

The Case Problem (Experimental) Model: Application in the Design Studio

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ABSTRACT

The Case Problem or the experimental approach of teaching architectural design to students of architecture was a rationalistic approach developed by two eminent professors, Martin Symes and Alexi Marmot of Bartlett University, UK in 1985. The attempt was to make students face real life situations in the design studio [2]. It would also help the students to be good decision makers and to find multiple solutions for a given problem [1]. The rationalist model, is based on true architectural live cases from the profession, brought and introduced to the students in the design studio. The attempt is to make the architectural studio interesting and lively. The model is very rigid and has a prescribed set of rules to be followed. The model aims to link theory with design and education with practice. The present research is about understanding the original model given by Martin Symes and Alexi Marmot. The interpretation is used in designing and executing an architectural design studio. An architectural studio was designed with a hypothetical problem with an aim of linking theory with practice and generating multiple concepts. The phases of the original model were interpreted and experimented. Each phase was represented by a task. A package of information and a set of creative exercises were planned and used to boost the thinking process. The findings of the studio proves that design is a linking activity where many factors like learning by doing and experiencing yourself with the support of theory and technology to practice with the aura of profession, all synchronized together can be used to enhance the design process finally to generate multiple and practical solutions to an existing design problem.

Keywords: *architectural design, design process, multiple concepts, theory and practice*

1. INTRODUCTION: UNDERSTANDING THE MODEL THROUGH EXISTING LITERATURE

Martin Symes and Alexi Marmot, professors at Bartlett University, UK in 1985 came up with the case problem or experimental approach to teach architectural design. The model is based on true cases and as a vehicle for demonstrating the relevance of social analysis [1]. The model has also been interpreted by Ashraf Salama in his book, New Trends in Architecture, where the model has been divided into the following stages [1].

The model originally has three stages:

(i) The conception: the model calls for real live cases from practice. As per the two eminent architects, the real live cases are from situations where a crisis has arrived in practice. In practice, there are situations which require efficient decisions to be taken at certain points where the work gets stuck and ceases to proceed without a proper verdict or judgement. The model calls for these situations to be brought in the design studio. Hence, the level identified for the design studio shall be probably mature students who can identify the problem and give practical solutions.

The **aim of the model** given by Symes and Marmott will be to link the architectural course theory with practice and also to make students efficient decision makers.

The place of learning thus becomes the design studio where the students will try to understand the situation with its genuine problem and try to find a possible solution for the same. The students can work in groups or individually. With the strength of students, it is possible to generate multiple solutions for one problem. Thus generating multiple concepts also becomes the objective of the studio.

(ii) The design process: the design development process is divided into the following stages:

Stage 1: the students are made aware of the situation at the site, by the use of precedent studies and a **package of useful information** that is given to students. This package of information will include information of the architect, the client and requirements of the ongoing project. The personality and philosophy of the architect, his style of designing, his design intentions for the project is given to the students. The information of the site with its analysis and all other relevant information regarding technical data relevant for the current project like insulation, wind pattern, noise control measures, the construction resources with the selection of materials and the economic analysis; with similar precedent examples of already existing buildings is made available to students.

Stage 2: Evaluation of design solutions: The evaluation is done by the students peer group themselves in the presence of the instructors and if possible the client and architect are also invited. The aura is that of an office where each group or individual comes up, like a professional, with their proposal and gives a presentation. The student proposals are now evaluated on the basis of their practical applicability. The proposals will be judged on the application of the spatial organization, natural lighting, passive design techniques, noise control measures, construction resources and techniques with the economic analysis, etc. The proposal is analysed further and due corrections with changes are suggested by the evaluators.

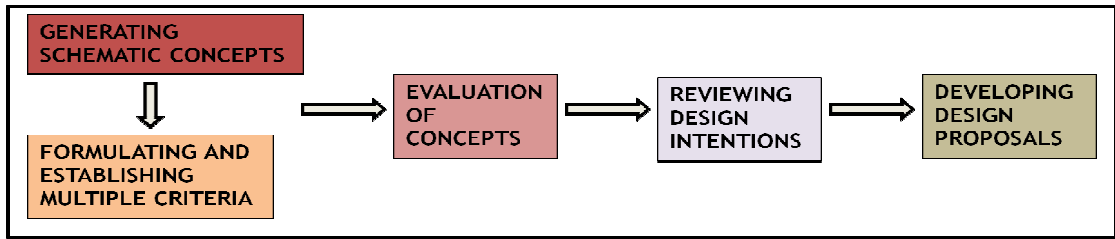


Figure 1: The various stages of the case problem model as interpreted by Ashraf Salamma

Stage 3: Students go back to the studio, review design intentions, work to refine their proposals and submit their design solution (Figure 1).

(iii) **The teaching Style:** students work in groups or individually. The students use their productive thinking for generating multiple concepts. The evaluation criteria can be decided by teachers, prior to the presentations.

Interpretation of the model and linking it to the Design Studio: A design studio was planned as per the model. Each phase of the model was analyzed and a task was allotted to it.

Preparation of the Design Brief:

| PHASES | AS PER THE MODEL | THE DESIGN PROGRAMME | OBJECTIVES |
|-----------------|--|---|---|
| PHASE 1 (INPUT) | INFORMATION Regarding client organization, personalities of architect and client, Concerned site, Technical & research data, reference to similar building type, context, Requirements | PACKAGE OF MATERIAL to be given in a lively style regarding Solomon Guggenheim Foundation, Solomon Guggenheim, F.L. Wright and Frank O. Gehry's Guggenheim Museums in New York and Bilbao, Spain. The concerned site at Nagpur Reference to the Louvre Pyramid, Museum of Contemporary Arts, Niterio, Brazil, ACCOUNT STOPS AT THE CRISIS POINT: They have to design a museum for the Guggenheim Foundation in India. | To increase the cognitive level of the students with all essential requirements. To prepare students for the design problem.. |
| PHASE 2 | GENERATING SCHEMATIC CONCEPTS FORMULATING AND ESTABLISHING MULTIPLE CRITERIA | INTRODUCTION OF CREATIVE EXERCISE: 1. BRAINSTORMING: Students on the basis of the input given to them will recognize activities associated with museums. 2. CREATIVE EXERCISES: 12 students shall be divided in 4 groups. Each group will have a creative exercise and all students of the group will work independently. | To evolve of requirements. To generate concepts and schematic proposals. |
| PHASE 3 | EVALUATION OF CONCEPTS | PRESENTATIONS: Students give presentations on their conceptual sketches. Conceptual sketches are made on the considering Spatial organization, semantic rating, insulation, natural lighting, wind patterns, noise control, construction resources, economic analysis. | EVALUATION: Solutions are compared. Students identify the shortcomings in their proposals. |
| PHASE 4 | DEVELOPING DESIGN PROPOSALS | Students REVIEW AND REFINE their design proposals and prepare revised drawings. | Final portfolio with corrected design intentions and proposals. |

Table 1: Interpretation of the case problem model and linking it to the design studio.

Identifying the Case Problem: The model asks for identifying a real life situation. In order to make the classroom a lively affair, a hypothetical situation with a hypothetical client was identified. The client was taken as the Guggenheim Foundation which had come to central India with the design intention of building the next Guggenheim Museum in the series of the museums built by the Guggenheim Foundation around the world.

Situation: The Guggenheim Foundation comes to India and identifies Nagpur as the future site for the next Guggenheim Museum. The site selected is the current Botanical Park next to the Talankhedi Lake at Seminary hills in west Nagpur. The foundation calls for a competition for the best concept (Figure 2). With this situation, a design studio was planned and organized, based on the phases of the design model with a task at each stage. Firstly, the phases of the model were identified with related objectives. (Table No. 1)

Identification of the level of students for the exercise:

The model calls for slightly mature students who can give in practical suggestions but the level identified for this particular exercise was the second year students. Integrating the knowledge base of students with other subjects, the second year students were equipped with climatological aspects like ventilation, daylighting, massing, etc., and had just learnt vertical expansion of building structures with the help of staircases, elevators, etc. in building construction and also were dealing with steel trusses.

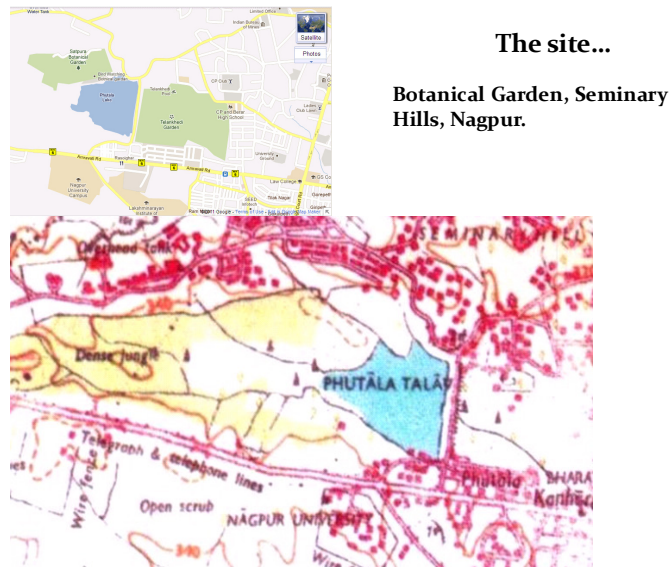


Figure 2: the site: the existing botanical park besides the Telankhedi (Phutala) Lake, Nagpur.

Execution of the studio:

Stage 1: The design studio commenced with stage 1, where the package of material was given to the students. So, the input given to students included information about the client organization- the Guggenheim Foundation, philosophy and personality of architects who have designed the other Guggenheim Museums. Information about different types of museums, also the contextual influence to design, technical data including ventilation, lighting control measures required for the design of museums were all explained to students in a pre studio class.

Stage 2: Introduction of the creative exercises

After the Input, a series of Creative exercises were undertaken, to make students understand the essence of the design issue. Creative exercises are introduced as a trigger to enhance the design process of the students and to achieve a variety of design concepts. There are different types of creative exercises used at various levels. In order to enable students to enlist the requirements of the museum, a brainstorming exercise was conducted in class (Figure 3). The students came up with various requirements of a museum. Students understood the importance of the esteemed Guggenheim Foundation and came up with requirements of the same echelon.

The next stage of creative exercises was given to students to help them develop multiple concepts. The experiment was carried out by dividing students in groups of four who would work on generating concepts based on the same type of construction technique. The four groups of were given creative exercises as making the use of crushed paper (Simple crushed paper led to a form which helped in deriving the levels), analogue based exercise (Inspiration from nature, human behavior or any analogic source), form oriented exercise (basic three geometric forms were selected and the composition leading to a possible concept) and the flexible material exercise (Inspiration from tensile structures) (Figure 4)

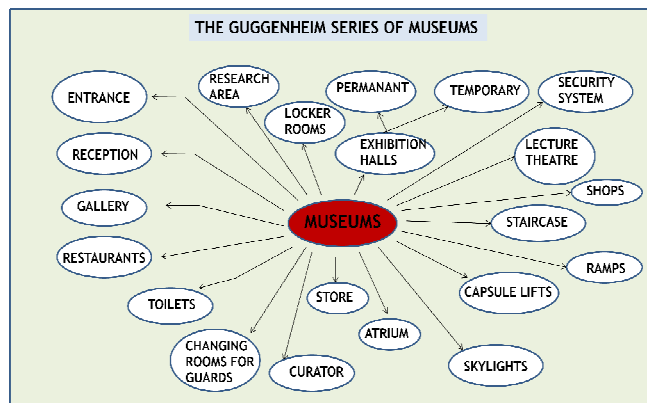


Figure 3: Brainstorming exercise

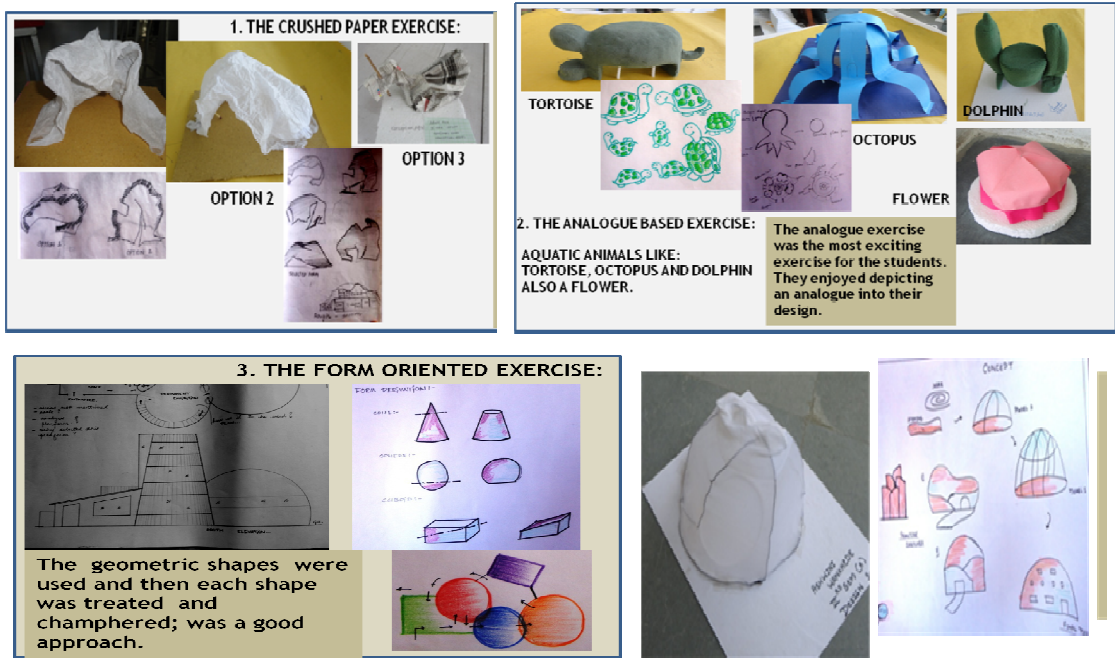


Figure 4: The Creative Exercises (Source: students of SMM College of Architecture, Nagpur)

Stage 3: The Design Development Stages:

Students of all groups started developing their proposals and worked as per the given schedule. Figure 5 shows the output of one student who worked with the analogue based design.

Stage 4: Evaluation of design proposals:

The evaluation criteria were established and the students were asked to come up with tentative concepts, hence conceptual drawings were required. Figure 6 gives the evaluation criteria.

2. CONCLUSIONS

As per the model, after the execution of the creative exercise, the next step is the presentation, where they realize their shortcomings and can work on the proposals again.

After refinement and revision of their drawings, the final submission can be taken.

We come to the followings conclusions:

1. This model gives us a new approach towards the design studio which can be made a lively and interesting affair. Even complex design problems and real live situations from the site can be moulded in stages to help generate multiple solutions.

2. The creative exercise is a stimulating and reinforcing exercise but restrictions should be removed with proper thought for better results.
3. Analogue exercises give better results and students enjoy the same while the use of flexible materials was a difficult approach but can be developed in the next design studio. Students of this level find material selection difficult and should be encouraged to new materials hence students who worked on crushed paper found it difficult. Outside to in approach in form oriented designing is difficult and probably a wrong approach.
4. The museum was just a typology used to implement the model in the design studio.

SOME OF THE OUTPUTS STUDIED IN DETAIL:

1.

The conceptual drawings...

The conceptual plan..

The conceptual elevation..

The conceptual section..

Anshuma worked on the analogy exercise and came up with these sketches.

The conceptual model...

Planform, canopy, columns, skylight, bridge, dome - all parts of the tortoise..

The conceptual sketches that developed the concept: The body, shell, head, tail, legs all were used in the concept.

The Conceptual sketches: Interpretal on of information.

ANALYSE WORKS WELL WITH STUDENTS. THEY ENJOY WORKING WITH ANALOGUES. HENCE THE ANALOGUE EXERCISE WAS A STIMULATING EXERCISE FOR THE STUDENTS. IT ALSO REINFORCED THEM TO COME UP WITH GOOD SOLUTIONS.

THE CASE PROBLEM (EXPERIMENTAL) MODEL

THE ANALOGUE BASED EXERCISE

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Figure 5: Output of the Analogue based exercise

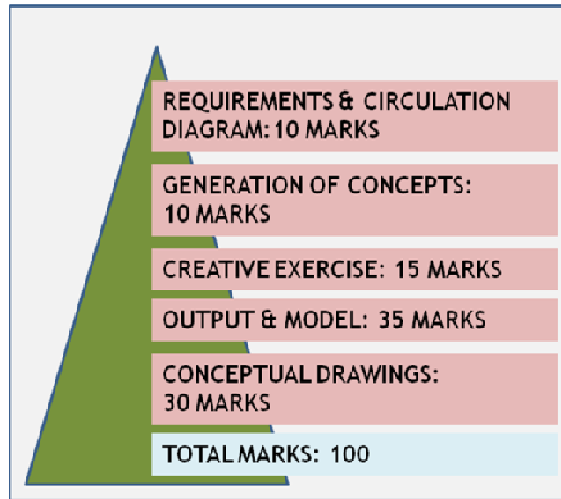


Figure 6: the Evaluation Criteria

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