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A Case for Analysis in the Beginning Design Student Curriculum

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Integration Within the Design Studio

Analysis - 1) a detailed examination of the elements or structure of something 2) the process of separating something into its constituent elements1

In many schools of architecture, precedent analysis is often done in a course separate from the design studio, and typically does not occur within the first year. The separation between analysis and design within a curriculum implies to the student that there is a separation between the two processes in reality. Additionally, and painful as it is to acknowledge, without active integration within the design studio, any topic, including technology, tends to play second fiddle to studio. Even, however, when the analysis is integrated within the design studio, there is a tendency for the analysis to be completed, and then cast aside without necessarily synthesizing what was learned from the process.

So why is analysis important? One of the points that Steven Hurtt and Norman Crowe make in an article for the Journal of Architectural Education (JAE) titled “Visual Notes and the Acquisition of Architectural Knowledge” is that the act of making a drawing increases one’s understanding of the object or space being drawn, and that that understanding translates into a “remembered experience” which subsequently forms the basis for a repository of memories that one draws upon in the design process. Without that repository, a designer is limited and in essence designs in a vacuum.2 It is interesting that most students crow about their varied life experiences on college applications in an effort to get into the school of their choice, but yet when they enter architecture school, the process of acquiring architectural experiences is seen as a hindrance to their creativity.

Many, if not most beginning design students, as well as more seasoned professionals, struggle with the slippery concept of the design process. It is difficult to define, as it tends to be individual in every case, but at a certain level a good and comprehensive design process could be the result of some rigor of investigation on the part of the practitioner, combined with an ability to tolerate ambiguity and see both sides to a question simultaneously. Rigor is often seen as an impediment to the creativity - creations are seen as spontaneous and intuitive acts that spring from the head of the designer, fully formed, as Athena sprang from the head of Zeus. And, obviously, in this case, there can be no preceding process.

It seems evident that a design process must be learned, but it must be said that it is also extremely difficult to teach, as there are no set rules. Beginning design students are therefore understandably frustrated when given the task of designing a solution for some particular problem, but have not been given the means by which to solve it.

During their first semester of design studio, students at Maryland were given a series of projects that were intended to introduce them to different methods of approaching the design process. The intention was to present the students with a menu of strategies that they might select from or modify in future endeavors. Analysis was seen as an important component to these strategies. It should be noted that these intentions were stated to the students from the very beginning. It is my belief that the pedagogical process is not a secret to be divulged at the conclusion of a problem to the initiated few but that it should be an open experience. Students tend to learn more and be more successful if they know what the objectives of a problem are from the beginning.

Three strategies were presented, in three different projects:
1. Formal manipulation of ordering principles
2. The narrative, or poetics of architecture
3. Transformation of precedent

The intention was to introduce formal manipulations of ordering principles first in an abstract manner and that that would provide a strong base or structure for subsequent efforts.

In the first project3 students were asked to make two-dimensional collages that each represented specific ordering principles (rhythm, datum, etc.). Students then selected three collages and combined them into one collage making one of the principles assume hierarchy and thus introducing the concept of hierarchy.

Students were then asked to make their collages three-dimensional, within a certain height constraint, and articulate and define space, while still demonstrating hierarchy. After developing these models for a time, the students were given a program - a loft residence for a particular personality, and the abstract problem now assumed a realistic dimension. The abstract model thus became the parti for the architectural project. The initial abstract exercises allowed the students to design freely without the encumbrances of a program and the "realities" of architecture. Additionally, they were introduced to a particular way of approaching the design process that relied on strictly formal manipulations. Inevitably, a form of
analysis and self-criticism was introduced as the students wrestled with the problem of how the abstract models were transformed by the circumstances of site and program. And finally, the rapid pace of the exercise, with its easily understood step-by-step procedure introduced a kind of rigor that the students sustained over the course of the semester.

In the next exercise, a different approach was proposed - the use of the literary narrative as a generator for ideas. The students were asked to interpret in three dimensions poems which in some form or another alluded to movement and sequence and then apply the three-dimensional construct to the design of a sequence through a garden. The intention was that the literary narrative would suggest an architectural narrative, and that this could form the basis for a parti. This project, one that I personally found more interesting, was wildly unsuccessful, as students struggled with how to turn words into architecture. Poems that had a clearly architectural context seemed to be easier to transform. The lack of success may also have had to do with the average Maryland student, who tends to be extremely pragmatic and concrete in his/her approach to design.

The third project was an exploration of the concepts of the free plan, and in this case, students were given specific free plan precedents to analyze and were then asked to use the precedent as the generator for the design of their project, a small gallery space. The intention of this project was to suggest that a precedent could be used as a parti for a design project, and similar to the first project of the semester, be transformed by the circumstances of site, program and scale. More important, however, it was also the intention to make the connection between analysis and design, as there is often the tendency of the student, once having completed the analysis to discard it and begin anew. This also promoted rigor in process, as it compelled the student to follow through and fully test an idea.

**Specific course based on analysis**

At the University of Maryland I teach a visual analysis course that is required for all beginning graduate students in the 3 1/2-year Masters program. Students go out and document and analyze works of architecture on-site, using as a venue the architecture and urbanism of the Washington, DC - Baltimore metropolitan region, an area rich in architectural resources. The course is structured so that it begins with a discussion of basic architectural elements and concludes with an investigation of large-scale urbanism.

The course uses as a premise four points set forth by Hurtt and Crowe in their article "Visual Notes and the Acquisition of Architectural Knowledge. These main points are as follows:

1. A person's understanding of a building is enhanced by the act of drawing it.
2. The ability to remember that understanding is enhanced by having made such drawings.
3. The ability to draw accurate facsimiles of exemplary works of architecture is proportional to one's efforts to do so.
4. Together, these remembered experiences and understandings constitute the architectural memory that we call upon in order to design.

These points seem fairly obvious. If you draw something, you have taken more time to look at it and therefore you understand it better than if you had simply taken a photograph. Your memory of a work is increased by having spent the time drawing it. The more you draw the better you are at drawing, and as stated before, the more you draw the larger your repository of visual images is, which subsequently increases the resources you have with which to inform your design process.

Many schools of architecture have courses devoted to analysis - however, these tend to occur at the upper years, and are often related to a study of building technologies, or are part of a study abroad program. It would perhaps be more useful if an analytical course took place earlier in the curriculum, and it might accomplish a number of tasks.

First, it can increase the students' facility in drawing through a series of rigorous documentation and analysis drawing exercises. Beginning design students are impatient with their own efforts to draw things accurately and seem unable to grasp the fact that in order to become proficient in an art, they must practice. One might blame the instant gratification of the computer, but this impatience can also be found in older graduate students, and is generally due to them having spent their previous lives being proficient in some other area, and being suddenly confronted with having to begin anew. Emphasizing the idea that such things as drawing and perceptual skills and design process actually take a significant amount of time should be addressed early in an architecture curriculum. And of course, by intensive drawing, the students increase their skills, which subsequently supports the design studio.

Second, it can increase the students' knowledge base of important works of architecture and their elements and principles. Analysis is an important venue for accomplishing this - by dissecting the components of a building, students understand that there are universal design principles, and that these can be applied to their own work. In addition, they also increase their vocabulary of possible sources for ideas. The course at Maryland is coupled with readings in architectural history and theory. Graduate students in our program are generally very ill-prepared when it comes to knowledge of architectural history and theory, and so in an effort to bring them up to speed, the buildings that they analyze are placed in a larger context of architectural history and theory through the readings and discussion.

Third, a beginning course in analysis can develop the students' ability to examine critically, and encourage speculation. Beginning design students tend to look at everything equally, and everything is pretty much cool and interesting - analysis breaks down a given composition and they are able to examine the components and assess more readily whether or not design responses are appropriate or inappropriate within a
certain context. Additionally, it is valuable to encourage the act of speculation. So often, analysis begins and ends with a graphic discussion of ordering principles. However, if one can encourage students to speculate and discuss elements that may address issues of, for example, meaning, typology and iconography, to name just a few, the analytical process is more fluid, and begins to address the idea of ambiguity and multiple interpretations. In that sense, it becomes more like the design process.

**Conclusion**

It has been said in certain architectural circles that looking at historical precedent stifles creativity and condemns one to repeat the past. This is a superficial argument, as it usually is made in reference to the style of a particular work of architecture. Using analysis, and its abstractive properties, allows one to understand the more essential structure of a particular work, as well as develop a deeper understanding of the contexts, physical, historical and socio-cultural in which the work resides. The analysis of precedent can in fact lead to solutions that are not necessarily traditional, but rather well grounded.

**Notes**

3. Although different in intention, this exercise was derived from one presented by Michael T. Maher of Clemson University at the 16th National Conference on the Beginning Design Student, in Las Vegas in September of 1999.