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INSTITUTE OF ENGINEERING
DEPARTMENT OF ARCHITECTURE
PULCHOWK CAMPUS
PULCHOWK, LALITPUR



A REPORT
ON
**VISUAL ARTS CENTER: Inclusive of
Art Therapy**

IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
Bachelor's in Architecture

By
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074/BAE/221

APRIL, 2023

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Subject: Approval for Final Thesis Presentation

Dear Sir/Madam,

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ABSTRACT

Art, in its broadest sense, is a form of communication. It is an expression of one's skills and imagination that provide aesthetic pleasure to the readers, viewers and audience. Art is not just a subject of visual pleasure but is a medium of self-expression, cultural identity, economic contributor and psychological healer that rigidly bind people to the confinement of rational consciousness.

An art center is a functional community facility with the explicit goal of promoting art practice by offering relevant amenities. However, despite the fact that formal art education has existed since 1934 and that government and private art galleries have been established in significant numbers, no institution currently offers a comprehensive community for art.

Despite the creation of numerous institutes for art education and galleries, Nepal is still unaware of the potent effects of art as a form of healing. In addition, Nepal's lack of an architectural identity is one of the obstacles, and the absence of public involvement with art is one of the biggest issues.

The suggested art center will give students, professionals, and the general public a platform to take a hard look at art practices creatively, academically, economically, as well as psychologically. Taking all these issues into consideration and using architecture as my study focus, it will address them. The proposed visual art center will also focus on building interaction between art and public through public art exhibitions.

1. INTRODUCTION

The art has evolved alongside the human race within the cultural practices ever since the beginning which is seen inherent in all of us whether it is through praising of the gods, rites of passage or way of life. From the prehistoric cave paintings to the modern arts, they reflect the same interactions with the human mind by expressing the feelings that are verbally impossible. Rather than the product, it is the creative process that is therapeutic. This fits perfectly since art is an expressive medium and an essential part of psychotherapy has to do with expression. So, art therapy is a form of expressive therapy that uses the creative process of making art to improve a person's physical, mental, and emotional well-being.

1.1. RATIONALE OF THE RESEARCH

Over the history of art centers in Nepal, none of the centers cover enough program to call it a complete art community. Few art centers are dedicated to art education only while few of them are dedicated as a conventional art gallery. These institutions are not adequately furnished with the art demands and are unable to provide proper platform for artists to interact with the public, learners and other professionals. Hence, art centers in Nepal has failed to link the interaction between art and public and are only limited to conventional introvert art galleries.

Proper built environment is one of the major influencing factors for mental productivity which is lacking in the related centers for art. Research suggests that art activities can heal mental health and develop brain capacity. Having a healthy state of mind is very important to enjoy life and cope with problems. It offers a feeling of well-being and inner strength. In today's generation of hectic competitions and busy schedules, there is very less time dedicated to self-time to sort out built up stress. According to a web article published on Art therapy for Alzaimers and dementia, a wealth of research has demonstrated that participation in creative activities promotes health and well-being by stimulating curiosity and self-evaluation by encouraging individuals to express themselves in meaningful ways, and by affirming dignity and self-worth.

Although art therapies are common in worldwide scenario, Nepal has yet not realized the power of art and none of the art institutes or art centers are dedicated for art therapy. One such is CAM Nepal (Children's Art Museum Nepal) which believes in art therapy as a part of their program but is dedicated only for children and specialized programs such as disaster relief or trauma relief art therapies. It only has a single floor in a building at Hattisar for all the functions which lacks architectural environment that would enhance the therapeutic process. Few of the hospitals like Kanti Hospital include art therapies for children but they are in a clinical environment. Also, the centers for art in Nepal lack individuality in design and architectural environment that would enhance the therapeutic process.

So, this research would give a new light to the potential of promoting well-being with the combination of art and architecture. Also, to design a built environment with the knowledge of healing spaces to influence the psychology of a human being. Also, placing it in an art center rather than in a clinical environment would contribute to destigmatize mental health in the society.

1.2. OBJECTIVES OF THE RESEARCH

- To achieve a complete art community through adequate planning of program and requirements.
- To analyze spaces that encourage healing and provide positive architectural distractions for art therapy.
- To understand the spaces suitable for people with special needs, having trauma/anxiety in a combined environment

1.3. SCOPE AND LIMITATIONS

Scope - Although there have been many researches on visual art centers but were limited to either galleries or studios or art therapy in separate setup. So, this research aims to further explore the spatial studies regarding to healing through art and architecture.

Limitation-The research material regarding the architectural approach for designing the combined space for both conventional galleries and art therapy will be difficult to extract. The program and the complete art community with healing environment that have been envisioned is very rare in Nepal and it is difficult to have live case studies.

1.4. PROJECT COMPONENTS

The art center should achieve a complete community of art with expression, education, economic and psychological sectors as a guiding principle.

1.4.1 Expression

- Individual art studios
- Permanent gallery
- Temporary gallery

1.4.2 Educational

- Studios for art classes (painting, sculpture, printmaking, photograph)
- Seminar
- Lecture theater
- Workshops
- Art library

1.4.3 Economical

- Art market
- Art café

1.4.4 Psychological

- Art therapy
- Workshops and art camps

The art center should have three major zoning

- Public space targeted to general public for public art exhibitions, art market, café
- Semipublic space targeted to the artists, art enthusiasts for exhibitions, classes, library, workshops
- Semi Private space targeted to people seeking art therapy.

1.5. TARGET POPULATION

Public zone- General public and students

Semipublic zone- Art enthusiasts, artists and students

Art therapy zone- The targeted population suffering from mental health issues or anyone wanting to take a break from stress

1.6. METHODOLOGY

This research will be oriented to meet the requirements for the completion of Bachelor's Degree in Architecture. Although it is an academic requirement, it will be based on ground reality and will be based on the systematic procedures and methods. For this, data and information from a number of sources were collected, analyzed and the ones suitable were incorporated in design.

The following process shall be adopted:

- **Theoretical Understanding and data collection**
The required information for the project is gathered through the literature review of books, reports, articles, research works, surveys and other related documents regarding the data for the project. In the process of information collection required data are also revealed and analyzed. If needed survey work is also done for data collection.
- **Literature Review**
The part will comprise guidelines to be considered while designing any built forms. Thus, necessary national and international standards related architectural books of standards to be consulted. Further, to understand the different aspects and the value of the project book, articles, project works, documents etc. related to the project is studied carefully. From the study we understand what to know more from the case studies and what is required for the project.
- **Case studies**
The collection of first-hand data is accomplished with studies of various national and international projects. The case studies in the different aspect of the project help to solve the problems in the project. The following probable case studies will be conducted in order to formulate the program and incur necessary facts and figures enough to conceptualize the design

1.6.1 Primary Case studies:

- Nepal Art Council
- Park Gallery
- Siddhartha Art Gallery
- KU School of arts
- House of Palletes
- CAM Nepal

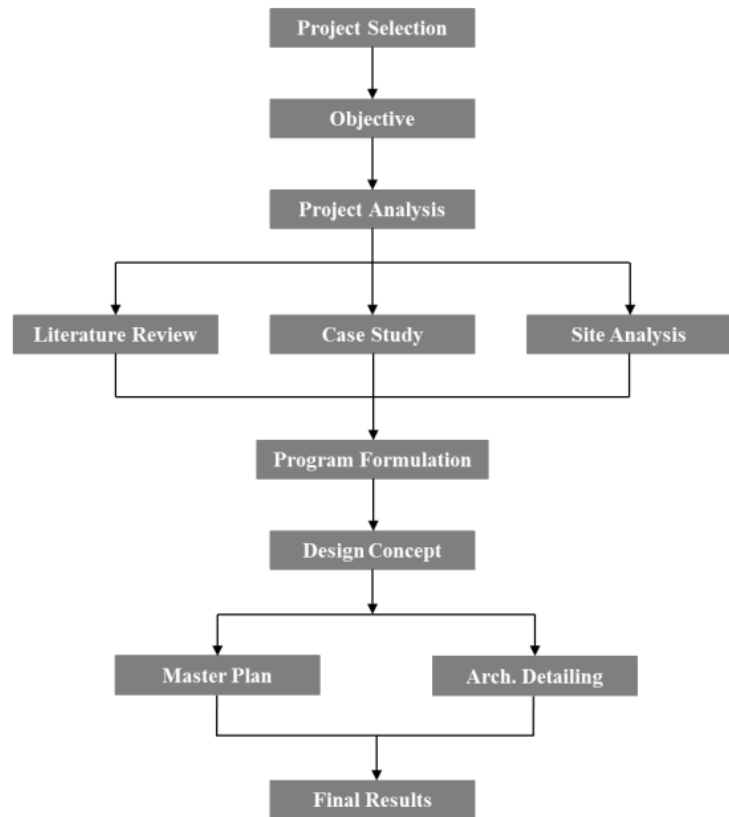
1.6.2 Secondary Case Studies:

- Jamia Art Gallery
- The Little Art Studio
- Pamio Sanitorium
- Psychiatric Center Friedrichshafen

1.6.3. Necessary design drawing

1.6.4. Model of the project

1.6.5. Final report



1.7. SITE SELECTION

Site selection is a crucial project component because it provides insight into the surrounding geological, historical, and infrastructure contexts. The primary need for site selection for the creation of a center for visual art is that the location should process a decent flow of

Public areas and should be easily accessible by vehicle. Another requirement is to be situated adjacent to both medical and artistic institutions, ideally those that deal with psychology. It should be close to a neighborhood or urban area to encourage neighborhood connection and prevent isolation.

2. LITERATURE REVIEW

2.1. INTRODUCTION TO ART

Art is a product of human activity that involves creative or imaginative talent expressive of technical proficiency, beauty, emotional power, or conceptual ideas. This undergoes a process of transmission through the mind, through the emotions and through the ideas into a directed action. Britannica defines art as "the use of skill and imagination in the creation of aesthetic objects, environments or experiences that can be shared with others."

Etymologically 'Art' is originated with the Latin word 'ars' which means, skill or craft. However, there is actually no precise definition of art. It's about sharing the way we experience the World and the communication of intimate concepts that cannot be faithfully portrayed by words alone.

By art, we usually refer to the Visual Arts (including architecture, sculpting, drawing, filmmaking, painting and photography) although there are wide variations such as Literary Arts (including fiction, drama, poetry and prose), Performing Arts (including dance, music and theatre) and culinary Arts (cooking, presenting and serving food).

2.1.1 HOW ART IMPACT COMMUNITY

The need to express a wide range of emotions, including joy, passion, grief, and hope, is undeniably ingrained in all people. Art is the color, the shape, and the tune that translate these emotions into form. It is one of the forms of communication that is able to express the emotions directly to people non-verbally. (Guetzkow, 2002)

Through these artistic manifestations, a soul is transformed from a state of grief and despair to one of hope and bravery. Often, the outcome is a better individual who helps to build a healthier community. In turn, a healthy community contributes to a strong nation—and a strong nation to a better world. Private and Public agencies are seeking innovative ways to employ the arts for improving and strengthening communities. Also, art researchers have made a variety of claims about how the arts influences communities.

Arts-integrated school curricula supposedly improve academic performance and student discipline (Fiske, 1999; Remer, 1990). Participation in the arts improves physical and psychological well-being (Baklien 2000; Ball and Keating 2002; Bygren, Konlaan and Johansson 1996; Turner and Senior 2000)

The following discussion is organized by claims about the impact of the arts. Here three types of claims are focused:

1. Art build social capital and community cohesion
2. Art improves the economy
3. Arts are good for individuals

Table 1 mechanism of Art Impact

	Individual			Community		
	Material/ Health	Cognitive / Psych.	Interperson al	Economic	Cultural	Social
Direct involvement	Builds interpersonal ties Promotes volunteering Increases opportunities for self-expression and enjoyment	Increases self-esteem Improves sense of belonging or attachment to a community Improves human capital: skills and creative abilities	Builds individual social networks Enhances ability to work with others and communicate Ideas	Wages paid to Employees	Increases sense of collective identity and efficacy	Builds social capital by getting people involved, by connecting Organizations to each other.
Audience Participation	Increases opportunities for enjoyment Relieves Stress	Increases cultural capital Enhances visual-spatial reasoning (Mozart effect) Improves school Performance	Increases tolerance of others	People spend money on attending the arts and on local businesses.	Builds community identity	People come together who might not otherwise come into contact with each other

Presence of Artists and Arts Organization &	Increases individual Opportunity and propensity to be involved in the arts			Fosters a “creative milieu” that spurs economic growth in creative industries.	Improves community image and status	Promotes neighborhood cultural diversity Reduces neighborhood crime and delinquency
---	--	--	--	--	-------------------------------------	--

Source: <https://www.issuelab.org/resources/9753/9753.pdf>

The columns above represent types of impact and are divided into individual and community levels. The three types of individual impacts are material (mainly health), cognitive/psychological and interpersonal (Guetzkow, 2002). Types of community-level effects are economic, cultural and social.

2.1.2. VISUAL ARTS

It includes mediums such as drawing, painting, sculpture, architecture, photography, film, and printmaking. Many of these pieces of art are created to stimulate us through a visual experience and often provoke a feeling of some sort.

2.1.3. PUBLIC ART

It is the practice of involving artists in the conception, development and transformation of a public space. It includes a wide range of art forms including mosaics, painting, sculpture, lighting, landscape designs, textiles, glasswork, video installation, ceramics, poetry and performance art. Placed in public sites, this art is there for everyone, a form of collective community expression. Public art is a reflection of how we see the world—the artist’s response to our time and place combined with our own sense of who we are. Public art is a part of our public history, part of our evolving culture and our collective memory.

2.1.4. COMMUNITY ART

It has a concept where the local communities come together to express concerns and issues through an artistic process. The term ‘Community Art’ was defined in the late 1960s, which became popular in USA, Canada, Netherlands, UK and Australia. Its main objective includes, to develop the practice of art for social change and empowerment of community members who come together to create artwork/s with artists. It includes cultural festivals/events to address social concerns.

2.2. PUBLIC ART EXHIBITIONS

Public art exhibitions are artistic activities that take place outside of regular exhibition venues. The spectator is now an integral part of the entire visual experience rather than being only passive and distant. These interventions produced experiences rather than tangible products, blurring the line between art and everyday life.



Figure 2-1 public exhibition in Brooklyn Bridge Park, NY

(Source: brooklynbridgepark.org)

2.2.1. ADVANTAGES OF PUBLIC ART EXHIBITION

- Despite the huge numbers who visit galleries and museums, most people do not go. Galleries and museums are anti-social spaces and filters its audience.
- The purpose of art i.e. to express and communicate loses most of its audience when the message only reaches a certain class of people.
- We sense many things vicariously, without direct experience.
- The art, which has more of an experimental value than commercial value, has more benefit in exhibiting it in public spaces. For eg: social art, students work
- People attract people
- In today's context, media and social network proves to be a powerful network. Exhibition in public can attract for media and social advertisements through public.
- More interactive with public

There are certain things you want to show to the public and certain things that you do not. Public art exhibition is a plus point when it comes to reaching a better mass. You need to categorize the works for the suitability of public exhibit.

– Kapil Mani Dixit, Figurative artist

2.3. THERAPY

Psychotherapy or simply “therapy” is a form of treatment intended to heal people with mental health problems through various holistic approach. It is a collaborative treatment based on the relationship between the therapist and the clients.

2.4. HOW ART RELATES TO THERAPY?

The art has existed and evolved as part of humanity since the beginning through the cultural practices which is seen inherent in all of us. From prehistoric cave paintings to contemporary arts, it been a vital part of the human experience and symbolizes both personal and cultural progression. Art simultaneously reflects and predicts trends within society, and has traditionally been a forum for personal expression and creative ideas that are verbally impossible. The validity of this has long been recognized and, indeed, encouraged. (Dalley, 1984)

The visual arts in particular – be it drawing, painting, sculpture, dance, music – have been seen through a poetic lens as a creative rite. Yet there is more to art than this—the neglected aspect of its healing properties and qualities. However, an essential difference can be seen in ‘art’ used in traditional sense and ‘art’ used for therapeutic purposes. When an individual indulges in the process of creating art, one can feel relaxing, satisfying, frustrating and even therapeutic at some level but the sole purpose is to produce a ‘good painting’ which is aesthetic.

In contrast, art activity undertaken in a therapy setting, with clear corrective or treatment aims, in the presence of a therapist, has a different purpose and objective. The technique came from the belief that creative and artistic expressions can enhance healing and overall wellbeing. Rather than the product, it is the creative process that is therapeutic which suggests aesthetic considerations are secondary. The process, which can be achieved by either creating art or viewing it, helps people release and develop self-awareness, explore emotions, manage stress, and better express themselves. This fits perfectly since art is an expressive medium and an essential part of psychotherapy has to do with expression. It works quite well for psychotherapy.

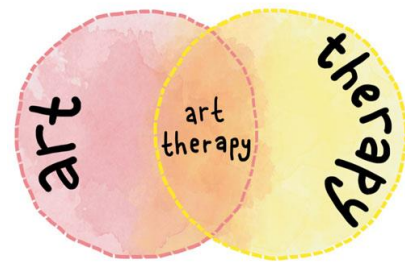


Figure 2-2 art therapy illustration

Source: <https://www.davisart.com/blogs/davis-desk/therapeutic-approaches-to-art-education/>

ART + THERAPY = ART THERAPY

2.5. ART THERAPY

Art therapy involves the introduction of artistic practices to boost mental health and treat psychological disorders. Art therapy can achieve different things for different people as it encourages this pictorial of the self and the art produced is seen as a spontaneous process released from the unconscious through introspection. Therefore, making the art produces a projection of what is felt, experienced or of the self.

The profession of art therapy is defined based on the American Art Therapy Association (AATA) guidelines as follows:

“A mental health profession in which art media, the creative process, and the resulting artwork are utilized to explore feelings, reconcile emotional conflicts, foster self-awareness, manage behavior and addictions, develop social skills, improve reality orientation, reduce anxiety, and increase self-esteem.” (AATA, 2013)

In simple terms, art therapy is the creative use of art and other visual media in a therapeutic or treatment setting. But as this activity ranges from the child scribbling to express him- or herself, to the mentally handicapped man working with clay to the graphic painting by a woman, deeply depressed, it is clearly very complex. Carl Gustav Jung, as pioneer of analytical psychology, believes that the function of creativity is to restore psychological balance through symbolic meaning. He defined the creative process as that through which an idea or conceptual thought is born and eventually the art is manifested in the creative process of making.

In therapy, the person and process become most important, as art is used as a means of non-verbal communication which provides a concrete expression that can be used as a valuable agent for therapeutic change. Rather than the artistic product, it is the creative process that is therapeutic which suggests aesthetic considerations are secondary. So, Art therapy is recognized as independent studies and profession, separate from therapy that clinical social workers are trained and licensed to provide (Boyd Webb, 2003). Much of the early influences of art therapy are from Margaret Naumberg (Huntington-Kaye & Peterson, 2007), who believed that art represents an expression of unconscious processes and that by converting these inner processes of painful experiences into art, healing takes place.



Figure 2-3. Art Therapy program in George Washington University

(Source: arttherapy.columbian.gwu.edu)

2.5.1. HISTORY OF ART THERAPY

The use of the creative arts in the fields of social work and psychotherapy has been developed and influenced by such a variety of sources that a complete history is beyond the scope of this thesis research. While people have been using the arts as a way to express, communicate, and heal for thousands of years, art therapy only began to formalize during the middle of the 20th century. Doctors noted that individuals suffering from mental illness often expressed themselves in drawings and other artworks, which led many to explore the use of art as a healing strategy. Since then, art has become an important part of the therapeutic field and is used in some assessment and treatment techniques.

The initiation of the use of art therapies in the treatment of diseases dates back to the time of ibn Sina, who lived in the 1000s, pioneered the development of medicine, believed in (and used) the therapeutical power of music. However, in 1942, Adrian Hill (1895-1977) coined the term ‘art therapy’ to label the practice of using art as a therapeutic tool while he himself was recovering from tuberculosis at the King Edward VII Sanatorium in Midhurst, England. He defined art as “the enemy of diseases”. Once Hill began to carry out studies on the therapeutic aspects of art, he observed that the artistic practices improved the psychological states of patients and reduced their stress. He administered art therapy to tuberculosis patients for the first time in 1945. With that study, the building stone of art therapy was introduced (Ezgi Bilgin, 2017). During this period and the following 20 years, researchers primarily investigated the new concept and theory of art therapy, although there were few applications until 1969, when the AATA was established and the role of art therapy became widely recognized (Qiu-Yue Wang, 2016).

In 1980-1990, art therapy was applied to the care of dementia patients, mainly by observing the patients' paintings. Wald et al found that artwork by dementia patients featured repetitious, broken, split and twisted patterns and confused perspective angles, short and broken lines and missing details in the appearance of objects, etc. The Formal Elements Art Therapy Scale (FEATS), which was developed at that time, was used to assess the progression and outcome of the disease based on different pattern characteristics created by dementia patients during different stages of the disease. Since then, art therapy has been gradually developed in the field of dementia research (Qiu-Yue Wang, 2016). In the late 1990s, the effectiveness of art therapy intervention was eventually confirmed; Kahn-Denis et al enhanced patients' memories of past events, improved patients' mood, decreased their behavioral and psychological symptoms and improved their verbal skills through pencil drawing, making collages, cutting shapes, etc. Although these studies were not rigorously designed, they promoted the application of art therapy in dementia research. In the 21st century, applications of art therapy in the assessment and intervention of dementia gradually increased (Qiu-Yue Wang, 2016).

2.5.2. THERAPEUTIC ART

Therapeutic art making is not a new concept. It has been in existence since forever. To the outsider, an art activity done by an art teacher, volunteer or aide can look the same as an art activity done by an art therapist. Since the engagement in art making can help one realize various emotions such as relaxation, pleasure and frustration, art making is therefore popularly known as a ‘therapeutic’ activity applicable for all categories of people. The difference

between art as therapy and art psychotherapy (or art therapy) is subtle and happens firstly in the mind of the facilitator.

- **Distinction from art therapy:**
 - Both therapeutic art-making and art therapy involves the general relationship between the artist and the professional involved.
 - Therapeutic Art is what we call a fun distraction and can be done by everyone, and does not require any specialized training of artistry whereas art therapy needs proper guidance of a licensed Art Therapist.
 - Therapeutic Art leads to learning artistic techniques whereas Art Therapy is more into learning coping skills and

2.5.3. WHAT ART THERAPY IS NOT

Generally, there has been some common misconceptions held about art therapy.

First. Art therapy is not only for potential artists or those who show an interest or natural talent in the subject. The majority of patients treated successfully in art therapy have neither drawn nor painted before. Those inexperienced in creative expression must be helped to gain confidence in their capacity to express thoughts and feelings through images. The approach for somebody already skilled in art is quite different, as there is a tendency for the ‘artist’ to use these specialized skills to distort or repress unconscious material when attempts are made to work with inner conflicts in therapy. As Naumburg explains:

“It is especially difficult to free an artist from the tyranny of his technical knowledge. When archaic forms begin to break through from his unconscious, during treatment, the artist becomes eager to capitalize, immediately, on this new content for his professional work. He must then be persuaded to postpone the application of such unconscious imagery to conscious work until therapy is completed.” (Naumburg 1958:514)

Second. Art therapists are not art teachers. They may be artists but they must also be trained in the awareness of their actions within the therapeutic process. Ideally, they should have some experience of personal therapy to increase insight and self-knowledge. Art is too ‘powerful’ to play with in that it is not a trivial or menial activity. Its potential effect in therapy necessitates rigorous training and professional standards from which art therapists work in practice.

Third. Art therapy is not just a form of occupational therapy. Traditionally, occupational therapy is concerned with working on a conscious level, with the aim of developing technique in making products, using methods which are really more compatible with those of teaching. Certainly, the activity of art has some occupational aspects which are therapeutic, but other qualities, peculiar to art, particularly in relation to working with the unconscious, have contributed to its development as a separate specialism. However, both art therapists and occupational therapists can offer their own expertise in working together within a treatment programme, particularly as the more progressive ways of working in occupational therapy now concentrate more fully on creativity.

Finally. Art therapy is not diagnosis through art. There is a popular conception that a disturbed, fragmented type of painting is connected with a disturbed personality: Van Gogh and Edward Munch are prime examples. While this is a very interesting idea, at the present time we believe it is a matter only for speculation, as there is no way of testing its validity. Whereas it is easy to make the connection between a disturbed mental state and ‘disturbance’ in art forms, it is not so easy to determine whether we are seeing a valid connection or, forearmed with knowledge of the disturbance, we look for indicators of this in the artist’s work.

2.5.4. USE OF ART THERAPY

Art therapy can be used to treat a wide range of mental disorders and psychological distress. In many cases, it might be used in conjunction with other psychotherapy techniques such as group therapy or cognitive-behavioral therapy.

Some situations in which art therapy might be utilized include:

- Children with learning disabilities
- Adults experiencing severe stress
- Children suffering from behavioral or social problems at school or at home
- People experiencing mental health problems
- Individuals suffering from a brain injury
- Children or adults who have experienced a traumatic event
- People lacking self-expression, self-esteem
- Anyone dealing with stress

With the guidance of a credentialed art therapist, clients can "decode" the nonverbal messages, symbols, and metaphors often found in these art forms, which should lead to a better understanding of their feelings and behavior so they can move on to resolve deeper issues.

2.5.5. WORKING MECHANISMS

The area of the brain responsible for processing emotions, the amygdala, is also the area that processes imagery as well as sensory input. Human emotions can be complicated and becoming overwhelmed by them can impact sleep, appetite, learning, motivation, productivity, nervous system response, and can even cause physical/mental illness. (“Art Therapy In Los Angeles”)An art therapist uses art materials and directives to activate sensory responses and generate imagery that is directly connected to emotions. This process helps one to re-experience emotions in a way that allows them to organize their feelings and form a narrative around an overwhelming experience. As Naumberg (1958: 511) explains: “The process of art therapy is based on the recognition that man’s most fundamental thoughts and feelings derive from the unconscious, reach expression in images rather than words.” Through the process of creativity, a person is both physically and emotionally engaged. By this definition it is thus the fusion between art and therapy that informs healing or adheres to a therapeutic state since both are a natural consequence of each other. Even though art, in its own right, is therapeutic, patients cannot necessarily paint their way back to health. It is only with the help of a therapist that emotions and conflicts surface to help the patient. The art that is created is done with the

full understanding of its creator that it may be psychologically analyzed to its fullest capacity. The art is not necessarily beautiful or obvious in its meaning and content. It is up to the therapist to pick up on the significance. Communication, though not verbal, in art therapy is very important. As language is often a barrier, the medium through which therapist and patient may communicate is best done through art. Mental illness, trauma or anxiety may be the source of the language barrier and art therapy then allows the patient to express him/herself outside the boundaries of language. Through this process of expressing innermost feelings the patients can liberate themselves and begin the process of healing. The emotions and thoughts communicated in the art work may be discussed after the session with a therapist. Through retrospection and reflection of innermost feelings the patient can begin to make an effective and permanent change in his/her life. It is only from this change and acknowledgement of the self that one can change and grow.



Figure 2-4 Figure 7 3 Illustration of art therapy

(Source: projectlyme.org)

“Action” therapies add even greater value to art therapy. Known as catharsis, these therapies become a powerful release of emotions and enable the subject to connect with the suppressed emotion and vent it out. This is done by attaching a string of emotions to an object or character represented in a picture and through artistic expression exerting the emotion. This represents a safe, half-way stage as with physical gestures or words the subject can confront conflict without it being physically displayed in the same space. Art therapists are master-level clinicians who work with people of all ages across a broad spectrum of practice. Guided by ethical standards and scope of practice, their education and supervised training prepares them for culturally proficient work with diverse populations in a variety of settings. Honoring individuals’ values and beliefs, art therapists work with people who are challenged with medical and mental health problems, as well as individuals seeking emotional, creative, and spiritual growth.(Dalley)

An art therapist may use a variety of art methods including drawing, painting, sculpture, and collage with clients ranging from young children to the elderly. Clients who have experienced emotional trauma, physical violence, domestic abuse, anxiety, depression, and other psychological issues can benefit from expressing themselves creatively. They provide services, individually and as part of clinical teams, in settings that include mental health, rehabilitation, medical and forensic institutions; community outreach programs; wellness centers; schools; nursing homes; corporate structures; open studios and independent practices. Art therapists are trained to pick up on nonverbal symbols and metaphors that are often expressed through art

and the creative process, concepts that are usually difficult to express with words. It is through this process that the individual really begins to see the effects of art therapy and the discoveries that can be made.

As with any form of therapy, the first session will consist of talking to the therapist about why you want to find help and learning what the therapist has to offer. Together, you will come up with a treatment plan that involves creating some form of artwork. Once you begin creating, the therapist may, at times, simply observe your process as you work, without interference or judgment. When you have finished a piece of artwork—and sometimes while you are still working on it—the therapist will ask you questions along the lines of how you feel about the artistic process, what was easy or difficult about creating your artwork, and what thoughts or memories you may have had while you were working. Generally, the therapist will ask about your experience and feelings before providing any observations.

2.5.6. METHODS USED IN ART THERAPY

Each of those artistic methods can be used in therapy in three ways: receptive, expressive, or symbolic (also called ceremonial) (Mazzo 2009). Each of these practices can be prescribed by the therapist, or initiated by the client (Mazzo 2009).

a. Receptive.

The receptive art process used in a therapeutic capacity involves using already created art to further therapy (Mazzo 2009). This method may be used for further various therapeutic objectives, for example to validate feelings or encourage group cohesiveness. This form of art therapy is often used with children, and particularly when coping with trauma or loss, but can be adapted by therapists for use with adults and around any variety of life experiences. Receptive art therapy can also use visual art creations, such as paintings, or movies that are representative of the client's experience (Henderson, 2009) (Sanders, 2013).

b. Expressive.

Visual arts are commonly used as an expressive tool, and include a variety of art forms: drawing, painting, clay, sculpture, photography, collage, or visual journals (Henderson, 2009). For example, a therapist may suggest a client, or a group of clients, make “soothing books” with images of things, places, and people that help calm them (Henderson, 2009). Susan Boyd Webb (2003) gives examples of expressive visual arts in a bereaved children's group which includes the following:

- Drawing with distinctive colors the location of different feelings associated with grief on a body profile;
- Writing or drawing a picture of the funeral or other experience connected with the death;
- Making paper plate masks with one side showing the feelings shown to the outer world, and on the other, one's inner, private feelings;
- Creating a memory book or box containing memories or reminders specifically related to the person that died. (Boyd Webb, 2003, p. 67).

c. Symbolic.

Rituals and symbols are important to people, especially in times of transition or loss (Mazza, 2009). Therapists can utilize the healing power of rituals and symbols as a way to assist their clients in coping with these life changes, and the strong emotional reactions that accompany them. An example of using symbolic art in therapy might be through the suggested creation of a personal altar after the loss of a loved one, or a group storytelling or dramatic performance following a community crisis or natural disaster. The use of metaphors may also be used in therapy as a creative, symbolic means to heal (Mazza, 2009).

2.5.7. THE STRENGTHS OF ART THERAPY

The therapeutic healing through art can trigger mental and emotional stabilities. Some of the strengths of Art in Therapy can be explained as,

- **Coping skills and self-regulation.**

Making and responding to the creative arts is a way to cope with life's stressors, pains, and limitations. In a program for clients who are in inpatient treatment for substance abuse, patients are asked to paint a picture of a safe and calming place that they can either go to physically or imagine in order to give them a way to cope with the challenges of recovery (Matto, 2001). The artwork and the art-making process offered an experiential space in which patients could experiment, act out, experience and portray.

- **Insight.**

Insight and comprehension are defined as the ability to understand oneself and others, which underlies overt behavior by perceiving and interpreting behavior (Haeyen, 2015). Self-exploration is often an important part of the therapy process, and one that can be easily adapted to involve an art process. Being able to express their internal world in a creative and perhaps nonverbal way provides clients the opportunity to explore their sense of self and increase self-awareness (Smith, 2011; Matto 2010; Coholic, et al., 2009).

Communicating internal states.

Communication of emotions is important to the therapeutic process and yet can be difficult to achieve with certain populations, like children, men in prison, and people who may be overwhelmed by emotions if they verbalize them (Mazzo 2003; Finn 2010; Gussak, 2007; Kim, 2010). Art can provide a safe medium to both verbalize feelings and to contain them. Art experiences can also assist in forming alliances with therapists, and increasing engagement in the process with reluctant clients (Smith, 2010; Matto, 2003).

- **Group cohesion.**

Similar to arts' conduciveness to forming an alliance with the therapist, art techniques can be used to bring cohesion to group work (Finn 2010; Matto; 2002). This may occur for many reasons, but one often cited is that art or music help create a comfortable environment, and staying on task can be easier to achieve with creative, active approaches (Register & Hilliard, 2008). The use of art in groups is less threatening and therefore allows

for more self-expression and group cohesion in populations such as those in residential care, foster care, or prison.

- **Personal integration**

‘Personal integration’ is defined as the ongoing self-definition in which the integration of contradictive polarities in oneself leads to more self-coherence and self-acceptance. The patients mentioned that they could express and portray their personal issues, emotional experiences and identity or self-image in AT. They felt that their identities became visible, which led to an ongoing self-definition in which identity and self-image could be strengthened and become more positive. By expressing emotions through their artwork, they could further investigate and unravel their thoughts, patterns and inner conflicts (Haeyen, 2015).

- **Behaviour change**

Behaviour changes consist of two aspects: the behaviour of the patients towards themselves and their behaviour towards or in cooperation with others. A number of patients stated that they learned to change their behaviour patterns. Patients mentioned that creating requires the ability to be self-directed, because they have to make a number of choices about what to do and how to do it. The product and process trigger different emotional states and reactions. Therefore, experiments in AT can help patients practice alternative behaviour (Haeyen, 2015).

2.6. SUITABILITY OF ART THERAPY IN ART CENTER

De-institutionalizing the institution

Are hospitals for the mentally ill achieving the goal of rehabilitating people? We are today experiencing a crisis with a shortage of beds and space in psychiatric hospitals, but the solution would not be to build bigger psychiatric hospitals and acquire more beds. Moreover, the current state of “institutional “care is determined by the existing hospital design which limits the mental wellness and recovery of patients in these types of institutions. The mentally ill could be in a space where he could have grown into the unique soul he was meant to be in this world and in a place connected to life and secure enough to attend to his needs rather than the prison like institutional hospitals. The effects of being institutionalized often make it difficult to readjust to the “outside world”. Thus, with the engagement of public interaction and a comfortable living environment both the recovery and rehabilitation into society can be established when people leave psychiatric treatment facilities - thus achieving the goal of the treatment programme and therapy.

The environment that one is put into during a rehabilitative programme is very important as it affects the rate of the recovery process and a patient’s susceptibility to the treatment and therapy and inevitably the response to healing. Mental health facilities have, in the past, been reminiscent of prisons as the logic of detaining or “institutionalizing” a person outside general society rested on the hope that they might recover and come out rehabilitated. The irony is that

the opposite effect is achieved as an “institutional atmosphere” hinders the rehabilitation process and instead results in patients becoming a reflection of their surroundings. A building designed for people with mental illness and intellectual disabilities should be built with diversity of spaces that can accommodate advanced treatment programmes, facilitate community interaction, establish patient privacy and instill skills development and training in order for its occupants to socially adjust in society.

In order to break the bounds of the traditional institution we need to change the “institutionalized atmosphere” from lessons learnt. These are:

- Psychiatric treatment facilities should not be isolated entities on the edge of cities and towns. Patients should, while still in recovery, be a part of society and not ostracized to detached institutions.
- The architecture of mental wellness treatment facilities should abandon prison-like architecture of high walls, multi-storey brick and concrete and screened barred windows. This type of architecture only fuels the assumed notions of society about the mystery and danger related to patients with mental illness and intellectual disabilities.
- Moreover, it would also help if maximum security units of the “criminally insane” were not in the same facility as that of people with treatable types of mental illness. This also would help reduce public concerns and fears about mental health facilities.
- Materiality is another concern. The use of building materials should be variable and not distinctively chosen because it is readily available and easy to maintain. The conventional materiality of psychiatric hospitals is usually stigmatized by the general public. Thus, different material options should be observed so that the architecture is not distinctly identifiable as “mental health architecture” thus branding and stigmatizing the architecture.
- The facility should be situated to allow for community interaction. The treatment programme should enable the ordinary activities to be scheduled as part of the treatment programme such as shopping, personal grooming, etc.
- Ideas of “secure” nursing stations, sleeping quarters, etc, should be abandoned because it prohibits or limits personal contact with patients.
- The internal environment should look inviting with the use of art work and lots of light to soften the space.
- Outdoor interaction should be encouraged and a visual connection of outdoor spaces and environment should be experienced from the inside of the architecture.

Winston Churchill (1959: 21) succinctly expressed the effect of architecture and our surroundings with the comment that: “We shape our buildings and later they shape us.”. He appreciated that architecture has the ability to change social perceptions and how we feel in our physical environment.



Figure 2-5 Healing with art at Coral Springs Museum of Art (Source: wlrn.org)

2.7. ARCHITECTURE AS HEALING SPACE

Can a space make you sick or heal you? How then, does architectural space appropriate this idea of healing? Healing involves a process where the recipient receives a physically external antidote in order to help them heal. It is then up to the patient to take the inward step of acceptance and retrospection in order to progress the healing. However, if we ignore the qualities of physical context, it could involuntarily slow the healing process. Easter Sternberg (2010), divulges that a study published in science magazine in 1984 showed that when hospital wards looked out onto nature the patients healed faster. It was modernist architect, Roger Ulrich who performed the experiments that proved that window views could affect healing.

Ulrich chose 46 patients, 23 of which had beds near windows that overlooked a landscape of trees and the other 23 looked onto a brick wall. After studying their vital signs and their pain medication doses it showed that the patients that were positioned by the window needed fewer doses of pain medication and were healing at a rapid rate than the others. These new discoveries, at the time, influenced new hospital design with bigger windows and skylights to allow more natural light into the wards to help patients heal. Hospitals also had solariums at the end of every ward so that patients could sit and absorb the healthy rays of the sun. In addition, natural sunlight and air were the most effective ways of purifying the air and killing bacteria. The idea of the window was not only an apparatus to bring light into a building; it had become a “portal” that transcended patients from the painful reality of illness to a space of meditation that led to relief. It was a way of accessing memories of better times and places that progressed patients to better health.

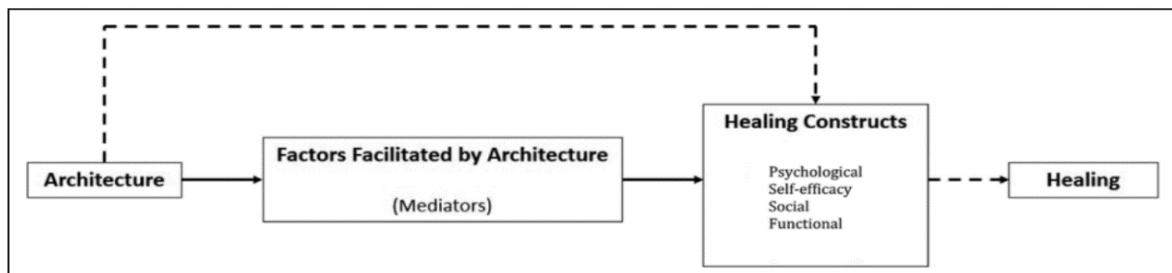


Figure 2-6 Causal model for architectural impact on healing

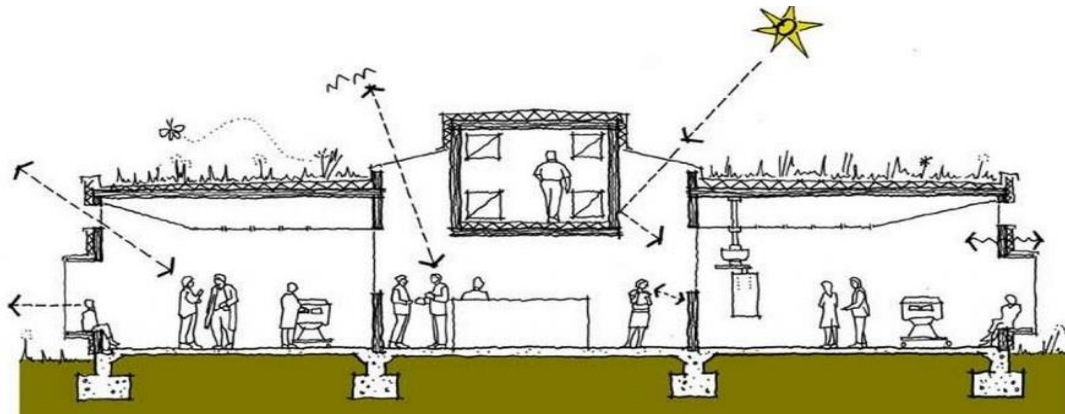


Figure 2-7 therapeutic architecture

(source: Pinterest)

2.8. ARCHITECTURE AND PSYCHOLOGY

Human psychology is directly related to architecture. Appropriate use of various architecture components has the capacity of enlightening the atmosphere, whereas the inappropriate use does the opposite. Some of the components of architecture which affects the human psychology are:

2.8.1 USE OF NATURE

Nature is an important asset to the built environment. It introduces the Self to a space of calmness and serenity. It provides a space for meditation and reflection that allows one to connect with the Self. The use of natural elements such as greenery and water appeal to all the senses which help in the healing process. The process of healing and recovery is brought about by how we feel in a space. This is enabled by the fact that the cells and molecules in our brains produce a blend of signals called Intola perception. They help in enabling us to sense and negotiate the space around us. We can determine how the nerve chemicals in our brains affect us according to the way we react to our environment which inadvertently influences our immune systems to help us heal. This brain function reinforces the argument that our environments can make us sick as much as they can be a powerful variable in healing us. Nerve chemicals create the mood balances involved in creating our perception of the world around us. As human beings, we create an image of place based on the information we receive through our senses, which in turn creates a sense of place. As our perception of place changes, so does our mood and our health.

2.8.2 USE OF LIGHTING

Zumthor establishes the connection between light and the quality of life as he says that the presence of light in architecture indicates the presence of life, which reveals the quality of life (2006:61). Light in architecture is very important as it captures the essence of a space which gives it character. This light quality has the ability to transcend its user to therapeutic state of mind that is recalled far beyond its lived experience. Well controlled lighting can enhance the feeling one gets when one walks into a space which can inculcate feelings of well-being and comfort or opposes fear and discomfort. Colour and light can be used to stimulate the senses and evoke emotion. In architecture, colour and light provide significant meaning.

Natural/Sunlight-The appropriate strategy is to provide access to not only sunlight, but also adjustable shading to control overheating and glare. Sunlight in outdoor spaces is also valued, both for sitting out and to give pleasant views from inside. Courtyards, particularly deep ones, are generally poorly sun-lit unless they are opened out to the south. Patients like sunlight because it gives light and warmth, and is seen as having a therapeutic effect. Outdoor spaces and large windows can give maximum sunlight to indoor. Also, the windows with high height gives more view to the sky.

- Natural Lighting can be provided by means of side lighting or by provision of skylights. Both the side lighting as well as sky lighting has advantages as well as disadvantages.
- Sky Lighting
- Ribbon windows and external Sun breakers are also preferable for natural lighting

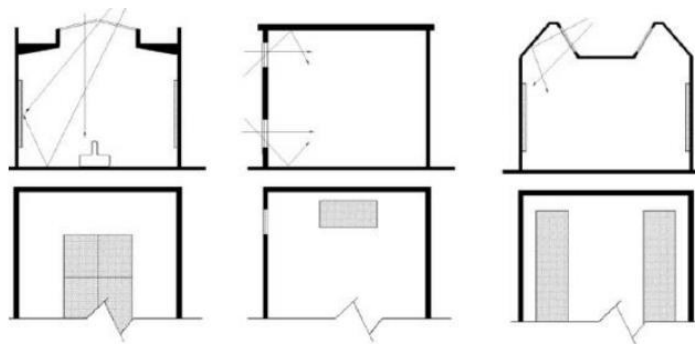


Figure 7: Skylighting techniques

Artificial light:

Ambient and indirect light is preferred as direct glare can cause frustrations in patients. Consistent light level and minimum variation in indoor and outdoor lighting is preferred so that patients do not suffer from direct glare.

Room Lighting:

- It is provided by 'Diffuse Lighting' technique.
- It is used for illuminating room zones and objects from a surface that radiates light in all directions.
-

Exhibit Lighting:

- It is provided by 'Directional Lighting' technique.
- The light beam falls directly onto the objects to be illuminated by striking light at an angle defined by the geometry of lighting arrangement.
- They need to be supplemented by softer room lighting luminaries.
- They can be combined for a stimulating spatial experience in gallery spaces.
- In directional lighting, shadows are created when they strike on an art piece having irregular surfaces. This helps to enhance the visual impact of a three-dimensional surface. The artificial lighting solutions used in a gallery space as are as follows: 1. Luminous Ceilings
- Tubular fluorescent lamps are used to imitate natural day lighting.
- They are suitable for 6m high ceilings.
- They are not suitable for lower ceilings because they can occupy large field of vision.

Cove Lighting

- They provide additional brightness in diffused form.
- Indirect source of light in coves.

Wall washers

- They can be directional or diffuse type.
- They are flushed with ceilings and reflectors.

Indirect luminaries

- They are suspended luminaries radiating light in upward direction.
- They are suitable for spaces where no daylight occurs.

Spotlight

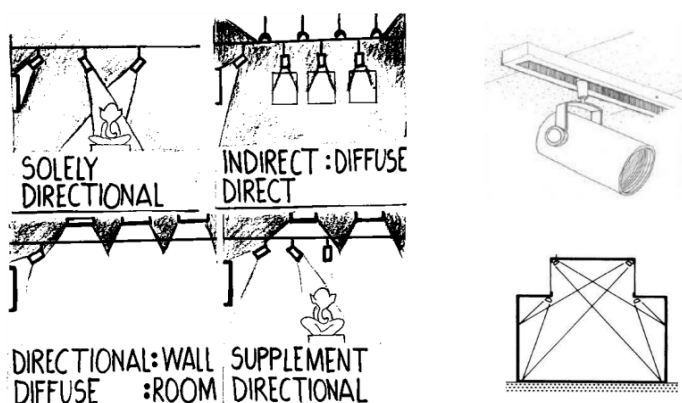


Figure 2-8 Artificial lighting-diffused and spot lighting

2.8.3. USE OF COLORS

- **Red** evokes strong emotions. It is intense color that creates the feeling of excitement, danger, energy, power and love.
- **Blue** calls to mind feelings of calmness/ serenity. This color has soothing quality, people feel relaxed and comfortable.
- **Green** symbolizes the nature and natural world. It represents the tranquility, luck, health and jealousy. It relieves stress and helps heal. Neutral shades of green such as olive/ sage are more accepted in room colors than aqua/ yellow green.
- **Yellow** is the most fatiguing to the eye due to the high amount of light that is reflected on and by it. It is attention getting, increases the metabolism and energy. The pale shades of yellow are the best for warmth.
- **White** color represents purity and innocence. It is bright and can create sense of space/ add highlights. It is cold, bland and sterile. The white interiors give a feeling of cleanliness and space.
- **Purple** is symbol of royalty and wealth. It also represents the wisdom and spirituality, and used to give exotic feeling, especially the shades of violet will make the statement.
- **Brown** is natural color that gives sense of strength and reliability. It gives a feeling of warmth, comfort and belongingness.
- **Orange** is a very exciting color and calls to mind feeling of excitement, enthusiasm, bravery, sociability and warmth. It is inviting and warm, easier on eyes than yellow and not as bold as red. The warmer shades of orange are more preferred.

<p>Red</p> <p>Excitement Strength Love Energy</p>	<p>Orange</p> <p>Confidence Success Bravery Sociability</p>	<p>Yellow</p> <p>Creativity Happiness Warmth Cheer</p>	<p>Green</p> <p>Nature Healing Freshness Quality</p>	<p>Blue</p> <p>Trust Peace Loyalty Competence</p>
<p>Pink</p> <p>Compassion Sincerity Sophistication Sweet</p>	<p>Purple</p> <p>Royalty Luxury Spirituality Ambition</p>	<p>Brown</p> <p>Dependable Rugged Trustworthy Simple</p>	<p>Black</p> <p>Formality Dramatic Sophistication Security</p>	<p>White</p> <p>Clean Simplicity Innocence Honest</p>

Figure 2-9 Color psychology

2.8.4. MATERIAL AND TEXTURE

Texture-less room need wallpaper or colour schemes to give interest. Surface textures and choice of materials provide visual and tactile clues to help people with poor vision use a building. Flooring plays an important role in providing texture to an enclosed environment. Changes in texture of flooring help those people who require tactile information for guidance. Excessive texture should be avoided as it causes distraction and frustrations. Texture of wood signifies warm and comfortable feeling which metals signify institutionalized feeling. Reflective materials should be avoided in indoor as well as outdoor since it can cause excessive glare.

2.8.5. FORM AND SHAPE

To understand how shapes affect us, we must try to be conscious of what we actually experience in differently shaped spaces: which spaces welcome, exclude, are tense, relaxing, dominating, or allow us to feel ourselves free individuals. Scientific observations throw another light upon straight lines and curves. But the outsides of circular space – circular forms – are difficult to bring together to make places with; much harder than with straight-line forms. Convex forms are more self-contained than simple rectanguloids. Being stronger as objects, they're harder to make into satisfactory boundaries of space. The most difficult objects of all are spheres. Spherical buildings around a space don't make it into a place. However personally freeing their interior spaces, egg-shaped 'living-pods' or geodesic domes clustered together can achieve no better than suburban spatial relationships – objects with leftover space between them. Smaller form gives a feeling of cozy home while bigger form gives a feeling of institution.

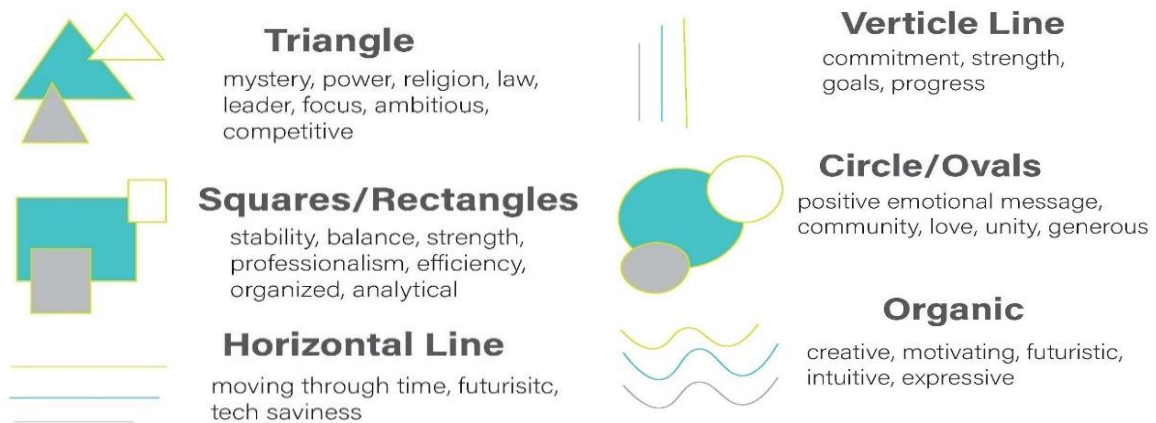


Figure 2-10 form and shape psychology

(Source: zekagraphic.org)

2.9. PUBLIC SPACE

Public spaces were designed to support human interaction and political debate since from the ancient times, and these spaces provide opportunities to interact with strangers and observe the others. Public space definitions have been diversified since their differentiation according to their ownership, control, access and use especially last three decades. Some authors defined them as not controlled by private individuals or sectors, and open to all public by focusing on the control mechanism, and other researchers focused on their access and use features rather than ownership and defined as publicly accessible places where people go for their activities. So privately owned spaces that are accessible ones were qualified as public spaces and publicly owned spaces were not qualified as public spaces if they are not accessible to the public (Mehta, 2014).

“Public spaces, particularly when integrated into the private realm, create a shared sense of unity and emotional resonance.”

Public spaces range in form from informal street corners to grand civic set pieces. Public spaces should

- focus for public life, activities and events
- simply be somewhere to rest, hang out, or play
- providing a visual pause in the flow of streets through urban areas



Figure 2-11 public spaces in architecture

(Source: futurearchitectureplatform.org)

2.9.1. SUCCESSFUL PUBLIC SPACE

A successful public space is designed and developed in such a way that they are accessible and can attract a range of use and activities, providing an opportunity to socialize.

The Project for Public Spaces (2000) outlines four key qualities of successful public spaces:

- a) Access and linkages;
- b) Comfort and image;
- c) Use and activities; and
- d) Sociability

A) Access and linkage Access concerns how well a place is connected to its surroundings both visually and physically. A successful public space is visible, easy to get to and around. Physical elements can affect access (a continuous row of shops along a street is more interesting and generally safer to walk by than a blank wall or empty lot), as can perceptions (the ability to see a public space from a distance). Accessible public places have a high turnover in parking and, ideally, convenient public transit.

B) Comfort and image Comfort and image are key to whether a place will be used. Perceptions about safety and cleanliness, the context of adjacent buildings, and a place's character or charm are often foremost in people's minds—as are more tangible issues such as having a 16 comfortable place to sit. The importance of people having the choice to sit where they want is generally underestimated.

C) Uses and activities Activities that occur in a place: friendly social interactions, free public concerts, community art shows, and more, are its basic building blocks: they are the reasons why people come in the first place and why they return. Activities also make a place special or unique, which, in turn, may help generate community pride.

D) Sociability A place is only as successful as the degree of sociability. As public spaces are intrinsically tied to community, one must be able to socialize freely in the space, which helps people strengthen their roots with their community and the people around them.

2.9.2. LINKING PUBLIC AND PRIVATE

In the framework of social sustainability, the relation between private and public spheres is one of the important aspects that define the social qualities of everyday life in the neighborhood level. Especially, the border of this interaction, as called semi-public and semi-private is a key element that can provide balance and well-being in the individual's social and personal life. The boundary between indoor - outdoor, private and public is the place where 'something starts to exist' and leads ultimately to the establishment of a communication, acting as social equipment (Psillidis, 2006). The boundaries regulate what is hidden and what is exposed, therefore they are really important for creating the relation between the two social spheres. They can be encountered in two orientations, which make them act in two different ways. approached from the other side, they shelter the private life from the scrutiny of public view. This kind of 'transitional' spaces, known as thresholds, accessible to both spheres.

2.9.3. THRESHOLD

Thresholds not only occur by entrances but rather everywhere. There are many different types of thresholds. These are broken down into various types:

- Topographical threshold
- Vegetation threshold
- Structural threshold
- Water threshold

The threshold is the physical crossing place from the street into a building. The idea of the threshold as a link between public and private experience is one that is explored in various guises in many disciplines. In psychological thinking, it is proposed that from a young age most people learn to move backwards and forwards between the internal world and the world that is shared. Even in terms of art therapy, the role of architects is to design the threshold between public and private space and art therapists help people negotiate and cross these thresholds. It considers some of the ways architecture and art therapy might work together with other disciplines to help secure the basis for health.



Figure 2-12 threshold illustration

2.10. HEALING GARDEN

Ulrich's Theory of Restorative Design

Dr. Roger Ulrich's theory of restorative garden design is based on theory and research in the behavioral sciences and health-related fields. His theory proposes that gardens in healthcare situations are important stress mitigating resources for patients and staff because they foster:

- Social support
- Sense of control
- Physical movement and exercise
- Access to nature and other positive distractions (Ulrich, 1999)

According to the research by Clare Cooper-Marcus and Marni Barnes in their book *Healing Gardens: Therapeutic Benefits and Design Recommendations*- 1999, research by Roger Ulrich and from the article "Restorative Garden Design: Enhancing Wellness through Healing Spaces" by M. Susan Erickson, the following design suggestions for creating healing gardens are listed. When designing healing gardens, the same considerations are used as in designing any other garden. However, these considerations take on special meaning in healing environments.

- A healing garden should afford opportunities to make choices: private areas and public spaces, contemplation and people watching, various walking routes, different kinds of seating, interaction with nature, and more.
- It should provide easy accessibility: place nurse stations with view and access to the garden. Make sure width and materials of the pathways, stairs and lifts are usable by people with infirmities and on wheel chairs.
- It should create a sense of physical security: provide handrails, non-skid surfaces, pavement that does not create glare. Provide sitting areas at frequent intervals, especially near the entry point.

- A garden should create a sense of quiet and calm. Users should be able to hear birdsong, chimes and water.
- Design needs to encourage interaction with Nature: promote safe wildlife, bio diversity, and a sense of mystery.
- At the same time, the design should include a variety of form, texture, seasonal interest, and color to provide sensory stimulation. Not having enough interest can also be stressful to the users of the space.
- Use key, specimen, group, and mass plantings to create emphasis within the space. This provides focal points to help people orient themselves in the garden.
- Create sequence or smooth transitions from one area of the landscape to another. This is especially important to create good flow when going from public gathering areas to more private areas for solitude.



Figure 2-13 healing garden at Celebration Health

(Source: commons.wikimedia.org)

2.11. DESIGN CONSIDERATIONS FOR GALLERY

2.11.1 GALLERY

A gallery for visual art facility is a formal space for displaying the visual art items like paintings, sculptures, etc. Galleries may have to provide accommodation for permanent and temporary exhibits, or special exhibition held from time to time, with varying display objects.

The contemporary museum is a place with a multiplicity of functions, which has to combine traditional roles of interpreting and conserving a wide range of artefacts with requirements for large- scale retail areas, complex new technologies and the circulation needs of the public. Galleries and museums now have to be equipped for people wishing to relax, shop or have a meal. They have to be able to accommodate seminars and postgraduate courses. Galleries act as art markets, promote certain artists and anticipate fashions by organizing temporary exhibitions. Existing galleries and museums have to continually adapt to reflect current feelings on exhibition areas; areas where objects are not displayed in static form, but which offer itineraries through which the explanatory panels, computer screens, and the atmosphere of the area invite the visitor to participate. The ultimate aim is, therefore, not merely to classify and divulge the contents but to incorporate the museum into the type of place where people will readily spend their leisure time.

2.11.2 DESIGN OF THE GALLERY

Space requirements are governed by the size of the collection, the method of display, the size of the artefacts and the projected rate of growth of the collection. Generally, larger artefacts require significantly more display space if their full impact is to be communicated. High-capacity floor loading is an important consideration for locations of heavy items in exhibition and storage areas, and has to be provided for anticipated numbers and likely distribution of visitors.

Space in finite buildings on prime sites has to be used effectively, so non-public facilities such as offices, reserve storage and conservation workshops can be in remote ancillary buildings. Extra display space can be created in various ways: e.g. mezzanine floors have been inserted at the London Transport Museum (1994) by Dry Butlin Bicknell, and in Vienna a new basement has been excavated at the Museum of Applied Art (1993) by Sepp Mueller Architekt.

Supporting programs help the gallery to have more sustainability. This includes rentable exhibition rooms, auditorium, multiple-use event spaces, library, shop, workshops, conservation areas, offices, cafeteria etc.

- Shop: should be accessible without having to enter the museum/gallery. At the same time, it should not be too dominant.
- ‘Resource centre’: in main gallery space or store area, where researchers can handle and examine objects under controlled environmental conditions and approved supervision.
- High-quality lecture spaces and seminar rooms: extra income as conference suites.
- Special temporary exhibitions: These are important in attracting visitors to museums, which therefore need to provide good facilities for such events.

- Particular needs are for workshop access with clear wide access to the gallery, and also provision for deliveries, from the street.

2.11.3. ACCESS AND CIRCULATION

The entrance

This can be accessible and democratic or ceremonial and imposing. An entrance at ground level is welcoming, particularly if combined with an open, diaphanous (rather than a closed, bastion-like) appearance to the public; on the other hand, the ascent of a monumental staircase makes entering the building a ceremony. Ideally, the building should be accessible to all through the main entrance.

Visitor orientation

A very important aspect of museum design; the visitors need a clear idea of the layout of the exhibition rooms. At the Tate Modern, Herzog & de Meuron have made the ground level an open public space from which the entire gallery can be seen, and with glass monitors indicating the exhibits and their location to provide orientation 'so people don't feel lost'. A central atrium interconnecting all the rooms with a central atrium enables visitors to orient themselves and choose the rooms they wish to visit.

Display area should be continuous allowing visitors move from object to object without dead ends. The visitors may pass along one side and return along the other wall, if lighting conditions permit. A viewer tends to turn right once he enters the gallery so the circulation path should be in anti-clockwise direction. The viewer should be able to survey the gallery in one sweep. Movement should be such that one is not forced to walk past the same object twice. Enough space for visitors to move at different pace should be provided so that few visitors can move continuously while others can stop to take a detailed look.

CIRCULATION

If possible, all visitors, with or without disabilities should use the same routes throughout. Where space permits, the preferred method of changing levels is a ramp. Otherwise provide a lift device, independently operable: - stairlift or, better still, a platform stairlift for wheelchair users - vertical hydraulic-type platform lift - stair climbers for wheelchair users (this is a last resort as it does not allow independent access. WCs for disabled users at all levels.

Staff needs: Access is required for staff with disabilities to all offices and stores, with accessible toilet facilities on the office level. This would open up these areas to disabled students, researchers and colleagues from elsewhere wishing to study items in store.

Generally, the circulation in museum can be categorized into either of the two types:

- a) Restricted circulation
- b) Open plan organization

Two examples of modern designs, the “Museum of Unlimited Growth” (1939) by Le Corbusier, and the New National Gallery (1942) by Ludwig Mies van der Rohe in Berlin, illustrate these attempts (Montaner, and Oliveras, 1987).

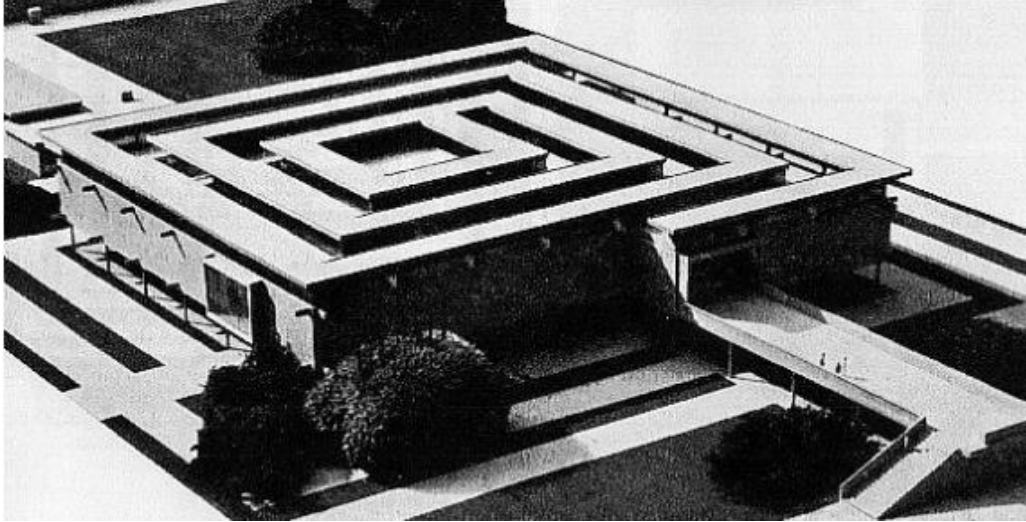


Figure 2-14 Museum of Unlimited Growth by Le Corbusier

Le Corbusier’s project illustrates a design in which continuous circulation dominates the museum’s spatial organization. This scheme later appeared as a basic idea for the Guggenheim Museum (1945) by Frank Lloyd Wright, presenting restricted circulation around a central core. Mies van der Rohe’s building, on the other hand, suggests a museum environment in a rectangular volume, in which spatial organization barely implies a circulation path and vaguely divides gallery spaces with a few partitions. This building houses a volume that would have only a little influence on possible circulation paths that visitors may choose.

Mies’ museum design is noted as having some need for additional restrictions which could be created through the exhibition layout (Searing, 1986). Architectural historians argue that this building is a complete break with traditional museum design, and introduces a modernist flexibility in circulation with open plan organization (Quetglas, 1988).



Figure 2-15 New national Gallery by Ludwig Mies Van der Rohe

Reviewing Le Corbusier's and Mies van der Rohe's designs implies two primary attitudes to museum design: restricted circulation, and open plan organization. These attitudes present two different sets of logic in museum design. In a museum with restricted circulation, visitors' accessibility to exhibitions would be limited to relatively few alternative paths of exploration. Thus, the visitors' museum experience follows a planned viewing sequence. Open plan organization, on the other hand, motivates more changeable circulation patterns and modulates more varied and distributed patterns of occupation. This results in visitors' choosing individualized paths and therefore individualized encounters with exhibit elements.

zA preferable circulation pattern for a gallery visit is the one which has centralized type of circulation. The centralized type of circulation can be as follows:

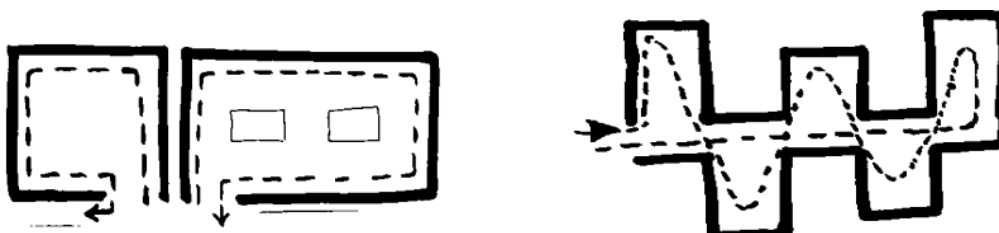


Figure 2-16 centralized circuit in square and rectilinear circuit

In a Chain layout, different units can be provided which will be circulated one after another unit by visitors. Fan shaped layout offers a wide range of possibilities. It is advantageous in terms of technical and traffic management. However, is disadvantageous in terms of congestion in a single overall space and a bottleneck is formed due to visitors bunching together.

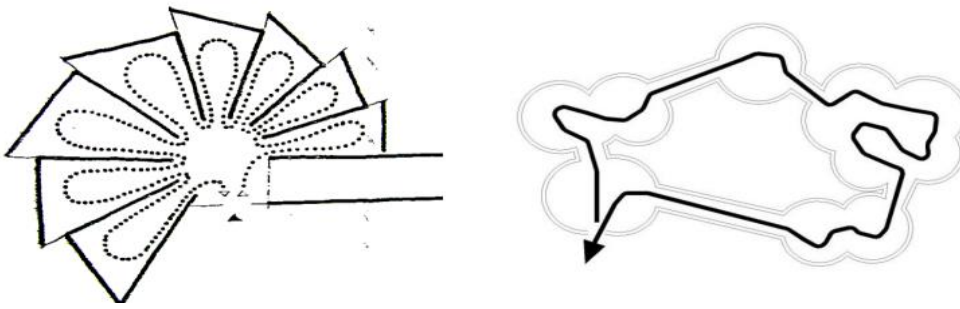


Figure 2-17 fan type circulation, chain layout

2.11.4. COMMUNICATION SIGNAGE

Even when the design of the building itself is the main influence on circulation patterns, signage plays an important part in the visitor's effective use of a museum or gallery. Museums without prescribed circulation routes, such as the Royal Armouries in Leeds, are dependent on signage. Effective signage does not necessarily rely on words: for foreign visitors and children colour-coding and pictograms can work well. The building itself can fulfil the function of a sign. For instance, the Victoria and Albert 'Boilerhouse' extension is proposed as a 'museum without walls', which will act as a visual, physical and virtual gateway to the collection of 4.5 million objects. The interlocking spiral tangentially links space after space, inviting visitors to turn corners to the next glimpsed event.

2.11.5. DISPLAY TECHNIQUE

A museum or gallery display is composed of permanent and temporary exhibits in varying proportions. Temporary exhibitions can amplify and extend permanent exhibitions, and provide an opportunity to display material normally kept in storage.

Certain basic guidelines apply to the wide field of designing for exhibits:

- Walls: Uninterrupted surfaces are needed for displaying artefacts. Fabric-covered or plasterboard-clad hardboard are easily repaired and can be fixed directly to walls. These porous materials help to control relative humidity by absorbing and releasing moisture.
- Floors, poor finishes: Quiet, comfortable, attractive, hard-wearing, light-reflective and capable of taking heavy loads. Usually wood, stone or carpet are most suitable. Basic floor loading for museums and galleries is 4kN/m² (BS 6399: Part 1,1984).

Object display

Most importantly, individual items must be placed at an appropriate viewing level, in suitable light.

As far as possible, each group of pictures should be exhibited in each room and each picture in each wall so smaller rooms are preferable. It is necessary to allow 3-5 sq.m hanging surface per picture and 6-10 sq. m ground surface for sculpture.

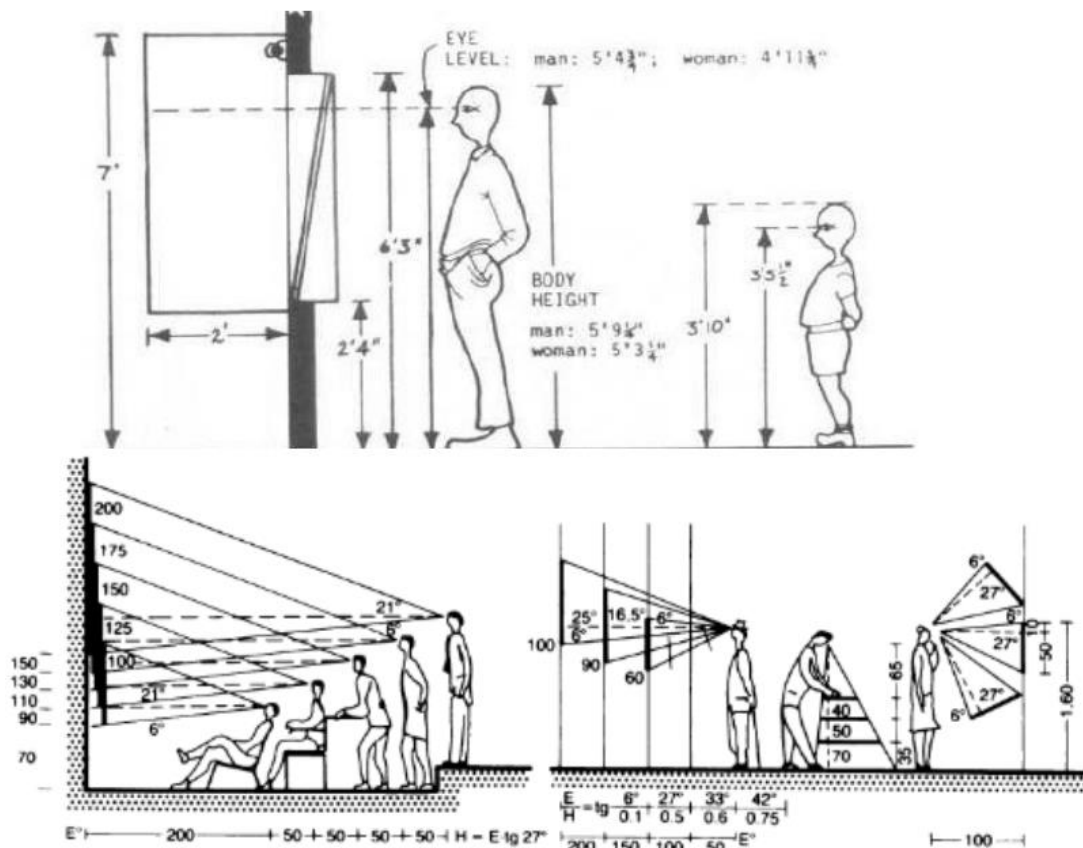


Figure 2-18 Field of vision

(Source: Neufert's Architect data)

Visual angle

The normal human visual angle starts 27 degrees up from eye level. Viewing distance should increase with size of object. There arises difficulty in viewing details below 3' and above 1' of one's eye level.

2.11.6. ENVIRONMENT

The design of servicing (i.e. climate, security, storage, handling and conservation) is as important as that of the galleries themselves.

Basic environmental requirements

The overriding objective is to achieve and maintain suitable stable indoor relative humidity and temperature conditions with minimum mechanical intervention.

Passive design

A high thermal mass of structure allied with porous finishes can be used to create an inherently stable environment. This can be enhanced by the use of external insulation, small windows or shaded shuttered ventilation openings where heat losses and gains can be dealt with at the window and not in the room. Furniture can also contribute to moisture buffering properties.

Minimization of energy use; sustainable methodology

Sensitive exhibits could be kept within buffered display cases or areas. Low control is acceptable in low-occupancy areas (e.g. store rooms and reserves). More input is needed in areas of high heat gains from lighting and/or large numbers of people introducing more moisture. MGC standard rules for low-energy design: Avoid the 'uniform environment' approach to design. Use a zone strategy whereby 'sensitive' areas are grouped together. Use low-energy features such as high-frequency lighting and condensing boilers. Adopt appropriate operation and control features.

Environmental management objectives:

1. Avoid environmental change which causes stress to objects.
2. Achieve balance between needs of objects and those of visitors: fresh air, comfortable temperatures for visitors; lighting sufficient to see collection but not enough to damage it.
3. Well-designed showcases create environmental zoning, providing protection against high numbers of visitors and consequent fluctuations of temperature and humidity.
4. Ensure that the energy saving does not override conservation; the collection needs stable conditions at all times.

Air conditioning and close control systems

Air conditioning should only be viewed as the correct solution if the majority of a museum's collection requires tight control, and then only after careful consideration of capital and

running costs. 'Environmental zoning' can be used to reduce the need for air conditioning in existing buildings. This can be achieved by the division of museum spaces into critical and uncritical areas, and grouping the most sensitive exhibits together in easily controlled zones or display cases.

Air conditioning; temperature and humidity control :

Temperature is the least critical environmental factor but important as a means of controlling humidity levels. Low temperatures help reduce chemical and biological decay, but a desirable temperature is often governed by human comfort requirements, which should not exceed 19°C. Relative humidity (RH) is a more important factor in conservation than temperature, as high humidity poses the greatest potential risk. Dry conditions inhibit corrosion, chemical and biological attack, but organic material such as wood and textiles shrink and may become brittle. In damp conditions, corrosion occurs in some unstable materials, and most organic materials are at risk attack from moulds, insects and fungi. Some moulds can propagate at RHs as low as 60%, but the real danger starts at 75% RH. A generally acceptable level of control for sensitive or delicate objects is 55.25% RH. Short-term fluctuations in moisture levels are particularly damaging to artefacts, and this can happen with an influx of large numbers of visitors. Such variations are considered to be as damaging as excessive, long-term dryness or moisture. Most artefacts can be safely exhibited and stored in environments with a RH range of 45-60%, provided that the buffering effect of the building's thermal mass and porous finishes can be used to control short-term fluctuations.

2.12. DESIGN CONSIDERATIONS FOR STUDIO

It is a space where artists perform visual artworks. Creativity is the key to their work. Their creativity can flourish under following environment:

Peaceful environment

Artists prefer to work in a peaceful environment for better concentration. Proper sound control techniques are necessary to maintain peace in the studios.

Freedom

Artists get wearied by fully covered, dark and congested rooms and narrow corridors. So, there should be sufficient and lively corridor and aisles. Large airy rooms with high ceiling and transitional areas like courtyards or sky lit spaces are well appreciated in studios. Indoor and outdoor spaces should be linked as far as possible.

Outdoor seating

Artists don't limit themselves within four walls. There should be plenty of outdoor studios along with indoor ones. In fact, indoor studios should spill out directly as far as possible. If artist wishes to work outdoors, outside environment should be such that it inspires his work. Such effect can be achieved by noise control, proper landscaping, visual improvement, etc.

Space Arrangement

Spaces like studios, café, display rooms, parks, recreational areas, etc. should be interactive and interesting as possible. It wouldn't be nice if these spaces are bound in isolated blocks. There should be inter-linkages between these spaces, and they should be interesting too.

Protective Equipment's and measures

Protective equipment's and measures should be taken so that dust, fire, fumes, chemicals, etc. involved in art activities don't create any kind of problem.

Lighting

Both natural & artificial lighting is important in visual art studio. Studios must have a good natural light, with high level windows equal to at least 25-33% of the floor area, and north or east aspect. Roof lighting is also preferred. All the windows should have some form of daylight control like blinds to prevent glare and possible damage to materials and colors. Artificial lighting is very important in absence of daylight, in detail art works and in galleries. Lighting appliances should be chosen such that there is no glare, less maintenance, much saving off wall and ceiling space.

Thermal control and acoustics

Required mechanical devices such as air conditioners, coolers, heaters, etc. are to be installed. Proper sound insulation is also required.

Maintenance and Safety

Art activities involve firing, hitting, cutting, etc. There may be wet areas, fumes, dust, etc. so cleaning is necessary. Materials used for flooring, furnishing should be durable and easy to clean. Nonskid flooring is preferable.

Abundant working and circulation spaces

Unobstructed working and circulation spaces are demanded in studios. There should be plenty of working areas in studio so that the artist can move around easily. Besides plentiful of circulation space is required for transportation of materials and display rooms.

Abundant Storage area

Store area is important area in studios. There are lots of tools and raw materials like colors, canvass, papers, etc. involved in art work. Besides that, there are prepared artworks which need to be stored. So, there should be enough of store rooms and locker rooms. All storage should be sited next to the appropriate workshop and satisfy requirements for specific heat and humidity conditions where required for specialised materials being stored (e.g. clay, plaster).

Building Forms

Building forms should be both interesting and functional at same time. The building form should be such that it inspires art activity going in and around building.

Locating workspaces with respect to the activities

Studios are located according to the activities carried out in the studio. For eg: the sculpture studios and printmaking studios should be in ground floor because these activities require huge

and heavy machineries like press, kilns, raw materials like stone, wood, etc. painting and graphics studios can be placed in upper floors as they involve light works.

2.13. DRAWING/PAINTING STUDIOS

Materials required for art may be paints, pencil, brushes, grinder, chemicals, etc. Furniture required may be easels and donkey chairs, drawing tables, chairs, storage cabinets, stools, display boards, work tables with surface for cutting, slatted storage for canvasses, sink, etc.

Design requirements of drawing/ painting studio:

- Drawing and painting can be carried out in a general studio space. No special machinery is required. As a rule, a dust proof cubicle and a store is required. Most of the work is done either at fixed benches or on easels.
- Wall and floor surface should be washable.
- Natural north light is preferred for drawing and painting activities. If daylight is not enough artificial lighting should be provided in most preferred way. An outdoor painting court is also preferred.
- Fluorescent lamp is preferred over incandescent lamp.
- Artificial light is preferred while doing still life works, proper blinds should be provided to restrict daylight when necessary.
- Display boards should be provided on walls. Studio area should not be obstructed by any kind of structural members like columns.
- Still life and modelling rooms need stand for still life objects and models. Around the stand there should be benches and drawing stands for artists.

2.13.1. SCULPTURE STUDIO:

- It is a fully equipped multimedia fabrication studio.
- Materials used are wood/stone for carving, clay, plastic, paper for modelling, metal for casting and welding, etc.
- Furnitures used are floor and table sculpture stands, work benches/stools and counters for mixing of materials, cabinets and racks for storing materials
- Furniture set for model in modelling room
- Tools and equipments used are several sets of hand chisels, grinding and buffer arbor, welding equipment, heavy anvil, wood working power tools, kilns and furnaces.

Design requirements of sculpture studio:

- Site for studio: A sculpture studio should be located in ground floor because in this studio, huge rocks are also used for sculpting. There should be spacious entry and exit points where raw materials and finished model works can be transported from one space to the other. It also requires outdoor spaces in ground floor for stone and wood carving. It should have both indoor and outdoor spaces along with semi open spaces like shades.

- Size of studio: Size of the sculpture studio should be larger than other studios as it has to offer spaces from small sculptures to even larger ones.
- Space division should be done according to the progression of the work. Such as separate clay mixing space which is a wet area, separate for drying, separate for working on models, separate for washing in sinks and separate for storing.
- Flooring should be resistant to heat and oils and should be non-porous. Terrazzo/hardened concrete floor are preferable

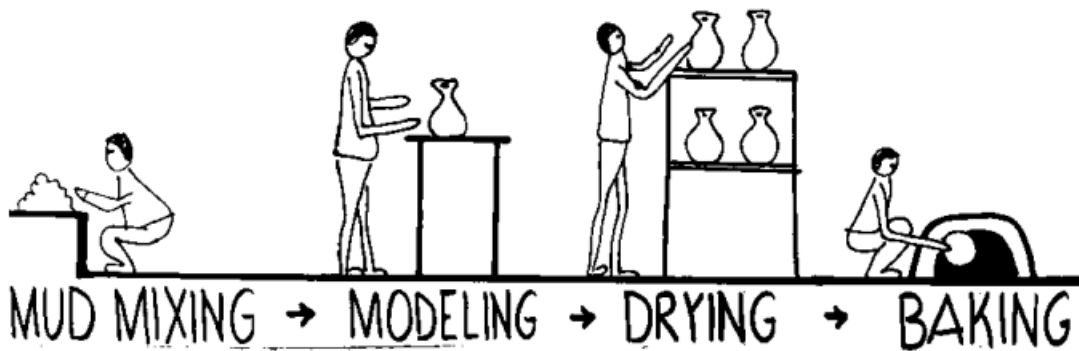


Figure 2-19 Schematic diagram of sculpturing process

- Store spaces for models, cardboards should be provided
- Natural North and East lights are preferable.
- Clay are sensitive to sun light hence, clay storing shelves should be kept away from direct sunlight.
- Sculpture studio should be separate from other studios as dust is produced in stone carving works or clay works.
- Firing kilns produce a lot of heat so it should be placed separate from general studio area for safety precaution. Low heat generating kilns can be placed next to the studio. High heat generating kilns should be placed outside the studio in a covered space. Proper ventilation and emergency exit is necessary.
- Indoor sculpture area should have double height ceiling as the studio work demands open and airy space.

2.13.2. PRINTMAKING STUDIO

Printmaking can be mainly categorized into four major areas as:

- a) Relief: it is creating image on paper from the raised surface of the matrix.
- b) Intaglio: grooves are made instead of creating raised surface and ink is then passed into these grooves so that when pressed against the paper images cut in the surface gets printed
- c) Etching: creating a design or a picture on a metal plate with the use of acid

- d) Lithography: drawing on the stone and after the image is drawn, the stone is dampened and ink is applied with a roller. The print is then made by pressing paper against the inked drawing.
- e) Silk screening: technique in which ink or paint is forced through a piece of silk onto paper or other material.

Materials required are:

For lithography- limestone, papers, ink, ground materials like beeswax, oil, etc

For relief making- blocks of wood, ink

For silk screening- silk, ink, colors, papers, etc

For intaglio- metal plates, acid, paper, etc

Furniture required are glass top working tables, drawing tables, storage cabinets, chairs and stools, drying and storing racks, work sinks, etc.

Tools and equipment required are litho-press, intaglio press, general press, inking rollers, cutters, easels, fans, acid trays, trolleys for stones, heaters, etc.

Design requirements of a printmaking studio

- Location of the printmaking studio should be in lower floors as it requires heavy printing presses.
- Toxic chemicals are used in etching and silk screening process and for safety, they should be placed away from other activities.
- An outdoor area for cleaning silk screens or an acid room is desirable. A secure acid storage area is also required.
- Flooring and topping materials of worktable should be acid or chemical resistant, impervious like treated concrete or quarry tiles. Such surfaces should be washable.
- Furniture layout should reflect the step by step progression of the process. Wash area is necessary near the work tables.
- Drying elements like fan should be installed near printing press to dry the painted papers. It should be away from dusty and dirty areas like wood workshops, mid mixing places etc.

2.13.3. PHOTOGRAPHY STUDIO

Photography studio involves spaces like photographic lab, classroom and display area. It may include activities like studio work, film and slide projection, demonstration and exhibits. Basic processes of photography remains same although there are wide difference in equipment, technique, and variations between monochromatic and color film. The main activity inside the photography studio is film processing which consists of loading, developing film, enlarging, developing the printing paper, drying trimming and mounting. Materials required are printing paper, used films, chemicals like developer, stop bath, fixer, etc. Furniture required are

backdrops, stacking chair, display boards, worktables for enlargers, counters with sink, storage cabinets. Tools and equipments required are mobile rear screen projector, film and slide projectors, film clips, timer, developing tank, thermometer, printing tongs, orienting frames, safe light, printing trays, enlargers, etc.

2.14. DESIGN CONSIDERATIONS FOR SUPPORTIVE ELEMENTS

2.14.1 LIBRARY

Library acts as a resource center for information and ideas serving as a tool to assist learning, teaching and research and offers hospitality to students, faculty members and visiting students. It provides collection of sources of information and similar resources, made accessible to a defined community for reference or borrowing. It provides physical or digital access to material, and may be a physical building or room, or a virtual space, or both. A library's collection can include books, periodicals, newspapers, manuscripts, films, maps, prints, documents, microform, CDs, cassettes, videotapes, DVDs, Blu-ray Discs, e-books, audiobooks, databases, and other formats. Libraries range in size from a few shelves of books to several million items. Book shelves should be protected from daylight. Work spaces should preferably be in daylight areas.

Standard workplace: 0.35-0.55 sq. m

Book issue and return: 5 sq. m/person

Information desk: 19-20 sq. m/person

Storage in 1000 volume stacks: 20-30 vol. /meter

Access per person: 4 sq. m

Circulation route: 1.2 m

Spaces between shelves: 1.3-1.4 m

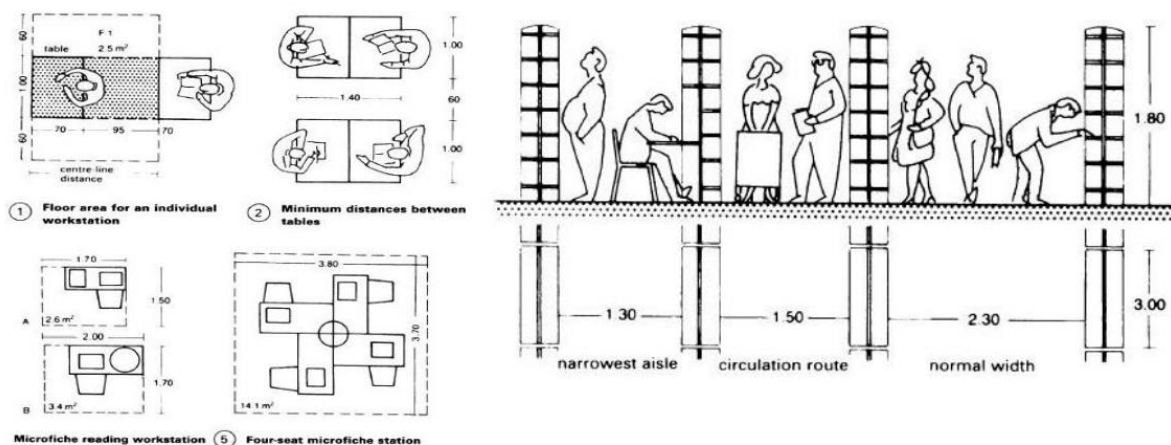


Figure 2-20 Library furniture dimension and distance (Source: Neufert's Architect data)

Shelf storage

- Area required for a simple reading/working is 2.5m² and that for a PC or individual work place is greater than 4.0m².
- The circulation routes should be >1.2m wide, & clear spaces between shelves at least 1.3-1.4m wide (or in accordance with local regulations). Crossings and overlapping of routes for users, staff and book transport should be avoided.

2.14.2. RESTAURANTS

Rest and refreshment is requirement and necessity of people visiting the arts center. A good restaurant with adequate seating facility and good service attracts visitors. Surrounding of restaurant also plays important role in well-functioning of restaurant.

Planning factors

The organizational sequence of different functions is of great importance in planning and design of restaurant. The following considerations should be made so as to achieve good restaurant design:

- Public access should be inviting and be separate from the service entry and waste disposal.
- The exterior appearance should communicate clearly with signs, lighting and menu displays and convey image of cleanliness.
- The interior should create a good impression and a suitable environment.
- Each type of restaurant needs a different identity. Ambience is an important factor in restaurant design.
- Large regular spaces should be broken up into smaller, more intimate areas by use of screens or decorative features.
- The cash desk may be at the entrance, by service doors or within the kitchen area, depending on the management system.

Design considerations (Spatial requirements)

Min. table size: 40 x 60

Floor height: 2.5-3 m

Window area: 1/10 of floor

Min. walkways: 1.1 m

Min. width of service aisle: 0.9-1.35 m

Waiter station: 1 per 20-30 seats

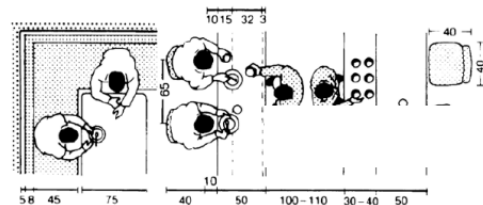
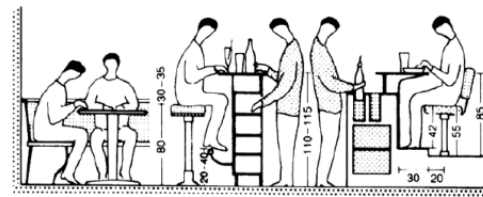


Figure 2-21 Café design standards

Dining area per seat: 1.5-2.2 m²

Kitchen area per seat: 0.4- 0.6 m²

Net Kitchen area: 15-25%

Ratio of service area to total area: 1/4 - 1/2

2.14.3. PARKING REQUIREMENTS

The type, size and shape of a turning and parking place in a road depends on the road use in that particular area and the size of the vehicles. Separation of moving and stationary traffic is necessary due to the growth of the transportation. (Shakya, 2019)

- Parking spaces in parking bays range from 1.80m X4.6m to 2.5m X 6m.
- 90° parking = 20-22m² per car
- 45° parking = 23-26m² per car

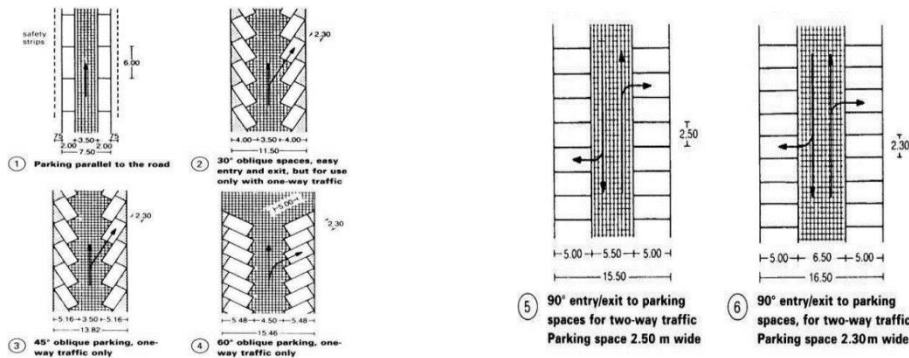


Figure 2-22 Different types of Parking layout

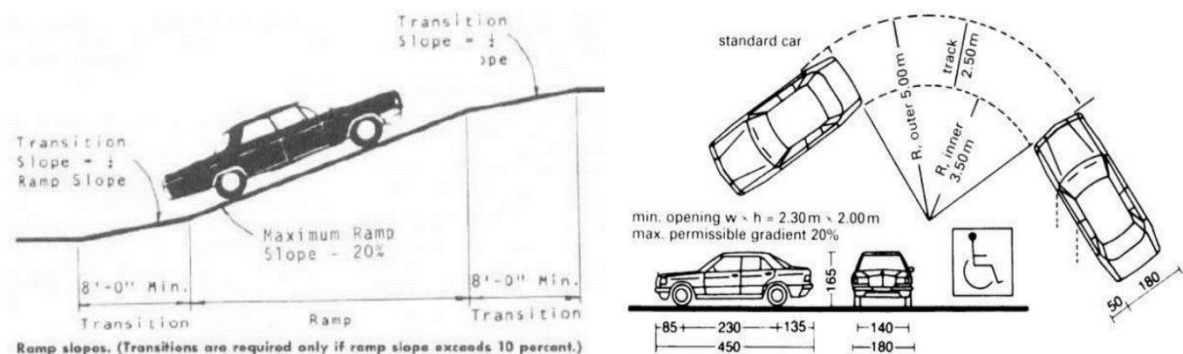


Figure 2-23 Standard car turning radius and slope

2.14.4. TOILET STANDARDS

Toilets Requirement will vary from place to place. The following are the general guide:

Gents Restroom:

WCs - minimum 3 (up to 50 males), then 1 for each additional 50

Urinals - minimum 3 (up to 50 males), then 1 for each additional 50

Wash basin - minimum 1 for each WC plus for each urinal

Ladies Restroom:

WCs - minimum 9 for 140 ladies

Wash basin-3 for 140 ladies, then add 1 for each addition

2.14.5. CONSIDERATION FOR PEOPLE WITH DISABILITIES

ADA CODES

Slope and Rise: The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any ramp run shall be 30 inches. Curb ramps and ramps to be constructed on existing sites or in existing buildings or facilities may have slopes and rises, if space limitations prohibit the use of a 1:12 slope or less.

Clear Width: The minimum clear width of a ramp shall be 36 inches.

Landings: Ramps shall have level landings at the bottom and top of each run. Landings shall have the following features:

- The landing shall be at least as wide as the widest ramp run leading to it.
- The landing length shall be a minimum of 60 inches clear.
- If ramps change direction at landings, the minimum landing size shall be 60 in. x 60 in. If a doorway is located at a landing, then the area in front of the door shall comply with 4.13.6.

Handrails: If a ramp run has a rise greater than 6 inches or a horizontal projection greater than 7 inches, then it shall have handrails on both sides. Handrails are not required on curb ramps.

Handrails shall have the following features:

- Handrails shall be provided along both sides of ramp segments. The inside handrail on switchbacks or dogleg ramps shall always be continuous.
- If handrails are not continuous, they shall extend at least 12 inches beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface.
- The clear space between the handrail and the wall shall be 1 - 1/2 in (38 mm)
- Gripping surfaces shall be continuous.

- Top of handrail gripping surfaces shall be mounted between 34 in and 38 in (865 mm and 965 mm) above ramp surfaces.
- Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post. Handrails shall not rotate within their fittings.

Washroom standards:

The standards Designate Clear Floor Space to accommodate a single wheel chair of at least 30 inches by 48 inches (760 by 1220mm).

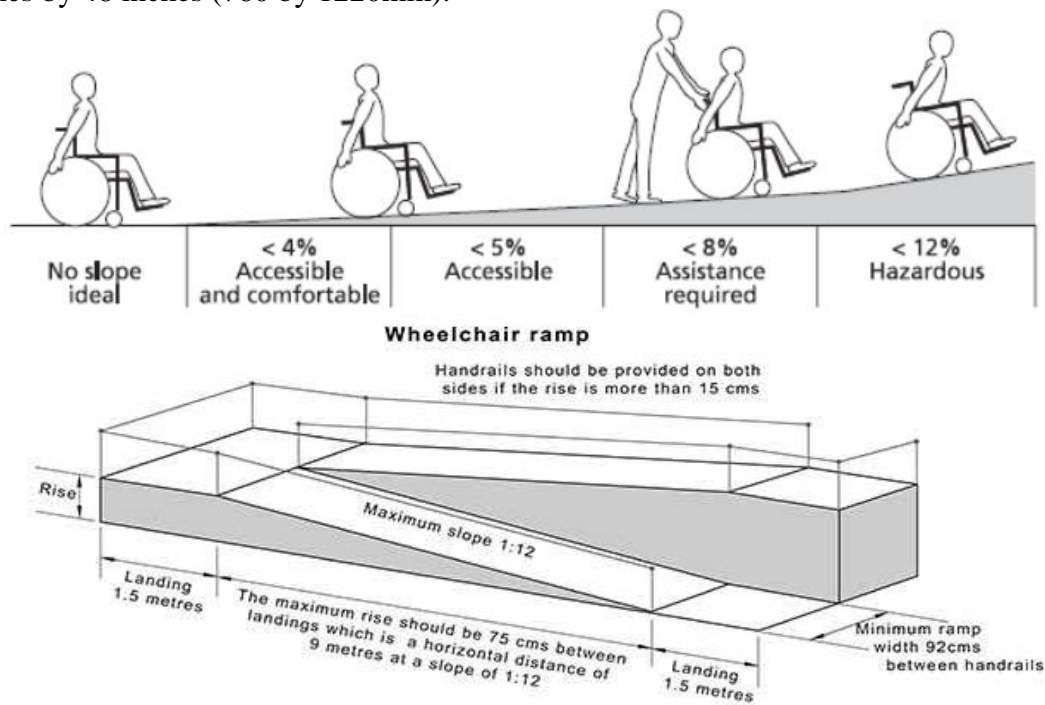


Figure 2-24 design considerations for people with disabilities

Source:

<https://disabilityinclusion.msf.org/assets/files/Iraq%20General%20Accessibility%20Guidelines.pdf>

Security

Thefts are increasing during opening hours and methods of display and vigilance are important to reduce attempts to damage displays as well as steal exhibits. Methods of control include closed-circuit TV, warders, alarms, and fire detection systems.

Fire risk -The risk is relatively low, but protection should be provided by fully addressable alarm systems

Theft and damage - A balance has to be achieved between the provision of direct fire escape routes and designing the layout to maximise security. Security systems should include barriers and display cases, intruder detection to external openings, deadlocks and non-removable hinges to external doors, infra-red movement detectors and colour closed-circuit TV systems. Blind areas and deep shadows should be avoided.

Barriers -In open displays where there is no conservation problem unobtrusive ‘psychological’ barriers can be employed to indicate a ‘no-go’ or ‘do not touch’ area (e.g. guard ropes or placing the objects on a plinth). Another deterrent is to display security devices prominently.

Vandalism- Shatterproof glass or perspex should be considered for casing valuable objects or those of a politically sensitive nature.

2.15. ENVIRONMENT AND ENERGY CONSIDERARIONS

A. SUSTAINABLE DESIGN APPROACH

Sustainable architecture is architecture that seeks to minimize the negative environmental impact of buildings by efficiency and moderation in the use of materials, energy, and development space and the ecosystem at large. The idea of sustainability, or ecological design, is to ensure that our actions and decisions today do not inhibit the opportunities of future generations. Manifestations of sustainable design require renewable resources, impact the environment minimally, and connect people with the natural environment.

Sustainable design principles seek to:

- Protect landscape and water resources;
- Minimize non-renewable energy consumption;
- Balance long-term economic, social and environmental needs;
- Provide cost-effective development solutions; and
- Enhance quality of life.

- **Photovoltaic (pv) panel:**

Solar electricity is created by using Photovoltaic (PV) technology by converting solar energy into solar electricity from sunlight. Photovoltaic systems use sunlight to power ordinary electrical equipment, for example, household appliances, computers and lighting. The photovoltaic (PV) process converts free solar energy - the most abundant energy source on the planet - directly into solar power PV equipment has no moving parts and as a result requires minimal maintenance. It generates solar electricity without producing emissions of greenhouse or any other gases, and its operation is virtually silent.

PV systems are typically made of these key elements: (SMA Solar technology, 2011)

- PV panels, cables, and mounting or fixing hardware
- An inverter and controller
- Batteries, back-up generators, and other components in off-grid situations
- Special electricity meters, in the case of grid-connected

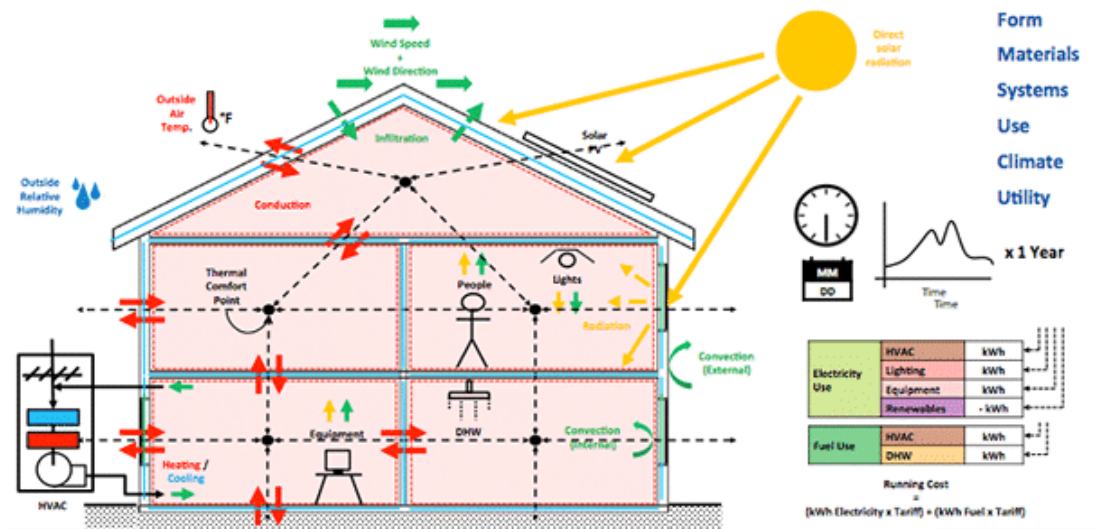


Figure 2-25 sustainable design approach
<https://theconstructor.org/building/elements-of-green-building/5375/>

B. RAINWATER HARVESTING:

Rain water harvesting is the technique of collection and storage of rain water at surface or in sub-surface aquifers, before it is lost as surface run-off. Rain water can further be used for artificial recharging of ground water. It is a process by which the ground water reservoir is augmented at rate exceeding that under natural conditions of replenishment.

Advantages of Rain Water Harvesting:

Rain water harvesting overcomes the inadequacy of waters,

It helps to maintain the water level.

It increases infiltration of rain water in the subsoil which has decreased drastically in urban areas due to paving of open area and improves ground water quality by dilution.

It improves ecology of the area by increase in vegetation cover.

Rainwater is an environmentally friendly natural resource which is easy to maintain. Rainwater systems are simple to construct from inexpensive local materials, and are potentially successful in most habitable locations.

Predicting Rainwater Harvest Rate:

To size a system for a site, you must choose the water collecting area to supply enough volume of water for the site occupants, given the site's rainfall patterns. The simplest equation for system sizing is this: $(\text{Volume}) = (\text{Area}) * (\text{Precipitation}) * (\% \text{ Efficiency})$ Where, Volume is the amount of rain harvested in that time period, measured in liters. Area is the rainwater capture area, measured in m2. Precipitation is the amount of rainfall in that time

period (in mm). Efficiency is the percent of water actually captured, as opposed to splashing out of the system somewhere; it is usually 75% - 90%.

Occupant Needs -The volume of water needed by the occupants will vary based on the number of occupants, the amount of time they spend on site, the activities they engage in, and the equipment or processes used on site.

Efficiency Different gutter systems, different roof pitches, and different materials can affect system efficiency. For example, lower-pitch roofs cause less loss than steeply pitched roofs.

Sizing Rainwater Tanks-There is no one standard recommended size for rainwater storage tanks. The size depends on the site's water needs, the weather, and whether the site is connected to a municipal water supply or not. The main consideration for sizing a storage tank is Occupant's water needs* average frequency and magnitude * safety factor.

The rate at which water can be collected from either system is dependent on the plan area of the system, its efficiency, and the intensity of rainfall.

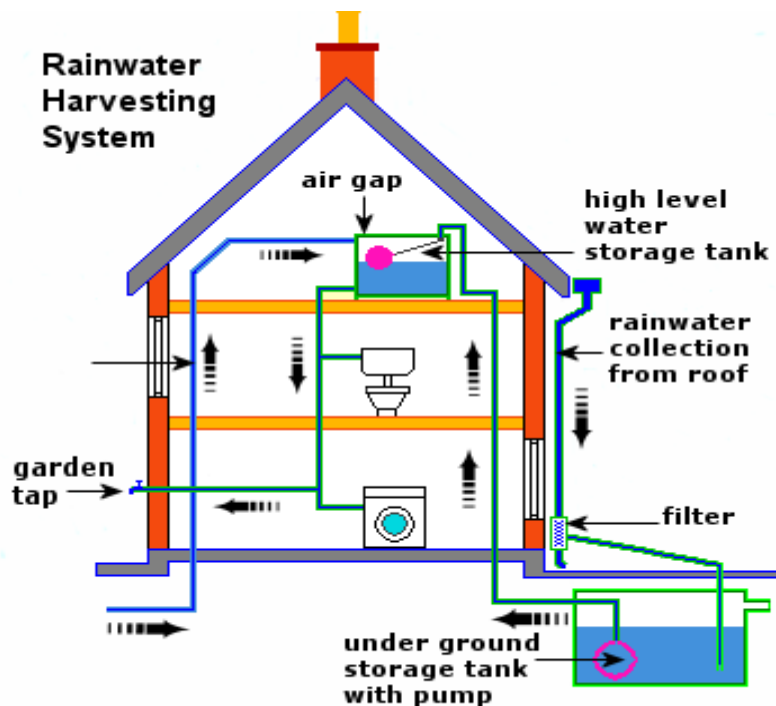


Figure 2-26 rainwater harvesting process

C. GREEN ROOF

“A green roof is a roof of a building that is partially or completely covered with vegetation and soil, or a growing medium, planted over a waterproofing membrane.” While all green roofs have similar functions, each installation is unique, so technical performance will vary by region, climate, building and green roof type and design. Construction of roof garden is complicated and expensive task. It needs different structural system. Care should be taken in the case of drainage system, root barriers and water proofing membrane. Soil mix used must be environment friendly, light weight and good water holding capacity.

Advantage of Green roofs are:

- Green roofs are energy efficient - Green roofs reduce the heat flux through the roof, and less energy for cooling or heating can lead to significant cost savings. Shading the outer surface of the building envelope has been shown to be more effective than internal insulation. In summer, the green roof protects the building from direct solar heat. In winter, the green roof minimizes heat loss through added insulation on the roof.
- Saves building from heat, acidic rain and ultra violet rays.
- Reduces and slow storm water runoff, absorbs 50% storm water.
- Act as sound insulator.
- 10m² (~100ft²) of green roof consumes approximately the same amount of CO₂ as a 13 foot-high tree per year.
- Beautifies the environment.

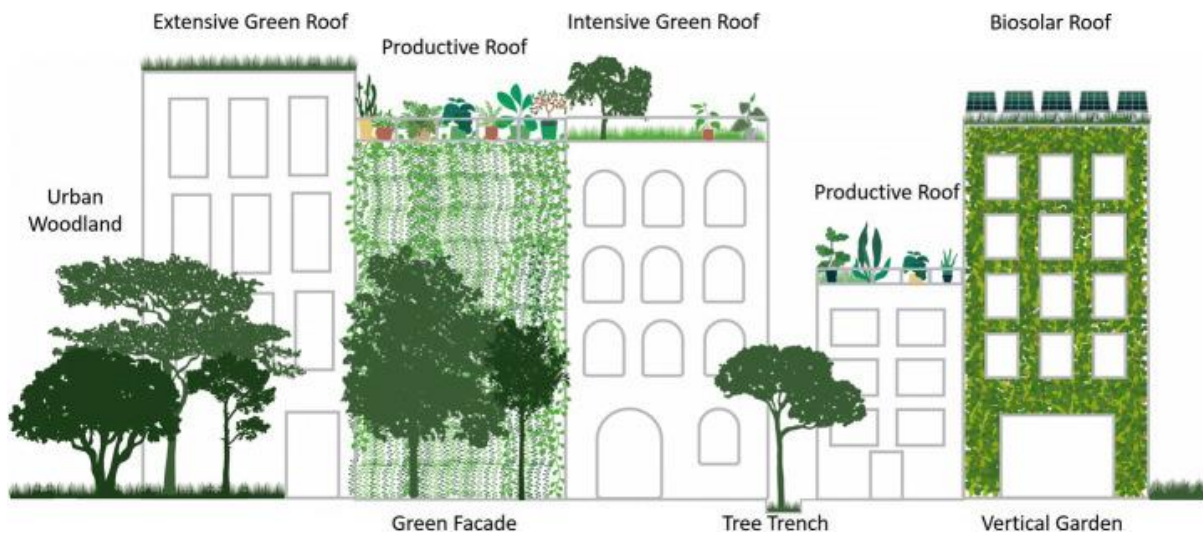


Figure 2-27 green roof architecture

D. NATURAL VENTILATION

Natural ventilation, also called passive ventilation, uses natural outside air movement and pressure differences to both passively cool and ventilate a building. Natural ventilation is important because it can provide and move fresh air without fans. For warm and hot climates, it can help meet a building's cooling loads without using mechanical air conditioning systems. This can be a large fraction of a building's total energy use.

3. CASE STUDY

3.1. NATIONAL CASE STUDY

3.1.1. NEPAL ART COUNCIL

Selection criteria: Study Gallery spaces

Location: Babarmahal, Kathmandu, Nepal

The gallery is located at the core city area and is easily visible from the road. The site surrounding includes government offices, art galleries, companies, etc.

Building type: Government building

Orientation: East

Site context: Commercial zone

Activities: visual arts exhibition



Figure 3-1 Art gallery of nepal Art Council

Table 2 Sizes of galleries

GROUND FLOOR 12' HIGH 1'6"*1'6" COLUMN SIZE	GALLERY 1	<ul style="list-style-type: none"> • 12' COLUMN SPACING • 36'*96' AREA
	GALLERY 2	<ul style="list-style-type: none"> • TWO CONNECTED • 36'*15' AREA
FIRST FLOOR	GALLERY 3	<ul style="list-style-type: none"> • 48'*36' AREA
	GALLERY 4	<ul style="list-style-type: none"> • 48'*36' AREA • WALL
SECOND FLOOR	STORE	<ul style="list-style-type: none"> • 20'*16'

	OFFICE	<ul style="list-style-type: none"> • 12'*16'
	BAGMATI ART GALLERY	<ul style="list-style-type: none"> • COVERS TOTAL BUILDING AREA: 75'*45'

PLANNING:

Gallery Space:

- Gallery location is easily visible from the main road of Maitighar by any casual passerby. Hence, it attracts more visitors.
- Galleries are used only for temporary exhibitions. Permanent exhibition is on the top floor but a lot of people are unaware about the permanent gallery
- Variation in the gallery sizes and wall alignments prevent monotony.
- White walls in the galleries brighten up the space, make it look more spacious and benefits by distinctly focusing on the art works.
- Only one entry/exit door.

Natural Lighting:

- Lobby spaces at the upper floors are naturally lit by side lighting. The openable windows provide ventilation in the lobby.
- Galleries are naturally lit by clerestory lighting which also saves the wall space for exhibiting paintings. During exhibitions, these windows are also blinded with papers and only artificial lighting is used.
- No sky lighting facility.
- View through windows is mostly of the urban buildings and few natural landscapes within the gallery premises.



Picture 16: Use of clerestory windows for natural lighting

Artificial Lighting:

- Supplement directional lighting is provided as;
 - Directional light towards the wall by the use of adjustable spotlights.
 - Diffused light in the room space by the use of fluorescent tube light. This makes the room supplemented by softer light.

Circulation Pattern:

- Easy circulation because the visitor is guided from one gallery to the next one.

- Centralized type of circulation in galleries.

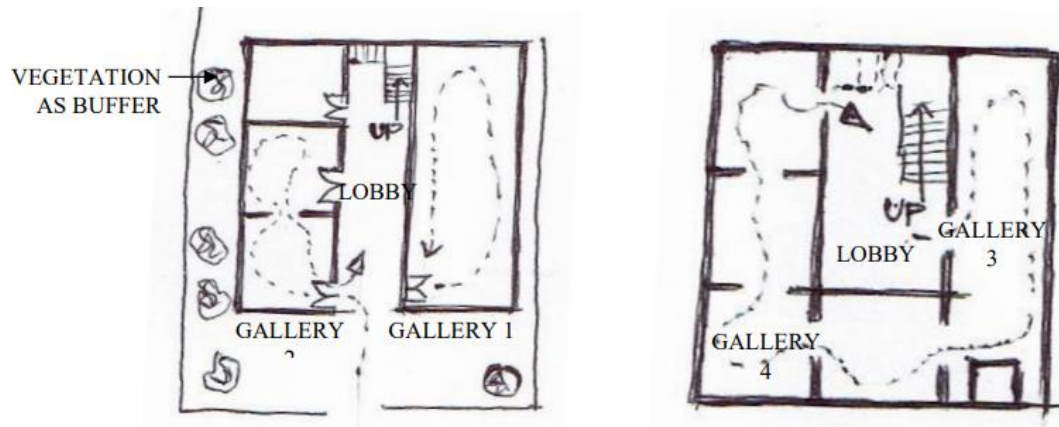


Figure 3-2 ground floor plan, first floor plan

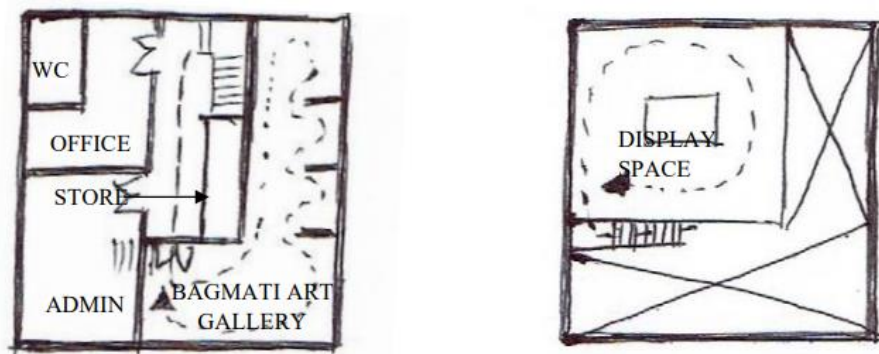


Figure 3-3 second floor plan, mezzanine floor plan

Recommendations:

- Not enough lobby space with cloak rooms and reception desk.
- Not enough toilets for visitors at Ground floor. No such service at other upper floors.
- Not clearly defined circulation paths in gallery space.

- Workshop spaces are lacking.



Figure 3- main



Figure 3-4 Gallery 2 with inner partitions in white wall



Figure 3-7 Mezzanine level in Bagmati Art Gallery and use of daylight through ribbon windows



Figure 3-6 Artificial Directional lighting when Natural lighting is not enough



Figure 3-5 Permanent Gallery with flexible mobile partition walls

INFERENCES:

- Should be easily visible from road
- Different sizes and enough number of gallery spaces should be provided for different exhibits.
- Variation in heights such as mezzanine levels prevents monotony.
- Centralized type of circulation makes the flow of visitors easy.
- Plain white walls focus the art works and emphasize them.

3.1.2. PARK GALLERY

Selection criteria: Study Gallery spaces

Location: Pulchowk, Lalitpur

Site context: Residential zone

Activities: Visual arts exhibition

Architectural Style: Modern and traditional

Founder: Rama Nanda Joshi

The location is in an alley from the main road. So, the gallery is not visible to the general public which is a huge drawback. However, there has been changes in the interior of the gallery compare to the interior few yrs. back. The entrance has been changed and also maintenance and restoration process is currently undergoing in the gallery.



Figure 3-8 main entry facade to Park Gallery

Gallery Space:

- The location of the gallery is near the Jawalakhel main road so it is easily accessible to the public.
- Space arrangement is done in courtyard style. This is beneficial for natural daylight, feeling of open space and ample ventilation too.
- Painting works and sculpture models made by professionals and students are placed for temporary displays at the front gallery.

- Permanent exhibition is done at the main gallery behind the courtyard as well as the museum space on upper floor.
- Paintings are positioned at a height of 6' which gives good vision for the visitors.
- Due to double height, the main gallery gives a feeling of welcoming and airy space.
- Main gallery is at the ground floor and is supplemented by another gallery at a mezzanine level. Due to this variation in vertical height, it has prevented monotony.

Planning and Circulation pattern:

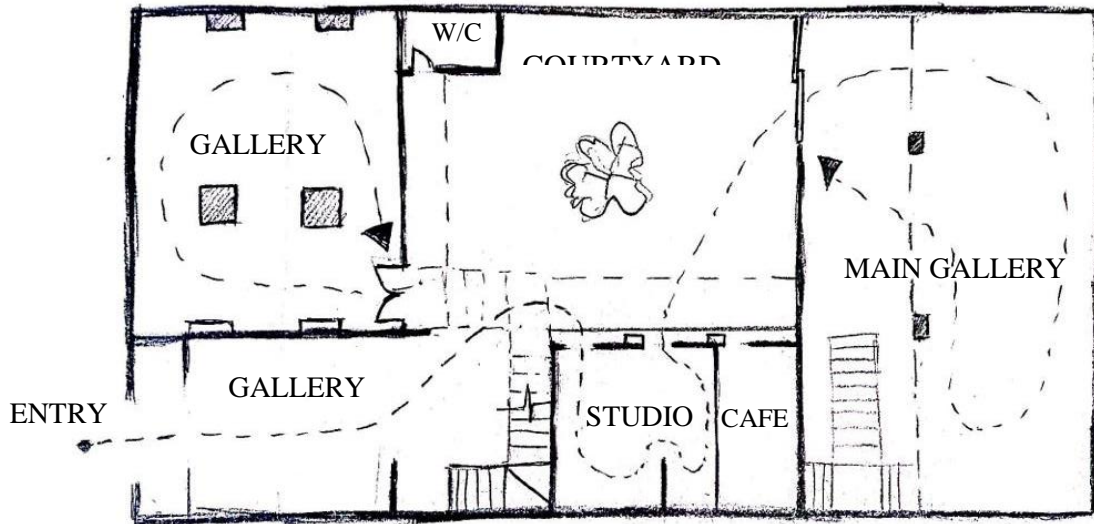


Figure 3-9 Ground Floor Plan

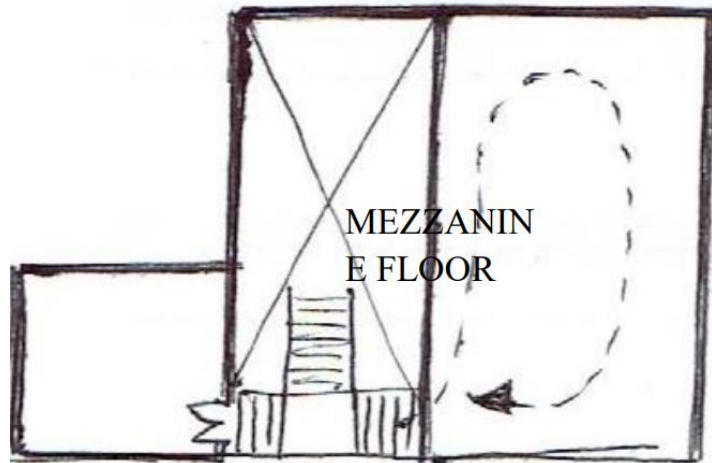


Figure 3-10 First Floor Plan

Natural Lighting:

- Natural lighting is provided at the main gallery by the use of open courtyard planning and glazed façade.
- The open courtyard space gives ample daylight to the gallery shop and reception area also.
- Side lighting through glazed glass doors and windows are provided.

Artificial Lighting:

- Supplement directional lighting is provided as;
 - Directional light towards the wall by the use of adjustable spotlights.
 - Diffused light in the room space by the use of fluorescent tube light. This makes the room supplemented by softer light.

Recommendations:

- Reception should be provided near the front gallery rather than at the back.
- Same entry and exits should be avoided as it causes congested space.
- The front façade should be attractive and welcoming to the visitors.
- The pocket spaces in front gallery are small and congested. Open plan system should have been done with centralized type of circulation pattern like that in Nepal Art Council. It might have made the gallery spacious, less congested and with good circulation pattern.

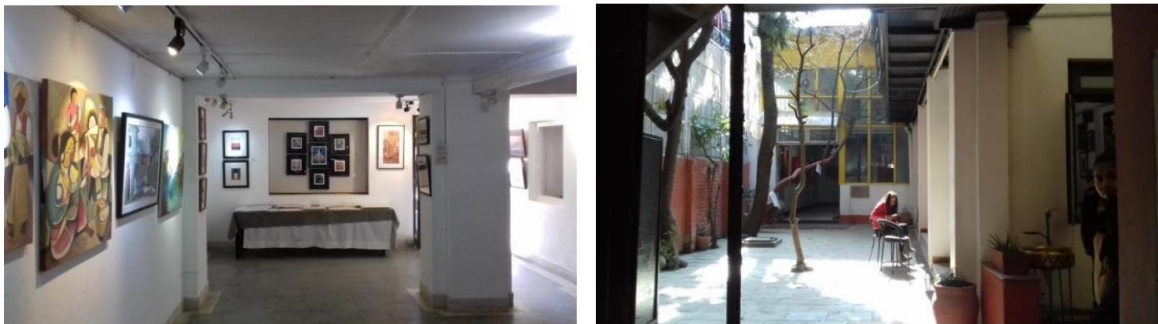


Figure 3-11 Front gallery space, Courtyard and space leading to gallery shop

- There is direct entry to the gallery without any lobby.
- Use of Directional spotlights
- Courtyard space with vegetation gives openness feeling.

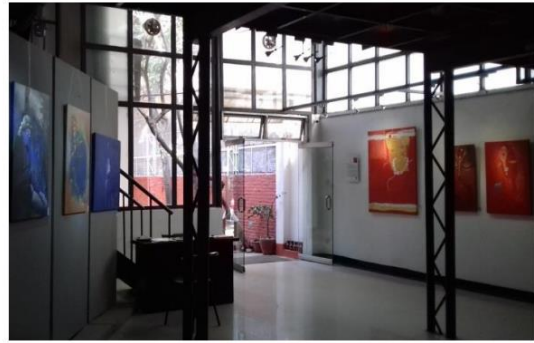


Figure 3-12 Main Gallery

- Gallery at a different mezzanine level break monotony.
- Glazed façade naturally lights up the gallery space.
- Entry façade should have been attractive and welcoming.



Figure 3-13, Gallery and museum space

INFERENCES

- Central courtyards give the feeling of openness and relaxation.
- Courtyard spaces can be used to allow natural daylight in gallery spaces and other supportive spaces.
- Variations in heights create welcoming feeling and create interesting spaces.

3.1.3. SIDHARTHA ART GALLERY

Selection criteria: Study Gallery spaces

Location: Babarmahal

The gallery is located in a core city area but inside multiple courtyards, surrounded by cafes and shops.

Site context: Commercial

Activities: Visual arts exhibition

Architectural Style: Neoclassical

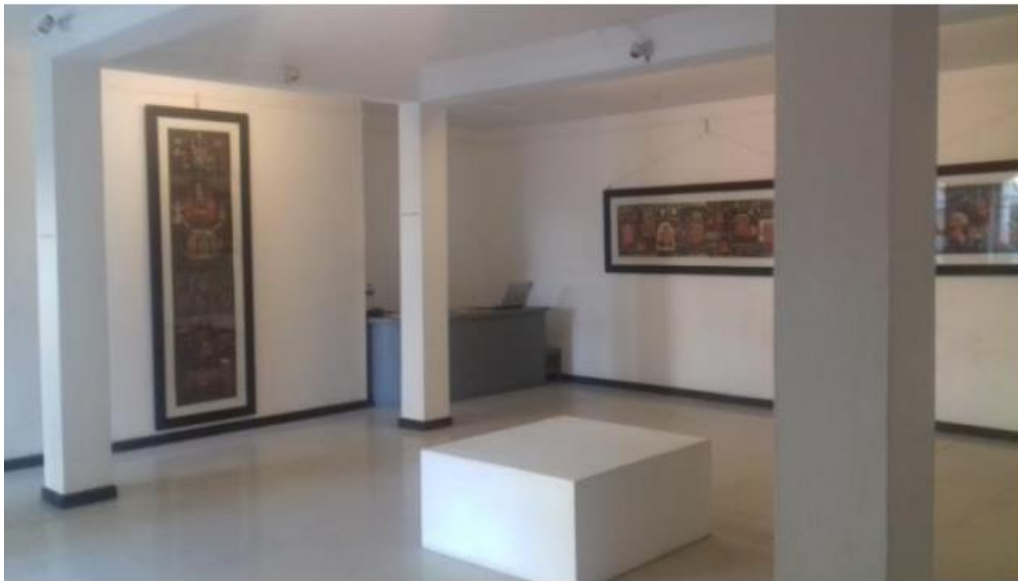


Figure 3-14 Gallery space in ground floor

Gallery space:

- The art gallery is accessed through souvenir shops and restaurants in the complex.
- It is two storied and has halls of area 750 sq.ft.
- The halls are used for temporary exhibits. Collection of the gallery is exhibited at other times.
- More of a commercial value

Lighting:

- Use of natural light by the use of skylight for stair case.
- Few side lightings are provided at walls which is very less in terms of natural day lighting.
- Artificial light is used as adjustable spot lights.



Figure 3-18 Small windows provide side day lighting in the upper gallery space



Figure 3-17 Artificial Flourescent tubelights and adjustable spotlights are used in upper gallery

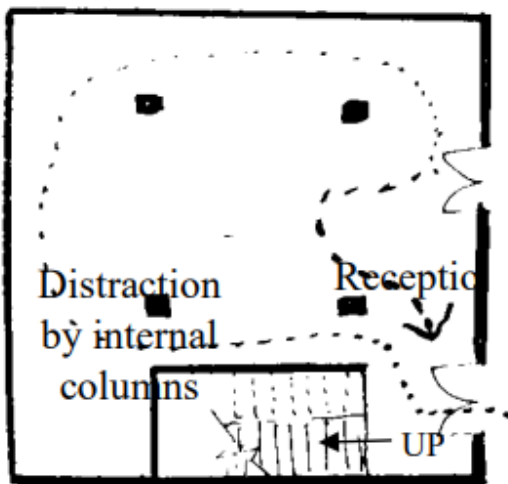


Figure 3-15 Ground Floor Plan

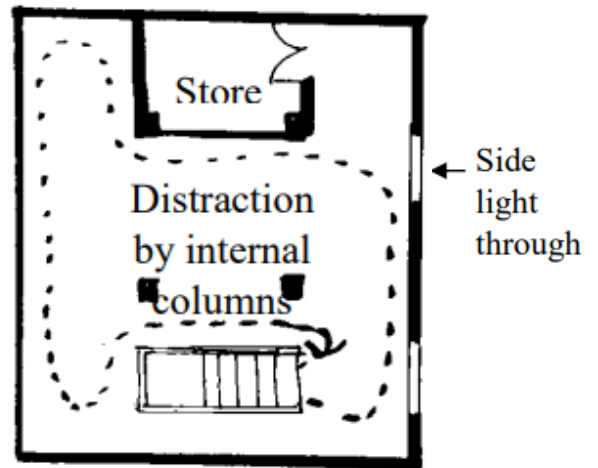


Figure 3-16 First Floor Plan

3.1.4. HOUSE OF PALLETES

Location: Jhamsikhel, Pulchowk

Study Criteria: Extra functional activities

This art studio is located inside the Evoke: Café & Bistro which has an open courtyard in the central space which can be customized according to the events organized.

- Time schedule: 12 pm-7 pm
- Eat and paint every day except Mondays
- Need to pay certain fees for canvas and art supplies
- Available studio area for custom painting session under the guidance of the expert
- There are other Nepalese local brand stores inside the café area.
- Social jam up every weekend
- Open courtyard in the center used as sitting space for café
- Customizable space for banquet, theatre, seminars and conferences up to 60 people max.



Figure 3-19 people involve in art-making at house of palletes

3.1.5. KATHMANDU UNIVERSITY, CENTER FOR ARTS AND DESIGN

Selection criteria: Study art studio and library spaces

Location: Hattiban, Lalitpur, Nepal

Building type: Institutional building

Orientation: South

Activities: Painting, Sculpture, Graphics

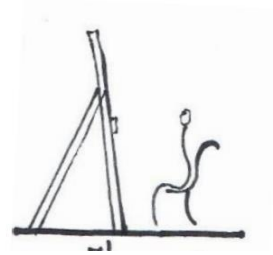
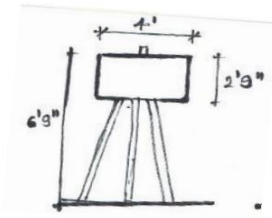


Figure 3-20 Easel Dimension

a) Location

It is located 1.7 km away from the Ringroad so it is easily accessible through vehicles and also possess a peaceful environment. It cannot be seen directly from the main road.

b) Space arrangements

Painting Studio (Typology 1):

- 32'x40' for 9 students
- 9 donkey benches with personal tool tables.
- Approx 64 sq ft per student
- Sink space available for washing brushes and palettes

Design considerations

- North light through glass door and South light through clerestory windows. Control of light is done by the use of curtains.
- Natural light not enough, maximum use of artificial lights
- As per students and teachers, natural diffused light is preferable but while doing still life, artificial light is preferred.

Painting Studio (Typology 2):

- 26 donkey benches (1.2mx.075m) for 26 students directed towards display board

Design considerations

- Natural daylight from north and south clerestory windows.
- There is no view of natural surroundings. The north windows give the view of the university premises only.
- No separate store room but a storing rack is provided at the room corner which is not sufficient for the whole students.
- Ceiling has truss system so no obstruction of columns.

Painting Studio (Typology 3)

- For 4th year students, few benches and 3 working space for digital designing

Design considerations

- Natural daylight from glazed doors at the north wall and clerestory light at the south wall.
- No separate storage rooms.
- No separate wet area of sinks for washing brushes and palettes.

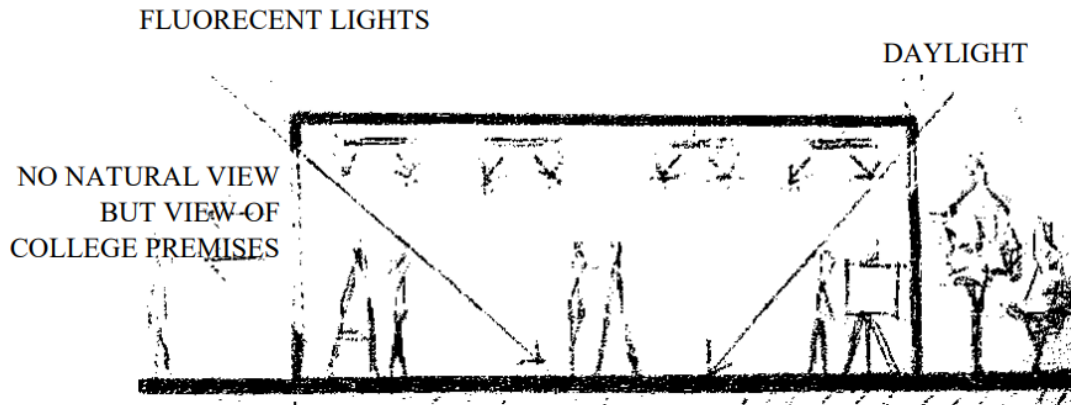


Figure 3-21 Daylight and surrounding of studio spaces

3D Studio:

Sculpture space and pottery/ ceramics space are all located in the multi-functional 3D studio but allocated in different spaces.

a. Sculpture studio

- Located in the ground floor level.
- The stone sculpting is done outdoor due to working on huge rocks and dusty environment.
- Sliding door of 5 feet is provided at entry so that models can be easily transported in and out of the studio space.

Space division is according to the progression of the work as;

- Separate for dry/ wet clay mixing as wet area at the room corner.
- Separate for kneading the wet clay as dry area.
- Separate for molding the kneaded clay in working tables.
- Separate space for sinks and taps.
- Separate space for storing final products.
- Size of sculpture studio is larger than other studios. It is 40'x55' and rectangular in plan.
- Non-porous hardened concrete flooring is done.
- Day lighting through northern glazed windows and doors. Clerestory light is provided at the southern wall.

Store space is demarcated as;

- Separate for raw wood in racks.
- Separate for storing reusable old clay model pieces in a 50sq.ft. rectangular pit.
- Separate for storing cardboards and papers by partition boards in an area of 35 sq.ft.

- Working tables of 4ft.x6ft. each are provided. But no rollers are provided on the tables to transport models from one place to the other easily in the studio.
- Four sinks are provided each of 1'6"x2'6" dimension and a tap space of 4'x5' at a separate area as wet area.
- For tools storage, drawers are provided below the model display /store racks.
- Clay storing space is kept away from direct contact of sunlight at the room corner.
- No separate studio for wood and metal work.

b. Pottery/ Ceramics studio

- Clay preparation is done in tables near the 'Potters wheel'.
- Six numbers of 'Potters wheel' for shaping the clay are provided for 20students and aligned near the day lighting windows.
- Firing of the clay is done in a kiln which is located outside but near to the studio space. The kiln space is 12'x18' and is semi-open which makes it well ventilated.
- The windows in the studio space have sill height of 3'.
- Separate space for kneading clay, 'Potters wheel' placement, molding clay, kiln and store spaces.

Problems and needs of the studio spaces as per user are as follows:

- Lack of separate and sufficient store spaces for clay, textiles (cotton, jute), etc. At present, it is congested.
- During rainy season, there is humidity so the clay doesn't dry and creates problem in plastering.
- Lack of proper ventilation.
- The corrugated sheets caused heating of the room space during summers. Hence, false ceiling was made but the problem is not fully mitigated.
- No sink facility for 2D studio.
- No enough cupboards for showcasing fine models.
- Separate studio space for metal and wood is lacking.
- No exhibition hall space. The events that they organize, generally takes place in Nepal Art Council.
- No separate store for greenware or to be burnt clay and store for already burnt ones.
- Lab space for chemical and quality checks is lacking.

3.2. REGIONAL CASE STUDY

3.2.1 JAMIA ART GALLERY

Selection criteria: Study functions of art center

Location: New Delhi, India

The location of the gallery is in a suburban context which is less dense than nearby urban area and has easily accessible natural spaces.

Architectural Style: Modern

Establishment: 2008

Designed by: Romi Khosla Design Studios



Figure 3-22 jamia art gallery



Figure 3-23 front Lobby (aisle) and use of louvers for controlled daylight

Design Concept:

- The architect designed this gallery, having in mind not only a space for displaying artworks, but also a ‘meeting-place’ and personal expression for the student community as a cultural hub.
- The architect has chosen the use of white marbles, white louvers in the gallery to express the contemporary identity.
- The building has utilized a cuboid as its overall form.

Space Planning:

The space planning is done as follows;

a. Front Gallery:

- This gallery is designed as a simple airy space with a clean façade which is covered by white metal louvers.
- This makes the gallery to be contrasted against the nearby canteen's slightly darker marble.
- It is brightly lit by daylight and is the most prominent space.
- It is primarily designed for display of popular art and students' exhibitions.

b. Internal Gallery:

- It is divisible into two smaller galleries for flexibility of spaces. It is used for permanent art collection as well as for artists who want to exhibit their work.
- It is lit by controlled daylight.

c. Open air Sculpture court:

- A type of courtyard space in the rear side of the building.

d. Artist Studio:

- Two number of artist studio are provided adjacent to the sculpture court.
- It provides service of short-stay residence for visiting artists.

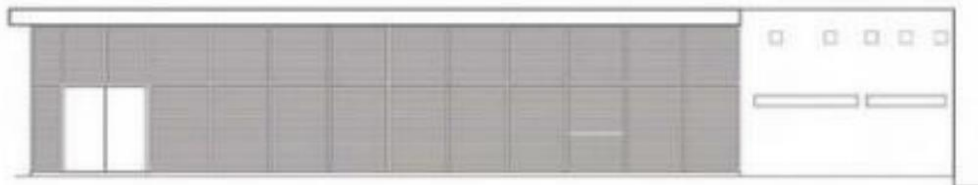


Figure 3-25 East Elevation- With Screen

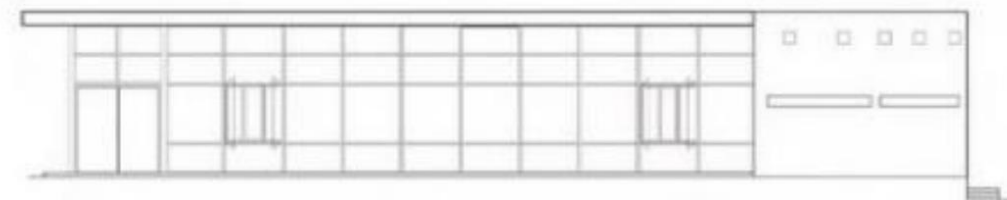


Figure 3-24 East Elevation- Without screen

Space areas:

- External Gallery =23mx4.53m, Clear room height =4.56m and additional height due to false ceiling=1.165m
- Inner Gallery=27.6mx7.8m in total. Partitioned into Gallery 1 and Gallery2 = 13.8mx7.8m each.
- Manager's office= 3.5mx5.5m
- Electrical room= 2.5mx3m
- Store= Two in number,3.5mx3.5m and 3.5mx5.5m
- Gents WC= Two in number
- Ladies WC= One in number
- Artists Studio= Two in number, each has area of 3.5mx5.5m with pantry of 2.3mx2.8m and WC of 2.3mx2.8m.

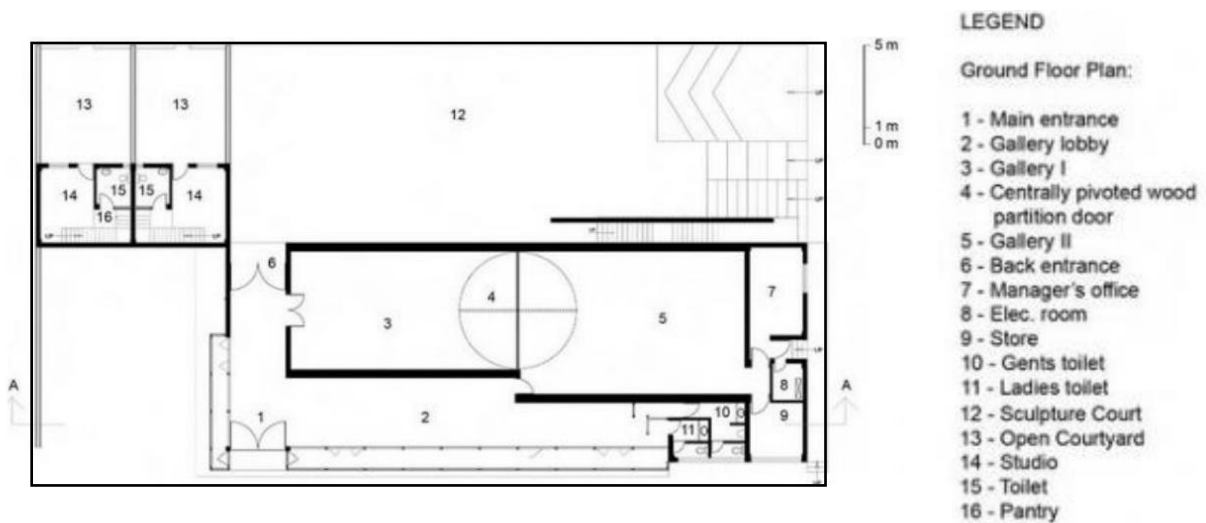


Figure 3-26 Ground Floor Plan

3.3. INTERNATIONAL CASE STUDIES

3.3.1. THE LITTLE ART STUDIO

Study criteria: Art Studio

Establishment: 2017

Architectural Style: Modern, Contemporary

Designed by: Chen+Suchart studio

Location: Paradise valley, United States

It is a 1400SF addition to an existing contemporary stucco and glass residence. The addition of this project to the site provided a backdrop to an existing desert courtyard and a gathering area surrounding a fire pit.



Figure 3-27 Exterior of The Little art studio showing the floating design and glazed facade

Design Concept:

- In order to distinguish the studio from the existing residence, the design allowed the studio to establish its own identity by making it look like it is floating from the ground plane which minimizes the disturbance to the existing desert landscape.
- The steel beam floor structure and composite concrete deck, is supported by six 36” diameter concrete caissons allowing the studio to “float” over an existing wash by touching the ground in only these six locations.

Material and technology:

- The cladding is largely comprised of standard 10 gage 4' X 12' tall A606 weathering steel panels. Using the standard module for the steel panels allowed for minimal preparation and fabrication time.
- High thermal performing reflective insulated glazing is used at all glazing locations. The insulated glazing is configured with the reflective surface which allows for maximum heat rejection while offering the most reflection.
- The combination of these two materials for the cladding is intended to complement, absorb and reflect the existing residence's landscape. Furthermore, the material palette distinguishes the addition from the existing material palette.

Space Planning:

- The interior space is configured as an open plan to allow the freedom of the studio to be used as a working artist's studio or gallery space.
- Three large movable partitions can be configured in any manner to allow for spatial diversity and increased surface area for hanging the artist's work.
- An integrated artwork hanging system is embedded and detailed with the drywall to establish a datum in the space for the constant hanging of artwork for review and display.
- Bi-parting sliding glass doors are located directly over the wash in order to celebrate a specific moment in the desert landscape.
- The configuration of the windows allows views of the existing courtyard and Camelback Mountain.



Figure 3-28 interior with flexible walls and ribbon windows



Figure 3-31 interior of little art studio



Figure 3-30 Elevation showing existing residence and addition of studio

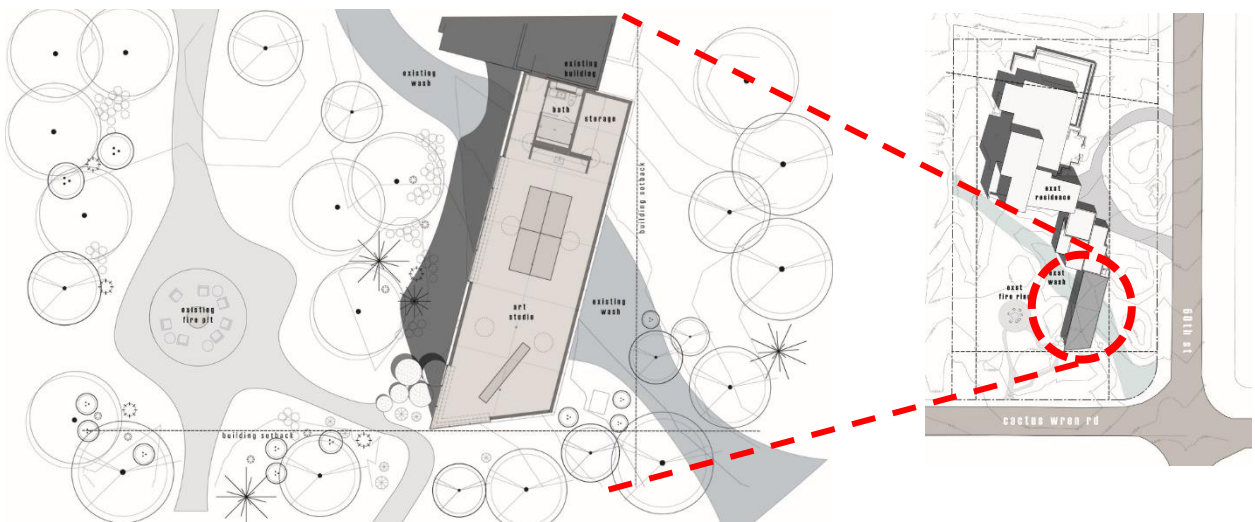


Figure 3-29 Ground Floor Plan

3.3.2. CULTURAL AND ARTISTIC CENTER IN BENXI

Study criteria: Art Center

Establishment: 2016

Architectural Style: Modern

Designed by: Lei Tao

Area: 4000 m²

Location: China

It is located in the south of the square of Benxi Museum.



Figure 3-32 exterior of cultural and Artistic Center

Space planning

- This building is both the local art gallery for cultural exhibiting purpose and the center for artists' working and communication.
- The center contains 4 floors above ground and a basement floor. The interior space of the first and basement floor joining the exterior through the sunken yard, generates an individual and welcoming shared space for art exhibiting.

- The second, third and fourth floor are mainly used for working, art creating and meeting.
- The hovering and stagger public staircase connects each floor, while showing its multiple forms from basement to

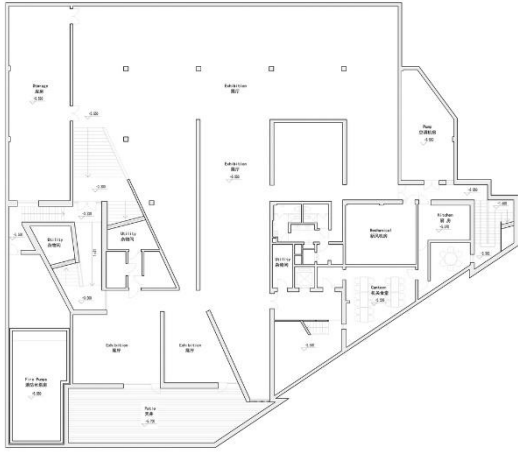


Figure 3-36 basement plan

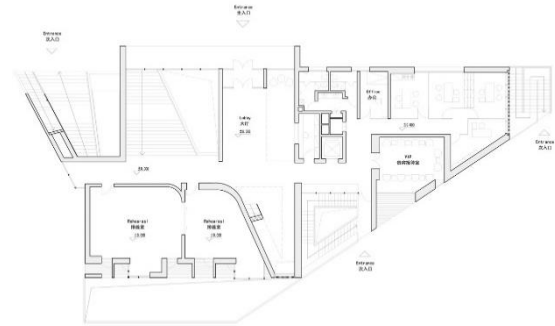


Figure 3-37 Ground Floor Plan

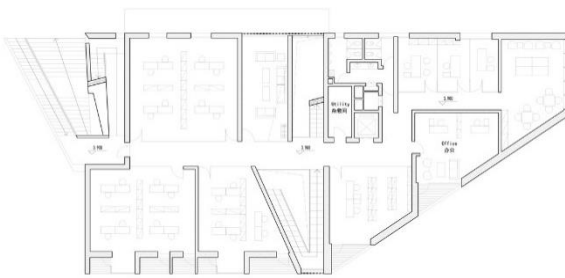


Figure 3-35 First floor plan

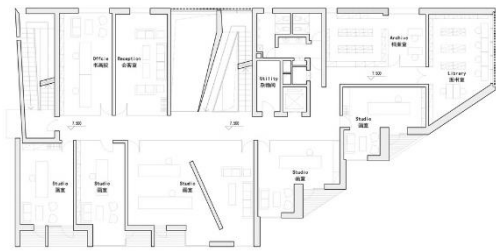


Figure 3-34 Second floor plan

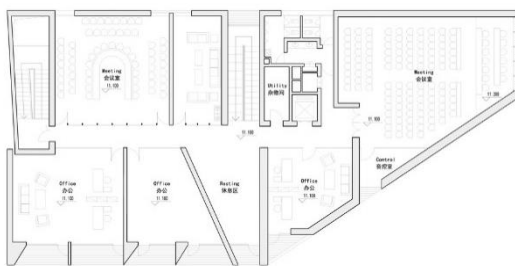


Figure 3-38 Third floor plan

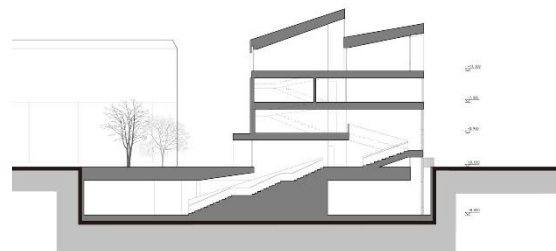


Figure 3-33 Section

3.3.3. PAMIO SANATORIUM

Study Criteria- Therapy space

Architect- Alvar Aalto

Location- Finland

Category- Rehabilitation Center

Project year- 1929-1933



Figure 3-39 paimio sanatorium, Finland

Developed in the 60's in general hospital, Alvar Aalto believed that architecture should not just operate solely as a functionalist machine but it should be well suited for its inhabitants and users as he had identified, long before explorations of environmental psychology that our surroundings affect us. This is evident in the design of Paimio Sanatorium in Finland.

LOCATION

It is located on top of an idyllic and secluded setting in the southeast of Finland, about 29km from the city of Turku. Nature became a driving factor for the design as the plan fans out 'biodynamically' positioned to the compass over the site taking full advantage of its views and natural sunlight. The complex of buildings of the sanatorium articulates opens outward, allowing views, ventilation and natural sunlight in all rooms and other rooms.

CONCEPT

Sanatoriums were ideal for principles of functionalism and modernism as they were predominantly focused on light, fresh air, sun and connection with nature. However, Aalto also focused his effects on creating a building that would combine recent medical and psychological views together with advanced construction technology at the time to creating a building that would function like a "medical instrument" (1994:68-69)

The main idea for the Sanitarium, originally planned for 296 patients, was a building that would promote healing and rehabilitation of tuberculosis patients, or in the words of Aalto, a building designed like a "medical device" is involved.

The set consists of distinct areas, the patients' rooms and galleries or rest, the common rooms and services, linking the blocks containing such functions under the guidance and views around a central core of circulation. The homes of doctors and employees are treated as isolation wards, for privacy and rest to the workers.

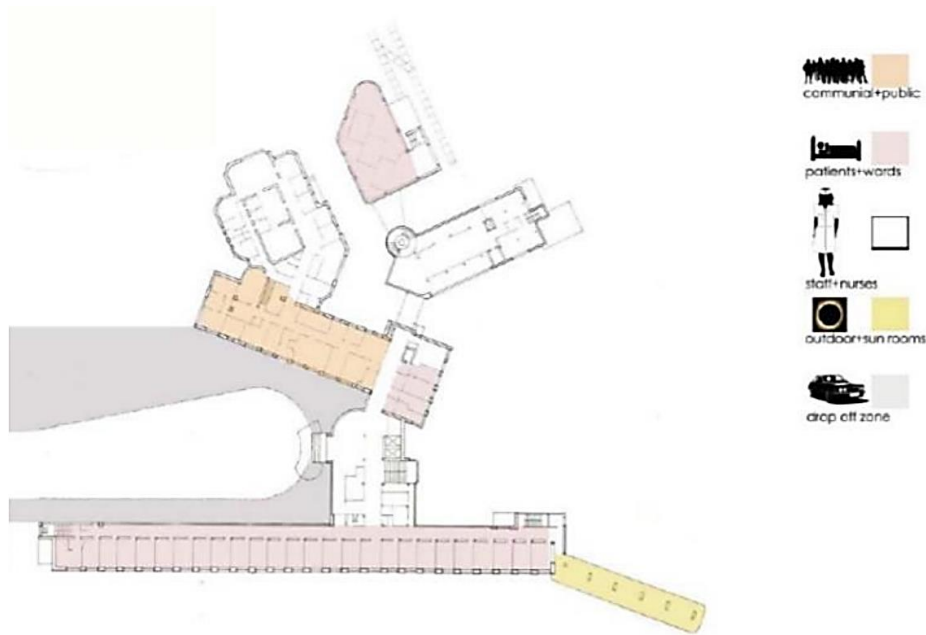


Figure 3-40 zoning of spaces, paimio sanatorium

SPACES

The Sanatorium’s shape of plan is derived from the separation of different health variants of the patients so that similar groups are close to one another to form a wing. The wings are linked by the central building that has common services and functions needed in all the buildings. The building services are intelligently hidden in central columns that can be maintained from the corridor away from the patients.

Paimio Sanatorium is unique as it pays attention to the patient’s needs. The wards are stacked with ribbon windows that form a continuous band around the building that open out to cantilevered sun balconies that are south facing to allow optimum light into the wards. These long balconies allow patients to come out to enjoy the healthy rays of the sun and air in groups.

The healthier patients can use the roof top solarium that has spectacular views of the surrounding landscapes and tree tops.



Figure 3-41 sun balconies at the end of sanatorium

There is also an indoor rest room for 120 chairs, which occupies the entire length of the surface and crowns the building, offering impressive views over the landscape and landscaping which prevents excess heat during the summer.

The ceilings in the ordinary rooms are painted darker than the walls to have a more restful gaze and avoid glare; the room light is mounted away from the wall and the patients head to avoid harsh light, is then reflected off the walls and ceiling where a semi-circle is painted. The slabs are canted to reflect light back into the room to provide a sense of visual release. The placement of heating on the roof is done so as to avoid direct radiation and the toilets are carefully designed whose geometry minimizes the potential noise caused by its use.

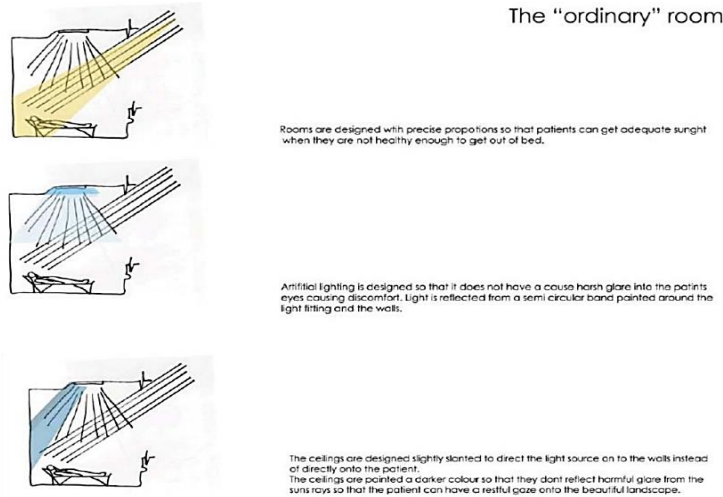


Figure 3-42 lighting concept in ordinary room

The common rooms are more spacious, as are the dining room and workshop are intended to south and are equipped with awnings for solar control. Also, these spaces offer different visual directions and cause the patient a variety of mental stimuli. The furniture was designed by the architect, noting the chair Paimio, for its ergonomic design, said to himself favored the patient's breathing.

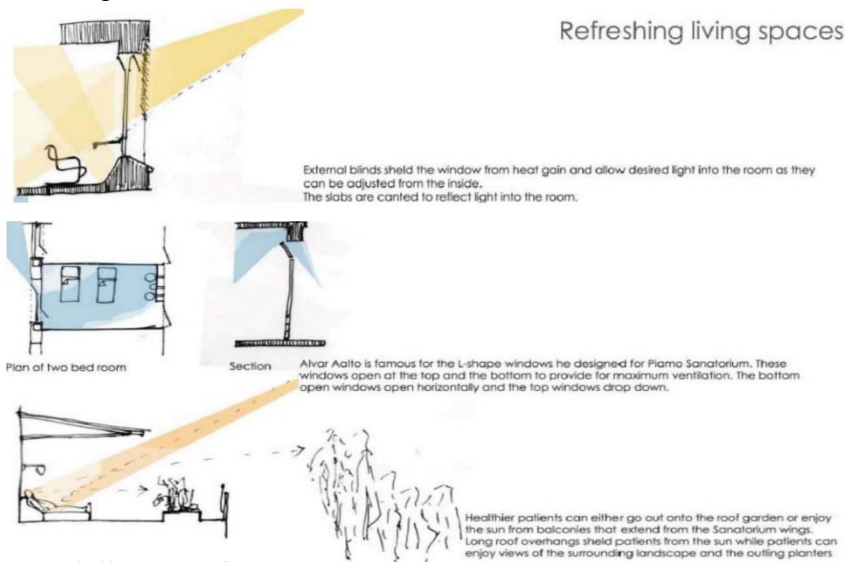


Figure 3-43 concepts for common rooms

COLOUR

Colour is very carefully thought of as colour schemes vary around the hospital to stimulate and soothe according. Main circulation routes are bright in colour and shared, more public spaces are painted in calmer tones. The design approach of Paimio Sanatorium is for the patient's wellbeing and is dedicated to catering to the needs of its patients manifested in every detail, prevalent quality of natural light and sunlight.



Figure 3-44 colors and furniture carefully chosen to provide a healing architecture

MATERIALS

The sanatorium is suitable to different types of patients, taking into account elements such as exterior view of the vegetation or the use of indirect light a lamp in bedridden patients.

Aalto designed the interiors taking care of every detail, such as entering the match curved surfaces of walls and floors for easy cleaning or preparing a special chamber pot for the sick, which was not used. Also designed the interior of the rooms and much of the furniture as the chair Paimio, designed to facilitate breathing of the sick, still in production.

INFERENCES

- The natural as well as artificial light quality is important for healing properties. Direct glare can cause disturbances and frustrations in patients.
- The slabs can be inclined to reflect light to the walls
- Patient interaction is important
- Courtyard can create space for physical activity, work as a communal space and can be used as a central garden providing light and ventilation
- Natural materials are preferred
- There should be intermediate spaces between inside and outside
- Interaction with general public and immediate community is necessary
- Sun balconies, sun rooms can be included in the design
- Visual connection with nature is very important which can be done with large windows providing great visual light quality
- Atrium spaces can be used for natural light
- Nurse supervision is necessary
- Color schemes can affect the psychology of people

3.3.4 PSYCHIATRIC CENTRE FRIEDRICHSHAFEN

Study criteria- Therapy spaces

Architect- Huben Staudt Architekten

Location- Germany

Category- Rehabilitation Center

Area- 3274 sqm

Project year- 2011

LOCATION

The psychiatric centre lies embedded into the campus of Friedrichshafen Hospital and follows the picturesque, orchard-laden, natural slope of the hill towards Lake Constance. The building encloses a generously dimensioned green courtyard and exploits typologically the contour of the hillside by providing entrances on two different levels. As a psychiatric center, the green courtyard can help minimize stress and induce relaxation.



Figure 3-45 Psychiatric Centre Friedrichshafen

SPACE

A wide spanning bridge frames the generous view into the undulating landscape and helps to emphasize the natural slope even within the sheltered courtyard. The psychiatric centre can be easily perceived from the landscape while enabling picturesque views of the countryside from within. Large central therapy rooms with direct access to the patients' garden are arranged on the lower floor by exploiting the possibilities of natural illumination along the slope. Access to gardens from therapy rooms gives out healing architecture.



Figure 3-46 Bridge to view landscape



Figure 3-47 :Access to garden from therapy rooms

The main building of the hospital, constructed in the 1960s, dominates the extensive grounds of the campus. The adjacent singular buildings of both the Kindergarten and the residential developments relate orthogonally to the hospital. The proposed expansion of the campus through the Mother-Child Centre, the Medical Centre and the Radiotherapy Centre emphasise in their orientation the pedestrian-friendly character of the campus. The new Psychiatric Centre arranges itself as a significant figure in this system. The entrance area between the new build and the existing hospital provides a high level of amenity and invites patients, visitors and employees of the hospital to linger.



Figure 3-48 therapy room



Figure 3-49 circulation space

MATERIALS

The two materials, fair-faced concrete and untreated wood, dominate the surfaces of the building both internally and externally. Concrete is treated in a sophisticated way: large flat board-marked concrete surfaces and fine horizontal linear prefabricated elements,



Figure 3-51 circulation space

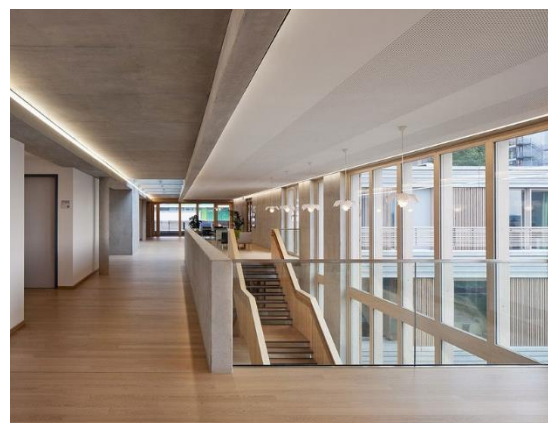


Figure 3-50 dining area

corresponding with the vertical fins of the wooden cladding. The timber cladding is made of untreated silver fir as a reference to the local building tradition, particularly in the nearby Vorarlberg region of Austria. The vertical cladding, comprised of untreated wooden profiles, lends the building, through its transparency, an airy and open appearance.

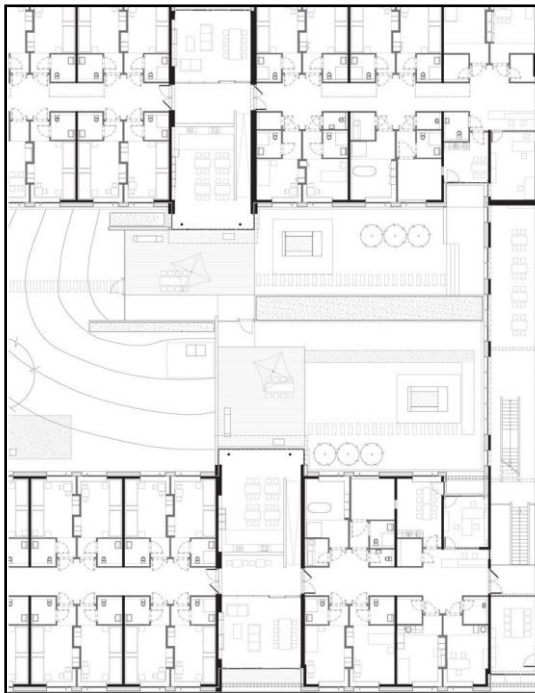


Figure 3-54 ground floor plan

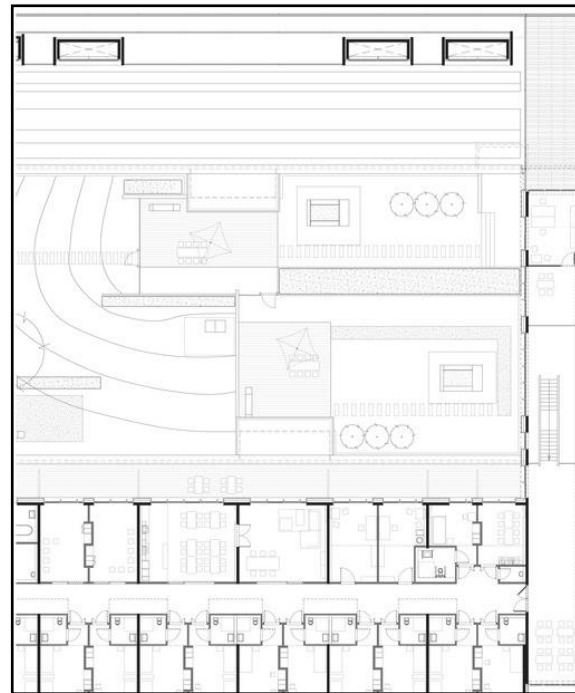


Figure 3-53 first floor plan

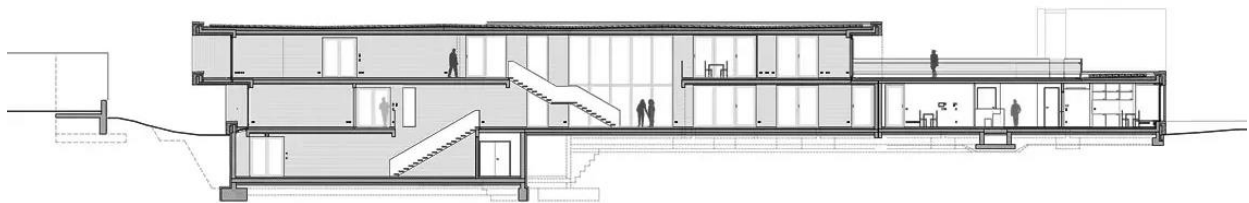


Figure 3-52 section

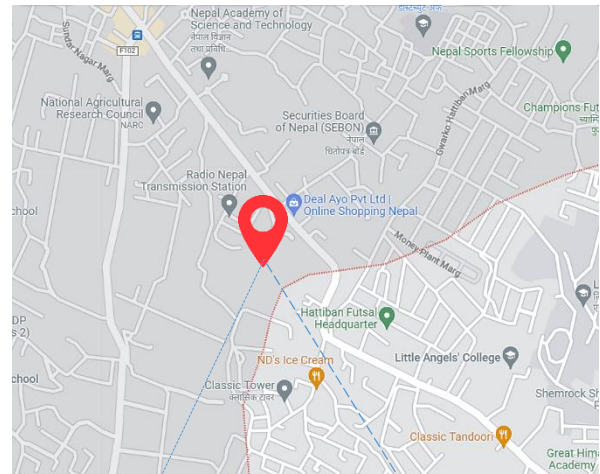
INFERENCES

- The green courtyard can help minimize stress and induce relaxation.
- Bridges can be used to frame view of landscape
- Access to gardens from therapy rooms gives out healing architecture.
- The entrance area should provide a high level of amenity and should be inviting to patients, visitors and employees.

4. SITE ANALYSIS

4.1. SITE SELECTION

Studying the preferable location of art centers, it can be concluded that the art centers are better positioned at the city core or near the city where the flow of people is generally good. But studying the locations for therapy centers, it requires natural and peaceful environment. Hence, the selection of site should be such that the flow of people is good, should be easily accessible and noticeable and also lies in a peaceful area away from the chaos of traffic.



4.2. SITE LOCATION

The site lies on the outskirts of Ringroad, located at Hattiban. It is 1.2 km away from Satdobato Ringroad. The site has an approximate area of 36 ropanies.

Area= 18313.9 Sq.M.

Co-ordinates: 27°39'00"N, 85°19'22"E

Access: 1.2 km east from Satdobato ringroad

Proximity: 300 m from Tranquility Hospital and research center,

500 m from KU School of Arts

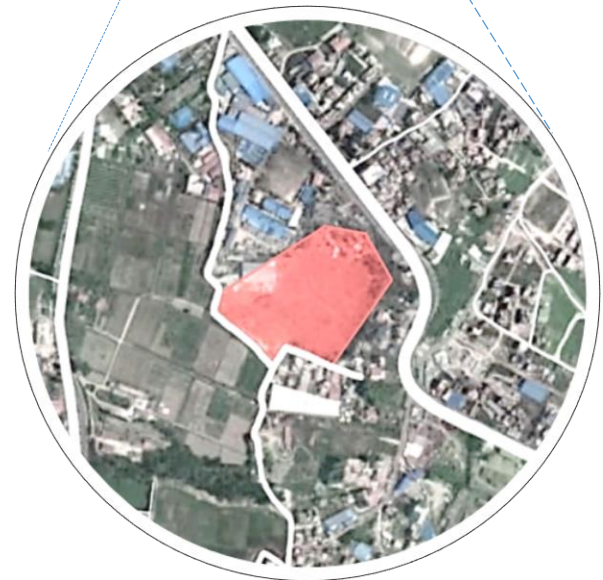


Figure 4-1 site location

4.3. SITE CHARACTERISTICS

Physical aspects

The major road access is in front of the site (Southwest) which is a certain 5-minute ride from the main road. The main road is about 35' wide. The land is flat and is oriented to south west. It lies in an institutional zone. The site is at upper level from the main road which makes it secluded from the traffic pollution of main road.

The site is 8m above the main road level.

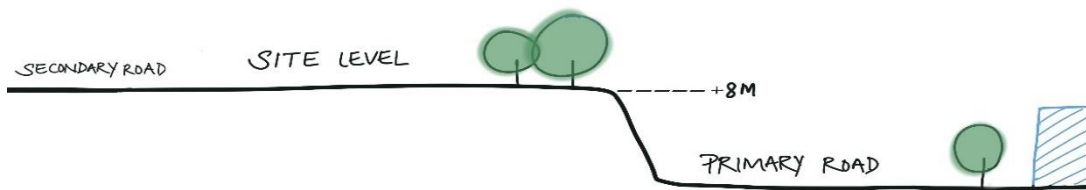


Figure 4-2 site level from main road

Social aspect

The hattiban forest is located in close proximity to the site which also contains a temple at the top of the hill. It is surrounded by colonies, residences, educational institutes and offices.

Byelaws

FAR- 2.5

GCR- 40%

Setback- 3m from nearby buildings and roads

ROW – 6m Light plane- 63.5 degrees

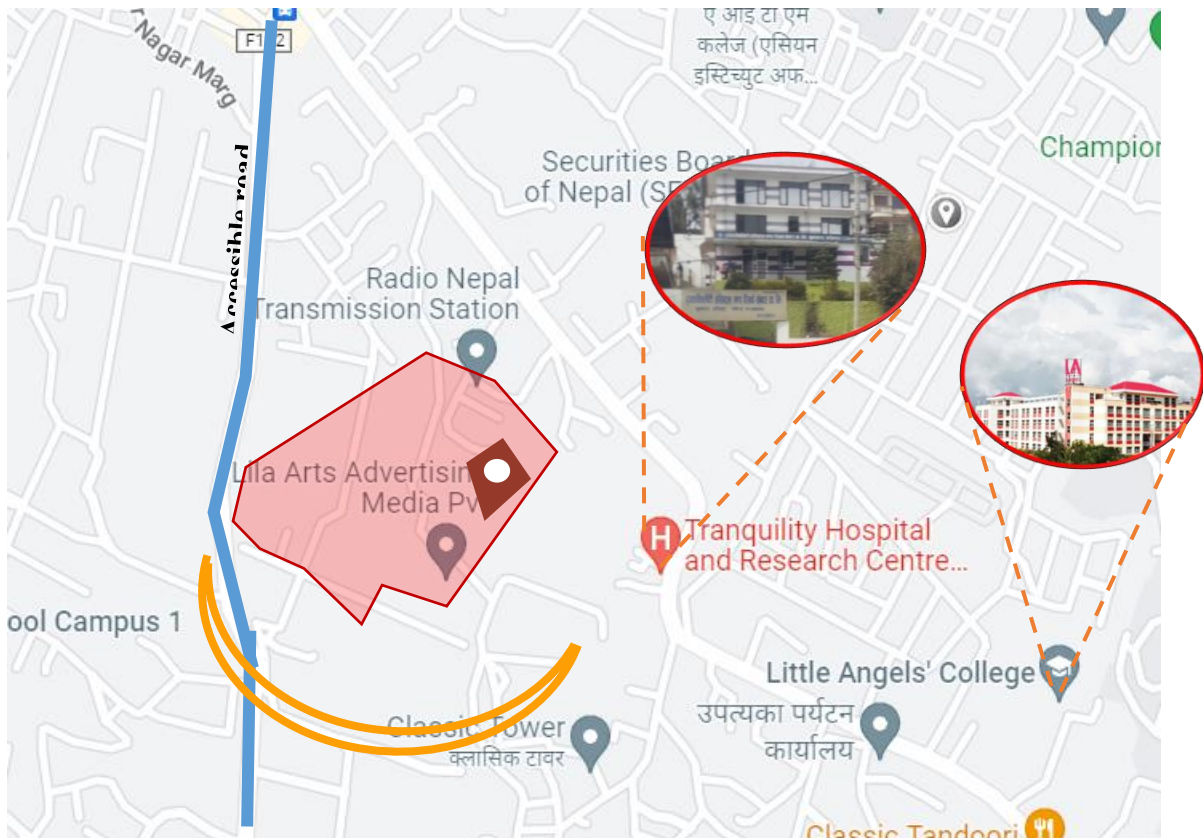


Figure 4-3 location map with landmarks around it

SITE SURROUNDING

North: Vacant land/Main Road

South: Residence Area

East: Residence Area

West: Approach Road/ Agricultural Land



Figure 4-4 Site for thesis

4.4. SITE JUSTIFICATION

- Easy accessibility by public vehicles
- Good flow of people
- Secluded from road but also peaceful enough for art therapy
- Institutional zone
- Ku school of Arts does not have exhibition area
- Near Tranquility hospital which is a psychiatric hospital

4.5. CLIMATIC CONDITION

Precipitation

The climate is mild, and generally warm and temperate. The average annual temperature is 25.7 °C. Precipitation here averages 1128 mm.

Precipitation is the lowest in April, with an average of 3 mm. Most precipitation falls in July, with an average of 389 mm.

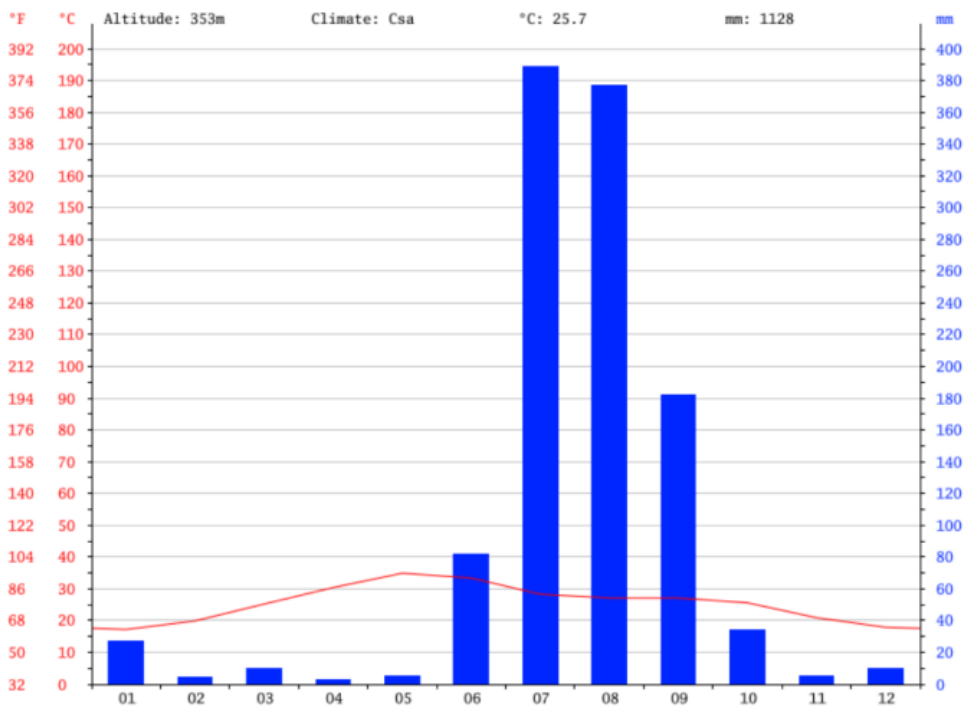


Figure 4-5 precipitation graph by month

Average Temperature

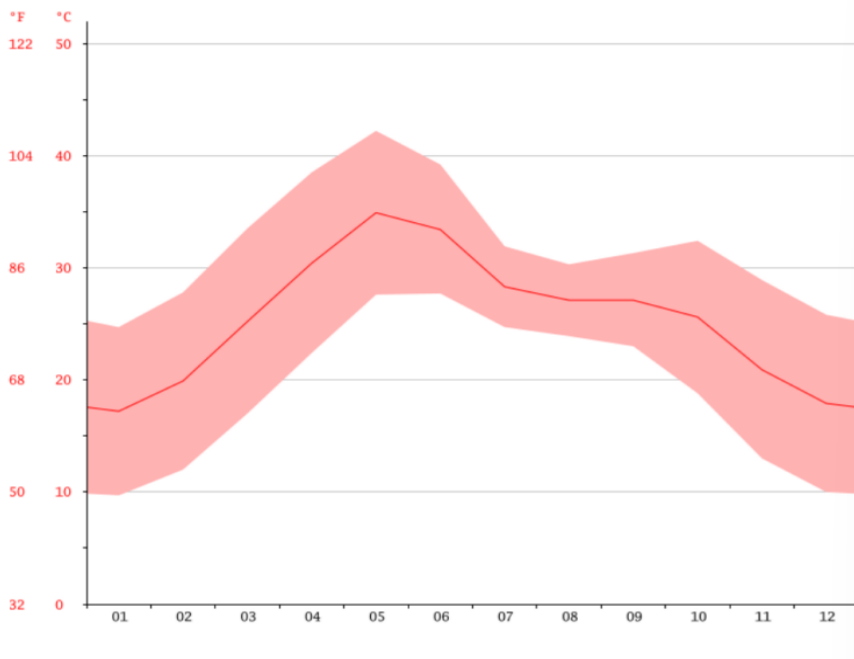


Figure 4-6 Average temperature by month

At an average temperature of 34.9 °C, May is the hottest month of the year. In January, the average temperature is 17.2 °C. It is the lowest average temperature of the whole year.

Between the driest and wettest months, the difference in precipitation is 386 mm. The average temperatures vary during the year by 17.7 °C.

Average Wind Speed

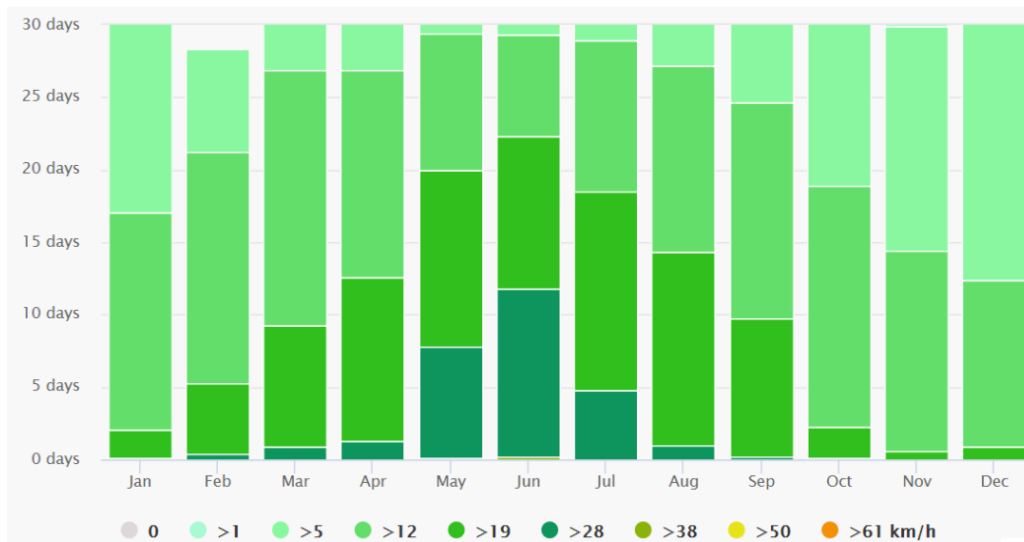


Figure 4-7 Wind speed

The wind speed is greatest in the month of June which is above 28 km/h. The speed does not reach 38 km/he in Lalitpur.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	17.2	19.9	25.2	30.4	34.9	33.4	28.3	27.1	27.1	25.6	20.9	17.9
Min. Temperature (°C)	9.7	12	17	22.4	27.6	27.7	24.7	23.9	23	18.8	13	10
Max. Temperature (°C)	24.7	27.8	33.5	38.5	42.2	39.2	31.9	30.3	31.3	32.4	28.9	25.8
Avg. Temperature (°F)	63.0	67.8	77.4	86.7	94.8	92.1	82.9	80.8	80.8	78.1	69.6	64.2
Min. Temperature (°F)	49.5	53.6	62.6	72.3	81.7	81.9	76.5	75.0	73.4	65.8	55.4	50.0
Max. Temperature (°F)	76.5	82.0	92.3	101.3	108.0	102.6	89.4	86.5	88.3	90.3	84.0	78.4
Precipitation / Rainfall (mm)	27	4	10	3	5	82	389	377	182	34	5	10

Figure 4-8 Lalitpur weather

source: <https://weatherspark.com/y/109523/Average-Weather-in-Lalitpur-India-Year-Round>

4.6. SWOT ANALYSIS

<p>STRENGTH</p> <ul style="list-style-type: none"> • Flat land • Secluded from the main road • Agricultural land in front • Fresh airflow 	<p>WEAKNESS</p> <ul style="list-style-type: none"> • No direct main road connection • Factories at the side
<p>OPPORTUNITY</p> <ul style="list-style-type: none"> • New art center which can be possible attraction of the area • Proximity to KU School of arts and Tranquility hospital for collaboration • Very flexible in terms of area 	<p>THREAT</p> <ul style="list-style-type: none"> • Noise from the nearby automobile factory

Sustainability of the art center in the located site

- Since it is an institutional zone, the area comprises of a lot of institutes such as Little Angels School, KU School of Arts, Prime College along the road and GEMS School, Ullens School, KIST, etc. on the periphery. Hence the public exhibition, art markets and art classes and seminars can be held targeting the students and students art work.
- Since Ku School of Arts does not have exhibition area and has been using Nepal art council for their yearly exhibition, this art canter can benefit them and the art center itself.
- The periphery also comprises of housing, residences. Trainings and small-scale production can be targeted for empowering the women as well.
- The area also contains offices. The seminar and conference hall can be used by them.
- The collaboration between Tranquility Hospital is possible for art therapy.

5. PROGRAM FORMULATION

Total site area = 18313.92 sq. m (approx. 36 Ropani)

Permissible site coverage = 40% of total site area (according to Bye law) = 7325.568 sq. m

According to few interviews and case studies, the approximate visitors during peak hour is 500-800 visitors per day. Therefore, the gallery proposed will have capacity to sustain 1000 people per day. Let's assume the visitor hour is from 10 am to 5 pm then, 150 people will visit in an hour approximately.

Table 3 program formulation table

SN	DESCRIPTION	STANDARD AREA	NO. OF UNIT/PEOPLE	TOTAL AREA (sq. m.)
A	Built-up Area			
	Gallery			
1	Gallery 1 (permanent)	130-160/unit	1	400
2	Gallery 2 (Temporary)	1.2-1.5/person	2	500 + 280
3	Gallery 3 (art therapy exhibition)	1.2-1.5/person	1	200
4	Store	20-30%	3	125
5	Rest room	10%	1	50
6	Public art exhibit space	1.2-1.5/person	200	220
		Total		1650
B	Art Therapy			
1	Therapy room 1	1.5-4/person	20	80
2	Therapy room 1	1.5-4/person	20	80
3	Clinical assistance unit	12-15/unit	1	15
4	Individual therapy room 1			30
5	Individual therapy room 2			30

6	Sun room			100
7	Healing garden	0.6-1 / person		300
		Total		630
SN	DESCRIPTION	STANDARD AREA	NO. OF UNIT/PEOPLE	TOTAL AREA (sq. m.)
C	Studios			
1	Individual artist studio	35/unit	4	140
2	Painting studio	4.5-5/person	15*2	150
3	Photography studio	4.5-5/person	15	75
4	Clay and pottery studio	4.5-5/person	15	75
5	Print making studio	4.5-5/person	15	75
6	Wood/stone workshop	4.5-5/person	30	150
		Total		665
D	Supporting Spaces			
	Art Library			
1	Spaces for shelves	100volume/m2		100
2	Spaces for reading	3.3 m2/person	50 readers at a time	170
3	Staff space	3 professional staff	6 m2/person	18
4	Store room			40
5	Lounge space			50
				378
		40% for circulation		151
		Total		529

E	Art Cafe			
1	Dining space	1.2-1.5/person	100	150
2	Kitchen	30-40% of dining space		45
3	Counter			5
4	Rest room for staff			20
5	Art shops	20/unit	20	300
		20% circulation		104
		Total		624

SN	DESCRIPTION	STANDARD AREA	NO. OF UNIT/PEOPLE	TOTAL AREA (sq. m.)
F	Seminar & Programs			
1	Seminar room	0.9-2 /person	50	100
2	Training/lecture Room	0.8-2 / person	60	120
3	Multipurpose room	1.4/person	200	280
	stage	40%	1	145
	store	20%	1	72
	foyer	50%	1	180
	Projector/control room	10-20%	1	40
	Rehearsal room	15-20%	1	84
	Changing room	10-15%	1	55
	Rest room	10%	1	40
		Total		1116

G	Parking	STANDARD AREA	NO. OF UNIT/PEOPLE	TOTAL AREA (sq. m.)
	60 cars	14 sq. m (5*2.8)		840
	160 bikes	2 sq. m		320
		40% of circulation		464
		Total		1624
		Overall Total		7302

Administration

Table 4 program for administration

Reception= 12 sq. m	Staff room= 80 sq. m (for 10 people)
Waiting Lounge= 50 sq. m	Surveillance room= 30 sq. m
Ticket counter= 20 sq. m	Meeting room= 50 sq. m (for 15-20 people)
Information center= 30 sq. m	Pantry= 20 sq. m
Director's room= 30 sq. m	Store= 30 sq. m
Curator's room- 30 sq. m	Total= 382 sq. m

Total Ground Coverage area= 4029

GCR= 4029, 21.9 % coverage

6. CONCEPT DEVELOPMENT

6.1. DESIGN CONCEPT:

The ENSO circle, a concept from Zen Buddhism, represents the circle of life, the universe, and the interconnectedness of all things. It is a Japanese calligraphy art style, that is hand-drawn in one/two brushstroke to express a moment when the mind is free to let the body create. The circle is often incomplete, with a gap left open representing the imperfection and constant change that is inherent in life.

In architecture, this concept can be interpreted and applied in various ways depending on the design intent and context. However, using this concept of incomplete circle as a source of inspiration for the form development, by creating circular or curved forms that convey a sense of beauty in imperfection, yet bringing balance and harmony between all things.

Also, to solve the problem of lack of architectural identity in an art center, the design has to be an art in itself so that the building will stand out amidst the surrounding skyline. Thus, circular forms are used to create a sense of flow and continuity in design of the building, public spaces and landscapes.

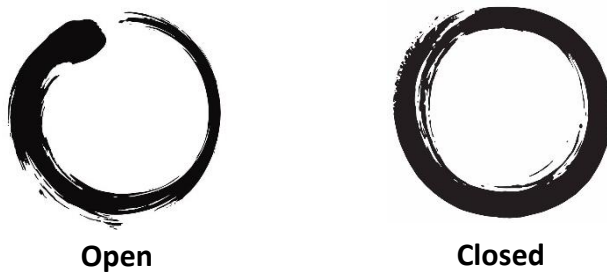


Figure 6-1 Enso circle representing two forms

6.2. FORM PROGRESSION:

Using the open incomplete circle for the form development which was further divided into required fragments and arranged into suitable shape.

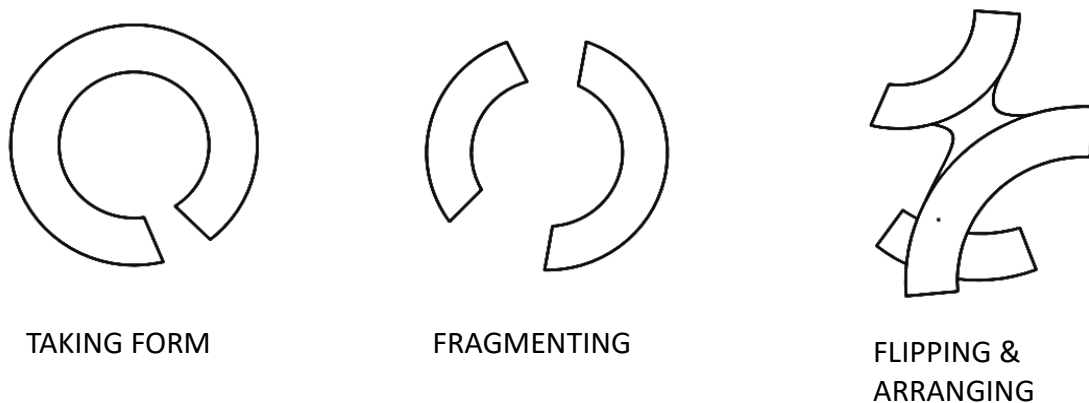


Figure 6-2 Initial form to final form progression in 2D

3D development :

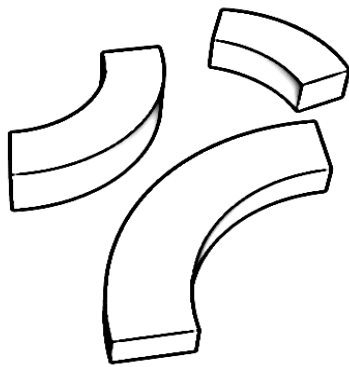


Figure 6-3 initial phase block

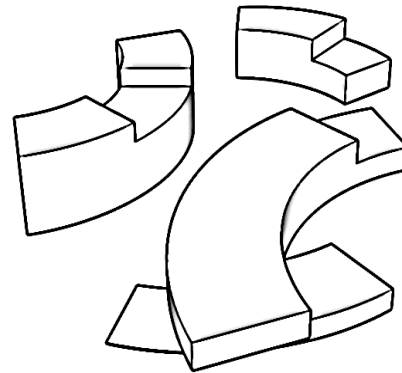


Figure 6-4 mid-phase massing

creating a geometric mass that has proper terracing spaces as well voids for letting in ample natural lighting. Also, using the space bridge to connect the blocks and create threshold spaces.

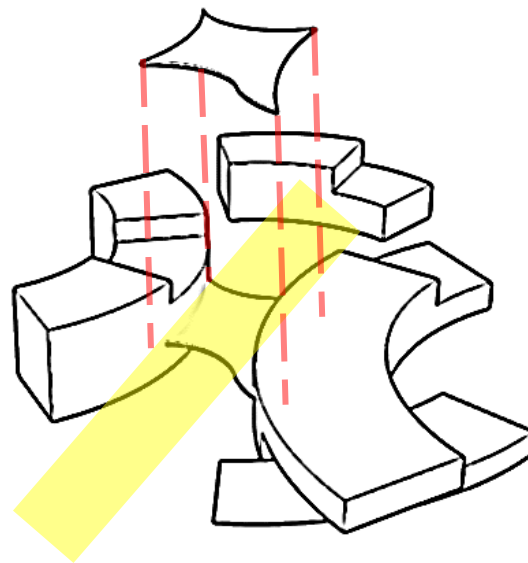


Figure 6-5 Final phase massing

Transparency between the public and the art community must be preserved in order to increase public interaction, and a suitable axis for people to move around the center was discovered to be important. As a result, by extruding the block along the axis, an axis cum corridor was defined from the entryway to the art community inside. By the narrow axis, this also enables curiosity in the thoughts of the viewer to peer into the art community inside.

6.3. ZONING & AXIS:

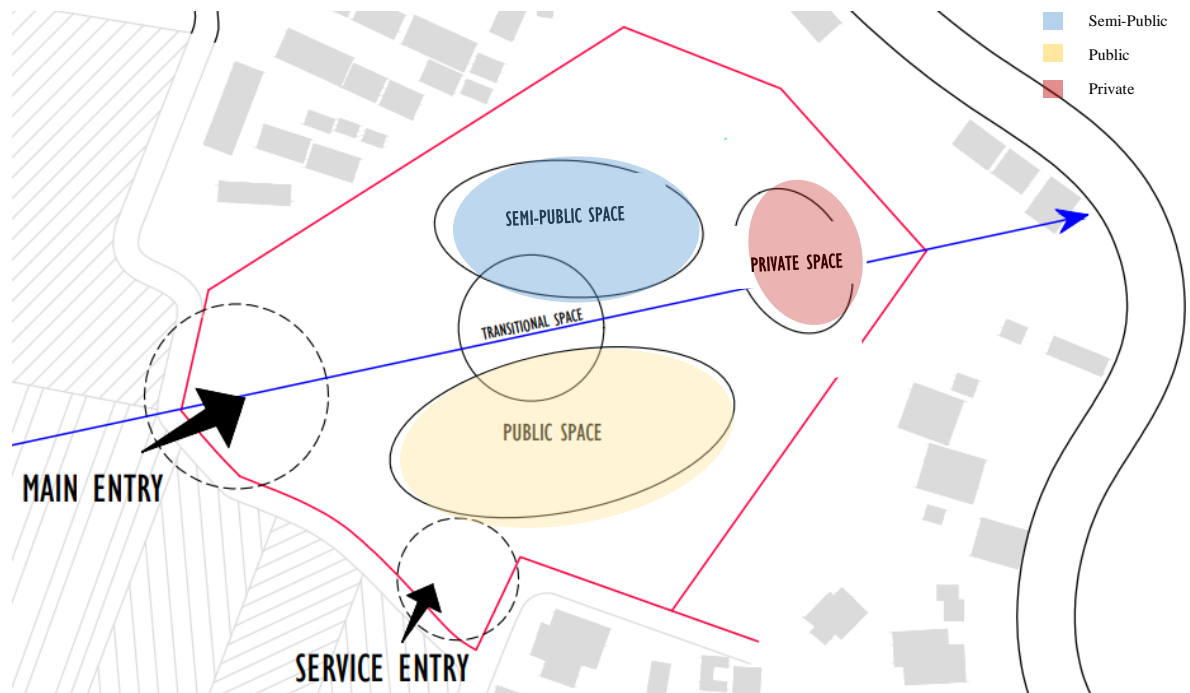


Figure 6-6 Zoning by program

Zoning of the site has been done emphasizing the privacy priority of the spaces as well as including the transitional spaces of different functions.

Taking Jan Gehl's main features of good public space into account further zoning is done by creating an axis which is along the wind direction; the axis is called **ACTIVATED MOVEMENT AXIS**.

Meaning a diagonal axis along the East-West wind direction to induce activities along the axis and help promote interaction between spaces.

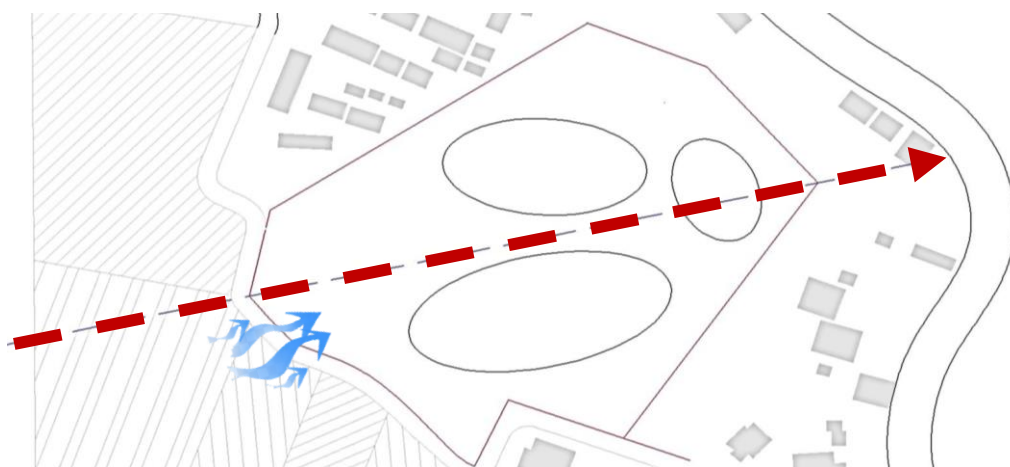


Figure 6-7 diagonal axis along the wind direction

6.4. SENSE OF OPENNESS:

The concept of “openness” in architectural planning refers to the creation of the spaces that promote a sense of visual and physical openness, as well as social and psychological connectedness.

This can be achieved through the visual connection to the outdoors, bringing the natural light into the building and through the layout itself. Open floor plans that minimize physical barriers and allow for the flexible use of the spaces can create a sense of visual and physical openness. This encourages the social interaction and fosters a sense of community and collaboration.

In this design, the sense of openness has been defined within three topics i.e.

1. Floored indoor space
2. User defined semi-open space
3. Open to sky space

Using various design elements such as the louvers, courtyards, void and pilotis to play with lightings, nature and create a sense of openness.

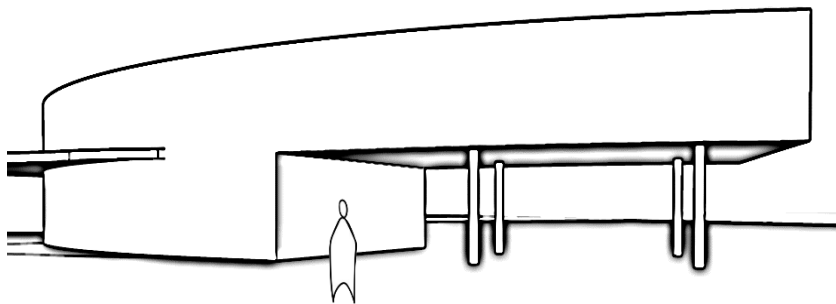


Figure 6-9 pilotis illustration through sketch

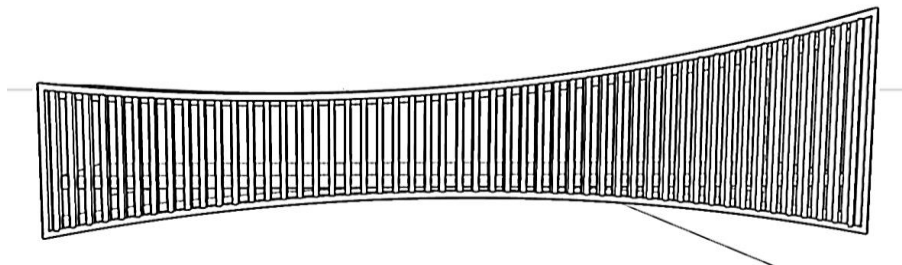


Figure 6-8 louvered elevation illustration

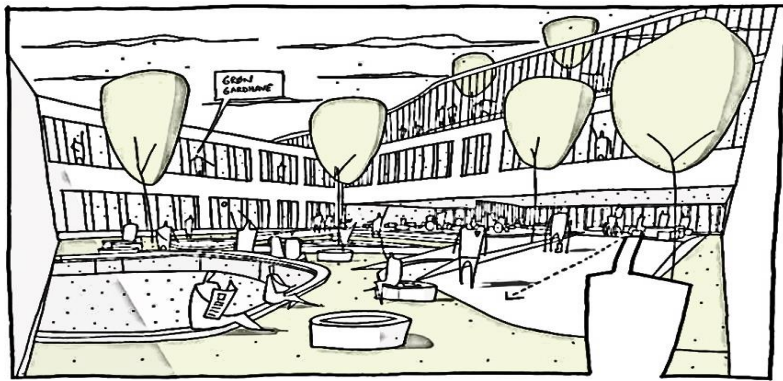
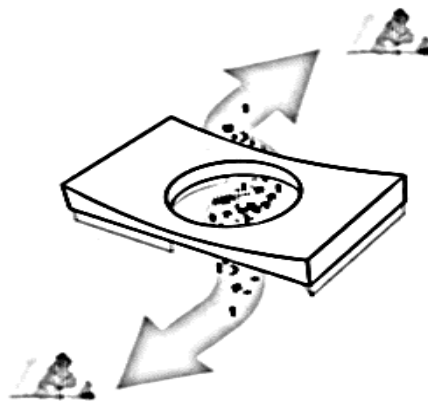


Figure 6-11 open courtyard illustration



USE OF VOID

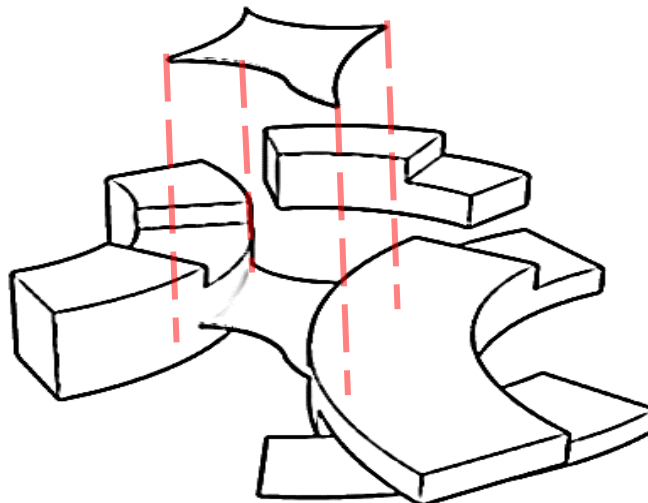


Figure 6-10 using void within the connecting bridge for transparency

6.3. NATURE AS A BINDING ELEMENT

Through all the design concept and form development process, the binding element in the whole design has been nature. All the spaces has been connected to nature through courtyards, gardens, nature windows, ramps and slopes in case of form, etc.

6.5. PLAN FORMULATION

The plan arrangement for the facility is inspired from the zoning of the required program emphasizing the privacy priority of the spaces as well as including the transitional spaces of different functions. There are three entrances; for the pedestrians, for basement and for the services and maintenance purposes. The buildings go from two storey to fourth in progressive ascending order creating a stepped platform on some blocks. The buildings are kept at further distance from the main entry so as to maximize the use of frontal pedestrian area for various public activities.

Accordingly, the public and semi-public blocks are nearer to the main entry whereas the private block is kept a bit far from the main entrance thus providing a different access to it. Another entry towards the basement parking that holds up to 65 cars and 170 bikes. The spaces are arranged such that the flow of visitors for the public block, semi-public and the private blocks don't overlap and clearly directed towards their designated spaces.

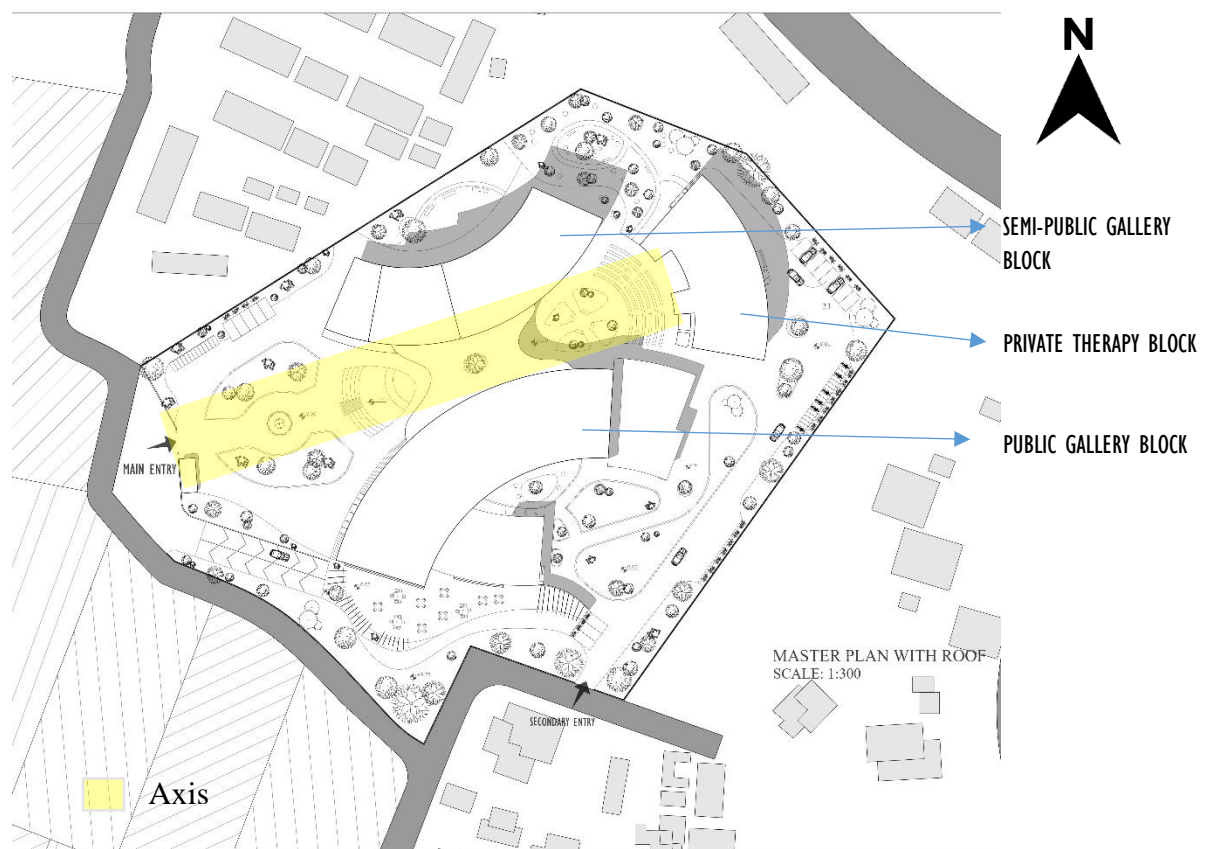


Figure 6-12 Master plan with roof sciagraphy

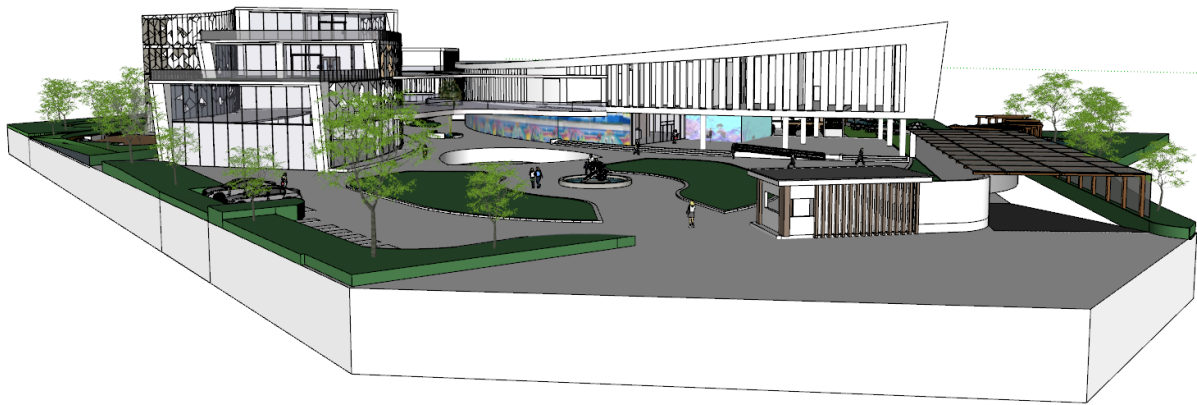


Figure 6-14 perspective 3D view

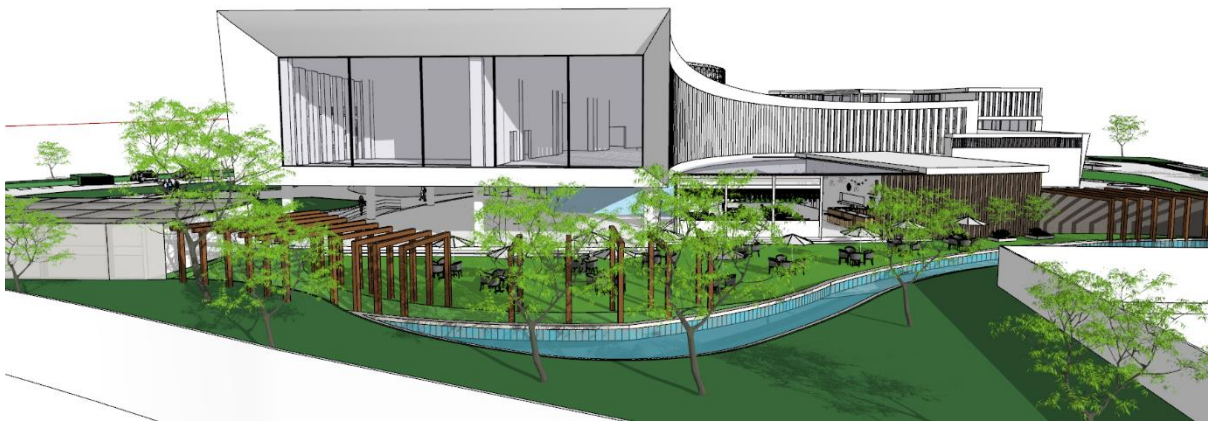


Figure 6-13 frontal view from the road side



Figure 6-15 isometric view

MASTER PLAN

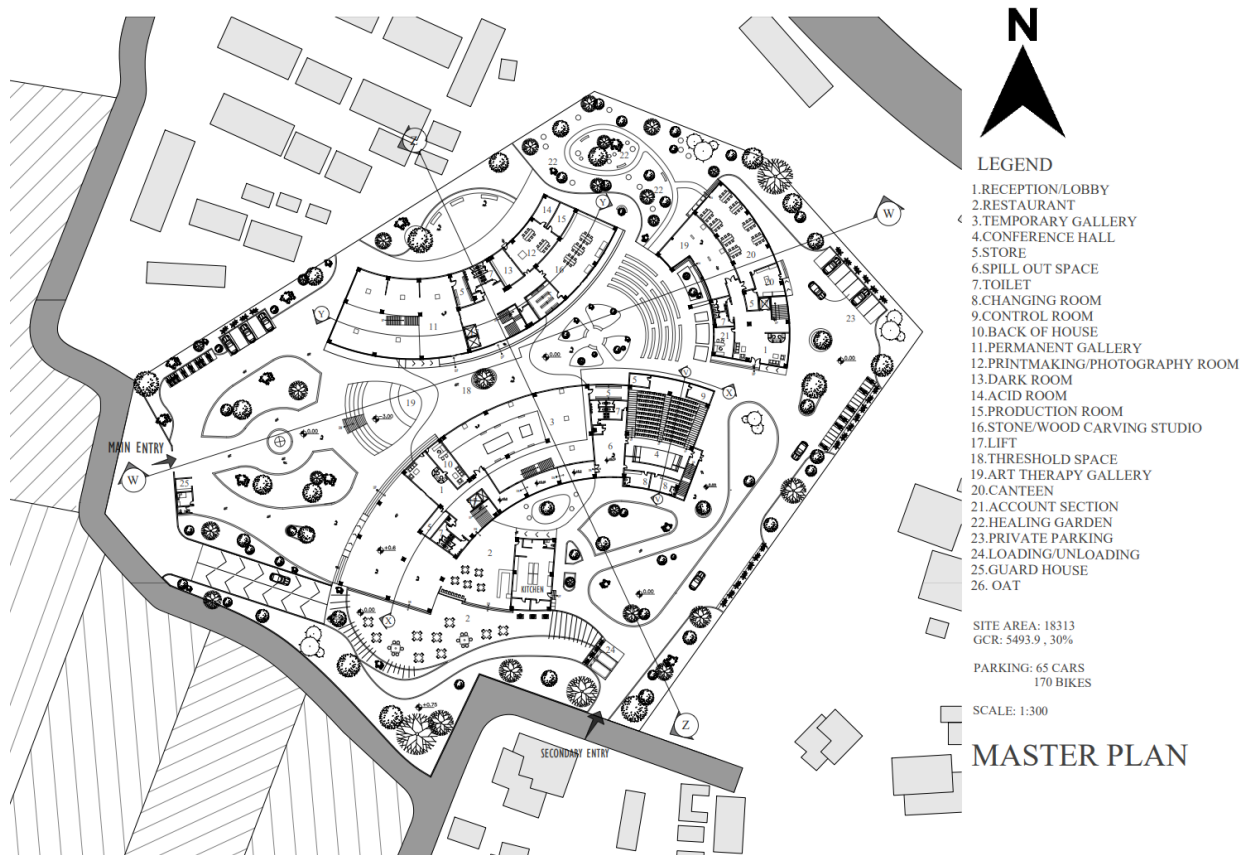


Figure 6-16 master plan with ground floor plan

1. PUBLIC BLOCK

The public block consists of the temporary gallery, training room, conference hall, restaurant and co-working space. This block is where the maximum visitors flow occurs due to the temporary exhibitions that are held for a certain period of time. The temporary gallery is provided with mezzanine space which leads towards the art shops on the bridge space of first floor. The lecture and co-working spaces are on the first floor and is designed very spaciouly with interesting lightplay due to the louvers. The conference on the ground floor has a lobby with murals/arts displayed as it guides people to the hall. It also has a direct exit to the basement parking or onto the outside garden so as to not overlap the visitors flow. Also, a restaurant is provided on the outside periphery of this block which is connected from the inside as well as with an outdoor arrangement of the café seatings facing towards the rich green gardens. To provide a serene therapeutic experience, a water wall is also provided with multiple design elements around the garden.

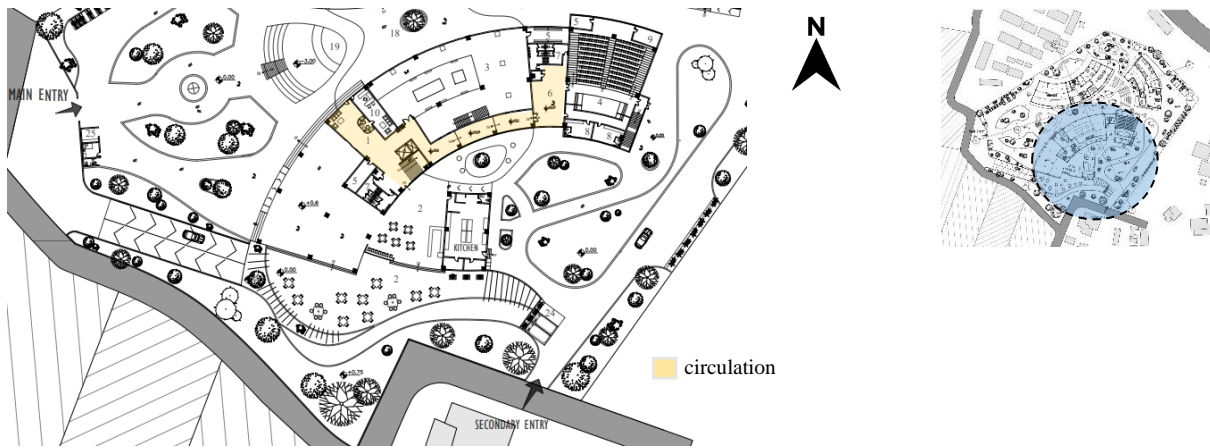


Figure 6-21 Public block, ground floor plan

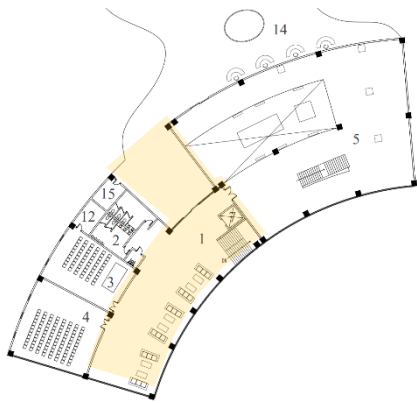


Figure 6-19 Public block, first floor plan



Figure 6-20 temporary gallery with mezzanine



Figure 6-18 outdoor restaurant with water wall



Figure 6-17 restaurant layout

2. SEMI-PUBLIC BLOCK

It is the combination of administration block, permanent gallery and education block. The permanent gallery is provided on the ground floor since it requires the frequent flow of people. It also has a mezzanine space to provide a spacious double height experience for the natural indirect lightings. The studios such as photography and wood/stone carving are on the ground floor since they require heavy equipments and materials, also the access to the outdoor for various activities. The admin space is on the first floor with a sense of privacy it requires, it is segregated from the common circulation space. The educational space is provided on the second floor i.e. the library and the studios for 2D and 3D which are separated by a common circulation space. the library has access to the terrace study place. The individual art studios along with accomodation are on the third floor (top floor) with their own access to the green terrace for creative mind needs peaceful environment and nature is the most efficient rejuvenating element.



Figure 6-24 semi-public block, ground floor plan

circulation



Figure 6-22 first floor plan

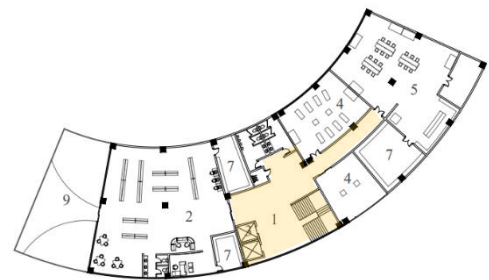


Figure 6-26 second floor plan



Figure 6-23 Library



Figure 6-25 third floor plan

3. PRIVATE BLOCK

The private block is an Art Therapy block that consists of therapy rooms, clinical assistance room, canteen, accommodation and administration. The block is provided with a different access and landscape is used as physical barrier between the AT block and other blocks. An open C-shaped courtyard is provided on the frontal part of the axis and the informal spaces as well as the gallery is faced towards the green space. The block is provided with ample informal spaces with a view of the nature providing a healing approach. Also, a healing garden is provided with direct access from the private block for the people treated in the therapy block for a broader sense of serenity and peace.

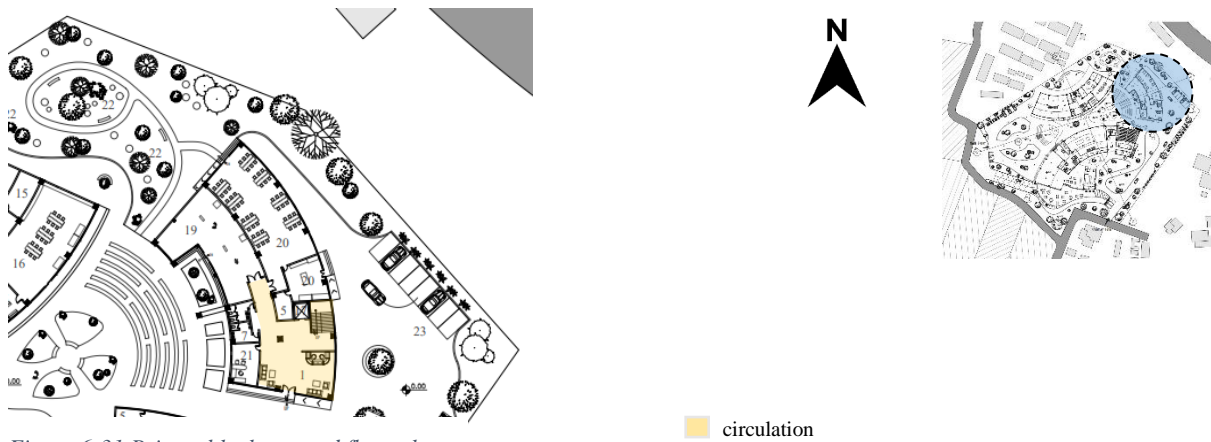


Figure 6-31 Private block, ground floor plan

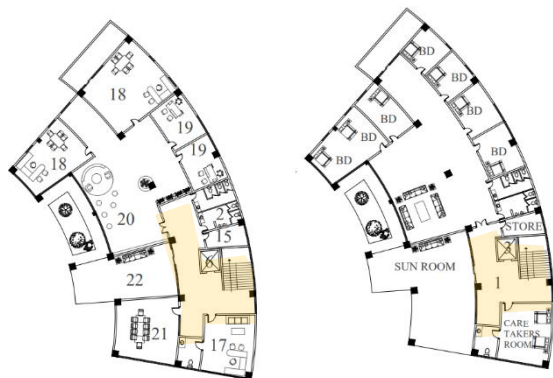


Figure 6-29 First floor plan

Figure 6-28 second floor plan



Figure 6-27 open courtyard



Figure 6-32 waiting space in therapy floor

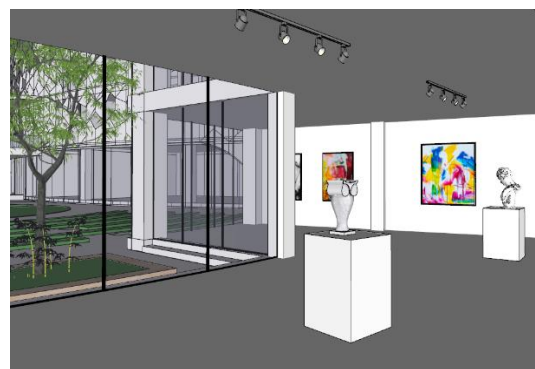


Figure 6-30 art therapy gallery

4. OPEN PUBLIC EXHIBITION

The space between the road and therapy block has been used for open exhibition where public arts, sculptures, mural, art installations can be exhibited. It is directly visible from the road creating a direct interaction between art and public. Since there is provision of ample space it allows the chaos control of people along the busy road. The entrance has been moved further away from the road so that a transitional space is created between the site and the road so as to prevent traffic congestion.



Figure 6-33 open public exhibition space with mural

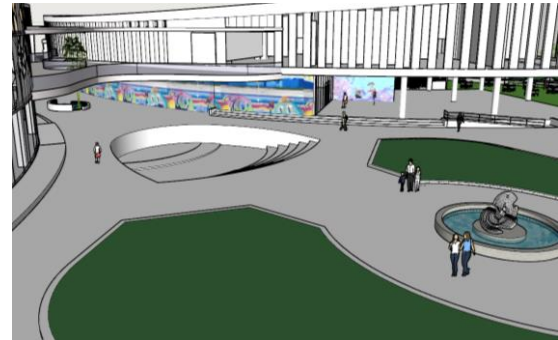


Figure 6-34 open public exhibition space with oat

5. LANDSCAPING

Designing the landscape to include multiple outdoor spaces that can be used for different purposes. This can include an open area for large group activities, as well as smaller, more intimate spaces for small group discussions or one-on-one meetings. Also, natural elements such as plants and water features, that can inspire creativity and relaxation. This can include features such as a garden or a water feature that can be used as a focal point for the workshop. To ensure that the landscape is accessible to all participants, including those with mobility challenges, there is the use of ramps and smooth pathways that make the space easy to navigate.



Figure 6-35 outdoor restaurant



7. SERVICES AND STRUCTURE

7.1. WATER SUPPLY AND SANITATION

CALCULATION OF WATER TANK

Table 5 calculation of water tank

SN	DESCRIPTION	NO. OF PEOPLE	OVERHEAD CAPACITY	TOTAL	REMARKS
1	Art gallery	180	40	7200	15 staffs and 1000 visitors a day, Taking 1/6 th visitors
2	Multipurpose hall	200	20	4000	
3	studio	130	20	2600	
4	Administration	15	45	675	
5	Library	50	40	2000	
6	Individual studio	4	100	400	
7	Café	150	50	7500	
8	Art therapy	120	20	2400	
9	Art market	16	20	320	

Total water consumption per day = 27095
= 28 cu. m

Size of water tank = 28 x 3 (safety factor 3)
= 84 cu. m

Fire tank = 50 cu. m, a/c to NBC, Total underground tank = (84 + 50)
=134 cu. m

Tank size = 160 cu. m,
8 x 4 x 5 m

Overhead tank = 42 cu. m (84/2, pumping twice a day)

Tank size = 45 cu. m, 6 x 3 x 2.5 m



Figure 7-1 water supply plan

CALCULATION OF SEPTIC TANK

Primary users

Gallery = 60

Studio = 120

Admin = 15

Studio Apartment = 4

Art market = 15

Art therapy = 30

Total = 244

Secondary users

Hall = 190

Library = 50

Café = 150

Workshops/ art camps = 100

Total = 440

20% of total = 88

Total users = 332 a

Required volume for septic tank = No. of users x 3 cu ft

$$= 332 \times 3$$

$$= 996 \text{ cu ft}$$

$$= 28.2 \text{ cu m}$$

Taking 28 cu. m.

Taking H=1.5m then B= 2.5m and L=7.5

So, size of septic tank = 7.5 x 2.5 x 1.5 cu. m

Size of soak pit = 4 x sp. 6 (Sp. 6 = dia. 5m and depth 2.75) from standard

(Refer to appendix I for sanitation layout plan and surface run off drainage plan)



Figure 7-2 sanitary plan

7.2. GREEN ROOF AND PERMEABLE PAVEMENT

Some part of the roof of the design has been used as green roof. This helps to control the amount of temperature inside the building as well as control the amount of storm water runoff by absorbing 50% of the stormwater and evaporating it back to the environment.

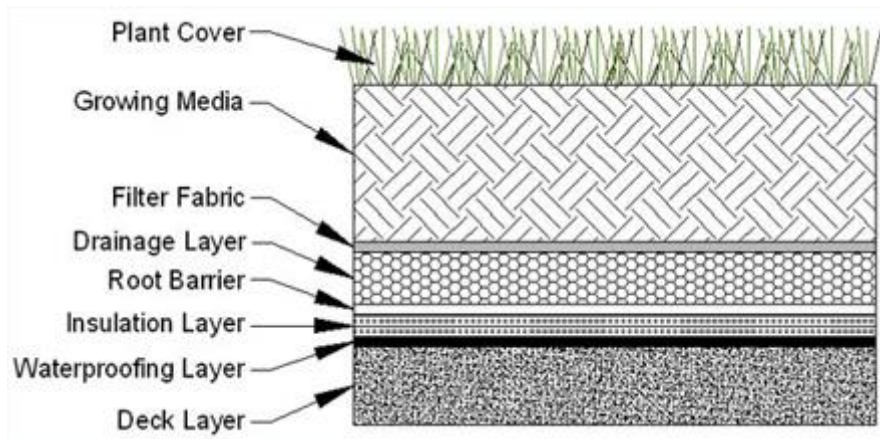


Figure 7-4 green roof section detail

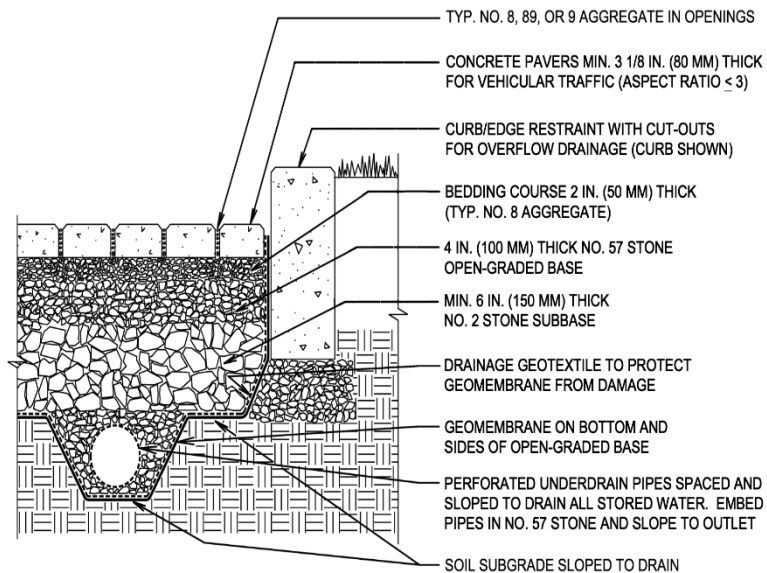


Figure 7-3 permeable pavement section detail

8. PHYSICAL MODEL



Figure 7-1 Front view



Figure 8-2 Back view



Figure 8-4 Left view (west)



Figure 8-3 Right view (East)



Figure 0-2 entry view

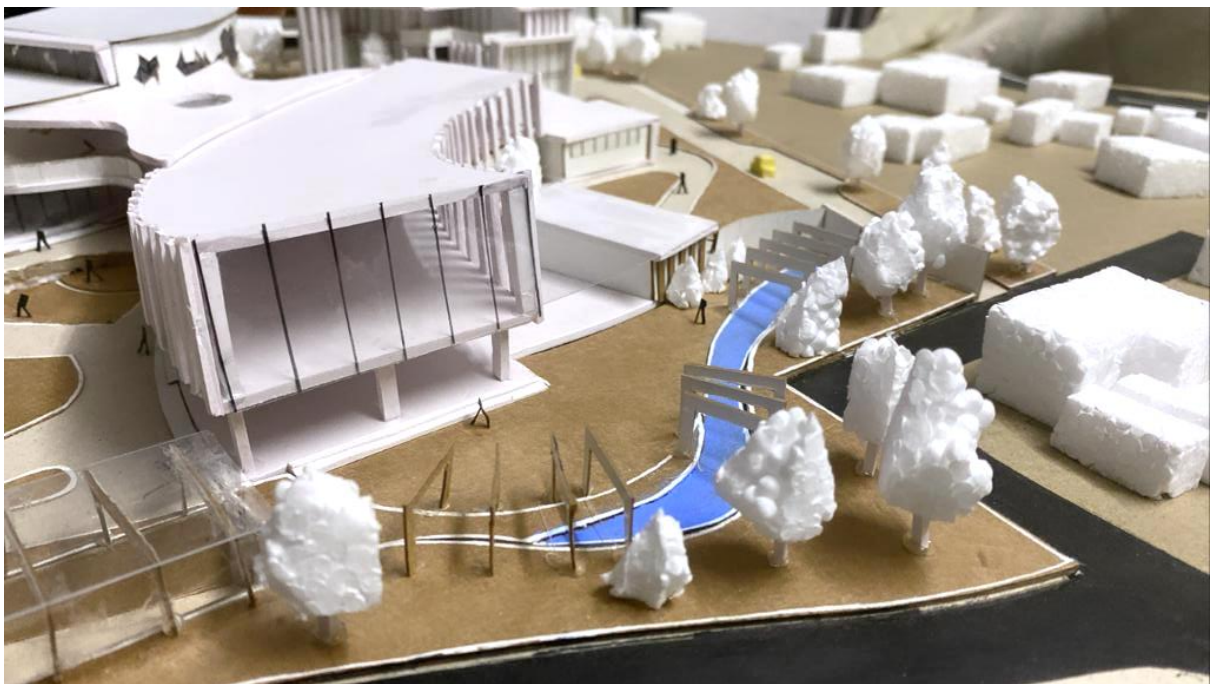


Figure 8-1 water body landscape



Figure 0-5 iso-side view

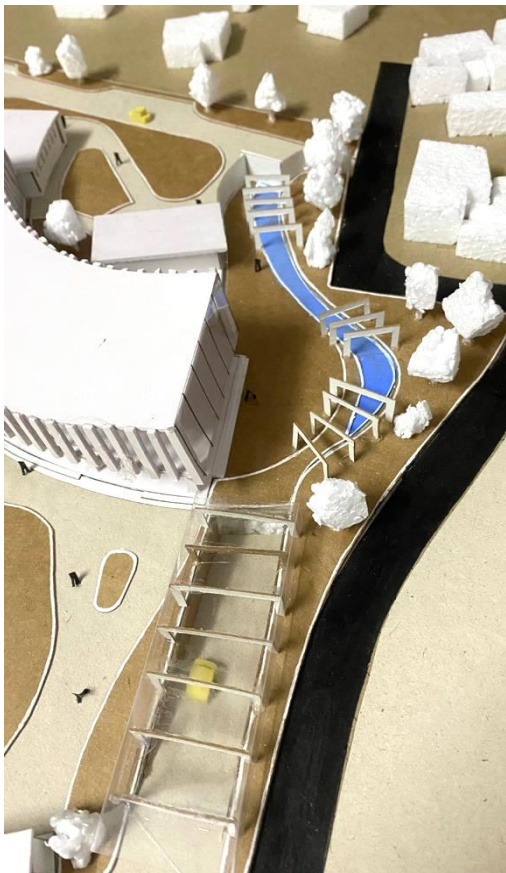


Figure 0-4 basement parking and landscape



Figure 0-3 ariel top view

CONCLUSION

The process of creating architecture is intuitive; it's almost as if we create our own "abstract" concepts of what we want a space to be. Using specific images from memory, we put together architecture to exist in the real world. Not only does it appear that all of us have an innate ability to create art, but architecture may be one of those abilities as well. Ever since creation of the first human shelter, humans have long associated the art of making with a significant act of self-improvement and being in tune with our surroundings, which is essentially a form of therapy and healing.

As an act of healing, it is symbolic of our perseverance as a species to live a fulfilled existence. In exploring art as healing, architecture as an art and lastly, architecture as a healing space, I can deduce that the common bond between them is that art does have healing qualities and it can be said that such healing qualities provide therapeutic harmony in all of us. I believe its effects may be limitless in measuring the benefits to the Self. The journey of healing through art seems to be a process of retrospection, Self-growth and Self-discovery. This investigation has brought about key design objectives that may be crucial in my site criteria and space making concepts for my architectural intervention.

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ANNEX