

A PRINCIPLED APPROACH TO ARCHITECTURE 101

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ABSTRACT

When asked to teach Introduction to Architecture at the Savannah College of Art and Design (SCAD), I pondered what would unite and inspire a young, diverse student population with minimal exposure to design and mixed levels of analytical skills coming from Nigeria, Colombia, Venezuela, Jamaica and Japan and throughout the United States.

After researching how Intro courses are taught around the country, I came to the conclusion that the purpose of this course is to enable students to engage in architectural discourse verbally and graphically and to have a coherent set of principles by which to approach the design process.

Instead of turning towards chronology as an organizing element for the course, I asked them one question on the first day and again, ten weeks later, on the last day of class –

What is your favorite building? Why?

I asked them to bring an image of their favorite building on class two and to be prepared to describe it to someone who is unable to see the building. This enabled us to begin to address the vocabulary of architecture. This also enabled us to address the next question –

What is architecture?

Beyond the incorporation of vocabulary, the underlying intention of this course is to enable students to harness what passion and interests have brought them to architecture school. By helping students identify their connection with architecture early (their favorite building), we enable them to feed from that experience in the upcoming years of education and practice.

This general discussion of favorite buildings and whether they are “Architecture” continued through the term. The context for the discussion was a list of “principles” which I presented to the students:

- 1. Formal Ordering and Shelter**
- 2. The Natural Environment**
- 3. The Built Environment**
- 4. Structure and Technology**
- 5. History**

In conjunction with readings, field trips and class discussions, students were given assignments from a range of media relating to the five principles. Dialogue about their favorite buildings and Architecture increased through the quarter and by the end of the quarter they produced informed diagrammatic analyses of a building.

The goal was not to define Architecture, but to use the question as a foundation for an architectural education.

INTRODUCTION

“The principal goal of education is to create men [and women] who are capable of doing new things, not simply repeating what other generations have done – men [and women] who are creative, inventive and discoverers. The second goal of education is to form minds which can be critical, which can verify, and not accept everything themselves, partly by their own spontaneous activity and partly through materials we set up for them; who learn early to tell what is verifiable and what is simply the first idea to come to them.” (Piaget from Feigenberg, p.270)

It is a basic tenet of architecture that every structure requires a sound foundation. The foundation of architectural education is not the design studio, as it has often been described. The foundation of architectural education is the Introduction to Architecture course taught at most architecture schools across the country and around the world. This first introduction to our complex and multi-dimensional field (often the first course a student of architecture will take within the major) will be the basis on which all courses to follow will be evaluated and processed by the student. It is the equivalent of basic language and math skills in relation to higher education.

While there are prolific writings on the differing approaches to architectural studio, inclusion of theory in architectural education and inclusion of sustainability in architectural education, I have been unable to locate any specific research into how introductory courses in architecture are approached and the success of differing approaches. The 2005 Beginner's Mind conference for the Beginning Design Student in San Antonio, Texas presented sixty-six papers of which none of the abstracts directly addressed introductory courses in architecture.

With this paper I hope to begin a dialogue regarding teaching models for introductory courses in architecture and to demonstrate the model that I have developed.

THE NEED FOR A DIDACTIC APPROACH

“All effective teaching, of course, proves itself by stating what it wants, what changes in behaviour it seeks to effect among the students, and therefore what aims it sets out to achieve.” (Johannes, p.3486)

There is a manifesto entitled Model for Architectural Design Education (MADE) by Ralph Johannes that approaches the decline in the quality of design education as a result of teaching by teachers who were never taught to teach. “They will seldom or never consciously use a consistent teaching method, or even conduct their courses in accordance with didactic principles, of which most of them are in any case unaware.” (Johannes, p.3471)

I agree that architectural education requires a clear structure and organization. However, the MADE document is, once again, addressed at the design studio rather than the introduction to the architectural education.

My own approach to teaching can be summarized with Feigenberg's statement “[i]deally architectural education should not focus on students' retention of facts and formulas, but rather on the enhancement of their ability to think critically and to learn how to learn.” (p.266)

MY APPROACH

My interest in this course began when asked to teach Introduction to Architecture at the Savannah College of Art and Design (SCAD) in Fall 2004. Multiple sections of the course are taught simultaneously, at least one section taught each of the four quarters. Recent student evaluations had not been high and the department was interested in revamping the course to provide a more successful introduction to architecture than previous courses had provided. As long as I met the NAAB criteria, I had the freedom to design the course as I deemed appropriate.

The department provided me with previous syllabi for this course over the recent years. One professor had approached the course as a 20th century architectural history course. Another professor approached the course as an introduction to architectural theory and a third professor had been so frustrated at the seeming disinterest of his students that he asked them to write a paper describing what they thought the course should be teaching them. These papers were the first indication I had of the challenge required to engage these teenage students in the complexities of architecture.

In considering how best to create this course, I chose to approach it as I would any design problem. Who is the client? What are the precedents? What is the schedule? What is the budget? What is the intent?

Client

The client in this condition is predominantly freshman students who intend to major in architecture at SCAD. They are a young, diverse student population with minimal exposure to design, mixed levels of analytical skills, coming from all over the world (16% of students in the architecture program at SCAD are international). What they have in common is their age, energy level, and some inherent interest in architecture that brought them to this class.

In previous courses I have found that freshman students in architecture are at risk of becoming overwhelmed and disenchanting with the complexities of architecture. I wanted to keep them engaged by tapping into the passion and interest of these students, allowing them to discover the basic skills in architecture that would enable them to flourish in architectural studio.

My approach to teaching has always been to engage the students fully and offer positive feedback, while retaining very high expectations. I have learned that with younger students, lecturing is not nearly as effective as discussing. Given the small class size at SCAD (maximum of 20 students in lecture courses), I recognized the potential for dialogue as well as opportunities for student presentations.

Schedule and Budget

My schedule in the SCAD quarter system is ten weeks. But, my budget is the youthful energy of these students. Having worked with young students in the past, I knew that, if inspired, the potential energy is incredible. To keep their attention, I incorporate a continually changing array of media for my own presentations as well as for their assignments.

Precedents

I compiled numerous syllabi from Intro courses at other institutions. I also sent out a questionnaire to practicing architects and architectural educators asking about their memories of their introduction to architecture course. By evaluating this data and discussing the success of these courses with the teachers and students who had taken them, I organized these findings into three basic methodologies – introduction to history and theory, introduction to design fundamentals and introduction to architecture principles.

Which methodology is taught at a given school is dependent on a number of factors: Is the class exclusively for architecture majors or is it open to other majors? When in the architecture curriculum is the course taken? What is the size of the class? What is the overall philosophy of the department and what NAAB criteria need to be addressed to complete the curriculum criteria? But at SCAD, my approach was to design the course based on principles.

Intent

I realized that the success of an introductory course in architecture could be evaluated by a student's ability to respond coherently to the question "What is Architecture?" To answer this question coherently, one must have a solid grasp on the basic issues in architecture. I also saw that there needed to be a structure around which to build this vocabulary.

I created the following list of five principles as a set of areas by which to evaluate whether a building is "Architecture".

1. Formal Ordering and Shelter
2. The Natural Environment
3. The Built Environment
4. Structure and Technology
5. History

PROCESS

Beyond the introduction of verbal and graphic means of communication in architecture, the underlying intention of this course is to enable students to harness what passion and interests have brought them to architecture school. By helping students identify their connection with architecture early, we enable them to feed from that experience in the upcoming years of education and practice. If we can engage students in discussions of "meaning" and "value" initially, then the memorization inherent in the learning process will have a context.

Instead of turning towards chronology as an organizing element for the course, I ask the students one question on the first day and again, ten weeks later, on the last day of class –

What is your favorite building? Why?

After teaching four sections of this class over two quarters, I have found that student responses are quite consistent. About half of the students bring in a Frank Lloyd Wright building, often Fallingwater. Approximately a quarter bring in an image of their own home and the remaining ones bring in a building that seems to represent something "fancy" to them. There is usually at least one building from Las Vegas, at least one skyscraper hotel (the Burj Al Arab Hotel in Abu Dhabi is popular) and the occasional sports stadium.

I then show the students some of my favorite buildings and I discuss them using architectural vocabulary. Recently I showed Rem Koolhaas and OMA's Seattle Public Library. By asking if it feels like a library, we can immediately engage in a dialogue about typology. We also discuss how well it fits in the city (context), how the structure is a part of the interior expression (structure and technology) and what it means to design a public library in the 21st century (history). I also showed Zaha Hadid's Vitra fire station. The fact that this building never functioned as a fire station engages the question of architectural function as well as sculptural expression and artistry.

The final piece of "architecture" I show is Goldmyer Hot Springs in Washington state. This is a natural hot springs which was discovered in the early 1900's and is a hiker's destination in

the foothills of the Cascade mountains, east of Seattle. A cave was dynamited out of a hillside, now offering a 110 degree hot spring tub. All the students recognize its beauty but the question of whether it is architecture brings up questions of function, shelter, manmade intervention and other key aspects inherent in a working definition of Architecture. In the beginning most students do not differentiate between “building” and “Architecture”. By the end of the term, the students may differ on the answer, but they are able to discuss the difference.

The students are asked to bring an image of their favorite building on class two and to be prepared to describe it to someone who is unable to see the building. On class two, they pin-up their images and without pointing at or naming the building, they have to describe it. This enables us to begin to address the vocabulary of architecture. This general discussion of favorite buildings and whether they are “Architecture” continues throughout the term.

Throughout the quarter, I attempt to make distinctions between architecture and building, between personal, sentimental response and architecturally significant work and between architecture that one “likes” versus “good” architecture. All of these issues are discussed within the context of the five principles. Early on, the students begin to understand that I am not looking for answers to these questions. I am seeking meaningful, educated dialogue from them.

PRINCIPLES

Formal Ordering And Shelter

Supplemented by readings from Ching and others, I lecture on the elements of architecture and the possibilities and ramifications of their combinations as exemplified in buildings across time and location. We continually revisit the students’ favorite buildings and discuss them as a combination of formal elements and ordering systems.

I also present an overview of basic architectural drawing that culminates with an assignment to draw plans and sections of their own room. A basic understanding of orthographic drawings is necessary for a meaningful discussion of formal ordering, as well as for the eventual diagramming that the students do at the end of the quarter.

The Natural Environment

The natural environment and issues of regionalism are introduced to the students in film and readings. I introduce the students to bioclimatic regions, vernacular and regional responses and contemporary approaches to environmental issues such as LEED. We look at examples throughout history and throughout vernacular Savannah buildings.

The Built Environment

On the following class, we meet in a square in historic Savannah and do a walking tour in which we identify elements of architecture, urban contextual derivations and responses as well as regional architectural innovations that evolved from natural environmental requirements. Issues include the shape and location of historic Savannah windows, courtyards, building materials, commercial streets compared to industrial and residential streets and more.

I begin to ask the students to explain why Savannah architecture evolved as it did. This is presented in tandem with the presentation of their first major assignment – a Savannah Scavenger Hunt. They are given questions about ten historic Savannah structures. They then have to research these and present photos and descriptions on clearly organized boards. I

introduce them to the incorporation of verbal and graphic presentations at this point. All projects to follow are partially graded on verbal and graphic presentation.

Structure And Technology

Beginning with the trabeated system of construction, we discuss the evolution of structural innovation and how it affected architecture. Students are introduced to basic structural issues of tension and compression and we once again return to their favorite buildings to discuss structural innovation and expression. We also refer to the local 19th and 20th century Savannah buildings that exemplify multiple periods of structural and material understanding.

History

In the second half of the quarter we do a quick sweep through the history of architecture in which we are merely discussing what we need to know in relation to the other four principles to discuss contemporary architecture from an informed perspective. The point of this is not to teach the breadth of architectural history, but to help the students understand that as designers, they are part of a lineage. Architecture today can not be designed without a comprehension of what got us here.

All five principles come into play in their final two assignments. They begin with a precedent study comparison of two noted architects – one who practiced pre-1960 and one contemporary architect. Each student does a 15-minute Powerpoint presentation in which they must present an in-depth comparative analysis of at least three buildings of each architect, including plans, sections, elevations and images. The second part of the project is a physical presentation board on which they must present a diagrammatic analysis of one of the buildings they have studied with at least three original diagrams.

OUTCOME

I began this paper with a Piaget quote which includes the following –

“The second goal of education is to form minds which can be critical, which can verify, and not accept everything themselves...who learn early to tell what is verifiable and what is simply the first idea to come to them.”

I am challenging the students to think critically and to question their first response.

On the last day of class students are asked again to bring in an image of their favorite building. A few students bring in the same building they started with while most do not. We discuss these buildings yet again and the students usually find that they are able to discuss these buildings with much more facility.

Of twenty students in one section of my Intro class this winter, all but two students changed their favorite building from the first class to the last class. Six students originally presented their own home as their favorite, though none did on the last day. This was in no way my intention, and I actually expressed my belief that our childhood home is, for many, the most important architectural influence we have. But, I do ask the students to question if their response to a building is sentimental and personal or if it is based on the principles that we had learned. It was not my intention that their favorite building need be Architecture, only that they begin to understand why a building is their favorite.

I then ask them if their favorite building is Architecture.

In a recent class, a student from the Ivory Coast changed her favorite building from Casa Mila on the first day to Yamoussoukro Basilica on the last day. This is a 1980's re-creation of Saint

Peter's Cathedral built in the Ivory Coast. It has tremendous political and social meanings for the culture. When asked if this was Architecture, she and other students responded that if the original Saint Peter's is Architecture, how could this not be Architecture? Others disagreed and this led to lively dialogue on originality and duplication.

Another student had switched from the Delano Hotel in Miami to Rem Koolhaas' Villa Dell'Ava in Paris. The exterior walls of this house respond to neighbors' requirements that they do not want to see the building. So if the neighbors hate the building, can it be Architecture?

As we debate on whether specific buildings are "Architecture", I clarify that, in my opinion, there is no universal answer to this question. I remind them that they will eventually be in studio where they will spend countless hours every term attempting to create Architecture. Before designing Architecture, they must define for themselves what architecture is. The purpose of the principles was to provide the students the basic understanding and vocabulary to form their own definition of Architecture.

If the students can carry on a meaningful dialogue on the definition of Architecture, then the course was successful. Actually defining architecture is not important. The dialogue is the test of the overall integration of all that we have studied through the quarter.

The real test of the success of this class will come in the upcoming years when I have these students in studio. In the interim, I follow their progress through other teachers who are teaching them. So far, they seem to be leaving Architecture 101 with a principled approach to architecture.

EXAMPLES

Marie-Alice

Favorite Building original



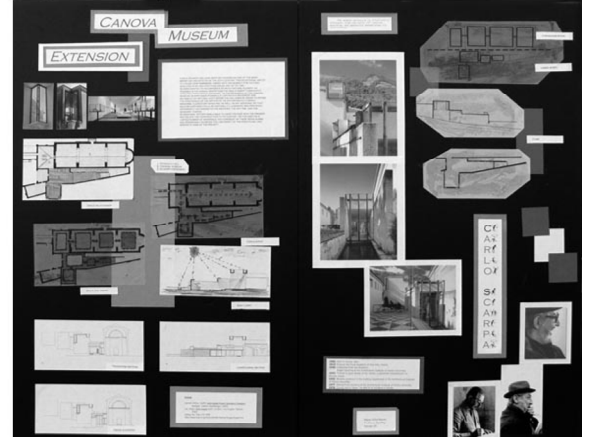
GAUDI - Casa Mila

Favorite Building final



YAMO USSOUKRO Basilica

Diagramming Project - SCARPA - Canova Museum Extension



Pamela

Favorite Building original



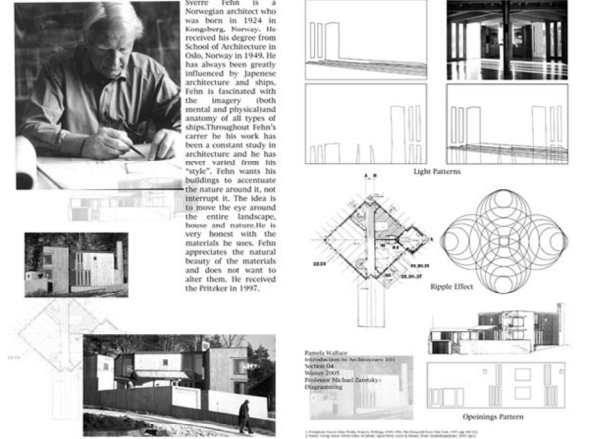
GEHRY- EMP Seattle

Favorite Building final



LIBESKIND - Holocaust Museum

Diagramming Project - SVERRE FEHN House



Anna

Favorite Building original



DELANO HOTEL - Miami

Favorite Building final



REM KOOLHAAS - Villa Dell'Ava

Diagramming Project - KOOLHAAS - Villa Dell'Ava



Tanner

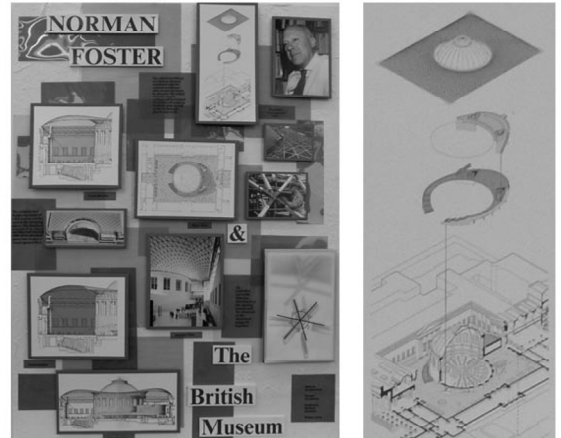
Favorite Building original and final



BURJ AL ARAB HOTEL - Abu Dhabi



Diagramming Project - NORMAN FOSTER - British Museum



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