

Development of ‘Creative Thinking: Case Study of Basic Design Studio

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Abstract:- Architecture is a creative ‘Art of understanding’ as it reconciles the various aspects of place and culture, aesthetics and techniques and different materials. Architecture manages the beauty and aesthetics on one hand and the utilitarian aspects on the other. This balance requires a lot of creative exploration.

Basic design studio is a cradle in imbibing this creative perspective in the new learner in architecture education. This studio plays a formative role in molding the students’ perception of architecture. The students not only get hands on experience but inculcates the trait of ‘Creative Thinking’. Basic design subject gets the students acquainted with not just architectural vocabulary but the ‘Principles of design’ which forms the basis of any design conception. The articulation of the elements of design like lines, planes, solids in two-dimensional and three-dimensional forms along with the use of different mediums, materials, and techniques through the principles of design aids them in the process of thinking creatively.

The paper aims to understand and analyze the extent of assimilation of ‘Creative thinking’ in Basic Design studio (Subject code-102- Allied design studio) for 1st year, semester- 2, B. Arch. students at Bharati Vidyapeeth College of Architecture, Mumbai University for AY 2021-22. The methodology adopted for the paper is based on qualitative data elucidating the learnings in the studio

based on the development of the ‘Creative thinking’ attribute.

I. INTRODUCTION

‘Good Architecture’ utilizes an artistic approach, relying more on creative solutions through scientific analysis. Designing is not just a rational process of analysis and synthesis but often resorts to a more philosophical and theologian’s approach. Thus, architecture education should be a multi-faceted field with specialized conglomerate of subjects ranging from social and cultural aspects, history and theory, philosophy, sustainability, technology, and many more.

Design studio is a core subject in architectural discourse in all institutions imparting architectural education. The main aim of architectural design studio is to channelize student’s imagination to develop design which is a balance of intangible and tangible characteristics. The theory of ‘Conception to perception’ is realized in this subject.

The activities that occur within the design studio context had empowered the creative design abilities of students (Orbey and Sarioglu, 2020). The design studio context is creating a learning environment that mainly focuses on increasing the creative learning abilities of the students (Ibrahim & Utaberta, 2012).

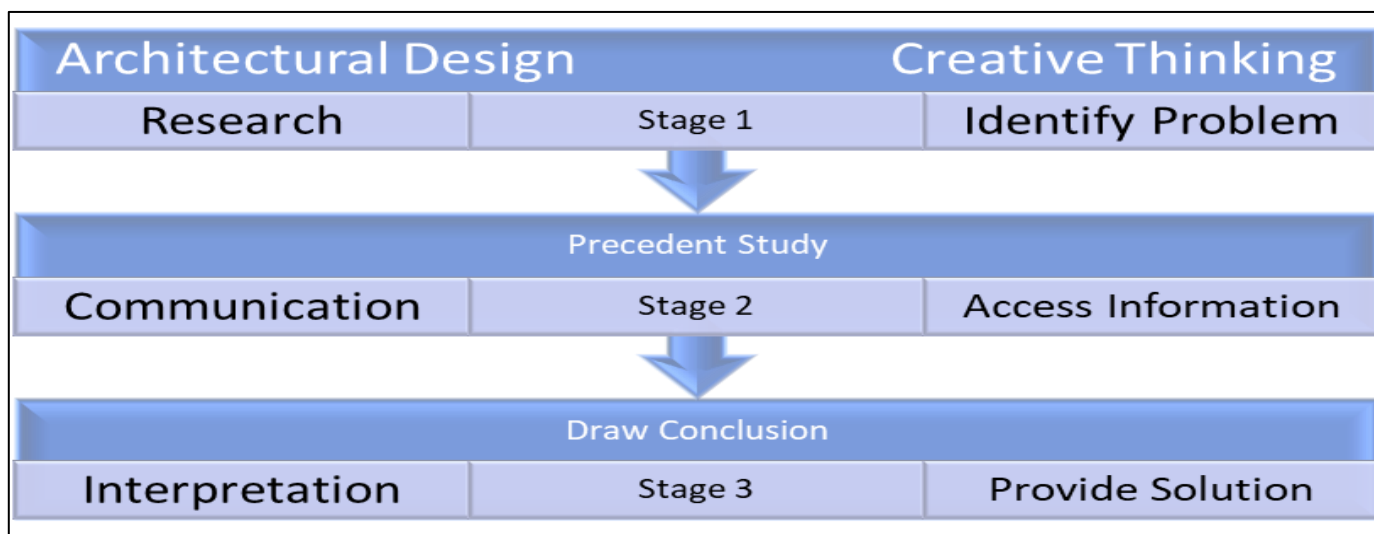


Fig 1: Relation between Architectural Design Studio and Creative Thinking

An integrative approach is adopted by all the architectural institutions wherein the other subjects assist the main core subject that is Architectural design. The other architectural subjects are generally aligned and systematized to contribute towards architectural design studio learning. Thus, the Basic design studio in the first-year architecture course helps the student bridge the gap between theory and

practice. Environmental studies in first and second years sensitize the students towards the environment and social contexts and lead the design towards sustainability. The subject of Building construction and technology helps the students understand the technical aspects. Whereas Humanities expose the students to the historical and theoretical aspects of architecture.



Fig 2: Subjects Supporting Architectural Design Studio

II. ALLIED DESIGN - BASIC DESIGN STUDIO IN MUMBAI UNIVERSITY

The course content for Allied design according to 2012 syllabus pattern of Mumbai University, may include Basic Design, Visual Arts, Graphic Design, Product Design, Interior Design, Furniture Design, Landscape Design, etc. It is developed by the individual colleges as per their choice.

Basic Design Course in Sem I, of B.Arch. is structured in such way that students will be equipped with the understanding of Design Principles, elements of design, concepts and ideas through 2D as well as 3D compositions, anthropometry, etc. This will further help enhance creativity by developing their skill of expression, imagination, aptitude of understanding the process of design.

The main objective of the Basic design studio is to stimulate, initiate and activate the creative learning capabilities and transformational abilities of the students to make them creative future designers.

➤ *Basic Design and Creativity*

Basic Design studio is one such fundamental subject that plays a principal role in helping the students learn the 'Art of Creative Thinking'. The first year of architecture is a foundation program. The students enrolled for this five-year professional course are from diverse social and educational backgrounds and are unaware of the architecture curriculum. Basic design studio has the utmost significance in the developmental years as it acts as a catalyst in sparking the brain's ability to think creatively i.e., resolve the problems in

a creative way not thought before in a stipulated time frame. This studio piques the student's inquisitiveness, interest, curiosity and experiences in the process of thinking, creating, expressing, and communicating thoughts through design vocabulary and different means of representation. To ensure that the main architectural design subject is creatively undertaken by the students, the other subjects must be properly integrated with it.

➤ *Creative Thinking:*

Architecture, being a field that demands the 'OUT OF THE BOX' approach, it is essential to equip the students with the skill to perceive any thought or design thread with all possible aspects to come up with a solution which can be unique. Thus, 'Creative Thinking' helps the students provide solutions to a problem in an innovative way never thought before. The course content of Basic Design is formulated in such a way that the discussions as well as assignment can help students to initiate creative thinking. The emphasis in the course is to make the students **Think – Analyze – Understand** and develop their own perception for the given assignment of Design Principles, elements of design and more. The evident solutions could be avoided with this pedagogical approach for this studio.

While analyzing the term 'Creative Thinking', some typologies are recognized which could decide the varied approaches taken to reach the solution. Following are the typologies and a brief explanation of how they are linked with assignments which could evoke the perception of 'Creative Thinking' among the students.

It could be observed through various literature study, that Creative thinking can be categorized into five major

types viz. Divergent thinking, Lateral Thinking, Aesthetic Thinking, Inspirational Thinking & System Thinking.

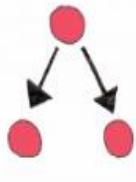




				
DIVERGENT THINKING (Exaggeration)	LATERAL THINKING (Out-of-the-box)	AESTHETIC THINKING (Beauty and taste)	SYSTEMS THINKING (Synthesis towards a whole)	INSPIRATIONAL THINKING (Emergent, radical insight)

Fig 3: Types of Creative Thinking
 Source: www.medium.com

All these types could be understood as a whole, given most of them are Interrelated one or the other way. But to narrow down the scope of this research and to justify its relevance to the subject, emphasis is given to three typologies viz. Divergent, Aesthetics and Systems. The divergent way of

creative thinking is related to lateral thinking as both break out of the rational way of thinking. Inspiration thinking is not considered in this research as it deals with the perception of receiving insights, which will be very irrational or having sound reasoning for the purpose of this study.

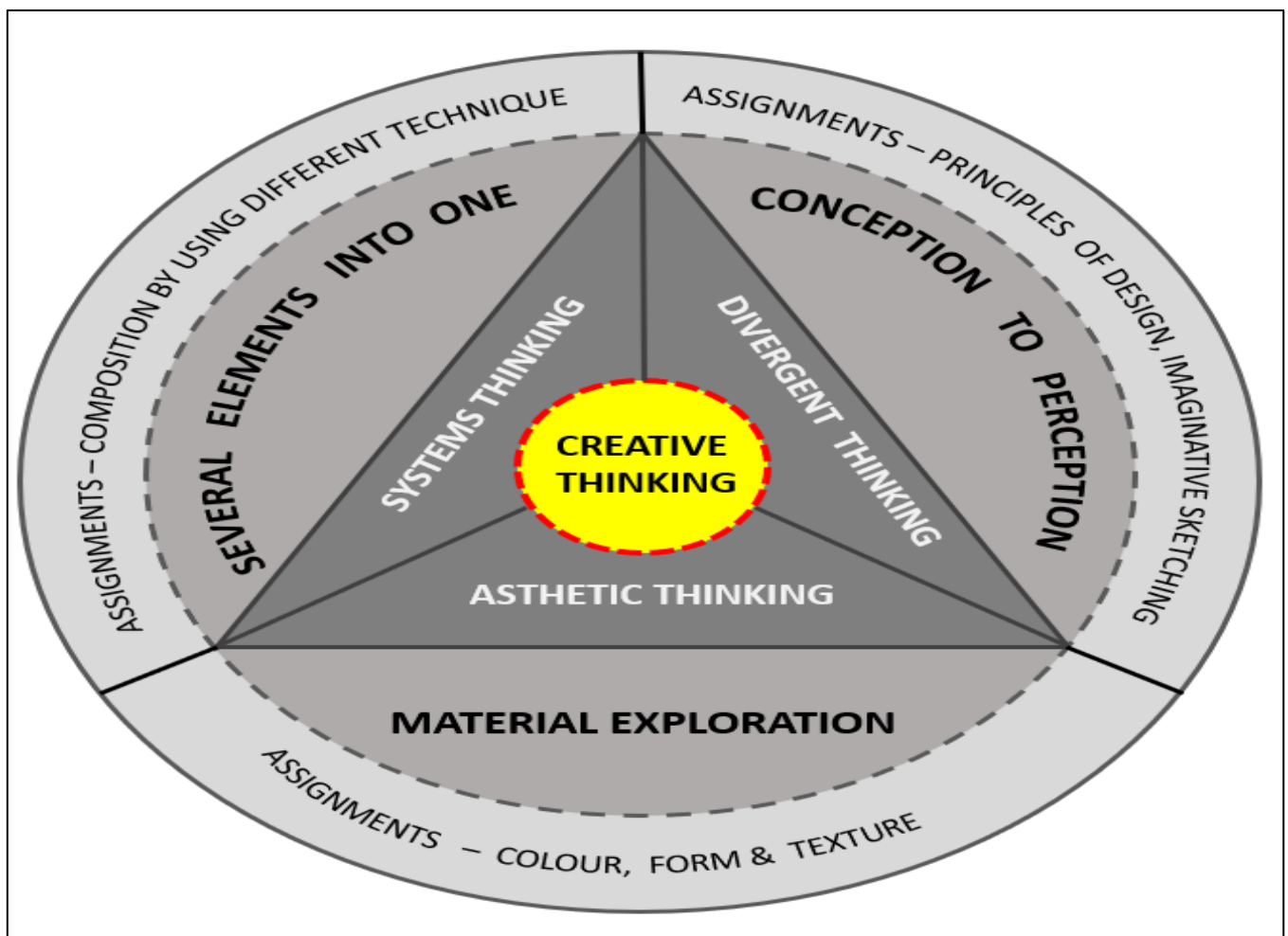


Fig 4: Types of Creative Thinking, Relevant Assignments and Learning
 Source: Author

➤ *Divergent Thinking*

To improve their imaginative skill and could benefit from a task of creative thinking that encourages them to think in all possible directions during a brainstorming session. The assignment is designed to keep an eye on the divergent way of thinking that involves coming up with multiple compositions for single design principle.










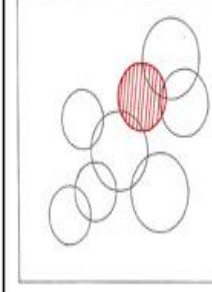





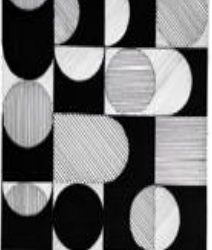



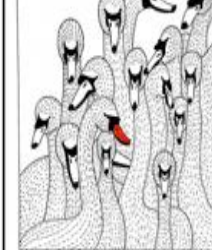
In this, the emphasis is made on Flexibility. The design principle can be applied in multitude of ways to achieve variety of outcomes.

It can be seen from the outcomes that the task has enhanced the student's ability to translate their ideas into designs and instigate their intangible thinking capabilities.

• *Assignment 1:*

The Assignment for this typology is to make various compositions on a 30 X 30 cm cartridge sheet which will portray the design principles in multiple way.

Table 1: Students Assignment 1 for Divergent Thinking Based on Design Principles

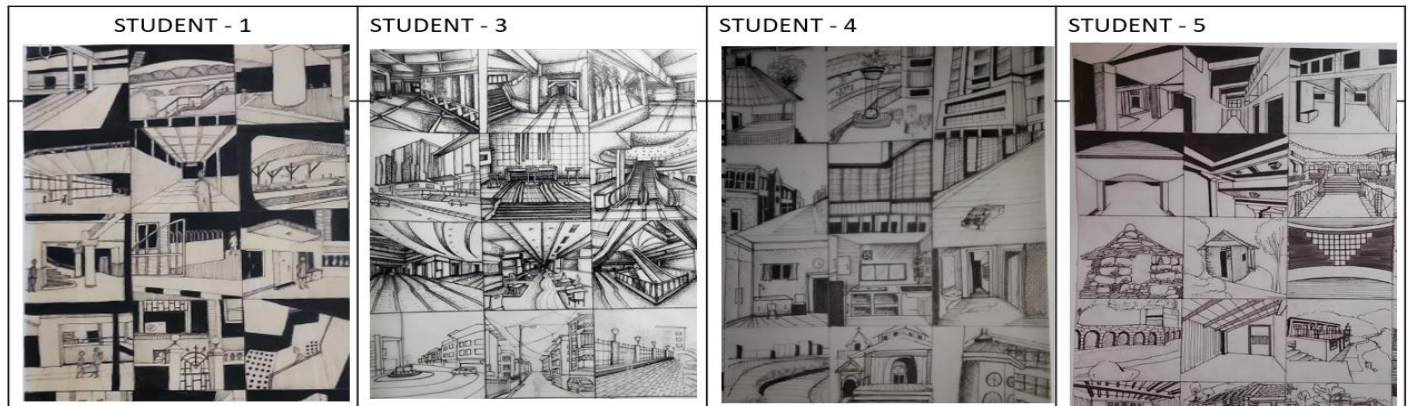
STUDENT WORK	PRINCIPLE-1 <u>PATTERN</u>	PRINCIPLE-2 <u>MOMENT</u>	PRINCIPLE-3 <u>CONTRAST</u>	PRINCIPLE-4 <u>PROPORTIONS</u>	PRINCIPLE-4 <u>EMPHASIS</u>
STUDENT-1					
STUDENT-2					
STUDENT-3					
STUDENT-4					

• *Assignment 2*

In this particular assignment, the students are supposed to make a free-hand sketching from their imagination based

on their everyday experiences. It enhances their ability to observe, think and translate their perception.

Table 2: Students Assignment 2 for Divergent Thinking Based on Imaginative Sketching



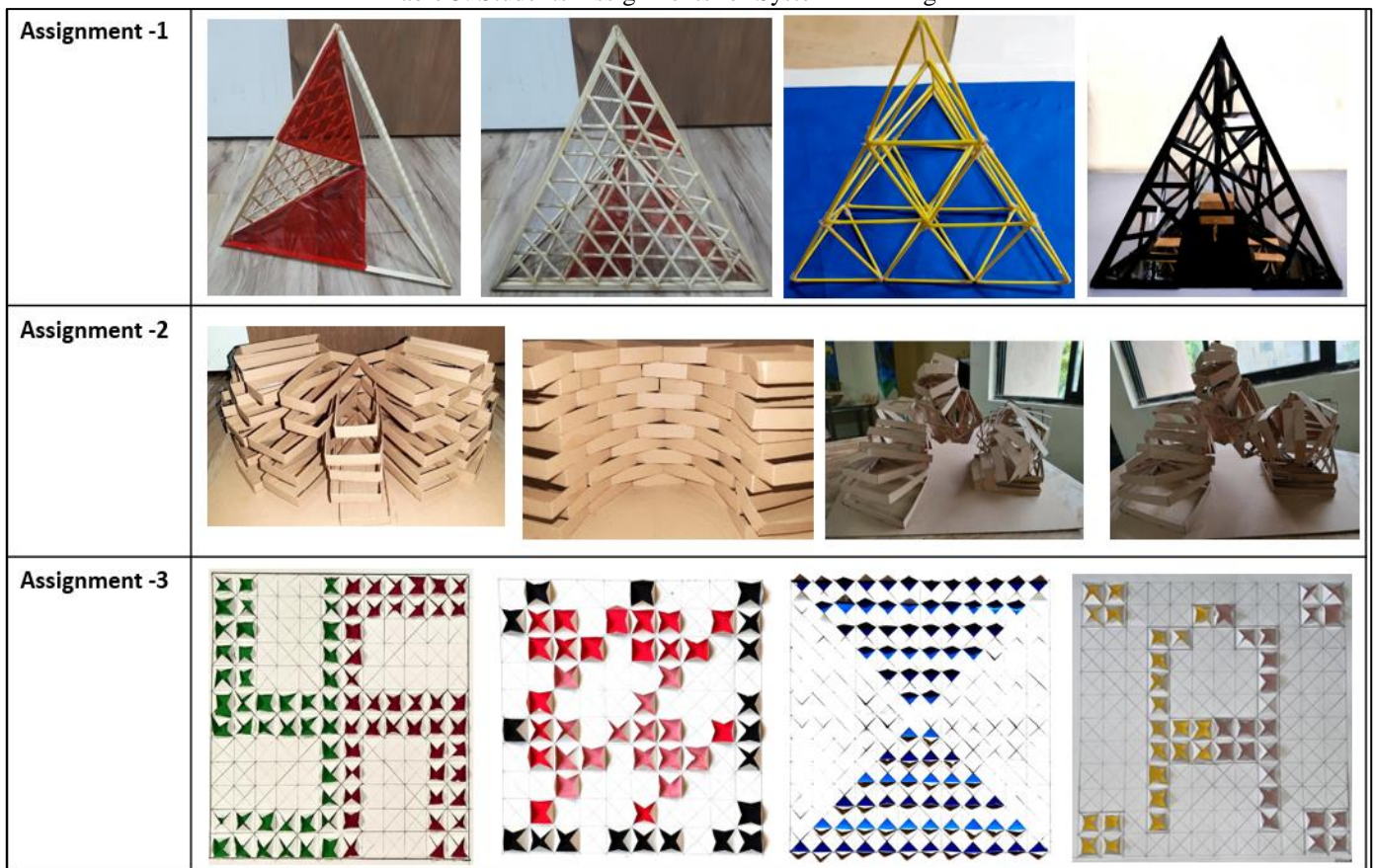
➤ *System Thinking*

System Thinking is understanding the various elements which are related to one another and form a bigger "whole". This could make it easier to comprehend the system by putting and utilizing the various components together.

System thinking is developed in a step-by-step format to reach the solution. The formulated way to approach a thought could help the students generate varied compositions by using the specified simple element.

Amalgamation of different principles could easily be understood through this kind of creative approach. For these, the assignments the students are expected to use material, shape and technique to create compositions. For material, watchmaker sticks are used, for shape, file card paper is used. Students came up with different shapes and made a composition out of it. For technique, paper cutting technique is used. This aids in enhancing their ability to use a single piece or a single module and create varied compositions with it.

Table 3: Students Assignments for System Thinking



➤ *Aesthetic Thinking*

Aesthetic Thinking focuses on discovering beauty through emphasis on colour, Form and Texture. The

assignment is designed in a way that emphasizes the aesthetic value of the given exercise exploration of different mediums and materials.

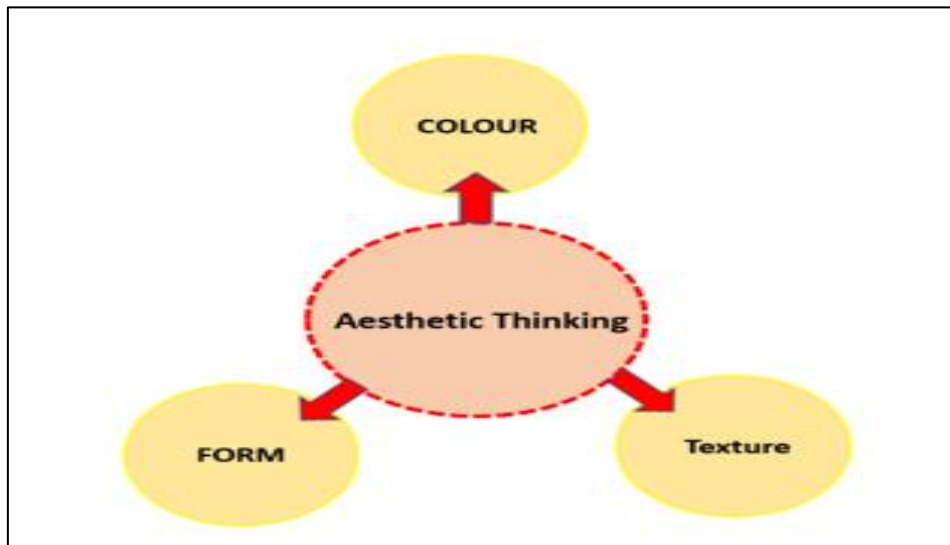


Fig 5: Aesthetic Thinking
Source: Author

Table 4: Students assignments for Aesthetic thinking

<p>Assignment 1 – Focus is on COLOUR Understanding colours, colour theory, their interactions, and creating compositions using warm colour schemes and cool colour schemes are the goals of this assignment.</p>					
<p>Assignment 2 – Focus is on TEXTURE In Another Assignment, by following same plane of 30 X 30cm, the students were expected to portray same form through various medium.</p>					
<p>Assignment -3 Focus is on FORM The purpose of this project is to use a cube to create various forms in three dimensions.</p>					

III. DESIGN PROCESS: FINAL ASSIGNMENT


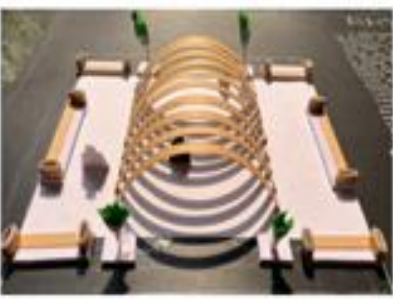




➤ *(Implementation of Creative Thinking – Basic Design Program)*


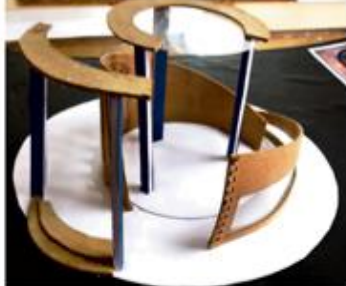

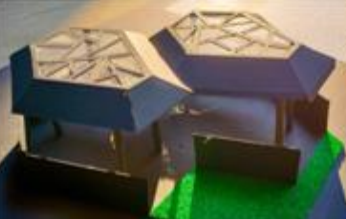


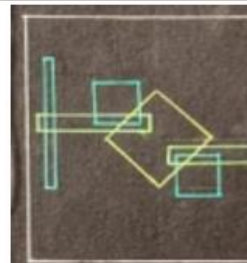




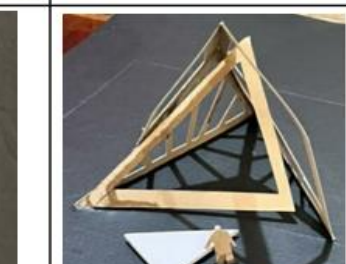
- Aim – The main aim of the final assignment is to implement all the knowledge of basic design acquired in the previous assignments related to Divergent, Aesthetic and Systems thinking. The amalgamation of all the learning of divergent thinking assignment on design principles, imaginative sketching, of system thinking techniques of material, shape (2D and 3D composition) and paper cutting and of aesthetic thinking on colour,

form and texture help them realize the outcome of this assignment.

- Step 1- Prepare a base of 30 X 30cm on black cardboard.
- Step 2 – Make a 2D composition by using any design principle.
- Step 3 – Extrude the composition of lines or shapes in 3D composition of planes and volumes. The exploration is based on the student’s instincts supported by their previous understanding and learning.
- Step 4 -- After creating form, the students are supposed to relate a function to it, understanding the space created by the composition.

Table 5: Students Final Assignments Compilation

STUDENT'S OUTPUT	DESIGN PROCESS		
	STEP 1- Representing in 2D	STEP 2 – Transferring that composition to 3D	STEP 3 - Development of thought Process (In Form of Narrative)
STUDENT - 1			<p>A 3D model of a dome-like structure, possibly a small pavilion or a decorative element, constructed from a grid of white lines on a black base. The structure is composed of several curved ribs that meet at the top, creating a hemispherical shape. The base is a square with a grid pattern. The overall design is clean and modern, with a focus on geometric forms and negative space.</p>
STUDENT - 2			<p>The 3D model is a structure with a central, rounded, dome-like top. It is constructed from a grid of white lines on a black base. A prominent feature is a large, curved, green ribbon-like element that wraps around the structure, possibly representing a path or a decorative element. The overall design is dynamic and colorful, with a focus on organic forms and movement.</p>
STUDENT - 3			<p>This composition of triangles depicts the upward, repetition, abstract form principle of design and the monochromatic color scheme of white shades of grey and black, green grey and white grey. The triangles are arranged in a way that creates a sense of depth and movement, with some overlapping and some pointing towards the center. The overall design is geometric and minimalist, with a focus on form and color.</p>

<p>STUDENT - 4</p>			<p>THE REASON BEHIND THIS THEME PURELY LIES IN ITS FUNCTION. THIS SPACE HAS BEEN DESIGNED AS A HUB OF THOUGHTS SURROUNDED BY LUSH GREEN FOREST FOLLOWED BY VILLAGE TRAILS. IT'S CURVED ENVELOPE THAT WHIRLS AROUND THE GAZEBO AT ITS EPCENTER, IN COMBINATION WITH THE VISION POCKETS IT CREATES WITH ITS PEACEFUL SURROUNDING. IT CREATES A MEDIUM TO REVOLVE AROUND IDEAS SERMLESSLY.</p>
<p>STUDENT - 5</p>	 <p>CONTRAST BY ILYA BOLDTOWSKY</p>		<p>THE DESIGN ALLOWS THE FORMULATION OF VOLUMES THAT CAN STAND EITHER INDIVIDUALLY OR IN CONJUNCTION WITH OTHER MODULES. THIS PROJECT IS SOLVED BY MEANS OF AN IRREGULAR HEXAGONAL PLAN, SYMMETRICAL FROM A CENTRE AXIS, FROM WHICH TWO STRAIGHT WALLS ARE DISPLACED ON THE SIDES AND A REAR ONE THAT ALLOWS CONNECTIONS WITH OTHER MODULES. FROM THESE WALLS A TRIANGULAR ROOF STANDS ON WHICH A CENTRAL DOME RESTS AND CROSSES THE HUT AT THE HIGHEST POINT WHERE THE MAIN FACADE BEINGS, CONFORMING A SINGLE TRIANGULAR GLASS ELEMENT THAT ALLOWS A PANORAMIC VIEW OF THE ENVIRONMENT. THE SAME PATTERN IS REPEATED AT DIFFERENT SCALES AND WITH DIFFERENT ORIENTATIONS, ACHIEVING VARIOUS RESULTS THAT CAN BE ADJUSTED TO DIFFERENT TERRAIN AND CLIMATE CONDITIONS.</p>
<p>STUDENT - 6</p>			<p>WE ALL NEED OUR PERSONAL PLACE DE SPIRIT IN OUR CLAMORED LIFE. WHERE WE CAN HOLD ON FOR MOMENTS AND CAN RELAX OUR TENSED MUSCLES, OPPORTUNITY TO AFFIRM PERSONAL SPACE AND TO CONSIDER OUR PROJECTS AND DREAMS TO FORM AND GIVE OUR WAY IN SOME PROUDING DIRECTION AND TO LET IT HAPPEN. SURELY, NEEDS THAT INTERFERE AND NOT ALLOWED TO BEHOLD THE QUALITY OF LIFE. FOR THIS REASON I HAVE DESIGNED SUCH STRUCTURE WHICH SIGNIFIES THAT ONE SHOULD LET THEIR EMOTION AND FEELINGS TO FLOW FREELY AND ONE SHOULD LET THEM FIND A PLACE WHERE FEELING, EMOTION, ONE'S IDEA AND AFFECTION IT BELONGS. THE PLACE PROVIDES A COMFORT TO THE PEOPLE AND LET THEM PURSUE THEIR IDEAS. IT IS A DIVISION OF SPACE WHERE PEOPLE MUST CHOOSE INDIVIDUALLY WHERE THEIR EMOTION AND FEELINGS THAT WOULD THEM A DIFFERENT SPACE TO TRAVEL THEIR SPEED BARBERS OF ONE'S BELIEF. IT IS A SHARED SPACE THAT ENCOURAGES INTERACTION AND PROVIDE AN OPPORTUNITY TO MEET FRIENDS, A GOOD PLACE FOR YOUR PROJECTS AND PROJECT COMPLETION. THE EXPANSIVE SPACE THAT HELPS IN STEERING AND FACILITATING FAMILIARITY. JOYFULNESS IS EVERYBODY'S IN SOMETHING AS AS TO MAINTAINANCE IT. DEEPLY, MEDITATING HELPS TO ENRICHES AND BUILD UP PHYSICAL, EMOTIONAL AND MENTAL HEALTH.</p>
<p>STUDENT - 7</p>			<p>WHAT MAKES A DESIGN GOOD IS ESSENTIALLY ITS FUNCTIONALITY, WITH AESTHETICS BEING A PLUS POINT. THE ELEMENTS OF THE CHOSEN STRUCTURE HAVE SUCH COMPOSITION THAT MAKE IT APPEAR TO BE SYMMETRIC AND BALANCED OUT, ALSO OPTIMALLY USING SPACE. THE SLIGHT ROTATION OF THE SHAPE AT THE CENTRE CREATES CONTRAST AS COMPARED TO THE PARALLEL DIRECTION OF THE OTHER SHAPES. THIS DECIDING THE UNLEVELNESS OF THE STRUCTURE. FURTHER THIS PLEASANT ARRANGEMENT OF SOMEWHAT OPPOSITE ELEMENTS BRINGS IN A DEPRESSING COMPOSITION, WHICH IN TURN PAVES THE WAY FOR EMPHASIS ON THE CONTENT.</p>
<p>STUDENT - 8</p>			<p>GAZIBO ELEVATING 2D COMPOSITION, WHICH IS CREATING A SPACE AND REVIVING A MOMENT OF VALUE. IT IS CREATING A FRIENDLY STRUCTURE WHERE PEOPLE CAN EASILY GATHER. THE IDEALITY OF CREATING THIS SPACE IS TO MAKE PEOPLE WANTS TO ENJOY IN THEIR OWN SPACE AND TO FIND COMFORT IN THEIR OWN SPACE. THE THIS STRUCTURE IS MUCH MORE SUITABLE FOR GARDEN. AS A PRINCIPLE IS THE PRINCIPLE OF DESIGN USED.</p>
<p>STUDENT - 9</p>			<p>THE PRINCIPLE OF DESIGN IN THE COMPOSITION ARE RHYTHM, REPETITION, HIERARCHY. A KIOSK REFERS TO A SMALL TEMPORARY STRUCTURE USED FOR MARKETING PURPOSES. THE DESIGN CONCEPT OF THIS COMPOSITION IS LIGHT & SHADOW.</p>

IV. CONCLUSION

Architecture manages the beauty and aesthetics on one hand and the utilitarian aspects on the other. This balance requires a lot of creative exploration. The main objective of the Basic design studio is to stimulate, initiate and activate the creative learning capabilities and transformational abilities of the students to make them creative future designers.

All the artistic endeavours taken up by the students through the assignments under the different typologies of 'Creative Thinking' has helped them understand the 'process of design'. The hierarchy of assignments also assisted the students in understanding the process and gave them a step-by-step guide on perceiving their idea. The process of 'Conception to Perception' is complex as we are trying to modify intangible into tangible, but with the exposure to all the aspects of basic design and visual art, the students' skill to apply all the theories and techniques to achieve the outcome becomes evident. This will help them achieve efficient, elating and resolved spaces through better composition, organization and understanding.

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