

PROCESS IN ARCHITECTURAL DESIGN EDUCATION: A CASE STUDY ON HOW TO CONDUCT A FOUNDATIONAL STUDIO?

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Abstract: A perennial question for architectural education, especially the design studio education, has been the degree of narrativity and conceptuality of philosophical, psychological, and social thinking in the design process versus the concreteness of built environment. While architecture is always concrete as to its built form, the questions of its relevance -cultural, experiential, social, temporal, etc.- hinge on the thinking processes that bring about the concrete end result. Arguments for the narrativity and conceptuality of design process are formed around this open-endedness of architectural thinking in the making of culture as a mode of production. However, they also run the risk of falling short of addressing the complexity of architecture as viable built form. On the other hand, the arguments for comprehensive building studies as the core of architectural design studio, while addressing the complex issues of realizing buildings, fall short of advancing critical thinking in the making of architecture as a cultural catalyst. Because, comprehensive building studies usually, necessarily, rely on conventional ways of making buildings without integrating a speculative design process, which, while unfolding experiential, tectonic, spatial possibilities beyond cultural habits, is hard to achieve end results with in the limited time of a design studio. The following study presents a foundational design studio that aims at bringing the explorative design process and concrete tectonic spatial constructs in close proximity in a generative process of *thinking* and *making* architecture beyond habitual ways of making. The curricular approach presented here also aims to establish the notion of process as a research method that links various acts of making in the continuum of iterative experiments.

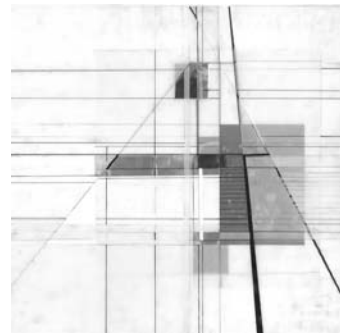
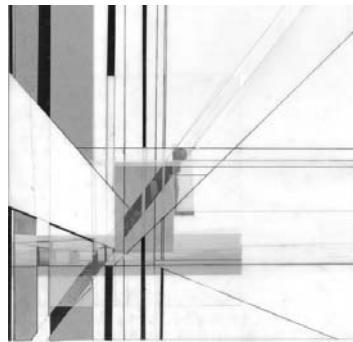
INTRODUCTION

The following studio is conducted at the University of South Florida School of Architecture and Community Design in Fall 2013. In the studio sequence, this studio is the first Core studio of the 4 year Masters program. The students usually come to this studio having one or two introductory studios from different venues including community colleges and other universities. USF also has an undergraduate program with two introductory studios. The curricular objective of the studio is first to establish a rigorous tectonic understanding in the service of space making in different modalities and gradually introduce the idea of occupation and program in relative scale constructs that explore and discuss various architectural typologies (See Angelil 2003 and Frenzen 1999 for further understanding of this pedagogical approach, and Benedikt 1987 for resultant architectural qualities). To this end, the semester starts with diagrammatic analysis as a way for new design iterations that progressively move from two and three dimensional studies into fragmented space studies with some kind of occupational, experiential, and tectonic programming. During the semester, ideas of context and intervention are also introduced in various forms from armature constructs with relative scalar hierarchy to the idea of making in the city. By the end of the semester, the students are expected to have a strong sense of a process of making and detailing of space at various scales through continuous iterations and be ready to tackle with more complex architectural programs in the following studios.

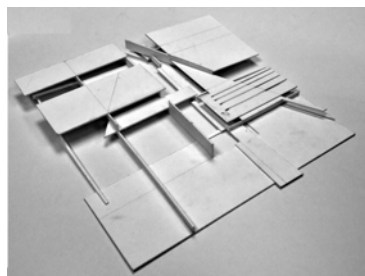


BEGINNINGS: FROM NARRATIVE STRUCTURES TO CONSTRUCTED EXPANSIONS

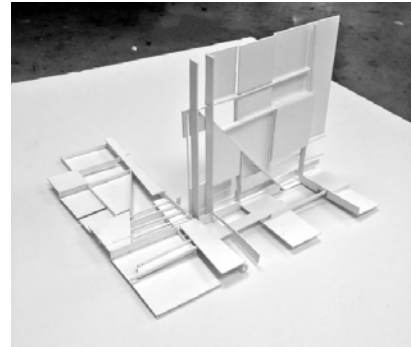
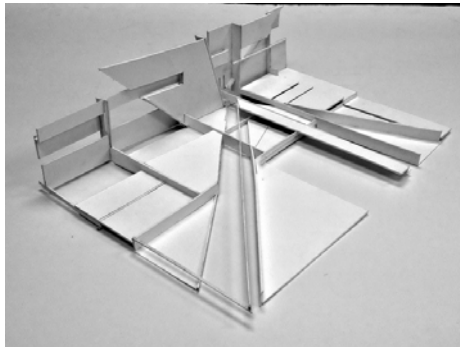
We started the semester by analyzing a film in terms of constructed surface collages. The objective of the first part of the semester is to develop a way of making that would allow tectonic decisions to unfold through various iterations from two dimensional studies to three dimensional volumetry in the continuity of a process that explores experiential possibilities of systemic architectural constructs. In order to distance the students from a thinking based on internally closed geometrical systems, we gave them a film as a generative device that would let them think in terms of visual and narrative structures of the moving image. We asked the students to focus and study certain aspects like the camera movements, the subject movements, the relations between gaze, movement, and space, light conditions, horizontality and verticality, and map these on a collage that tectonically iterates these conditions in the construction of an expanded field.



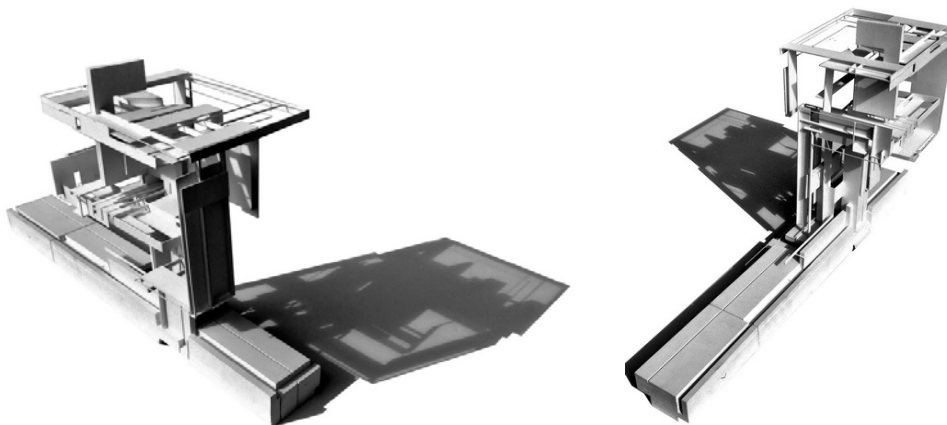
Each student is asked to produce two of these collages which carry the memory of the film, but make space also beyond the filmic conditions as systemically constructed surfaces with various layers of information. Juxtaposition of different layers is used as a device to enable students to think about not only the planar spatiality, but the sectional possibilities for the forthcoming step. In accordance with the objective of moving from two dimensional studies to controlled and programmed volumetry, we then asked the students to construct thick surface structures with particular sectional qualities. Using the collages as a starting point, the constructed surfaces further iterate on the filmic analysis in terms of its experiential and spatial findings. While the collages utilized color, toning, and imagery in terms of materiality, the surface constructions muted this materiality to focus on basic elemental conditions of nodes, vectors, and fields, in a carefully controlled systemic hierarchy to make planar and sectional space.



The next iteration is to explore the volumetric possibilities of the constructed surface studies. To this end, we started folding the constructed surfaces on one axis, but with different cuts. As each student have two surface studies, one is cut by 1/3 and folded, the other is cut by 1/3 and 1/2 and folded. The discussion on the folds focused on turning a corner with a continuous tectonic strategy that will achieve a carefully calibrated degree of spatial enclosure. This intermediary step of folding the surfaces lead to the next step of constructing a volumetric device by bringing the two folded surface conditions into a kind of dialogue in a three dimensional configuration.



Because each surface was constructed independently from the other, the initial exercise for the volumetric construct is just to simply hold the two surfaces in various relations and analyze potential moments to weave space between them. Unlike the folding exercise, where the iterated relations emerge form an initial unity, the unity for the volumetry between two different entities has to be constructed by using implications from each surface. Eventually, the surfaces started the volumetric conversation, and finally are transformed in the unity of a volumetric device that carries only their traces as generative ideas. In the process of constructing the volumetric study, another parameter is added to the discussion. With the next phase of the studio in mind, the volumetry question is introduced with a context in the form of a horizontal armature and a vertical scaffold holding the volumetric entity. Held by this horizontal / vertical context, the volumetric study not only discussed internal tectonic and spatial programming, but also the notion of being situated in another scale, with a critical dialogue to it.

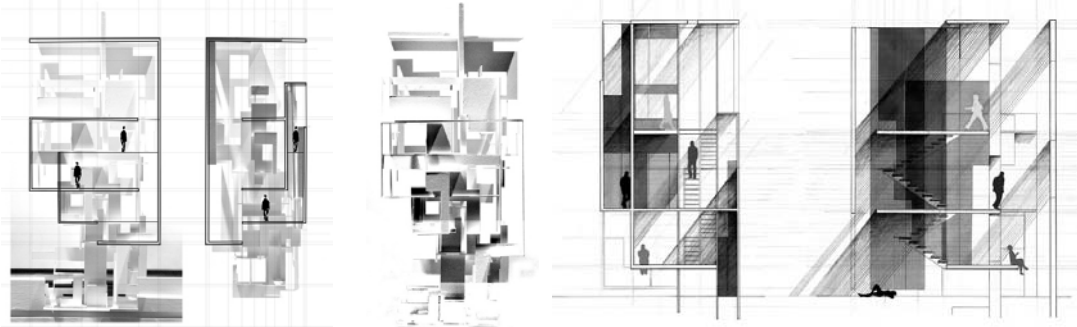


MOVING FORWARD, PHASE 1: FROM IN-THE-ABSTRACT TO ARCHITECTURAL EXPERIENCE

From the very start, the dimensions for each exercise are chosen so that the volumetric study would end up in a construct that is about 18 x 6-8 x 11-13 volumetric device held by about 25-30 inches long and about 18-20 inches tall armature structure. These final dimensions are chosen to fit to the following phase of the semester which is a 1/8ths of an inch equal to 1 foot scale study of architectural space and promenade discussing thresholds, boundaries, degrees of enclosure and transparency, vertical and horizontal movement, light in the form of a model that is large enough to calibrate a rigorous sense of materiality, scale, and detail in the service of lived architectural experience.

In the final presentation of the volumetric construct, which are scaleless relative to human body, we introduce 1/8"=1' scale figures into the models and ask the students 'what if?' While these constructs are scaleless relative to human body, their mode of construction, and the actual dimensions immediately start to resonate possibilities of occupying these as more concrete architectural spaces once they are seen with the scale figures in them.

Following this initial play of scale figures in the constructs, the students are asked to take elevational photographs of their models, print them 1-1 scale, and start using these as a template for sectional studies of a habitable construct that would have 2-5 distinct spaces with scalar and experiential hierarchy and the movement between these spaces in the continuity of an architectural promenade. At this point, they are also reminded of the film that started the process. In order to program this habitable construct, they are asked to go back to the film and bring particular aspects of the filmic narrative into space making and architectural experience.



The final results are achieved in about 4 weeks and presented as a model, a section drawing, and occupational photographs that analyze the model as to its potentials for distinct architectural experiences. This exercise, with its focus on space, movement, and tectonic detail becomes of keystone in the overall school program as it allows the students to study issues of surface construction as part of space making, experience of light and visibility, degrees of enclosure and transparency in a very concentrated occupational scale without the burdens of a social program other than an experiential narrative. What is also exciting is that these models carry the traces of the initial surface constructions which are now much more controlled and systemically constructed in the service an architectural narrative based on 1-1 occupation.



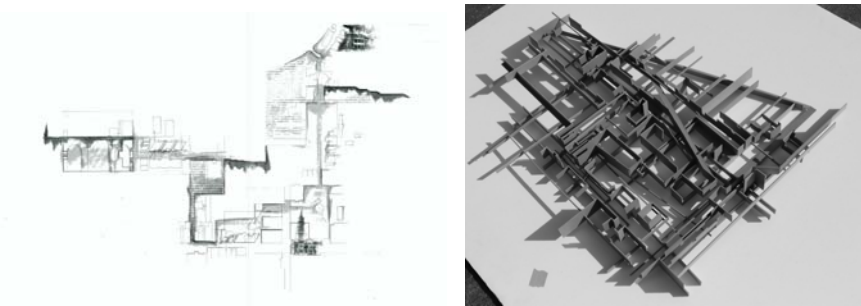
PHASE TWO, ENDING THE SEMESTER: CONTEXTS AND INTERVENTIONS

One of the objectives of the studio is introducing the idea of making in the city, and cultivating a sense for urban civic space. While the students are not ready to fully operate in the context of a given city with a certain architectural program, the last phase of the studio focuses on the idea of how to look at urban space and how to think about operating in it in the form of an abstracted spatial and experiential condition (See Casey 1993 for this understanding of urban in its abstracted spatial and experiential form).

A week long studio trip takes the students to Savannah GA, and Charleston SC, where the students are exposed to the two cities with strategic walks, sketching exercises, diagramming and mapping. While history, typologies, ways of living, etc. [more prominent urban questions] are discussed on the trip, the focus is more on how the built fabric constructs a sense of lived urban experience, and regulates a distinct sense of place in the architectural experience. Highly different in character, seeing both cities start a healthy discussion on ways of

making public space in the city. An anecdote from the previous phase, the habitable construct, is in order: At the final presentation of the habitable construct, which is after the trip, only 10 minutes before their presentation, the students are asked to come up with an urban program for their model, locate it in a particular place in Savannah or Charleston, and talk about it in these terms. Being forced to come up with a story different from their initial story, the students have to make an imaginative leap here, in 10 minutes. Whether they come up with something successful or not is not the key issue here, it is that they are introduced the idea of a different program and had to see their models under a new light.

Thus, provided a glimpse of what is next at the presentation, the students are asked to think about a 'memory city' where some places from Savannah and Charleston with distinct urban characters are to be brought together with an idea of moving between them in the sequence of an urban walk. The initial study is to make a drawing that will carry a sense of 'urban' to some generic degree and have more identifiable moments in its construction of this texture. This initial study is about capturing an 'idea force' that Steven Holl emphasizes in the design process (See Holl 1996, 2007) In the form of a collage, the drawing uses existing maps, line and shade work, and even imagery to construct a kind of urban experience mostly explored on plan. It deals with invisible structures of temporality and modulation along with the edge, surface, and volumetric conditions that make place. This initial collage evolves into a model, which is more or less without a determined scale, which can have multiple scales, but specifies an experiential unity in the third dimension. Mixed in materiality, this model unfolds the drawing into more specific spatiality.

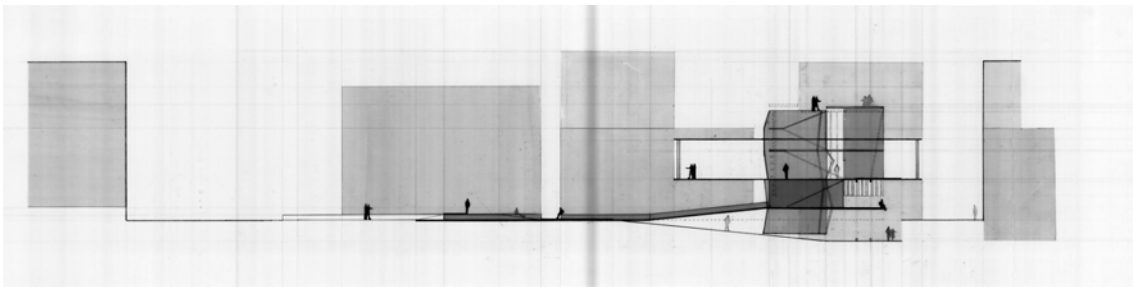
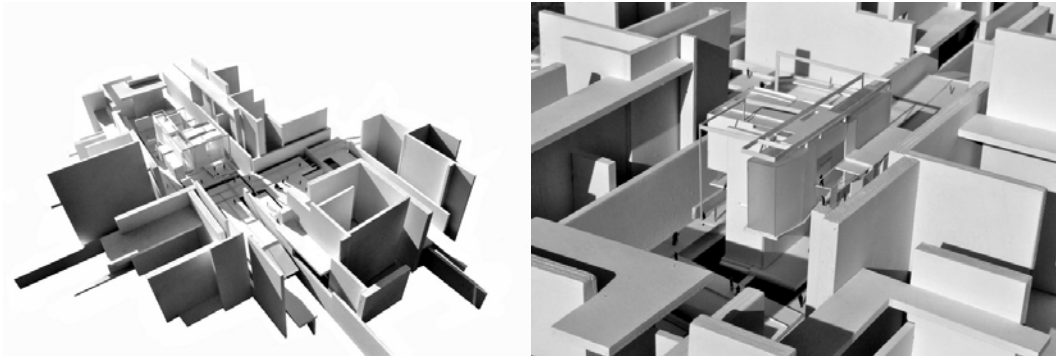


Determined at the very start in accordance with the objectives of the studio, the final project of the term is an urban intervention in a constructed 'city'. The scale decided is $1/16"=1'$, and the idea is to use the habitable constructs at $1/8"=1'$ as a generative device for the urban intervention. As the habitable construct is distinctively vertical, it allows a viable introduction into making in the city. Just like the chosen dimensions for the beginning volumetric study are to allow it to unfold into the habitable construct at the given scale, the volumetric and experiential character of the habitable construct is driven with an eye on the coming phase of urban intervention. Most importantly, the vertical movement studied in detail in the habitable construct becomes a key conceptual armature for the urban study, along with the notions of tectonic complexity which is hard to cultivate a sense for at small scale studies. Once the students construct a $1/8$ scale architectural fragment, they become more capable of exploring experiential qualities in terms of tectonic making and systemic volumetric unity at smaller scales.

Because the initial 'city' drawing and model are scaleless, and the objective scale is $1/16$, in the next iteration after the 'memory' model, the students are asked first to construct a diagrammatic model of habitable structure in $1/16$ scale, and then start constructing the 'city' around it, to control the scale of transformation of the 'memory' model. The focus in this step is to carry the qualities explored in the 'memory' constructs into an imagined urban condition with a particular scale and a strategy of intervention. Once a proper scale is achieved, the habitable structure diagrams are evolved into urban interventions with some civic program of students' choice. These programs include work and display spaces, reading rooms, art exhibitions, etc. The common aspect of the programs is that the intervention becomes a frequent node of visit for the city lover. The interventions focus on degrees of publicness, vertical and horizontal programming, ground as city, grounding in the city, degrees of interior vs. exterior, the constant dialogue between the urban volume and the intervention in terms of movement and visibility, scales of approach, entry, being-in, being-out, etc.

The final results are achieved in about five weeks and presented in the form of a model, section and plan drawings, and occupational photographs with varying scales of proximity, along with the process work of constructing a 'memory city'. Without the complexities of working in the city, this exercise sets the tone for

future studios by establishing a sense of urban experience, the urban civic space, grounding in the city, and programming a larger sense of experience extending beyond the confines of the individual building.



DISCUSSION

This studio experience shows that it is possible to run a series of exercises that lead to each other in the continuity of a design process where students produce tectonic and spatial constructs in various forms and scales by using a set of tools that they themselves develop along the journey (See Pressman 2012, and Yee 2012 for the importance of flexibility of design tools). The variety of assigned formal properties and varying scales ensure that the students do not repeat, but iterate on earlier findings expanding their vocabulary and understanding of space making. Also important is that the students cultivate a structural sense of tectonic engagement and materiality that is able to generate distinctively rich architectural experience. From generative devices that are scaleless to lived architectural space, these iterations set the tone for an understanding of architectural design process in terms forming meaning without reverting back to habitual ways of making (See Gregotti 1996 and Kipnis 1992 for further discussion on design process). Thus, architectural making becomes a research in the immediacy of here and now, able to think the particular in the making by its own determinations.

While the complexity of realizing buildings in real world is much more than the exercises presented here, once the students are equipped with this understanding of tectonic and formal flexibility, and the ability to think in various forms and modalities, they establish a much richer and explorative repertoire in their future education.

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