

Teaching Interior Design Methodology — A Case Study Shopping Mall Design Studio Project

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Abstract: Design is a complicated mental activity that involves detecting the possibilities of a given list of constraints and limitations. Interior design is a challenging multifaceted profession in which creativity and technical solutions have to be provided. These solutions must meet the physical and psychological needs of the occupants, in terms of functionality, improving the quality of life and health, responding to their cultural beliefs and also to be aesthetically attractive. The problem-solving technique that started recently in the artificial intelligence had a profound impact on the design process; it helped to systemize the models of design. This research aims to introduce some guidelines to the instructors, academics, researchers, programmers as well as relevant teaching institutions to create a framework of thinking of interior design problems. The research methodology is based on data collection and integration of previous literature, analysis, interpretation and a case study as a practice-based model. The research starts with clarifying the design process structure. Then, the requirements for creating a successful interior design were overviewed. A case study of a design studio project which was supervised by the author is presented. Finally, the conclusion and recommendations were crystallized. Further studies to create a software-based interior design model to help the designers and students in evaluating all the requirements, constraints and set priorities was recommended.

Key words: design process, interior design, shopping mall design, design studio project

1. Introduction

Approaching the study of interior design could be a dispiriting scope. Design problems in general are usually vaguely defined and open ended in nature, which means that they have more than one proper solution [1]. Multitude of information has to be collected, analysed, and synthesized to obtain a coherent design solution.

The obscurity of interior design procedure is mainly due to the complexity of embracing the ambitions of a designer, client, comfort and utility of purposed occupants and compliance with a multitude of life-safety and legal regulations [2]. In addition, the

design solutions must be aesthetically attractive and responding to the cultural beliefs of the inhabitants [3].

The interior design was discussed in previous literature from many points of view. To have a look briefly on the last editions; some books highlighted the experience and insights of professional designers through hundreds of examples [4-6]. Other references guided the people to the required steps to styling any spaces according to personal expression [7-10]. The essential data for the learners and professionals to design the interiors were included in other editions [2, 11]. This research belongs to the latter type.

This research pursues providing some guidelines to teach the students the design methodology and providing an interior design studio project model. A case study as an evidence-based application is discussed. Furthermore, this research aims to contribute in helping the programmers to create a software-based interior design model to assist in the

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decision- making and evaluating the design solutions in the form of a decision-matrix.

2. Design Process Structure

Design is an extremely manipulative process in which the designer has to constantly and jointly pay attention to, and balance, the many factors that touch and affect design [12]. Design activity happens over a period of time and demands a step by step methodology [1]. In the 1960s and 1970s, problem solving techniques that appeared in the domain of artificial intelligence has had a profound effect on Design Methodology. It helped to systemize the methods and models in problem solving in other areas. The intellectual problem-solving paradigm based on the conceptual frame that Herbert Simon, inserted in 1973 is still a prevailing model in the field [13]. With the view of prohibiting the entire process from being haphazard [14], following the consecutive steps of the design process helps the designers in obtaining comprehensive and creative designs that satisfy the client's requirements and meet the objectives of interior design [2]. As the main concern of this paper is teaching design studio project, the author is trying to frame the structure of such a process in the following framework, considering that build up a framework is in itself an open-ended problem. Design can be discussed from abundant approaches that go beyond the domain of this papers [13] (Fig. 1).

It could be picked up from the suggested model that the design process is an interactive and cyclic in nature. As the design is developing, the solution is subject to unexpected complications that may require interactions and backtracking [1]. Clarification of the said steps could be briefed in the following.

2.1 Design Studio Project

Since a creative work starts by integrating information on an existing work with previous ones [16], an existing building is given to the student to be re-designed. The program and the area of the project

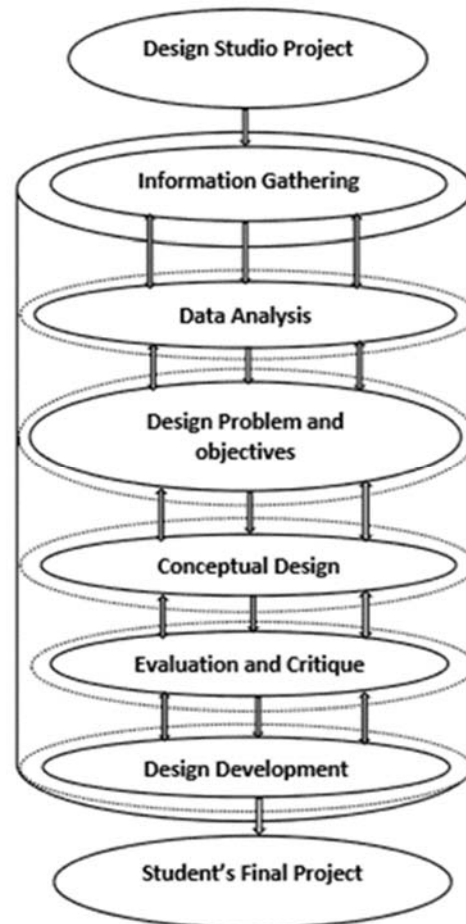


Fig. 1 Interior design studio project model — prepared by the author based on previous literature [2, 15].

could be the same or different from the existing building. The instructor may allow the students to modify the program depending on case studies.

2.2 Information Gathering Phase

The Students start the project by exploring opportunities and constrains from collecting pertinent data by scanning many different sources. Besides electronic information sources, the library is still none the less an essential source of data. Furthermore, as design action normally occurs in response to human needs, students have to understand and see such a need through interviews and site visits of the existing project [1]. Adopting the extramural educational approach of going beyond the institutional borders and integrating with the real world, will enable the students to become active learners and to realize the

local specificities and demands as real contributors in the design process [14]. A questionnaire that will be provided to the client — within this domain represented by the current users of the target building — has to be created by the students, directed and reviewed by the instructor. Furthermore, during the site visit, the students have to develop their personal observation, taking notes, sketches, measurements and photos [2].

2.3 Data Analysis

The weaknesses and the problems of the existing design have to be defined based on the analysis and synthesis of all collected data. Establishing the needed design criteria must be formulated. Initial criteria has to be general to provide flexibility during the design process. The instructor has to help the students to apply value judgments of the said criteria that will help to set the priorities in design solutions [1].

2.4 Design Problem and Objectives

The gap between the current situation and some positive future status defined as the problem space [17]. Formulating the problem in well-structured and obvious statement is the first step in the problem-solving procedure [1]. Generating the design objectives defines what could be seen as opposite to what is existent [17].

2.5 Conceptual Design

The previous exploratory phases that happened at a conscious level, creative knowledge that accumulates in the unconscious level is targeted to be utilized at a conscious level [16].

Performing the interior Design requires thinking of the whole project as a series of integral and linked spaces. Accordingly, a proper common theme or style takes place throughout the pursuit to harmonize and optimize the interior ambience [18]. Students have to brainstorm various ideas to come up with concepts specifying themes and create directions [19].

Preliminary three dimensional sketches attached with color scheme, references for fabrics materials and furniture will help to formulate the students' design proposal [2]. The student has to select three or four colors to be applied in a variety of shades throughout the project as a vital way to integrate the project's spaces [18]. Another substantial requirement during the same phase is studying the relationship between spaces to create an effective functional space planning. A bubble diagram or compatibility matrix has to be provided [2].

2.6 Critique and Evaluation

Training the students on selling their ideas, accepting modification, negotiating to arrive at the strongest group of the design aspects worthy of further development and iteration are vital targets of such a phase [17]. Since evaluating the alternative solutions is a highly subjective issue and should be made by experienced designers [1]. Consequently, students have to present their work to the instructor, other students, another instructor, and one or more expert from practice to get feedback from diverse perspectives and build consensus on potential design directions or worthy features [14]. By the end of the pinup critique session, each student should fully realize the scope and directions of the project [1].

2.7 Design Development

Students are encouraged to involve in another round of sketching, reinterpret and re-blend based on the received feed backs as well as concepts displayed by other students to reach a more solid concept and framework [17]. Each student starts to prepare a set of specified drawings by the help of his/her instructor. Students' design solutions should fulfil the requirements against the stated design criteria. Accumulated refinements have to be accomplished to compass efficient response to the functional, aesthetic, ergonomic, structural and technical requirement in a creative way [1]. Sometimes, the economic

requirements are mostly not considered in this design studios to give a space for the innovative and luxurious designs.

2.8 Final Project

By the end of the design development phase, a complete set of drawings have to be submitted which translate the design into a visual communication language; space planning, ceiling design and furniture configuration plan are expected to be refined. All the furniture pieces, finishes, lighting, fixtures, material board, and accessories have to be included. In addition, the design of doors, windows and stairs are expected to be detailed [2]. A model as an important tool for visualizing and translating the design concept in the three dimensional sense to the general public is an essential component of the final project [14].

3. Successful Interior Design Requirements

The National Council for Interior Design Qualification defined the domain of the interior design as follows:

“Interior design is a multifaceted profession in which technical and creative solutions are applied within a structure to achieve a built interior environment. These solutions are functional, enhance the quality of life and culture of the occupants, and are aesthetically attractive” [2].

In other words, Interior Design is a creative process involves a unique blend of science and art that analyses and synthesizes data, the client’s needs and wishes, sets a conceptual orientation, polishes the design direction and provides graphic communication and construction documents [18]. Furthermore, interior design could be defined as to provide a successful interior design, the created ambiance must promote the appropriateness and comfort of the end-users both psychologically and physically whereas considering the economic facts and a wider scope of sustainability issues [2]. Briefly, through the following points, the most significant design criteria of the interior design can be concluded as follows.

3.1 Functionality and Responding to Human Needs

A design solution that provides all the design criteria and does not function properly is a failure [1]. If the inhabitants cannot effectively perform the functions and activities required in the space, it means simply that the design is unsuccessful [3]. In addition, the designer should satisfy the particular needs of the users, including the elderly, children and people with special needs [2].

3.2 Anthropometrics and Ergonomics

People come in different sizes, the geometric features of 95% of the people is called anthropometric information. In addition the study of how people react with the built environment is called ergonomics [1]. Collecting the required data about the anthropometrics and ergonomics impacts the space planning and furniture design. It is an extremely valuable factor in providing the occupants with psychological and physical comfort [2].

3.3 Aesthetics Factors

Creating charming, attractive and a pleasant environment is a spirited factor in interior design. Promoting the sensitivity to the aesthetics of the interior ambiance is one of the essential aims of the interior design study. Pleasant and appealing environment has no ultimate formula; yet the felicitous utilize of aesthetic factors: harmony, balance, emphasis, rhythm, scale and proportion helps in decision making and enhances the final design outcome. Simplicity and Integrity are key words in quality design. Sensitivity to the user’s cultural choices and taste aids the designer to provide the convenient design solution [2].

3.4 Safety and Health Issues

Providing safe and healthy environment is one of the interior designer’s liabilities [1]. Designers should not compromise the users’ safety or health by selecting potentially harmful items and materials to reduce the cost. Certain precautions should be considered in

providing safe environment for children and elderly users [2].

3.5 Economic Considerations

Many good designs were never accepted because the cost surpassed the client's budget [1]. Responding to the willingness and needs of the customer should be limited by the proposed cost. The designer has an ethical commitment to report to the client with any expected excess of the original cost during the design process and taking his approval in advance [2].

3.6 Ethical Commitment for Sustainable and Green Design

Sustainability could be defined as an environmental science that draws attention to the feature of not being harmful to the environment or exhausting natural resources and accordingly supporting long-term ecological balance [20]. The designer has an ethical commitment to the earth and for his client's safety and health in selecting the designs' materials with all the relevant factors to green, eco, environmental and sustainable considerations [2].

4. Case-Study: Shopping Mall Interior Design- Design Studio Project

A case study for a research demonstrates concepts and assumptions in evidence-based approach [21]. Shopping Malls are the social gathering and entertainment centers of the 21 century. Contemporary shopping malls, are the most prevalent structures worldwide. In the current days, shopping malls became a multifunctional beautifully attractive designed venue which provides the experience of shopping, recreation and catering with a proportion almost of one third for every activity. Furthermore, the flourishing markets have a tangible influence on providing new jobs, encouraging the consumption and driving the production [22].

In the fall 2011-2012 the author was the supervisor of the graduation project. By the end of spring

2010-2011, a notification was sent to the students with the topic of the graduation project, "Shopping Centre" and a list of the requirements. The students were oriented to select one of the existing malls in Muscat to be re-designed considering no repeated selections. Letters were prepared to get the engineering drawings from the Muscat Municipality. The project program includes: competitive markets, cafes and restaurants, entertainment in various forms, lifestyle retail shops, children care center, a meeting place, large car parks, landscape design, management offices, services and facilities with a total area of 3000 m². Nevertheless, the students were asked to provide customers orientation, security, dynamics of spaces, attraction, zooming efficiency, excitement, convenient ambience, distinguished lighting and suitable color scheme. The selected case study for this paper is "Jawharat Al Shati Complex at Shati Al Qurm, prepared by the student Buthaina Al Farsi. With reference to the previous suggested model of the interior design studio project. (review Fig. 1) — for the limited paper size, some steps are merged into one — the steps of preparing the project were as follows.

4.1 Information Gathering, Data Analysis and Design Problem

The student started data search through the internet, Goggle maps and site visits. The mall is 7270 m². It has a distinguished location surrounded by important touristic destinations; Intercontinental Muscat (5 stars hotel) Al Qurm Resort (4 stars hotel), Shati Al Qurm Beach, and the Address Café. A questionnaire was prepared by the student which was distributed to the visitors and staff with a sample size of 20. The participants concluded that the main design problems are; in spite of the remarkable location, the mall has a very low rate of visitors according to the following problems; no attractive theme 81%, no colour scheme 76.50%, no convenient services 76.50%, no adequate Lighting 66.5%, and not enough parking area 66.50%. Through personal observation, the students identified

the following issues, No unifying design or colour theme; traditional Islamic elevation, Pharaonic columns design (Lotus capital) with a repeated cloud

shape everywhere in an undesigned superficial way besides the corridor's width is out of standards according to the Muscat building code (Fig. 2).



Fig. 2 Existing design problem; no design theme, no colour scheme a repeated cloud shape in an un designed superficial way besides the corridor's width is out of standards.

4.2 Conceptual Design

Based on data collection and analysis, the student determined her design objectives as follows; creating a charming attractive dynamic interior design to place the current mall on the top of the tourists' agenda. Furthermore, she wanted to provide a contemporary shopping and an entertaining experience among the existing traditionally oriented shopping centers. Moreover, the use of eco-friendly materials was also targeted to provide a healthy and safe environment with a high indoor air quality and in a larger scale the earth welfare. The design concept was the "finger print" clarifying her concept as "the fingerprint is an

impression left by the friction tops of the human finger. Everything — in the wider use of the term — has a finger print or a trace in the nature. Jawharat Al Shati complex needs a fingerprint in the Sultanate of Oman".

Information was gathered on the selected eco-friendly materials and relevant references to the students' concept of a variety of designs of furniture, lighting units, floors, walls, and ceilings. The color scheme was selected from the natural environment of Oman to create the sense of place (Fig. 3). In addition, the student prepared a bubble diagram and zoning analysis besides a lot of sketches (Fig. 4).



Fig. 3 References to the students' concept. The colour scheme was selected from the natural environment of Oman to create the sense of place.

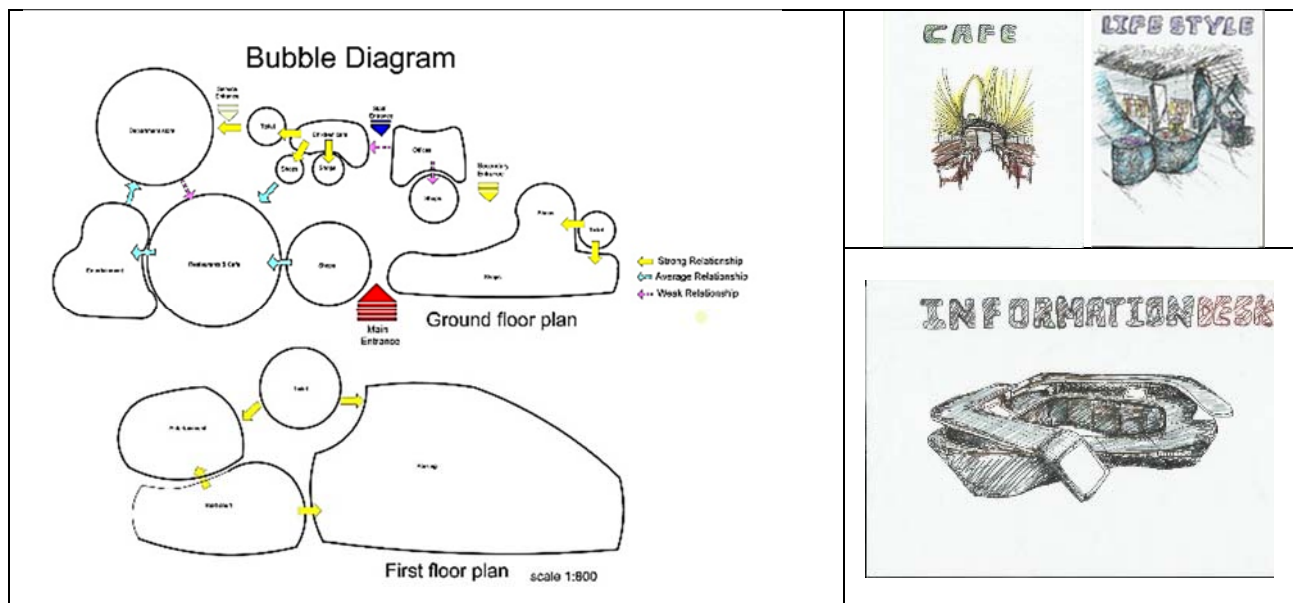


Fig. 4 Bubble diagram and a lot of sketches.

4.3 Critique, Evaluation, and Design Development

An interior designer from the practice and another instructor were invited to a pinup critique. The student prepared a power point of all the collected data and analysis. Two options of a schematic design were

discussed and criticized. During the following two months, a set of the whole required drawings and details were prepared and refined through a one to one critique with the instructor and grouping critique. Sometime a back retreat needs to be done. The plan design development is shown in (Fig. 5).

4.4 Final Project

By the end of the semester a complete set of drawings, diagrams and details were ready. Some main features of the project are shown in Fig. 6. External jurors were invited one academic, a consultant and a

representative of Jawharat Al Shati Complex. The discussion during the jury was very inspiring, integrating the approaches of theory and practice with the owner's point of view who expressed his interest of such a creative and innovative design.

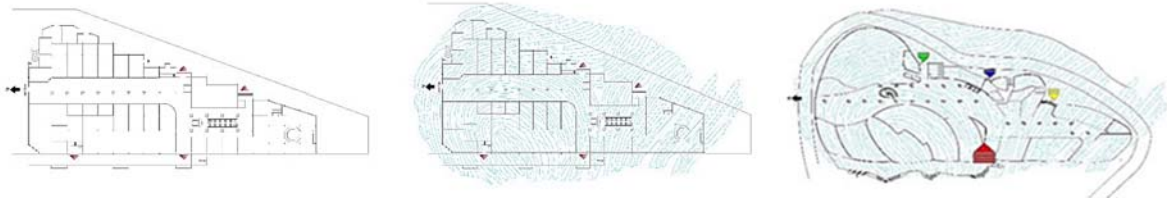


Fig. 5 Design development.

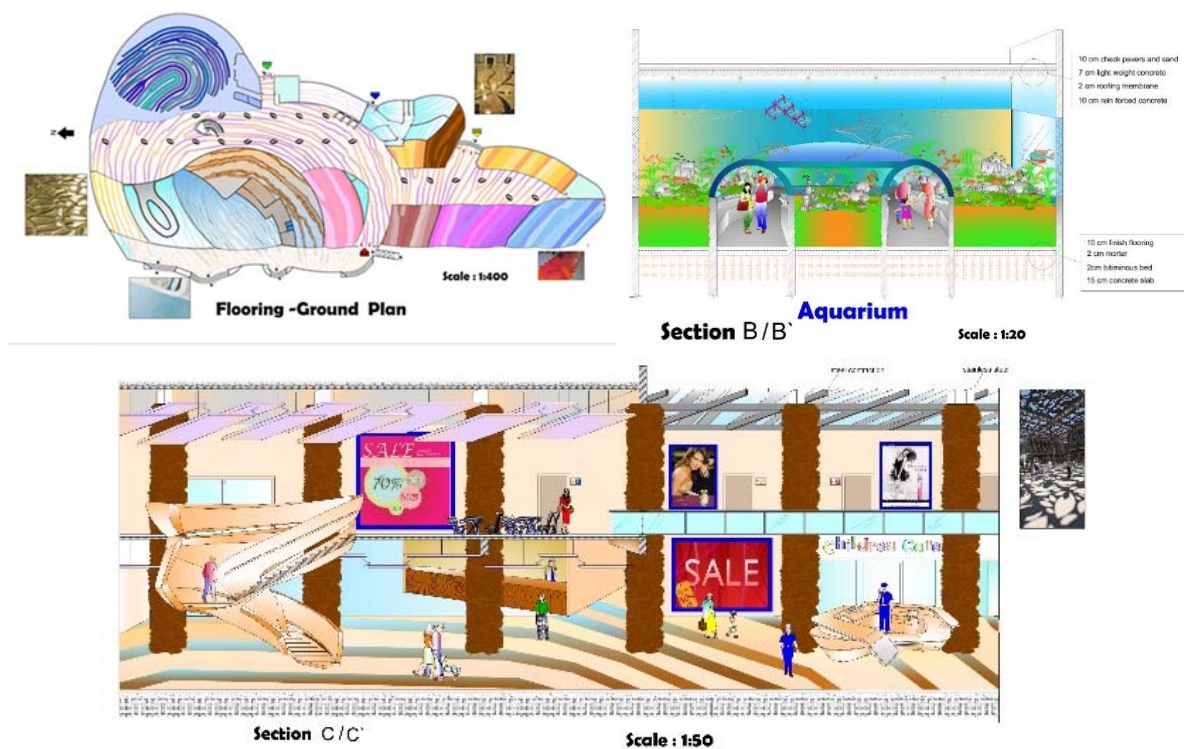


Fig. 6 Some main features of the final project.

5. Conclusion and Recommendations

Since the interior design impacts the safety, health, and well-being of the people. The main targets of the interior design which are fulfilling the requirements of function, human needs, aesthetics, economics and ecology have to be considered in the thesis on education. Designing a convenient interior design ambiance necessitates following an interrelated disciplined and systematic methodology of research analysis, synthesis of data, and creating innovative designs through a retracting and cyclic process. Furthermore, linking the academic process with the global and environmental concerns like sustainability and ecology is an imperative current issue.

Finally, it is recommended for the future studies to generate computer models to help in the decision-making either in evaluating the weight of design criteria against the design requirements or the design solutions against the project objectives at the form of decision matrix.

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