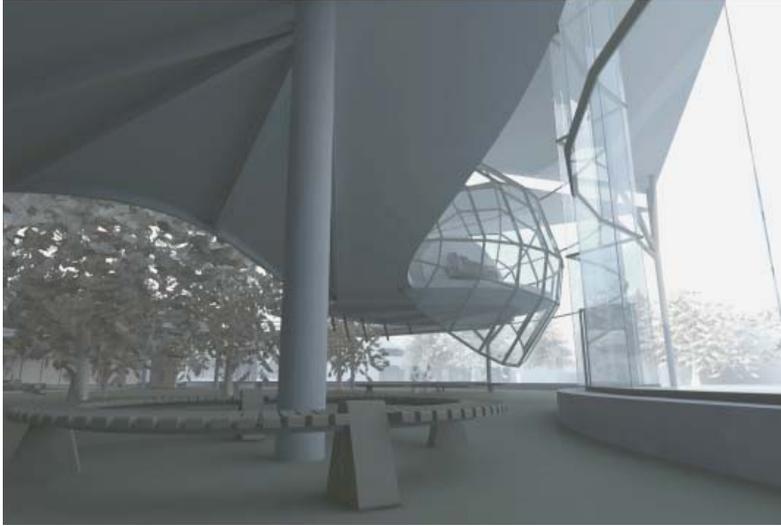
View from Indoor to the Lobby and Outdoor therapeutic Space



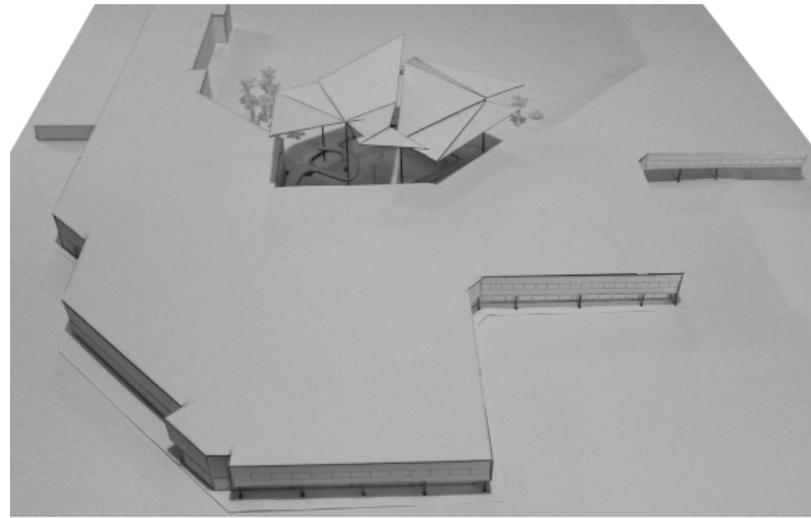
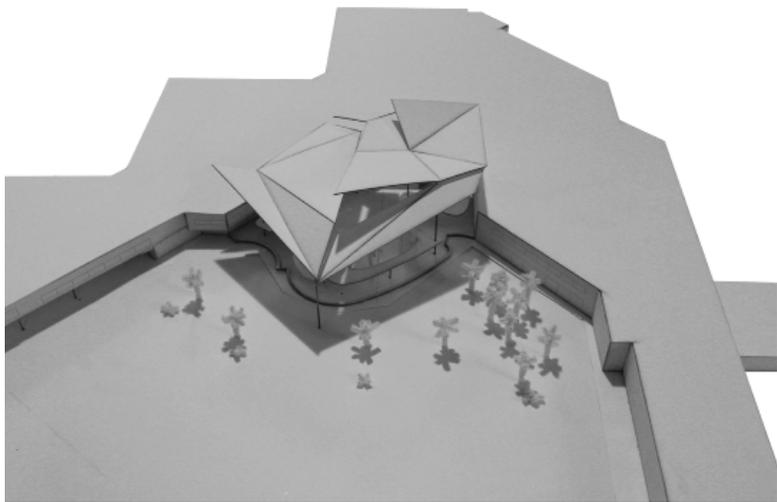
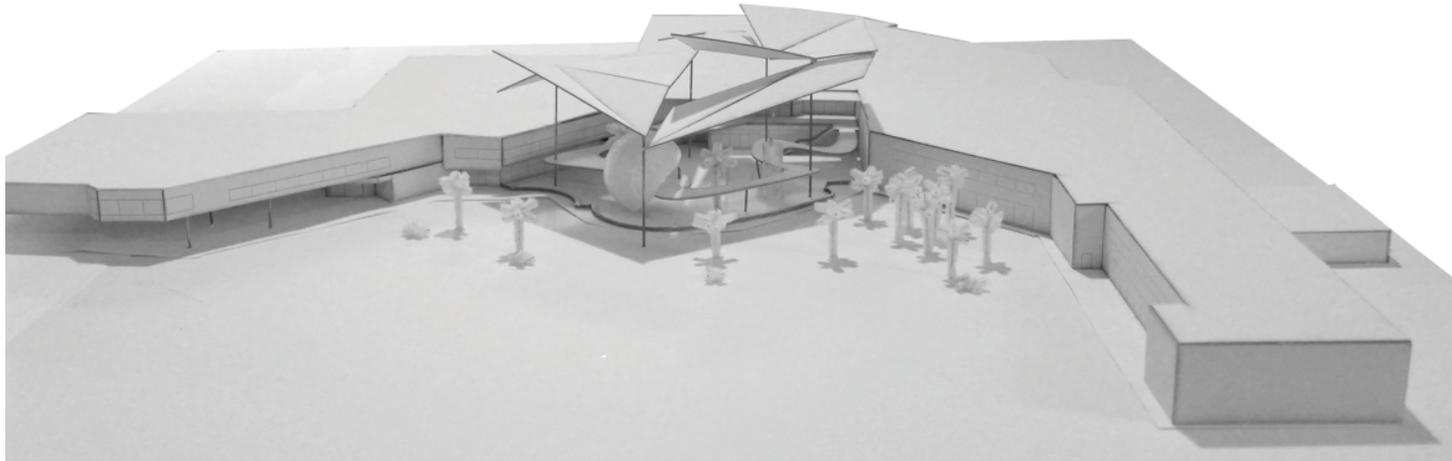
**Exterior Perspective**



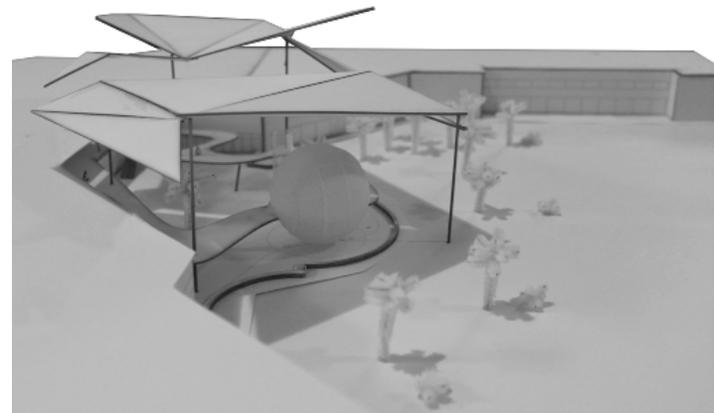
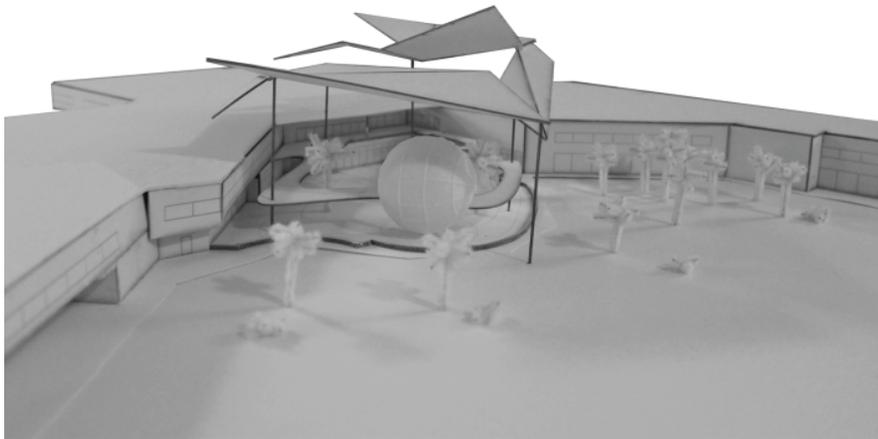
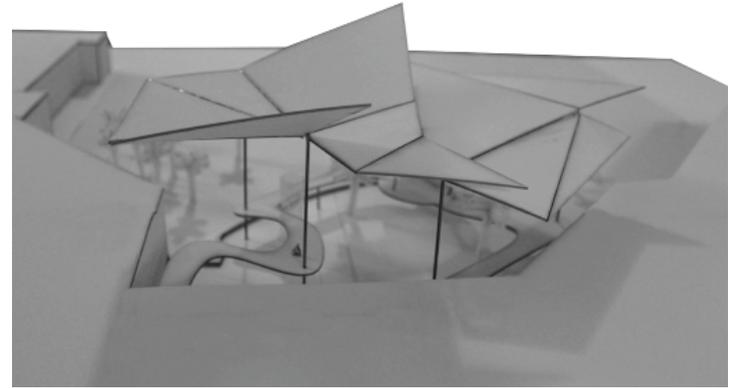
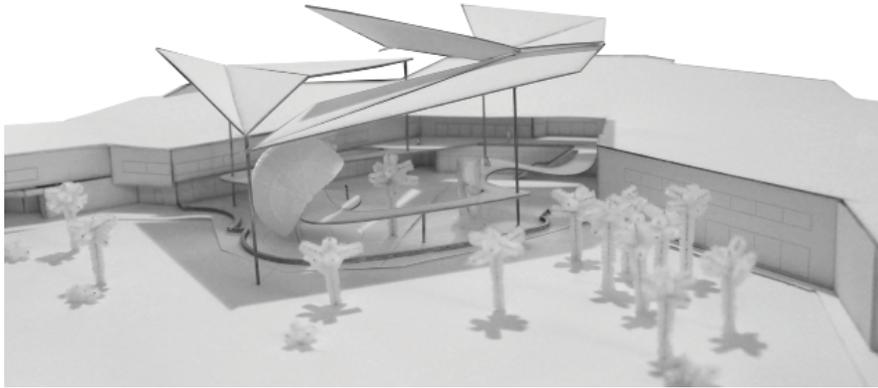
**Interior Perspective**



**Interior Perspective**



**Final Physical Model**



**Final Physical Model**

**CONCLUSION**

## CONCLUSION

The effects of the built environment on the mind and body plays a crucial role in treatment because it has the incredible ability to alter brain structure.

The aim of this thesis is to provide an environment that not only promotes physical well-being through healing spaces, but also supports mental well-being by creating an architecture for thinking, meditating, and imagining.

The main function of Physical rehabilitation center is caring for disabled individuals and giving them the opportunity to regain independence, so it is essential that architectural design addresses how these environments can have a positive impact on patients' recovery. The major keys for designing healing spaces are creating comfortable and soothing environments which impacts Patient's emotional state, and also improving physical issues by designing a space which increase human movement.

The ideas presented in this thesis highlight the importance of respite time for the rehabilitation center that can often provide one with time to reflect, meditate, and contemplate. Central space attracts patients to the site, increase walkability, promote meditating, encourage patients to participate in physical activity, and develop positive effects of exercising on patients. Also small gathering area for families and promoting community involvement are efficient in reducing stress.

Therefore, incorporating dynamic spaces within the natural environment of rehabilitation facilities will not only promote exercise but, it will also give this opportunity to patients to practice dharma.

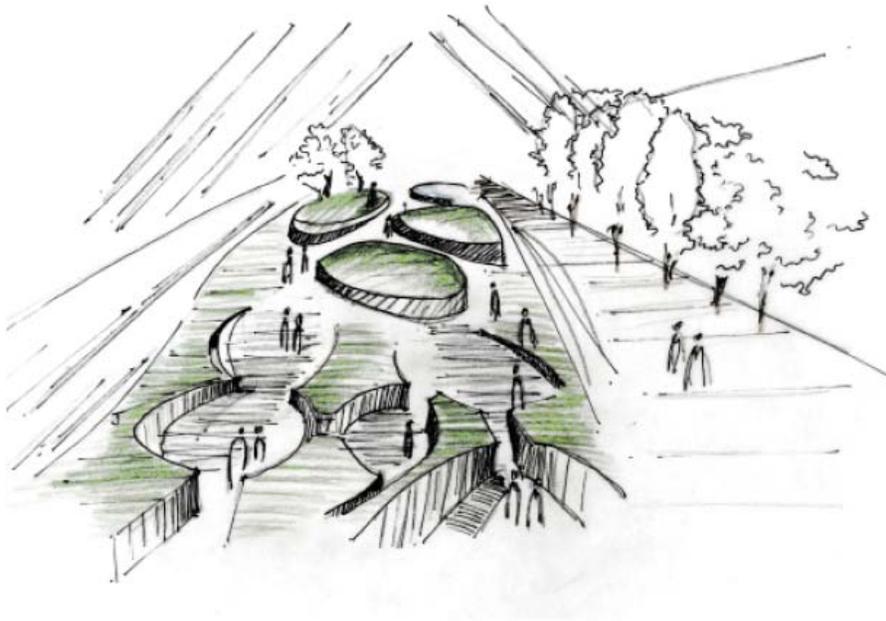


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# APPENDICES

## Architectural Preliminary Design 1

The first preliminary design was to create the main courtyard of the Rehabilitation Center as a gathering space which will be functional in all seasons and patients can visit their families and improve their communication.

Also, the third floor was added to the existing building to create a separate private space for meditation.

Also, the roof works as a green roof to develop a more friendly environment which individuals can improve their healing process.

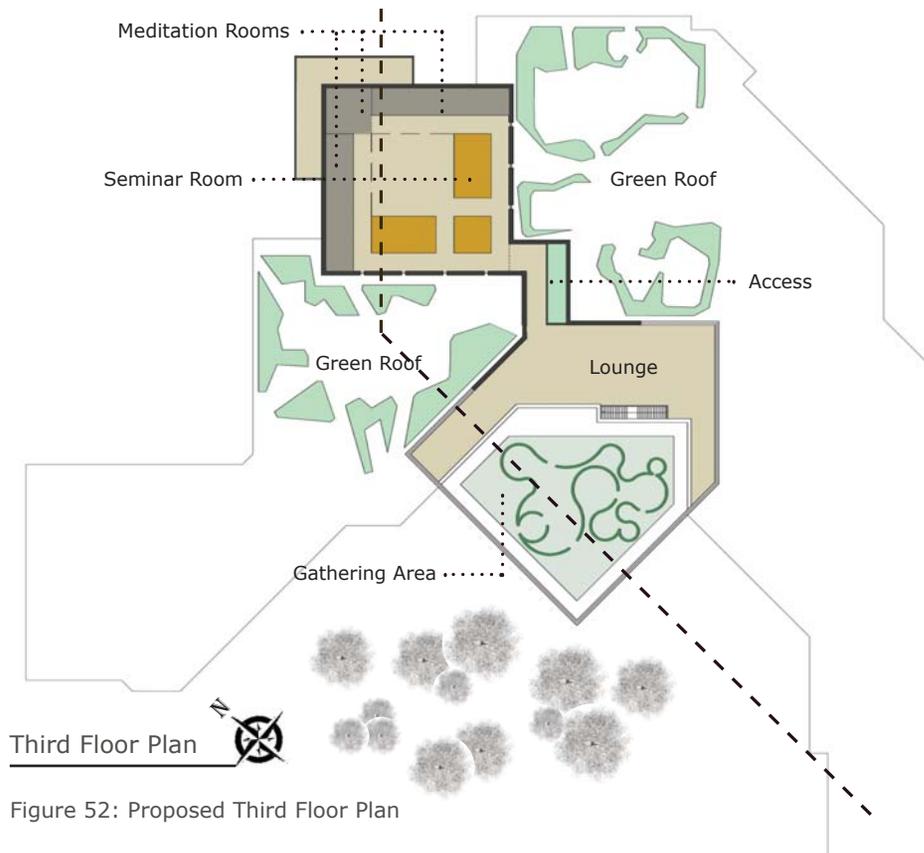


Figure 52: Proposed Third Floor Plan

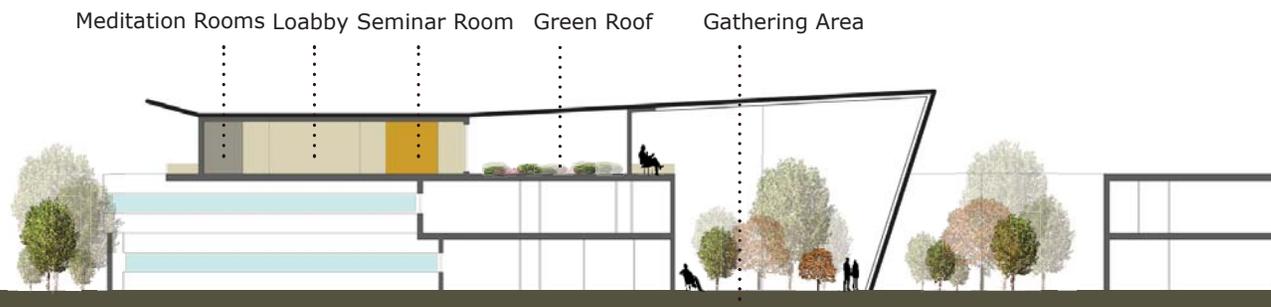


Figure 53: Proposed Section

## Architectural Preliminary Design 2

In the second preliminary design the idea of meditating and chakras was significant. For this purpose the activity ramp was created in the central space of Rehabilitation Center and it works as a spiritual journey. In order to promote exercise, the activity ramp revolves around the green space in the central yard while seven dynamic therapy spaces will be investigated in landmarks to appropriate movement and encourage patients to think and improve their healing process.

Patients start their rehabilitation journey on the ground level and gradually ascend to the second level for more practical treatment.

In each landmark, a profound moment happens that help the individual to navigate their environment. So patients gradually become aware of receiving positive energies from their senses of vision, hearing, smell, and touch and by following the path.

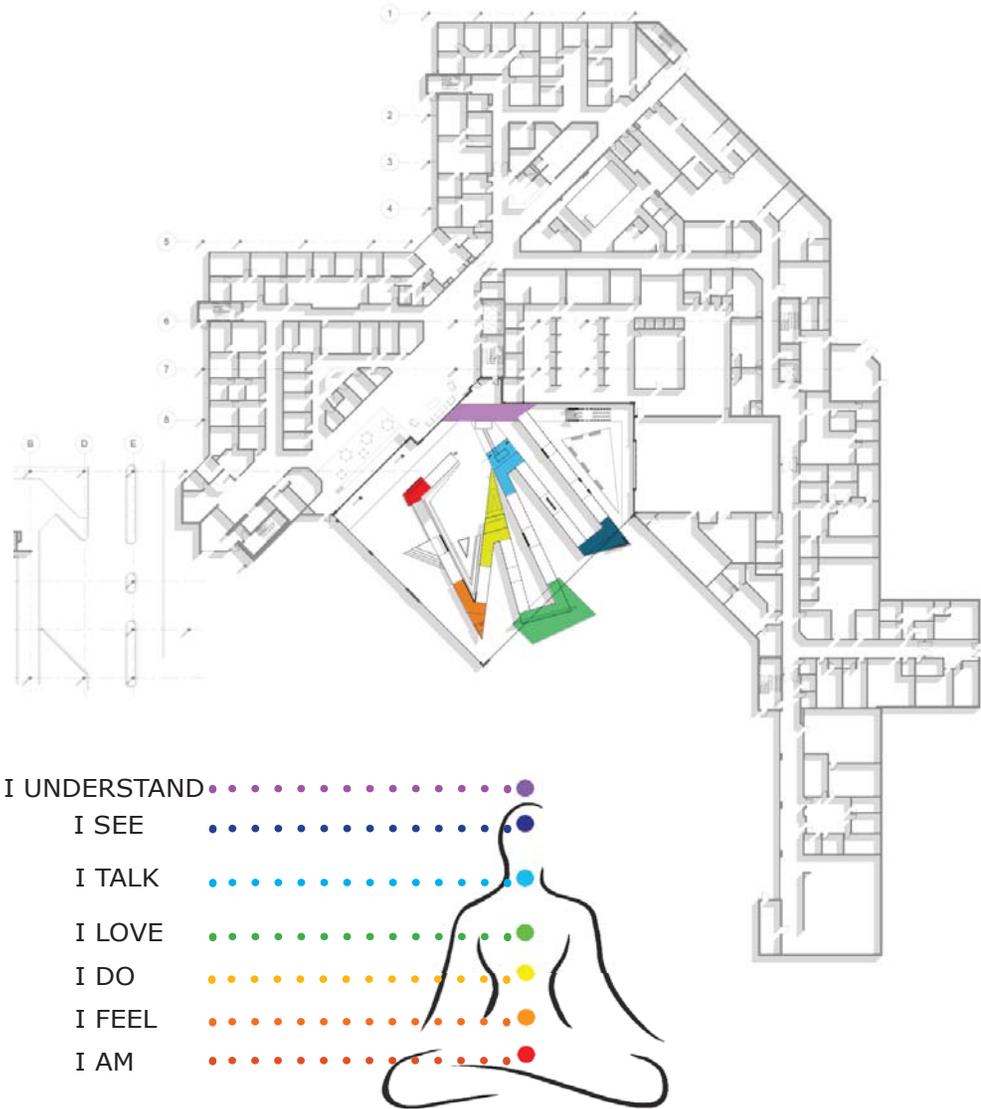
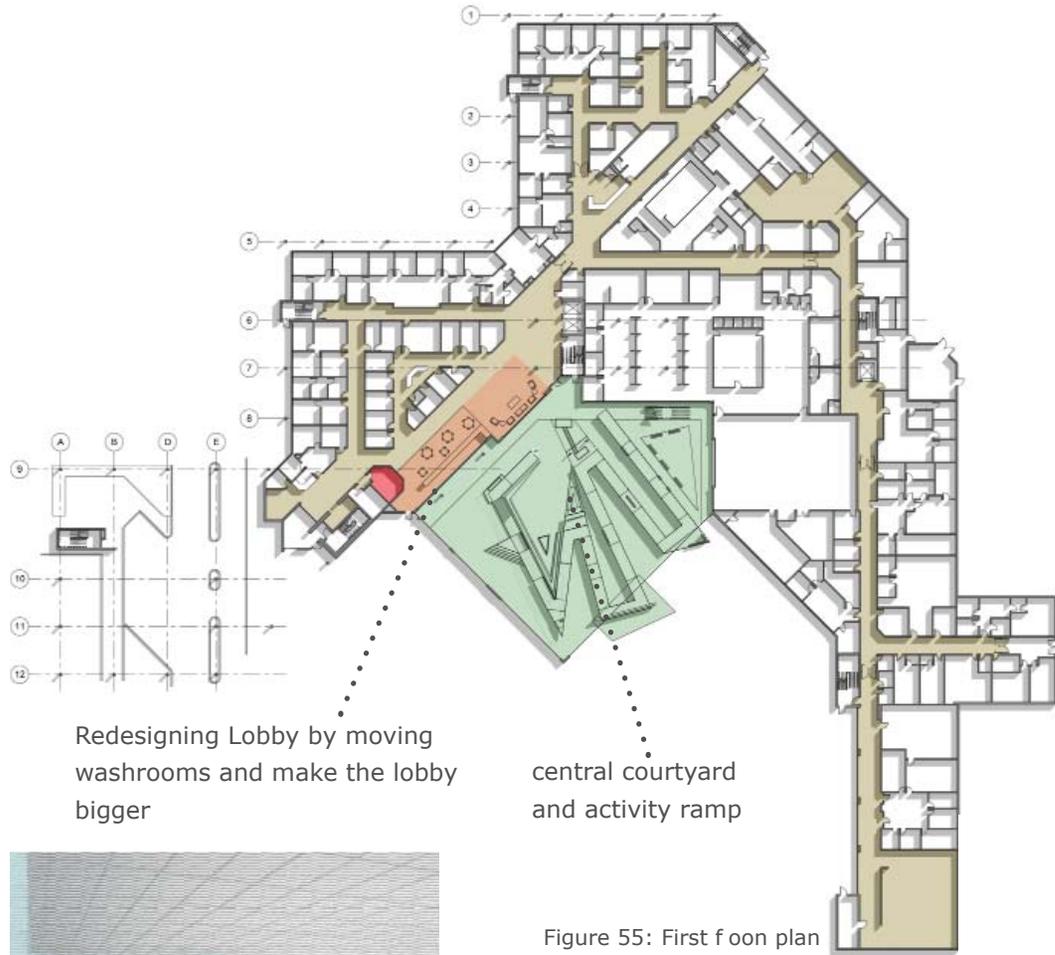


Figure 54: Meditation and seven chakras

## Architectural Preliminary Design 2



Redesigning Lobby by moving washrooms and make the lobby bigger

central courtyard and activity ramp

Figure 55: First floor plan

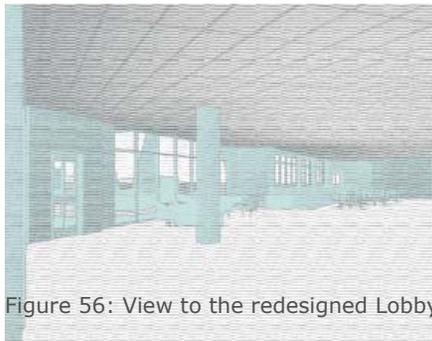


Figure 56: View to the redesigned Lobby

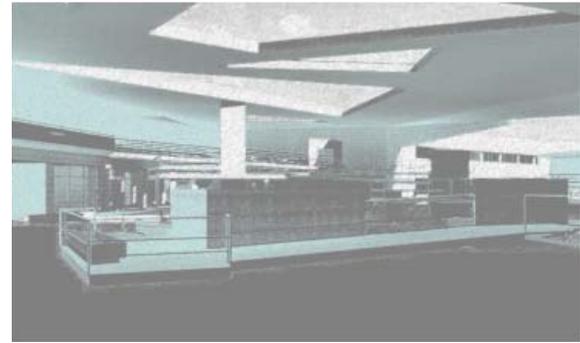


Figure 57: View to the central area and roof

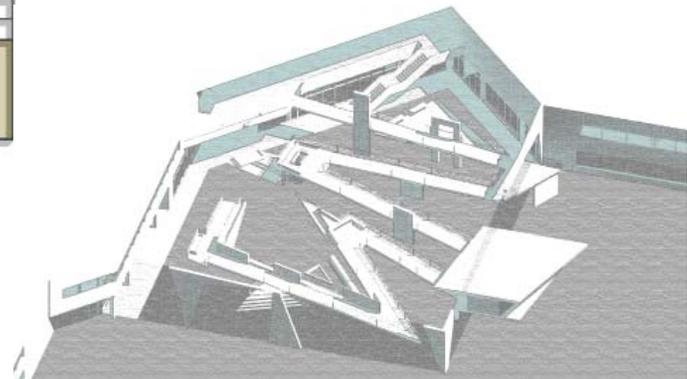


Figure 58: View to the Activity Ramp

## Architectural Preliminary Design 2

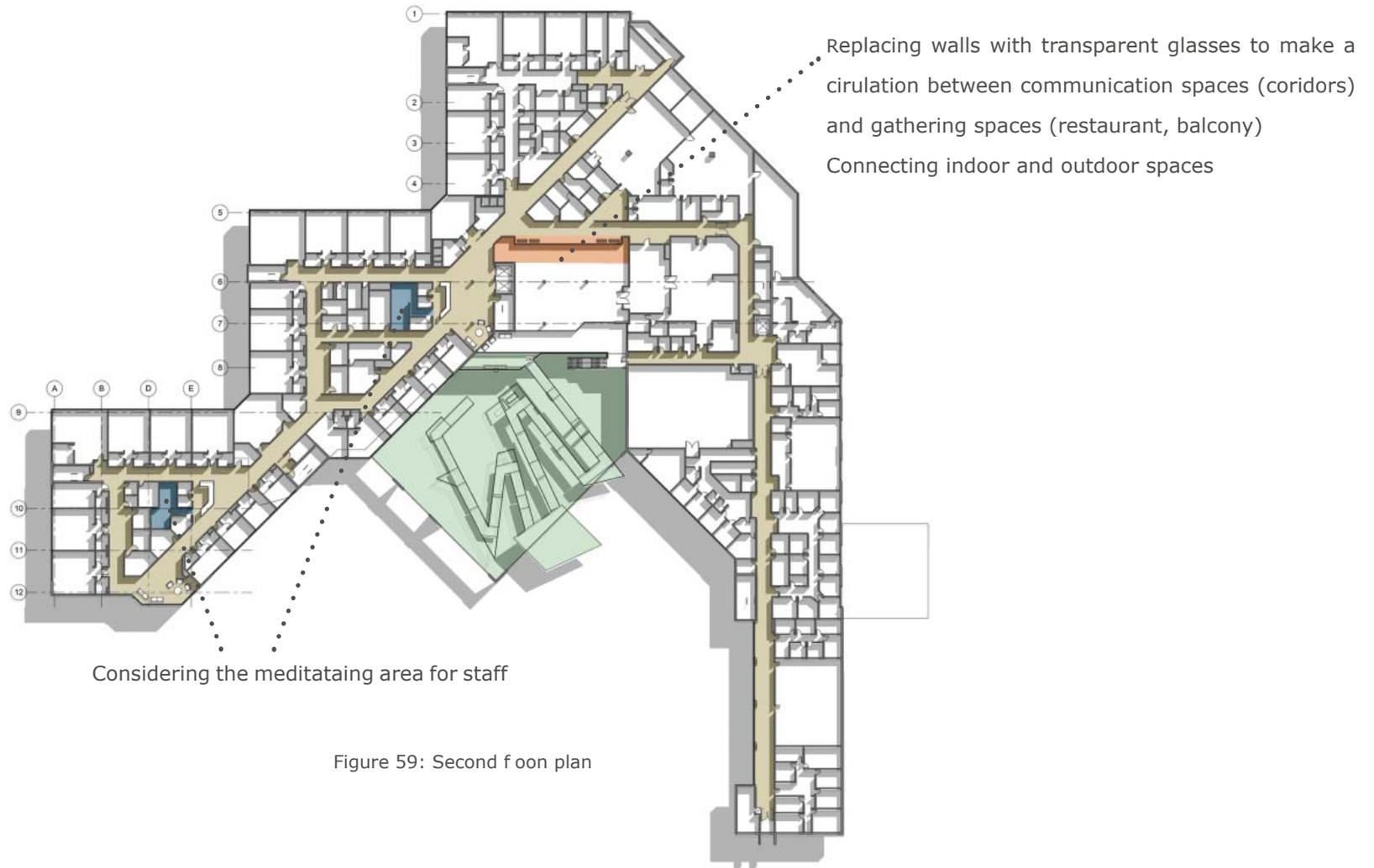
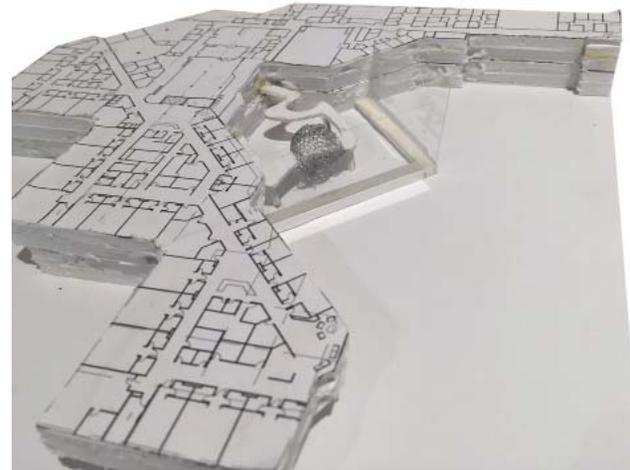
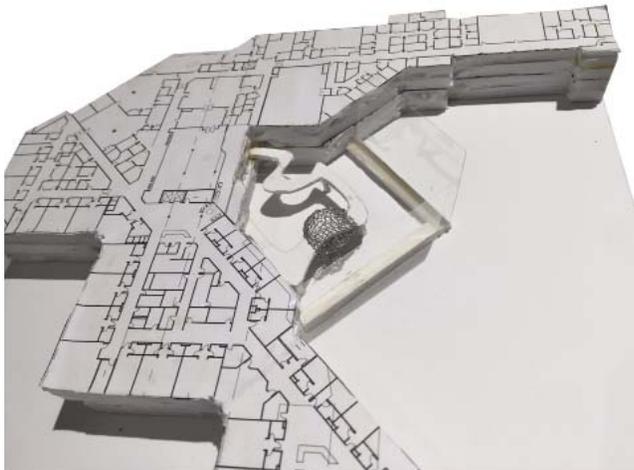
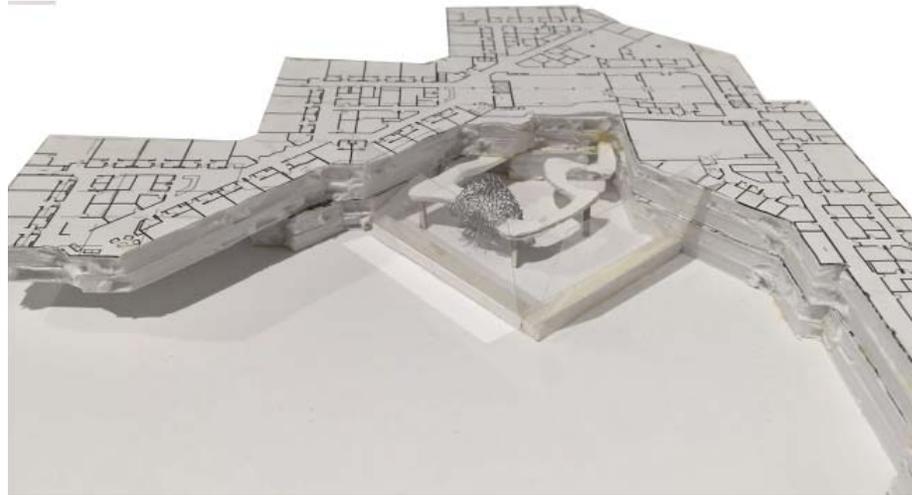


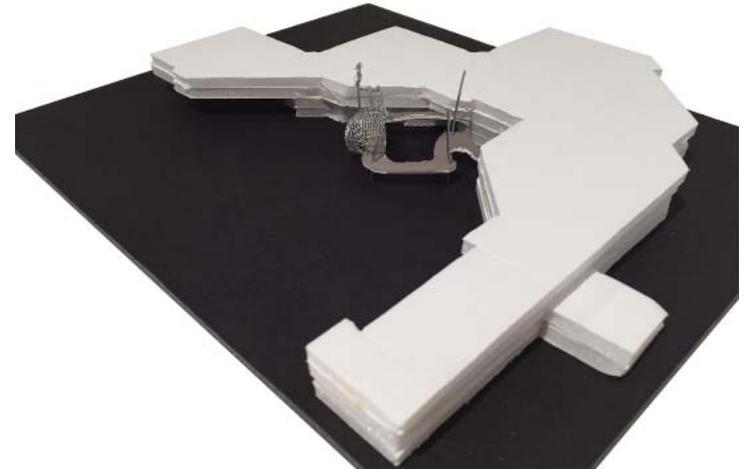
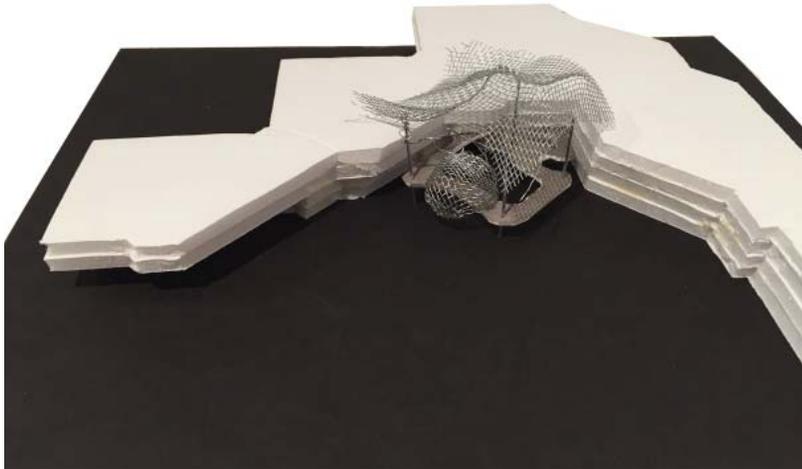
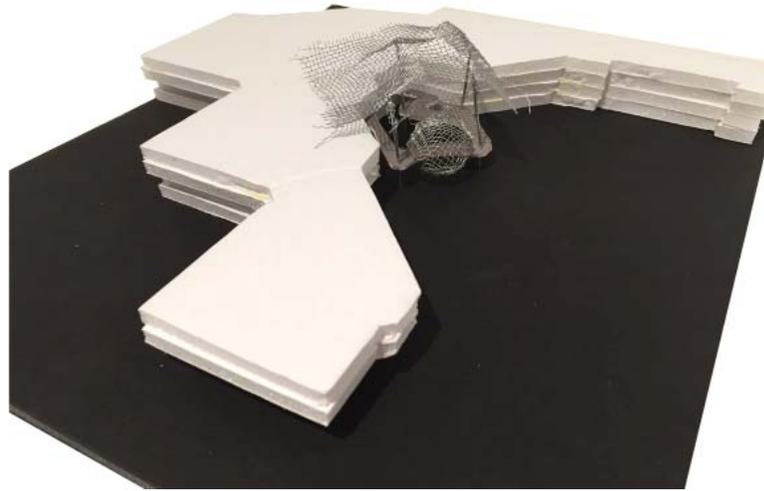
Figure 59: Second floor plan



Figure 60: Central area Section



**Sketchy Physical Model**



**Sketchy Physical Model**