

AN ANALYSIS OF ARCHITECTURAL DESIGN PROCESS

A Senior Honors Thesis

by

YOLANDA KAY LEVERIDGE

Submitted to the Office of Honor Programs  
& Academic Scholarships  
Texas A&M University  
in partial fulfillment of the requirements of the

UNIVERSITY UNDERGRADUATE  
RESEARCH FELLOWS

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Group: Health & Education

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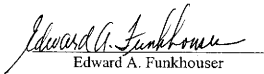
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## ABSTRACT

An Analysis of Architectural Design Process. (April 2002)

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It is important to the profession of architecture that the educational aspect of architecture be suitable enough to maintain standards within the profession. The design process is one of the more crucial components to the understanding of architectural pedagogy. Several schools of thought exist on architectural design process. Consequently, several different basic design processes are taught within architecture programs. This paper analyzes two different design processes: one experienced through an academic project with real clients overseen at Texas A&M University's College of Architecture; the other experienced in a senior level design studio as part of a four year Bachelor's degree from the university.

As criterion for evaluation, the project will be analyzed in terms of scope, quality, and time. *Scope* denotes the scale of the project. *Quality* simply refers to the projects' practicality and aesthetics as reflected in the design. *Time* refers not to the amount of

time spent on the project totally, but to the amount of time spent on specific aspects of the design process.

Using these criteria, an analysis of the design processes is conducted in order to identify the inherent differences between both processes, and to explain the reasons behind these differences. From further analysis of literature related to the subject and through my own documented observations, I suggest why the differences in structure of the two design processes are critically important to the design in each instance and suggest my opinion on a better and more effective method of design.

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## AN INTRODUCTION

The content of architectural education has always been a topic of debate among architecture professionals. The bearing placed on education can be readily seen through the extensive schooling architects must fulfill to practice architecture. Currently, graduates from the undergraduate architecture program at Texas A&M University can achieve licensure in Texas upon subsequent completion of an accredited Masters Degree Program, three years of internship with an architectural firm, and upon passing the Architectural Registration Exam.

This architectural criterion creates continuous controversy over the nature of design studio education (Lucas, 150). There are multiple views among architecture professionals on which methods of design should be taught within the university system. Because of these varied views, several types of schools of architecture exist. Most methods of design are composed of a blend of two extreme ideologies.

The first ideology consists of providing students with space requirements and with a limited amount of general information, such as the purpose of the building and other pertinent site information. From here, students are free to tackle the problem in a more intuitive manner, whereby; they find their own approach through trial and error (Thornley 5). The Naturalistic Approach suggested by Dr. Robin Abrams in an article entitled *Efficacy of Naturalistic Inquiry* is a research methodology for design. This methodology is one process that resembles the freethinking of this approach to design.

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This thesis follows the style and format of the *Modern Language Association*.

This intuitive thinking is a *new paradigm* of investigation, based upon a plan of first observing, recording, analyzing, reflecting, dialoguing and then rethinking (Abrams 144).

Another method is the more practical approach to design, which involves a process similar to the scientific method where students follow a step-by-step procedure (Thornley 8). At the University of Texas, a *Sound Building Design Studio* exists. This studio requires the student to apply tectonic systems to a design project, which helps the student gain a deeper understanding of the general practice of construction (Garrison 64).

Today technology serves as a factor in providing multiple options in the design process. With today's technology, the designer is faced with an abundance of materials to choose from. No longer do rules of thumb always play into the design. The means of production have become more versatile. The variety of materials and methods has led to a more complex system of design (Esherick, 17). As the technology becomes more advanced, so too must the educational system, because the profession is forced to adopt new techniques. Education stands at the forefront of the future profession's base.

In order to understand differences in two types of educational design processes it would be necessary to completely understand the processes first hand. The two design processes, which I have chosen to analyze, have two very different sets of environmental factors surrounding them. The first involves the design process through the studio environment at Texas A&M University. The second entails my experience through a



design process of my own construction, but overseen by an advisor at Texas A&M University.

The two separate projects are as different from one another as possible in order to effectively make an analysis of the design process. The details of both projects would have influenced one another and otherwise noticed differences would have been lost in the design process if they had been too similar. For example, if I conducted a study of two designs both of a residence and both on the same site, but one design was taught in the studio and one was completed outside of studio, the process in the studio might have influenced the process in the field, or vice versa, thereby, skewing the results. Steps were taken to limit the influences of one design process on the other to get the most accurate results. These steps are discussed in the following two chapters.

The study of the architectural design process from Texas A&M University is drawn from my own experiences as a student. I took a class during the Fall 2001 semester, which involved designing a project, through the educational design process. The Rothko Chapel Addition served as the project for this study.

I have also been commissioned by Doug and Patricia Lahasky, who have inherited lakefront property in Erath, Louisiana. They plan to construct a home and have asked me to complete the initial design. This project provides the basis for the study of the architectural process from Texas A&M University under an advisor.

As criterion for evaluation, the two design processes will be analyzed in terms of scope, quality, and time. *Scope* denotes the scale of the project. *Quality* simply refers to the projects' practicality and aesthetics as reflected in the design. *Time* refers not to the

amount of time spent on the project totally, but to the amount of time spent on specific aspects of the design process.

Using these criteria, an analysis of the design processes is conducted in order to identify the inherent differences between both processes, and to explain the reasons behind these differences. From further analysis of literature related to the subject and through my own documented observations, I suggest why the differences in structure of the two design processes are critically important in each design process and suggest my opinion on a better and more effective method of design.

THE ROTHKO CHAPEL FOUNDATION PROJECT  
*Houston, Texas*

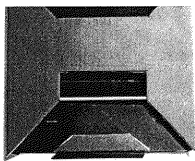
The project conducted within the studio was primarily based upon the instructor's own visions. I was guided through the project step by step. Every detail regarding the project was explained so that my design would not vary from his architectural style. Little opportunity for variation was allowed in the design. Occasionally, however, when something was not explained, I would have the liberty to design that aspect myself. If he approved of the design it would remain as part of the project. The relationship I have described here between professor and student is commonly referred to as a *master - apprentice relationship*. For the purposes of analysis, I have included a summarized version of the journal I kept for the Rothko Chapel Addition Project. A more in-depth account can be viewed in Appendix A.

The studio class began with an introduction to the Rothko Chapel Project. The Rothko Chapel Foundation was seeking funding for the addition, which they hoped would increase revenue to the Rothko Chapel Foundation. My professor was approached by the Rothko Chapel Foundation Chair, Alice McCarthy, essentially our client, to have our class generate ideas for the addition. Dominique de Menil, had provided funding for the Rothko Chapel until her death in 1999. Upon her death, funding for the Rothko Chapel Foundation no longer existed. The purpose of the studio project was to entice prospective sponsors to donate money for new buildings. These new structures were to generate funds to support the Rothko Chapel Foundation.

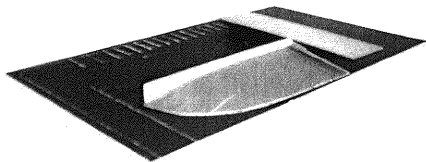
Several key issues affecting the design process present themselves in the Rothko Chapel Addition Project. The aesthetic affects of the design project were of great concern to this project. Little in terms of practicality of structure or cost saving techniques were discussed.

Basically, the professor wanted a design, which met his standards as a designer. In order to ensure this, he had me very carefully follow close instructions through simple models, known as study models, while designing (fig. 1-3). He had me correct problems he had with the design and come back to him with the results. If he were not satisfied with my corrections, he would have me redo the area in question. This process continued until the project was complete in his eyes. The resulting design was one completely in his style.

However, if there were areas he did not mention in the design, which had to be dealt with, I would design those areas the way I felt best suited the design. This I did paying little attention to structure or detail, because I knew that they mattered little to the professor. On several occasions the professor did notice changes in the design that I had created. Typically, he disliked them and had me change them to fit his ideals. Basically, towards the end of the design, if I was to design I was designing to please him so that he would not have problems with the design, and I could continue moving forward. Incidentally, I was incorrect on several occasions even within his detailed instructions on how to do something. This was due to a lack of understanding. Without a complete visual representation he and I both had difficulty understanding one another. Models helped to ameliorate this problem.



*Fig. 1* Initial Study Model Concept



*Fig. 2* Study Model of the North Site



*Fig. 3* Study Model of West Site

In effect, the design signified most of the professors ideas for a parking area near the Rothko Chapel. From start to finish the design process was under his careful scrutiny. He had a vision from the beginning, which evolved as the project moved through the models I constructed.

It is important to realize that the type of design, which has just been discussed, is very rare within Texas A&M University's College of Architecture. In my experience, the majority of professors allow more freedom in design. However, there are certain criteria the student must follow created by the professor as a basis for grading. More will be discussed on this issue in the chapter entitled Discussion of Both Design Processes.

THE LAHASKY PROJECT  
*Erath, Louisiana*

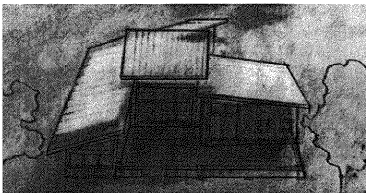
The Lahasky Project's design process was based upon my own experiences as a studying designer. Everything I have learned through the architectural design process aided me in the decision-making portions of this project. However, some interesting steps in the design began to present themselves as I realized I could not completely follow the design processes from which I was taught. The following is a summary of the Lahasky Project illustrating this point. For a more thorough account of the Lahasky Project see Appendix B.

The Lahasky Project began as a design following a combination of design processes I learned through studio classes. This was the basis for my design, as I had no other basis from which to work. I began with bubble diagrams to could see the spaces clearly. Bubble diagrams are used to show spaces as an outline in the shape of a circle, hence the name bubble diagram. These are very common to the studio design experience. Sketches, which also do not vary from many studio classes, were used next (fig. 4-7). In order for me to obtain an idea of form, the sketches were done in elevation and perspective. Design professors typically encourage these sketches, so that the student can better visualize the space. Soon after I began to design through diagrammatic floor plans rather than in three-dimensional model form, which is encouraged in most studio design classes at Texas A&M University (fig. 8-10).

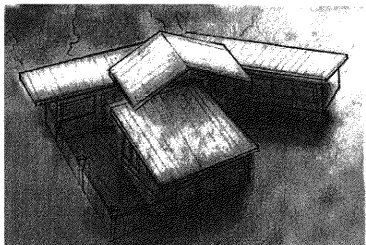
The Lahaskys were not concerned with the elevations or perspectives. They wanted to see the floor plan, which showed how the spaces related and dimensions of



*Fig. 4* South Perspective Sketch



*Fig. 5* East Perspective Sketch



*Fig. 6* North Perspective Sketch



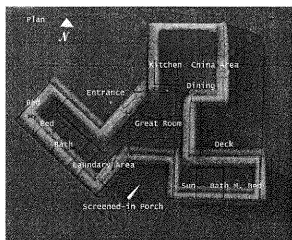


Fig. 7 Initial Diagramming Concept

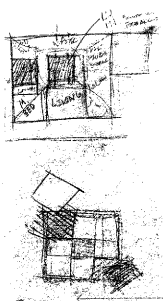


Fig. 8 Revised Concept

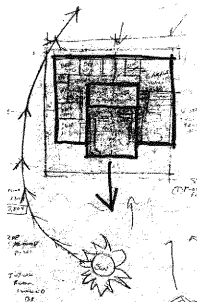


Fig. 9 Final Concept

those spaces. A floor plan was something they understood. As a result, I showed them only floor plans, and continued to design using a combination of methods. When I finally arrived at a design, which pleased them, I began to design in three dimensions.

With a few exceptions where my advisor pointed out possible issues in the design that may have later proven detrimental to the structure, all of the designs were my own creation. The Lahaskys provided many suggestions, and explained their visions, but I was free to pursue my goals in the project. However, their basic needs had to be met. If they were not fond of something I would start anew, but the design continued in the style and manner of my choosing.

### CRITERION ONE: SCOPE

The scope refers to the scale of the project; how many buildings are to be on the sight, how many people are to occupy them, and what site considerations have to be taken into account. In this way, scope acts as another criterion through which the designer creates. Scope, also denotes the requests of the professor or client in addition to my own ideas about the scale of the project. The two design processes were affected in different ways by the scope of the project.

The Rothko Chapel Addition Project required an exhibit space, reception area, and more office spaces. The number of people it needed to accommodate was not specified. However, it was assumed by my professor that several hundred people would be attending some events. The Rothko Chapel Foundation owned two sites across the street from the Rothko Chapel where historic buildings were used as storage, and it also owned a site adjacent to the Rothko Chapel itself, where the offices currently exist. Any or all of these two sites could be used to accommodate the project's requirements. Had it not been for the control my professor had on the project, I would have been given free reign in these areas.

My professor guided me through the Rothko Chapel first by instructing me to create simple forms of a staircase and a sloping landscape. These forms were to create the parking experience. The staircase and slope were constructed first because my focus was on parking even though parking was not one of the main original concerns of the Rothko Chapel Foundation.

After these forms were constructed, I moved on to the exhibit space and reception area. According to my professor these two spaces were to relate well to the existing forms of the slope and the stairs and were not to impede on the existing site. Once the exhibit space and reception areas were constructed circulation of the site was considered in terms of movement along the sidewalks. After the sidewalks were reworked the existing sites across the street were considered for office space. Another hill was constructed in model form to relate to the parking garage hill, and the office space behind the hill was created as a wall. After the professor saw the forms as he had envisioned them the design came to an abrupt halt. In this way the scope of the project was satisfied.

The design process in the Rothko Chapel Addition began with one element, which affected the next space designed. In accordance with the professor's wishes the spaces were continued in this manner until all requirements the professor created for the scope were satisfied and the forms related well to one another. Therefore, the scope of the project was considered in relation to the various forms of the project, and as a result of those forms.

The Lahasky Project on the other hand had one site with which to work. However, the scope in the terms defined was not smaller than the Rothko Chapel Project. The Lahasky's required several rooms to accommodate their needs, and even required a certain amount of square footage. These included, a master bedroom, a master bath, two guest bedrooms, a guest bath, a laundry room, a living room, a breakfast room/kitchen, a three-car garage, an office space, a craft room, a

dining/storage space, a plant room, and maybe a workout room. This portion of the scope was more limiting in comparison to the Rothko Chapel's scope, because of the detail that encompassed every room.

The Lahasky Project's scope was handled in a different manner. I thought about the entire design all at once rather than focusing on an individual portion of the design. The living room was my primary focus as that was the room in which the Lahaskys spent the majority of their time. The relationships of the other rooms had to be thought of in conjunction with the living room in order that way-finding and circulation be most effective. I had no conscious basis for this thought process. However, it could be argued that it was attributed to a combination of design techniques learned through my education in architecture.

Thinking about the entire design at once made the design of the scope more complex. All the elements and spaces had to relate from the beginning. This may have been due to the fact that I began my design with one building and within that building, spaces needed to relate to one another to make a whole. Individual pieces could not be placed without thought to the whole as easily under one roof without having their relationships affect the entire form.

In essence, the scope of each project was handled in two different ways. In the Rothko Chapel Addition Project the forms of the various required structures of the project and how they related in sequence in their design resulted in the professor's method used to deal with the scope. The Lahasky Project began with a design, which focused around a living room, but which considered all the spaces simultaneously, so

that the structure was a complete whole, a result of each space's relationship to it's surrounding space.

Due to the difference in the manner of design processes the project's scopes were handled differently. On the one hand, the Rothko Chapel Addition Project's scope was defined by the professor as the design continued through its process. On the other, the Lahasky Project's scope was under my complete control in terms of how I applied it to the design process. However, I had more realistic practical implications to deal with in the design for the Lahaskys.

## CRITERION TWO: QUALITY

A doctor can bury his mistakes  
but an architect can only advise his  
clients to plant vines.

*- Frank Lloyd Wright*

Quality in this analysis is intended to mean the way in which the designer, the client and professor affect the design content. Each has a different idea about quality. Quality, through the professor's eyes, deals with the aesthetics of the design itself and the presentation of the design. Quality to the client in the Lahasky Project concerns the design and how it reflects its ability to be built and endure many years of exposure to interior and exterior elements. In other words, it's practicality through structure. The client is concerned to a lesser extent with the aesthetic quality of the design. To the designer quality encompasses the goals the designer expects to accomplish in the design of the project, whether they are practical or aesthetic.

The professor shaped the design intentions in the Rothko Chapel. I had little to do with the quality of the design. From the beginning each aesthetic aspect of the form of the design was given to me. As previously discussed, the relationship of one form to the next and to the set of forms, as a whole was a deciding factor in the design. Here, also, spaces were made to fit the forms envisioned by the professor. The odd curve created by the hill of the parking garage actually allowed less parking to be placed within the structure, than if it happened to be a more rectilinear form.

However, the professor did ensure that the structures could be built. Therefore, practicality considerations in terms of quality remained a concern. Even though the

design was abstract and expensive, its form could be constructed with standard methods, which would ensure durability.

Few of my design intentions for the Rothko Chapel Addition were reflected in the project. However, the light well I designed exhibits the greatest amount of my own intentions. In terms of practicality, it probably could have been avoided. Its design was not even part of the initial plan of the project. Because it enhanced the light's effect in the parking garage, I saw it as a feasible design element. My own personal goal from the beginning of the project was to design something, which would make the process of parking, exiting the car, and walking to the Rothko Chapel the best experience possible. Even through this tiny element in the design, its importance remains without practicality. Again, though, my personal goals had to be approved by the professor. If he had not approved of the light well it would not have existed. He too saw aesthetic potential in its quality so it remained.

As previously stated, the Lahasky's wanted the design to exhibit convenience through the relationship of spaces and practicality, but to also contain some aesthetic value. Form was not a concern. When asked about the form of the designs I sent them they invariably never had a problem with them. However, the floor plans, which showed the relationships of spaces, were a concern. The floor plans were something they could look at and visually understand the relationship of spaces. They expressed a great interest in these.

I wanted the design in the Lahasky Project to encompass everything I deemed aesthetically pleasing, but to also contain a level of practicality in order to provide a



structurally sound and economical home for the Lahasky family. In this project every space had to have proportions to my standards and every transitional space had a reason for its existence. The Lahasky's actually said at one point that they didn't care if their house was a 'box'. Usually, the spaces and forms had at least two reasons for existing in the design, an aesthetic and a practical reason, because this is what I deemed necessary for the design.

In both projects, I designed with certain goals of practicality and aesthetics. My goals were realized in the Lahasky Project, but only slightly seen in the Rothko Chapel Addition. The professor had great interest and pull in the aesthetics of the Rothko Chapel project, whereas the Lahasky's could have cared less about how things looked. Although never precisely verbalized, the Lahasky's wanted to see their house sensibly built, so practicality considerations were taken into account on a larger scale.

### CRITERION THREE: TIME

Time provides an excellent indicator of the degree of importance placed on various aspects of the design processes. By focusing on where the time was spent on each aspect of the projects' processes it can be determined which aspects were of most concern. Each design had different concerns, which helped to determine the process of design.

In the Rothko Chapel the initial phases of design were not as important as the 3-dimensional model portion of the design. Three weeks were spent on the programming portion of the design process, but a good ten weeks was spent on designing the study model. The 3-dimensional scale study models were used to aid the visualization process of the design, which was necessary to view the abstract forms the professor envisioned.

In the Lahasky Project time was spent first in bubble diagrams for a week or so, then sketches, and finally spatial plan diagrams, which took several weeks to complete before a final diagram was chosen for the floor plan. Time was mostly spent in the diagramming phase of the project because this area, for me, was best suited for the understanding of the client and, if prepared in simple forms, could make for a less complex construction process.

The criterion time further indicated how the professor guided the design in the Rothko Chapel Project, and how I decided where I would spend time on the design in the Lahasky Project. The professor was able to regulate the design process in the way of time by defining deadlines. Although the Lahaskys expected certain designs to be dealt

with in a timely manner, I defined the deadlines. Therefore, where time could be manipulated to a greater extent in the Lahasky project it had less opportunity to be controlled in the Rothko Chapel project.

## SUMMARY OF BOTH DESIGN PROCESSES

The criteria scope, quality, and time generally indicate how each design process is contingent upon the designer's goals, the client's goals and the goals of the professor. All the criteria have shown to what extent the design processes differ. The basic difference found in the design was the amount of control placed on the design process. The design process was controlled by the professor in the Rothko Chapel Project, whereas, in the Lahasky Project the pace of the design process was controlled by my own ideas and goals for the project.

In terms of scope, quality, and time, the Rothko Chapel Foundation Project exhibited high restrictions on design process, but low restrictions on the practical implications of design. Scope was determined by the professor through the design process. The professor had me constructing the forms in relation to one another and, in this manner, found reasons for more forms, thereby, deciding the scope of the project. In terms of quality, the professor from the beginning placed his ideal of aesthetics on the design; every last detail had an aesthetic reason given by the professor. The professor even determined time, as he gave project deadlines for each class period. The deadlines regulated the amount of time spent on each aspect of the design process. In this way, tight restrictions were placed on the design process.

Low restrictions were placed on pragmatic criteria surrounding the design of the Rothko Chapel. The scale of the project was determined by the aesthetics of forms with few practical considerations given. The quality of the project was similarly determined by aesthetics with little emphasis on practicality. At one point, I even asked my design

professor about a structural detail. Although he showed me how it could work, he told me it was not of my concern for the purposes of this project.

Although the experience I had in the studio was atypical to Texas A&M University's College of Architecture, there were many aspects of the design process, which generally resemble the aspects taught in other design studio classes at the College of Architecture. Most studio design processes resemble the design process described in that they receive guidance from the professor in one form or another. Every professor has his or her own ideas about the design process and conducts the studio accordingly. Even if the studio professor appears to provide no guidance in the design process, some form of direction must be given; otherwise there would be no basis for evaluation. For, example, if a student was told to design something and direction was not given in how the design should take form, the professor could not grade the project fairly. How could a professor say that one design was an A project and another design was a B project without some form of direction which creates in itself criteria for evaluation? So even if the design studio appeared to allow freedom in the design process, without some form of direction, there would be little basis for a final evaluation on the design.

In addition to providing a criterion for evaluation, the design process creates a learning experience for the student. Because every design professor has his or her own idea about design process, the student will experience multiple design methods as he or she progresses through education. If restrictions on the design process were few, students would not learn a design process. This method of teaching is beneficial to the student because it will help the student form his or her own creative design process and

ideas. This enabling educational experience helps students become better architects; therefore, the design process is very important to the educational experience of the architecture student and is typically a focus of the professor.

By reviewing scope, quality, and time in the Lahasky Project it can be shown that the restrictions placed on the design process were relatively low in comparison to the studio experience. In terms of scope, the progress of the project was guided by my design goals. As the clients' architect, it is my job to answer those needs. The quality of the project was based on aesthetic and practical considerations. Where I spent my time and how long I spent it was completely my decision. Therefore, from the criteria it can be said that the restrictions placed on the design process were relatively low.

It is not surprising that the methods of design exhibit low restrictions in the Lahasky Project. No one was evaluating the process. All the Lahaskys cared about was the final product. I was chosen to do this project because I had four years of studio experience with the design process and it was understood that I could produce drawings for a residence. The clients care little about methods used to produce drawings for a residence. They are more interested in the product. If I had asked the clients questions about the procedure used to create drawings, as I had asked the professor in the studio, I would have worried them. I was commissioned to do this project because I *know* how to design.

In the Lahasky Project I experienced immense restrictions on practical aspects of the design. This is to be expected. Factors such as height above sea level, latitude, monetary restraints, the client's wants and needs, materials, and methods of construction

all played a part in the design. However, these constraints do not necessarily affect the design process. The designer decides to what extent the design is going to be affected by the constraints. Then the designer carries on with the design process taking into account the restraints, but not necessarily being restricted by them. Time constraints are another factor. Because of them, the designer is limited, but the design process is not. The designer has the ability to choose where the time will be spent within the given amount of time. In this way, the constraints are part of the design, but they are not a part of the design process.

The design process limitations are low in the architecture profession as well. Although the restrictions on the design may be high, the design process remains free from the constricting forces. Even architecture critics do not critique the architect's methods of design. They critique the product. Therefore, there are innumerable ways in which architects design. In fact, most every architect has his or her own style of design process. For example, Antoine Predock designs by constructing a cardboard model. As it is typically very abstract, it is scanned into a computer where the structure of the building is created. Louis I. Kahn chooses to design using sketchy diagrams. It only matters that the architect understands his or her own design method. Everyone visualizes differently and the design process ultimately comes down to the decision of the architect.

Design process methods can be taught to students, but there is no better way than another. Many may argue that one is better, but if famous architecture professionals exhibit design processes across the spectrum then who can say that one is more correct

than another? However, it has been shown that there is a significant difference between design process in the profession and design process in the studio. Architecture schools realize this difference and in fact are attempting to bridge the gap between the profession and pedagogy. Design build studios such as the piloted rural studio taught at Auburn University by the late Samuel Mockbee students build for the impoverished of the community. They spend a semester on site constructing the home and developing a relationship with the client. It gives the students a feel for designing and building something real and furthers their experience beyond paper and model architecture.

In addition to a jump in design process from the studio to the real world, the student goes from a design process lacking in a real relationship with a client to having to communicate with a client. In the studio, a relationship with a client is almost non-existent. The professor will typically act as a client, but a teacher does not have client attitudes. So, instead of acting as a client, the professor acts as a guide of the design process. Even if you have a client, like the Rothko Chapel Project, the student is working inevitably to satisfy the professor. After all, this is the person giving the grade. However, the relationship with the client is important. Many firms have the relationship with the client as part of their mission statement. FKP Architects, Inc., a well-known firm based in Houston, Texas, uses the relationship with the client as part of all their programs. The relationship with the client is so important that they even have a card for future employees to fill out which ranks from most important to least important their program criteria. The relationship with the client ranks as one of the top three.



The client-designer relationship and the low restriction design process create a huge gap between the professional and educational realms of architecture. It may be beneficial for architecture pedagogy to change the structure of architecture education in such a way that the gap between pedagogy and the professional world lessens. In this way, students entering the field of architecture will more easily transition into the profession and be of more immediate value to the profession.

### CONCLUDING THOUGHT

Further study on a larger scale is necessary to understand more about these types of design processes, but from my own analysis, the Lahasky Project method most resembles the methods of today's architects in that there were fewer constraints on the process itself. Also, as the design processes utilized in design studio are guided by professors, they are constrained by the requirements the design studio professors create for the student. It may be beneficial to students in architecture schools entering the profession if the school added a program, which somehow bridged the gap of the limited design process in the restrictions to more freedom in the design process. This could be implemented by creating a program, which incorporates a strong relationship with clients, in the latter years of architecture education.

## REFERENCES

- Abrams, Robin. *The Efficacy of Naturalistic Inquiry as A Research Methodology for Design*. The ACSA SW Proceedings 1998 "Searches in Architectural Reproduction." Oct. 1998: 142-147.
- Balfour, A. "Captive of Love and Ignorance: Architecture, Education and Practice." *Architecture Education Study*. Volume I. (1981).
- Beinart, J. "Analysis of the Content of Design," *Architecture Education Study* Volume I. (1981).
- Bloom, Benjamin S. (ed.) *Taxonomy of Educational Objectives, Classification of Educational Goals; Handbook I: Cognitive Domain*. New York: David McKay Company, Inc. 1956.
- CRSS. *Architectural education and the profession*. Houston, Texas: CRSS Center, Texas A & M University College of Architecture, 1995.
- Dietsch, Deborah. "Design Envy," *Architecture* (March 15. 1993).

Ehsan, Noushin. "Education as a Barrier". The ACSA SW Proceedings 1998 "Searches in Architectural Reproduction." Oct. 1998: 40-51.

Esherick, Joseph. "Problems of the Design of a Design System." *An Introduction to Design Methods*. Spring 2001: 17.

Garrison, Michael. "The Sound Building Design Studio." *The ACSA SW Proceedings 1998 "Searches in Architectural Reproduction."* Oct. 1998 "Searches in Architectural Reproduction." Oct. 1998: 148-157.

Honikman, Basil.. "Cognitive Structure and Design Method: An Initial Investigation," *Man-Environment Systems* 4 (1974): 105-107.

Kohler, Wolfgang. *The Mentality of Apes*. New York: Humanities Press. 1951.

Komendant, August E. 18 Years with Architect Louis I. Kahn. Englewood, N.J.:Aloray Publisher. 1975.

Langford, D. and S. Male. *Strategic Management in Construction*. Hants, England: Gower Publishing Company Limited. 1991.

Ledewitz, Stefani. "Models of Design in Studio Teaching," *Journal of Architectural Education* 38 (Winter1985): 2-8.

Lucas, Michael. "A critical Typology of Education Settings : An Undergraduate Thesis Prospectus." The ACSA SW Proceedings 1998 "Searches in Architectural Reproduction." Oct. 1998: 148-157.

Lunch, Milton F. 1992. "Designers, Federal Clients Debate Quality of A/E Services." *Building Design & Construction*. May: 29

Marx, Melvin and William Hillix. *Systems and Theories in Psychology*: New York: McGraw-Hill Book Company. 1963.

Raugh, R. and D. Wright. *Beginning Design Courses at Schools of Architecture in Western Europe*. Cambridge, Massachusetts: Architecture Research Office, Harvard Graduate School of Design. 1976.

Real Estate Research Corporation. *Emerging Trends in Real Estate*. Chicago, Illinois. 1992.

Skinner, B.F. *About Behaviorism*. New York: Vintage Books. 1974.

Smith, Adam. *Powers of Mind*. New York: Ballantine Books. 1975.

Sullivan, H. "The Interpersonal Theory: Sahakian," William S. (Ed.) *Psychology of Personality: Readings in Theory*. Boston: Houghton Mifflin Company. 1977.

Thorndike, Edward L. *Animal Intelligence: Experimental Studies*. New York: Hafner Publishing Company. 1965.

Thornley, D.G. "Design Method in Architectural Education." An Introduction to Design Methods. Spring 2001: 5-8.

Wigglesworth, Sarah. "The Crisis of Professionaization: British Architecture 1993," *Practices 2* (Spring 1993).

Yergens, Milton. *Reshaping Pedagogy in Architectural Education for the Information Age*. Masters of Architecture Thesis, University of Arizona, 1995.

## APPENDIX A

1. In the beginning each student was required to research the Rothko Chapel Foundation and to explain his or her findings through a PowerPoint presentation. I worked on a PowerPoint presentation with a classmate. After viewing all the presentations, I had most of the material memorized, as the material was repeated in each presentation. After the research presentations, each of us was given a focus by the professor. I constructed a 3-D model and explained the significance of the chronology of the form in the beginning stages of design of the Rothko Chapel. This was accomplished through a PowerPoint presentation.
2. Next, the students were assigned a story to write, which was to envision the Rothko Chapel Addition. Details on how to write it were not given. Simultaneously, the students were expected to write a list of questions for the client. Instructions on how to do so were not given. When the students came to the next class a few stories and questions were read from volunteers. The professor critiqued the readings, and we were asked to rewrite them. To him the stories lacked enough imagery and we were told we needed to focus our story on one type of imagery or one aspect of the project. He also thought the questions did not contain enough pertinence to the situation. He asked each of us to choose a focus for questioning and email the questions to him. After emailing the questions to him, he compiled them for review and sent them to our client.
3. We then made a site visit to the Rothko Chapel. This was the first time we got to see our client and our sight. It was here our client told us that we would only have a portion of the site with which to work. Other locations would impede the view of the Rothko Chapel, which was to remain the focus. However, our professor thought she was implying that we could have free reign of the site if we gave just cause.
4. After the site visit the class spent a week building a sight model. I built a scale model of the De Menil Museum, a design by Renzo Piano, with a classmate. Following the construction of the site model, each person was to create sketches and collages of their design ideas. A focus of our choosing had to be displayed through the media. I chose to focus on parking.
5. When I presented my idea to the professor he thought it would be beneficial if a building were placed behind the Rothko Chapel where parking, exhibition space and a reception area existed. I envisioned the parking area to be relatively small, only for the handicapped or speakers. The site did not allow for much parking. I saw the parking garage itself as an experience adding to the Rothko Chapel.

6. For the next class period I had constructed a simple mass model exhibiting what I thought encompassed these things. Being a parking garage it was to be well hidden within the site where the offices to the Rothko Chapel existed. It was to be made of limestone and hidden by bamboo so as not to obstruct the view of the Rothko Chapel. Parking was to be underground, and the building would be one continuous surface. Cars would enter from the street into a very inconspicuous entrance. Vehicles would be parked on the first floor and people would take an elevator to the second floor where they would be on axis with the Rothko Chapel.
7. My professor disliked the majority of the model. However, he thought the fact that it focused on an axis was beneficial to the design content of the site. He said I should use the land to hide the parking, and that I should build up from the earth creating a slope that would cover the parking and the reception exhibit space would be at the end with a long processional ramp, leading to the Rothko Chapel. He told me to do another model of the site. Underground parking happened to be part of my original idea so I did not find this objectionable.
8. I drew a simple section of the sight so that he could see the structure of the parking garage. He hated the tree-like columns I created to support the garage. (Fig...) He told me to do a better section with simple cylindrical unobtrusive columns. I also needed to place the parking at 5' below grade rather than 10' below grade, which was too deep for all practical purposes. I had misunderstood him from the beginning. I then was asked to construct a model with the stairs and slope of the earth as the primary concern.
9. I did what I thought he asked me to do. I built a slope with a grand staircase on axis with the Rothko Chapel. He told me not to focus on the exhibit space, so a wall represented it. He liked my idea of a bamboo-covered light well and thought it would increase the project's visual interest if I saved the existing trees which would come through the parking landscape. He drew on my model to show me exactly what he wanted. He disliked my stairs and told me I should have them come down at a diagonal opening wider as they approached the Rothko Chapel.
10. I redid the model. This time I created an entrance to the garage, which he disliked. He told me my slope was too great and that I should bring it flush with the building or 3'-0" above the building so that the people on the Rothko chapel side would see the people on the roof of the building. For Wednesday, I'm to change the slope.
11. Again, I redid the model. I created another model and changed the stairs, which are not of presentation caliber. The supports needed to come from within the structure so that the stairs could cantilever. The slope needed to equal the building which needed to be more detailed showing materials.



12. Later, feeling on the creative side, I added a retention wall to the initial slope of the parking garage, which didn't go over very well with the professor. He also complained that the sidewalks were too cluttered. I had used the existing sidewalks. By changing the sidewalks, I would be directing the circulation across the entire site. He told me to begin my AutoCAD drawings, computer aided drafting drawings, of the site. They were done in plan so that the sidewalks could easily be seen.
13. The slope of the lawn covering the parking was changed again. It needed to interact with the site to make the best experience possible for individuals walking through the site. More trees were also added to the sight.
14. Then where the tree came through the garage landscaped hill, I had to make my original square into an ellipse to relate better to the site. He said that the curve of the hill relates better to an oval or an ellipse. I need to add a wall across the street and play more with the building across the street by creating forms not just walls.
15. A few weeks later the professor had me work on a three dimensional AutoCAD drawing so that I could get perspectives for my final presentation. He then informed me that I would also be using the sight across the street, which would be best visualized through a three-dimensional model in AutoCAD.
16. From here I carried out the design to completion in AutoCAD and through an actual 3-D model. Little in terms of design was mentioned about my project. However, the color of my model, the color of my presentation, and the quality of my photographs remained an issue until completion of the project.

## APPENDIX B

1. The project began with a site visit. I let the clients speak to me about their wants and needs. Whenever I had an actual client through studio this is what was done.
2. The Lahasky's had a grand view of Lake Peigneur, which became grander as they took out some of the trees where the bulkhead was being constructed. Light and the view of the lake were very important to the Lahasky's and they mentioned these factors repeatedly. A barbeque house and a barn existed on the property. They intended to keep the barbeque house, but the barn they demolished. They also had a pool on the property, which they eventually filled-in with earth. To the Lahasky's fire safety was a concern as the original house burned-down several years ago. Patricia Lahasky also had reoccurring foot problems and using a wheelchair in the future was a possibility. I found that the room in which they spend the majority of their time was the living room.
3. After thinking about the site and what they had wanted for their house I began to ask questions relating to what they had envisioned. Through these questions I found what they liked and how they lived. Their answers gave me a better understanding of their lifestyles. Like what time they awoke in the morning, what they ate for breakfast, when and how they walked to the kitchen for coffee, and what they liked and disliked about each of these things. These questions helped me determine what arrangement of rooms would best suite their needs.
4. After the questioning phase, I began the design using bubble diagrams, which showed the type, and importance of each space. These helped me conceptually think about the space in terms of rooms, and their possible locations. They were drawn in two dimensions in plan. I had been introduced to them in studio. When I found one I liked I moved to possible elevations and perspectives of the design.
5. I found perspectives to be of more assistance so I drew multiple perspectives in hope that I would create a better design. Finally, I decided it was time to design a simple mass model. I created the model based off of a bubble diagram, so the spaces were not completely worked out in plan. I sent the perspectives and plan of the building to the Lahasky's. My clients sent a response via email, which indicated that the sketches looked fine, but that they were more interested in the floor plan "to see what rooms fit where".
6. So it was back to the drawing board for me. I began to see that the design was not going to work well. This was especially evident when I questioned my advisor about the roof, which he said would be difficult to construct. I decided to work

on paper in plan, since that's what the client's were looking for, a floor plan, and I found it helped me think of the spaces more concretely.

7. I created several floor plans. Each one of which I constantly thought about in three dimensions. Finally, I had one, which I thought was perfect for them. This square plan had a central courtyard with surrounding rooms and a central hallway surrounding the courtyards so that as you existed any room you would see the courtyard. The courtyard had many benefits, which I explained through email to the Lahasky's. The central courtyard had, admittedly, also several drawbacks with which they were unwilling to compromise.
8. So, I began again this time without the courtyard. Finally, they accepted my floor plan. From here I constructed a three dimensional wire - frame mockup for them in AutoCAD. This is where the study of the Lahasky design ends, as this is the point most compatible with the studio design ending point.

## VITA

## OBJECTIVE

To pursue a professional architecture license, to learn more about the professional practice through employment, and to continually develop my design talent.

## EDUCATION

1998-2002

TEXAS A&amp;M UNIVERSITY

College Station, TX

- Environmental Design, 3.8 GPR, Graduation date - May 2002
- Undergraduate Honor's Fellow
- 2000-2002 Recipient of the Robert L. and Helen Wingler Scholarship
- 2000-2002 Recipient of the Mendon B. Krischer Memorial Scholarship
- Sociology Minor
- Fall of 2000 Study Abroad Program at Santa Chiara, Castiglion, Fiorentno, Italy.
  - Studied under the direction of architect Paolo Barruchiari
  - Learned the Renaissance style of painting under Ricardo Bianci