

# UNSTAKED TERRITORY: Frontiers of Beginning Design

Proceedings of the 19th National Conference on the Beginning  
Design Student, Oklahoma State University, Stillwater, Oklahoma  
April 3-5, 2003



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Challenging The Boundaries I  
Challenging The Boundaries II  
Integrating The Boundaries  
Obscuring The Boundaries  
Various Terrains  
Initial Terrain

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## The Case Study as a Means of (Re)presentation within a Manual and Digital Representation Course

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Architectural drawings are not just informational images but can be beautiful and convey meaning beyond mere information; that is intention. Many designers before us, like avant-garde artist and architect, El Lissitzky and architect Peter Eisenman convey their ideas through their representational drawing selection. For example, both used the axonometric projection as a communication tool to further their design intentions. Lissitzky, a visionary architect, lecturer, theorist and propagandist, used the axonometric projection specifically to convey a sense of endless space within his Prouns. The axonometric projection has its point of view either from above or below, an abstract location. It is a measurable, objective precise drawing that can transmit abstract information without distortion. The axonometric has an infinite vanishing point that infers a constant motion and continuous space about the image. Peter Eisenman also used the axonometric drawing to convey similar intentions about architectural space. He used axonometric projection not only as a representational tool but also as a design and diagramming tool. The axonometric as a drawing projection suggests meaning beyond its use as just a communication tool. There is an embedded *intention* within the drawing type.

Stan Allen wrote, "Projections are the architects means to negotiate the gap between ideas and materials." The projections or the drawings are communication tools that balance information, meaning and ideas. For the student exploring the case study as a purely representational exercise, the projection is the method for which their understanding of the case study building is conveyed. By re-drawing existing projections and re-presenting new projections, the student is learning about big architectural ideas, spatial ideas, site ideas, methods of construction and even the architectural process while simultaneously learning new methods and techniques of representation. As a means to critically reexamine the role of new and old representational techniques and technologies and how best to facilitate these methods within the curriculum, this architectural representation course employed a comparison method of study and learning that tested manual means of representation against digital representation through the use of the case study project.

One of the goals for any representation course is to prepare students to express their own ideas in a coherent, clear and beautiful manner. Representation courses explore modes of visual expression and communication. The methods taught are critical to the student's ability to communicate creative ideas effectively, accurately and poetically. In this representation course, the idea of *intention* in representation explored through the case study project added a critical mode of thinking to what was traditionally considered a purely technical course (or even the case study project as a purely re-presentation of existing information). *Intention* was defined for the students as *meaning*.

Staying current with new technologies, what to teach, how to teach and when to teach the varying representational syllabi have challenged many school curriculum committees. Many architecture programs are beginning to establish a two-semester sequence for the representation courses as part of the core curriculum, one manual course and one digital course. I found myself in the position of teaching manual and digital representation in only one semester to beginning graduate students with no architecture background and in one semester to second year second semester undergraduate students. Within the confines of the course, I attempted to embed a traditionally skills based course with an intellectual exercise that would incorporate technical proficiency in digital and manual representations. The course description that follows is for the second year second semester students.

Given the restrictive allotted space in the curriculum, both forms of representation were taught in just one semester. Therefore, the course was divided into roughly two equal sessions starting with digital representation. To get the students immediately familiar with several computer programs, the course quickly covered scanning and Photoshop while more time was spent learning AutoCAD and 3D Studio Viz. The manual representational sessions covered constructed perspective drawing, shade and shadow and pencil rendering techniques.

The framework for the course consisted of a series of weekly exercises that were skill and design based. At the beginning of the course, each student selected from a predetermined canonical list of architects and buildings to study for the entire semester. The weekly assignments built upon one another toward the final goal for the course, the analytic. The following was the basic structure for the course.

Photoshop:	WPA/Russian Constructivist exercise and initial library research
AutoCAD:	Find all available documentation –draw plans and sections
AutoCAD 3D:	Create 3D model based on AutoCAD plans and sections
3D Studio VIZ	Render material on model

Photoshop:	Montage finished VIZ model with library documentation
Manual	Hand drawn perspective
Manual:	Rendering techniques
Manual:	Shade and Shadow techniques
Digital/Manual	Compositional studies
Digital/Manual:	Analytique

The final assignment, the analytique, combined the research of the case study and the re-presentation of existing documentation (site information, plans, sections, etc.) with a critical exploration of intention in architecture. In order to accurately represent a building, it was imperative that the students were intimately familiar with the building. As part of the comparison between digital and manual drawing techniques, students were given the option of formatting their final analytique in any combination of digital and manual methods but in either case had to convey an intention beyond that of just being a collection of drawings artfully composed. The final project combined fundamental techniques of research and representational skills embedded with meaning and intention. In other words, the case study representation combined a skills based curriculum with history and theory research into a single design exercise, the final composition or analytique.

#### HISTORY/THEORY

The case study project provided avenues for in-depth canonical research, over the entire semester, affording a better understanding of a specific architect and one of his/her buildings. The single building case study allowed students to focus representational ideas on another architect's building. The skills learned were used to represent the ideas and intentions of the architect. By choosing the case study instead of the student's own studio project, a focused discussion could address issues of representation without being concerned with the building design. The research of canonical works of architecture also connected the history and theory courses to the representation course. Students had to obtain all available documentation from books or magazines on the building and architect.

Students were able to investigate a building at an intimate level learning about the building as a series of parts (or diagrams) and as a whole. The representational agenda reinforced what the student learned; what was represented in the final analytique, in drawings and models, defined what the student understood the intention of the building to be.

#### SKILLS

Architecture is both a visual and intellectual endeavor. It is imperative that architecture students develop the technical skills necessary to graphically represent architectural ideas. These skills help students visually communicate their design ideas in a clear, concise and hopefully beautiful manner. Basic representational skills provide the building blocks for future representational competence. Representational skills and tools learned in one medium can be transferred to the other. Representational techniques in manual drawing are also found in digital representation.

The sequencing of skill assignments also reinforced an understanding of the case study project. The first AutoCAD assignment was to draw the assigned case study building in plan and section. A second AutoCAD assignment had students extruding the walls three-dimensionally. Producing 3 dimensional images in the computer using AutoCAD allowed students to quickly generate multiple views of a building in both axonometric and perspective which in turn afforded students a better understanding of the building as a whole. The 3-dimensional drawings provided a new spatial understanding of the building. After the students combined the 3 dimensional plans into a single volume, the building was transferred into 3D Studio VIZ for rendering. Modeling the building volumetrically meant that each student re-presented the entire building as a whole. The computer model provided new views that were not necessarily the same images found in the existing library documentation. The model provided visual access to the entire building. In addition, material applications produced in VIZ meant that students knew the building at an intimate detail level. The students were able re-creating the perceptual experience of the building in views and a 'walk through'. Similar levels of understanding were also established with the manual representation assignments.

Similar to the use of the computer, the physical act of redrawing the building implicated a level of knowledge about the building's design. In the manual representation portion of the course, each student was required to create a constructed hand drawn perspectival view of the building. Understanding perspectival theory made it necessary for the students to be conscious of "where" the station point was located in the perspectival view. By limited the assignment to one view, thus one drawing, the students had to isolate a single important view. This contrasted from the computer modeling that enabled endless quantities of views. The conscious decisions that students had to make in creating the perspective meant that they had to have a certain level of understanding of the building. The library research complimented all the drawing exercises in that the more a student knew about the building and architect the better equipped they were to make representational decisions.

Another level of inquiry in the manual representation portion of the course was developed through rendering techniques. The level of material detail in pencil rendering provided evidence of the students' understanding of the building. By rendering a particular area of the façade, students were revealing material details that inherently had meaning to the building's design. In manual representation, a limited method (or means) constructs a necessity for a clear and concise depiction of the intention in each drawing.

#### DESIGN

Since the architecture curriculum is designed based, I found that combining technical skills and research into design projects reinforced the role of design in each student's representational methods. All the skill assignments were design based. In the first Photoshop assignment, students looked at WPA and Russian Constructivist posters from the early 1900's. These sample advertisements became the basis for the students' own Photoshop poster projects which involved creating a new advertisement for a lecture by their architect. Part of the intention was for the students to understand a visually succinct idea in advertising and how that could work into their own designs. By looking at other work, the students learned the importance of being able to convey information and how good design facilitates this. The project enabled students to delve into the research, at least on a superficial level, while composing in Photoshop existing iconic images of the architect.

The analytique was the final rendered representation of the building in its parts and whole. It was meant to illustrate and re-present a building through different representations: plan, section, elevation, axonometric projection, perspectival views and details as an integrated composition. The prior skill assignments were not just about collecting orthographic information so that one could redraw shapes and layouts, but it was intended that through the recreation of a drawing each student would come to know that building better. The final analytique challenged the students to design a single compositional board that conveyed the intentions of the building and architect. Students were encouraged to think beyond the 2 dimensions of their own paper or board and to think 3 dimensionally about their own design proposal. Spatial ideas of the architecture could be transformed into spatial ideas in the analytique. (examples) In particular, this aspect of a design and a 3 dimensional quality of the case study is what sets it apart from the mere re-presentation of a canonical work of architecture. Design implications and intention were executed through the analytique. The assignment was not just the redrawing of existing work but a true recreation based on the ideas of the architect studied.

As architectural educators, we teach students to understand *intention* in their own studio projects, to get them to consciously represent their ideas with meaning. With the advanced undergraduate student, we often withhold the archetypal 'list of final drawing requirements' so that the student can put forth the project with the idea that one should produce the drawings that 'best describe the project'. Addressing intention earlier in the curriculum, the analytique challenged the student to represent the architecture with intention. Each student decided which drawings best represented the case study project and this in a sense constituted another design exercise. Given the variety of canonical precedents and their inherent differences, no single list of representational requirements could fairly describe them all. Therefore, it is with a deep understanding of the building that the student developed his or her own list of drawings which conveyed the intention of the architect in a skillful manner in the analytique.

#### SYMPOSIUM

The course concluded with a two-day symposium that brought together academic experts in both areas of digital and manual representation. The event included a final review, round table discussion and lectures by visiting critics as well as local design faculty and professionals. Brian Andrews, assistant professor at the University of Southern California, spoke about manual drawing in his practice and academia. John Eberhart, Digital Coordinator at Yale University spoke about the advances in digital media and technology that the school was currently exploring. The lecturers presented two contrasting views of representation. Also, in an attempt to be cross-disciplinary, reviewers were included from the industrial design and graphic design departments.

At the symposium, each student presented his or her final analytique for review. The purpose of the symposium was to start a dialogue about representation and get the students thinking and questioning what their role was and is in the whole process. From the discussion, students could understand how to take a more proactive role in what techniques and methods of representation they used in their own studio projects. In a sense, all the basic representational skills were provided in the course, it is the 'next step' that falls to the students' responsibility.

In the end, the re-presentation and re-creation of canonical works of architecture combined ideas of intention, design, skills and research in the case study analytique. By stressing the importance of intention in representation, students were required to comprehend the case study building more thoroughly. The big differences to the typical case study research were the introduction of design and the emphasis on the 3 dimensional quality of that design. Since the course used the case study as a way of learning representational techniques, students had to be prepared to re-present the ideas of another architect with as much understanding and conviction as if the project were their own. The combination of an intellectual exercise with a skills intensive course afforded an opportunity to go beyond the

technical and address issues of design, more often found in studio. The method of designing the analytique was similar to that of work in a design studio. Therefore, I could integrate the teaching pedagogy of the studio with that of the traditional representational skills course. The next level of representational courses could expand on the case study project by teaching advanced representations through the student's own studio work, especially in upper level studios where the projects are more complex and more developed.

#### Footnotes:

1 Stan Allen, *Practice: Architecture, Technique and Representation*. G+B Arts International, 2000. 20

2 Ibid, 20

3 Ibid, 1

4 I feel that the location of the representation courses within the curriculum is critical to establishing the schools overriding intention about digital media. I am a true believer that teaching manual representational skills is much more important than teaching digital ones to beginning undergraduate students. The skills learned in drawing courses are the basis for which all studios are developed and taught. It creates a direct kinetic connection between mind (ideas) and hand (body) and pencil (drawing instrument).

5 Inherent in that split is the implication that digital representation supersedes manual representation. In actuality, I believe the opposite to be the case. Teaching digital representation before manual was due to a digital studio being taught simultaneously to the same, second year second semester students. Since the representation course complimented a digital studio, designing with the computer was covered in the studio course.

6 When the course was taught to incoming graduate students with no background in architecture, manual representation was taught first, to cover the basics of scale, orthographic projections and perspective, while digital was taught second to build on the new knowledge of architectural drawing. Unfortunately, I think with these particular students, having no previous architectural education, the course covered too much material in too little time.

7 For example: drawing with line weights is the same for manual and digital and can be reinforced when taught in both methods of representation.

8 Although a building model could be created in both manual and digital formats, the course focused on learning new digital skills; therefore the model was undertaken in the digital format.

9 This was especially meaningful in the College of Design at NC State where students could take 'swing studios' in the complimentary departments of graphic design, industrial design or landscape architecture.