

not
white

diversity in beginning design education



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PROCEEDINGS of the
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the Beginning Design Student
Hampton University Department of Architecture

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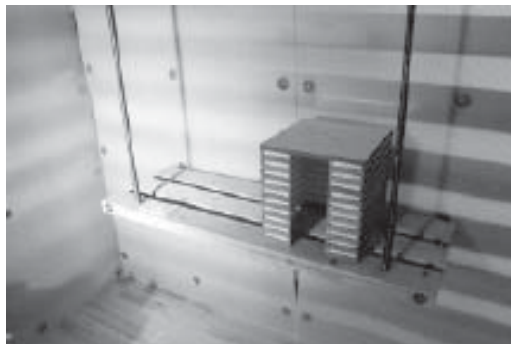
Re-Beginning: Revisiting Foundation Lessons in Later Years

While beginning design lessons serve as a foundation for subsequent studios should these lessons – and these teaching methods – be left behind after the second year? Beginning studios typically include several projects intended to isolate particular lessons, methods, or techniques whereas subsequent studios may only include one or two projects, each concluding as a concrete building design. Do the methods of design foundation become obsolete after the first two years of design education? If not, then where may these methods continue to be useful throughout the design curriculum?

The student body of our school includes a large number of transfer students entering in the third, fourth, and fifth years of the five-year Bachelor of Architecture sequence. Where a typical student is already familiar with a school's standards and expectations by the time they reach the third year, students in our program arrive with extremely divergent backgrounds – not only in how they have been taught to design, but also in their standards of quality and craft. From 1996 to 1999 the junior studios were being taught according to a traditional upper division studio program – students completed a medium to large public building design set in an urban context. Evaluating the progress of these students it became apparent that their varying foundation backgrounds did not provide them with a clear understanding of either the level of craft or the level of analysis typically expected of an advanced design student.

While this was not a problem for the most motivated students, this disparity of background exhibited symptoms most disturbing amongst the more average student – those who show appropriate motivation, but have weaker skills or a weaker educational background. Because there was no clear precedent in their own experience for an appropriate level of craft (or complexity) these marginal students were judging their own progress against the weakest design work without a clear understanding of the work's true value.

Beginning in the Fall of 2000 we began to re-build the junior level design curriculum – using first year studios as a model – with the intention of both re-enforcing lessons of drawing and analysis (in particular) as well as re-establishing a clearer set of benchmarks as per how drawings should be crafted, design ideas developed, and precedents applied. This re-working has evolved over several years to the current sequence of three (or more) projects in each of the junior level studios. The positive impact of this sequence has been noted by faculty in all levels of the design studios leading to several other experiments in the re-application of foundation methodology. This paper will discuss both the evolution of this revised design sequence, the most current evolution of the lessons, and the apparent (and evolving) impact throughout the program.



abstract

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and experience.

Introduction

The Architecture School at Florida Atlantic University has an unusual demographic. This is due partly to a location that attracts both immigrants and international students from Haiti, Jamaica, Brazil, Israel, Puerto Rico, Cuba, and Colombia (as well as students native to Florida and the United States), and partly to the University's many efforts to support non-traditional students.

While many FAU students begin college right out of high school, others come to the university after working for several years, after beginning course work in the community colleges, after completing a period of military service, or as part of pursuing a second degree. The student population of the Architecture School is a reasonable cross section of this demographic: a recent survey of students in the school shows their median age to be 25 years.

This dynamic mix is further complicated by the School's origin: the program was first established to supplement several well-attended Associate of Architecture programs in the local community colleges. Students completing these degrees [theoretically] have the equivalent experience to the first two years of a Bachelor of Architecture degree. Most students enter our program in their third year coming from one of these feeder programs: almost halfway through their Bachelor's degree.

The benefit of this diverse mix is that students bring a broad range of educational and life experiences to the classroom. At the same time, this unconventional diversity of educational background poses certain challenges. The resulting composite of fundamental skills and practices of design [while not entirely unique] has caused us to re-examine how foundational lessons of design, craft, and research should be applied within the curriculum.

An Extended Relationship with Design Foundation

Despite that fact that most of the coursework being discussed in this paper takes place in the junior year of a five year B.Arch. sequence, the assignments and curriculum changes came from a desire to reiterate and reinforce lessons typically associated with foundation coursework that many of our incoming junior students appear to be missing. This is not meant as a criticism of any particular lower division program, but rather this work is intended to reassert the value of foundation learning methods wherever they may be applied.

In 2000, shortly after the School's initial accreditation we looked critically at the student work and studio methods discovering several typical shortcomings with regard to drawing and analytical method. We do not offer freshman and sophomore design courses and therefore could not solve these problems by revisiting the foundation curriculum so we asked the question, "How can we re-teach and reinforce lessons of design fundamentals in the third year without losing sight of the complexity required in the upper division of the curriculum. What has come of this still evolving re-development are several projects that may serve as a model for a more continuous process of reinforcing lessons that are more often limited to the first two years of study.

Pace, Rigor, Craft

The Design 5 project sequence has been redeveloped, through several variations, to include at least three projects per term. This semester has unofficially become 'boot camp' for our incoming students. The projects progress from being most prescriptive to most self directed in the first term and through the end of the first year (junior phase). Most fundamentally, the objectives of this term are to establish the expected pace within the studios, to teach a more rigorous method of analysis as applied to design, and to establish an expected level of craft.

We have been developing the project sequence over several years. The projects have taken several forms, but typically progress through three stages: seeing and drawing, drawing and discerning, and discerning and designing.

Seeing + Drawing

The first project *Seeing + Drawing* has been most similar from semester to semester. We select a noteworthy building near school and the students do measured drawings of a particular space or portion. The project media, materials, and scale are prescribed. We use the several drawings required in this project sequence particularly to reinforce lessons of

composition, line-weight, and craft. When possible, drawing assignments include locations with stairs since the students seem notoriously ill-informed about these conventions.

Following from an experience teaching first year studios with Gerard Damiani at Carnegie Mellon, we often teach students a method of watercolor wash. They apply this to elevation and section drawings. This technique uses a very thin wash that is applied in several layers. The paper must be pre-moistened and stretched before painting. Applied correctly, the layer of paint must remain wet until a zone of the drawing has been completed. The paper must be allowed to dry before applying subsequent layers of paint. The method is not necessarily slow, but it does require patience and systematic order for applying the layers of pigment.

Students have reacted very positively to this exercise, although it has been difficult to find buildings in South Florida with the sectional complexity necessary to produce dynamic tonal ranges. Figure 1 shows drawings of the Broward Main Library, one of Marcel Breuer's last works. The south façade with its very deep-set windows and the building's complex central atrium are well suited to this project. (See Figure 1.)

Seeing + Discerning

The second project has been the most volatile of the three stages. The root of the project was an interest in teaching (or re-teaching) methods of design analysis. We have tried several exercises wherein students were asked to research landmark buildings leading to a series of analytical models and drawings. This project is less prescriptive with regard to material and medium, but still makes particular requirements with regard to the drawing types and scale.

Using Unwin's *Analyzing Architecture*¹ as a source for this work, students decomposed complex buildings into drawings and three-dimensional diagrams isolating conditions of order, geometry, circulation, context, and structure. From these individual parts students were asked to form more complex analytical drawings or models combining these conditions.

This has been the least successful and therefore the most variable part of the sequence. The most persistent problem has been teaching the students a method of abstraction that does not translate a richly complex building into an oversimplified representation. Many of the students do not discern between abstraction as an expression of what is essential and abstraction as a capsulated summary. These symptoms are similarly indicated in their written work wherein analysis is treated as a summary of outside sources rather than a discovery inspired by a collection of alternative views.

The most recent evolution of this phase was a significant departure from our original approach using a design-build project as the catalyst for discovery and reconsideration. The project does not provide the exposure to precedent of the earlier attempts, but was very successful as a means of progressing from a more abstract state to one of increased complexity via first-hand testing and deductive reasoning.

Discerning + Designing

The last phase of the fall semester is usually five or six weeks in duration and is most like other typical studio design project. The studio project is intended to build upon the previous exercises, but is also used to help develop a student's understanding of structural systems as they relate to spatial order and hierarchy.

Despite the prevalent use of concrete and concrete block in local construction, students are asked to develop a medium-sized building using wood or steel. Using these

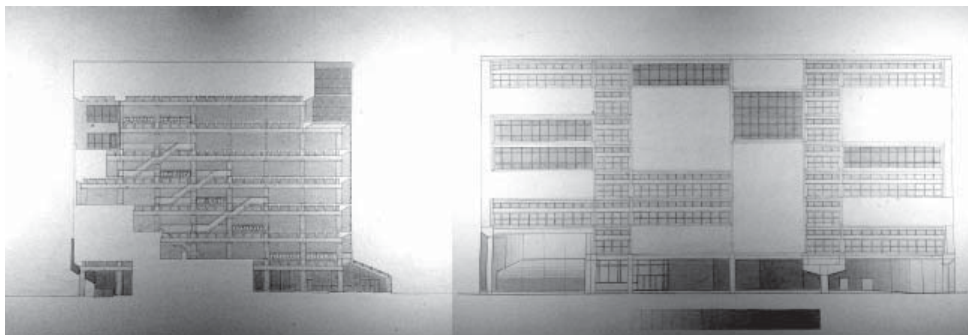


Figure 1 - Watercolor washes of Marcel Breuer's Broward Main Library by Tiery Boykin and Diana Morales (2000).

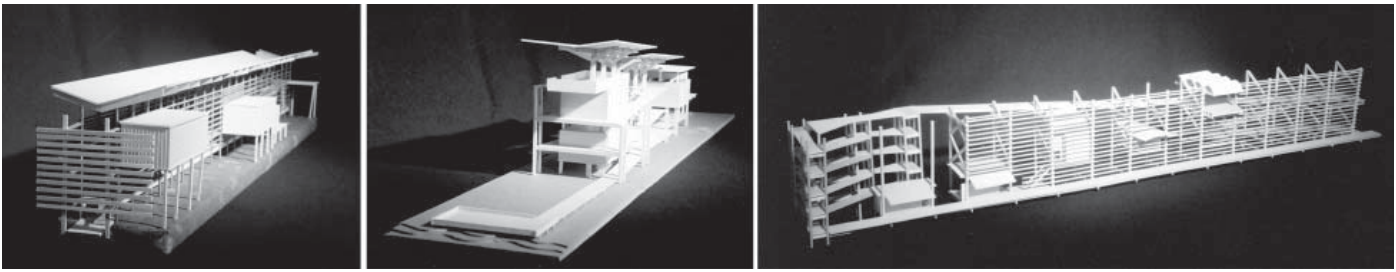


Figure 2 - *Ecological Research Centers* by (left to right) Morr Yeashoua, Rob Castrovinci, and Ray Peña (2001).

building types allows for a clear delineation of primary, secondary, and tertiary spans. It also provides an opportunity to discuss a more porous approach to skinning a building. While the contemporary ‘vernacular’ tends to seal off buildings from the elements and relies heavily on air conditioning the real vernacular traditions encourage air flow and allow for cross ventilation. With a frame system of building we can negotiate a broader range of open, semi-open, semi-enclosed and enclosed skin conditions.

One of the most successful evolutions of this project was an environmental research center for the Everglades (see Figure 2). Unbeknownst to many, the ‘River of Grass’ has virtually no mosquitoes. This live work shelter had to accommodate observation at several different elevations, allow for passive cooling, tread lightly on the landscape, collect water, and be handicap accessible.

The program for this project was designed to encourage a clear delineation between public spaces (used by small class groups) and private spaces (used by the scientists in residence). The requirement of accessibility combined with the observation levels created complexity in plan. The program intentionally contained a small number of rooms (or zones) but required particular attention to how various levels of privacy or community were reinforced.

We plan to revisit this project in future semesters: it was a very effective way of addressing issues of context and sustainability. Other projects have included a music conservatory and most recently a community art center. While illustrated above through models, the students are required to present this project through a composition of hand drawings built on the techniques of the prior assignments.

A Recent Evolution – A Succession of Closely Related Parts

This past year the faculty decided to switch places - many faculty members moved around to teach in a less familiar studio level. The hope in this switch was that we might all develop a better understanding of student’s needs at each year level: we are ultimately hoping to promote a more coherent progression between studios.

As a product of this mix (and the addition of several new adjunct faculty) we were able to consider the Design 5 sequence through several fresh pairs of eyes. In revisiting the sequence the main objective was to create more opportunities for crossover between the projects. The greatest shortfall in past semesters was all the downtime that occurred moving from one project to another because they were phrased as very discreet parts. The most recent evolution made significant strides toward unifying the parts into one progression tying the parts together through an examination of materials, textures and connections.

The first project in the recent sequence was to document a warehouse. The building is much smaller and spatially less complex than previous documentation projects. Initially, this permitted an examination of the whole as well as an examination of the materials – steel, wood, and concrete block – and the connections between these systems (see Figure 3). Edward

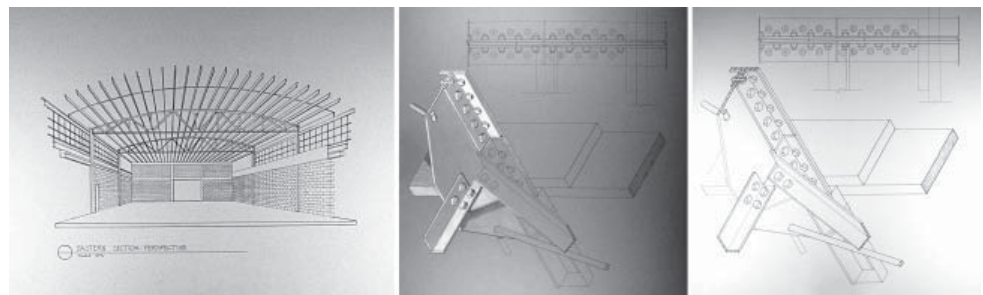


Figure 3 - Descriptive drawings of a bow-truss warehouse by Andrew Carlson (2003).

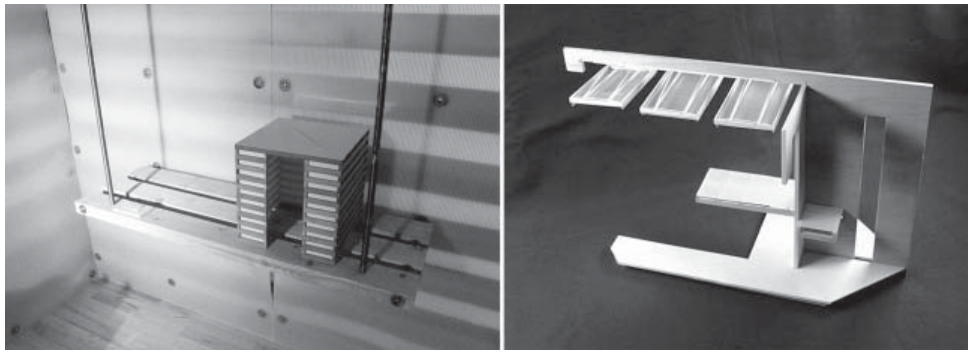


Figure 4 - *Design Propogator* models by Alex McMann and David Gonzalez (2003).

Robbins wrote, “Drawing today, is the root of architecture...looking at drawing allows us to join the making of architecture with the architecture of its making.”²² The scale of this building allowed a better opportunity to draw the building at several scales. In addition to drawing comprehensive views – elevations and sections- students also completed drawings of connections and surfaces.

One of the more unusual variations was an assignment to draw a square foot of the building at full scale. Where a detail drawing typically asks a student to find a critical juncture in a building construction this project asked each student to simply pick a part of the building and look at it closely. The expectation was that whether through surface, edge, or shadow a close examination would lead to discovery.

The second project was the most remarkable change within the sequence, and was also a remarkable success with the students. Where this second stage of the semester was previously treated as an analysis of precedent buildings, in this evolution we asked students to make a first-hand study of several standard building materials. The objective was to examine how material – its form and structural characteristics – might influence the composition of space and construction.

The project began as a charette, to develop a design propagator – a private space for a student and professor to meet for critique. The structure had to fit within the space of a seven-foot cube, provide room for two people when seated, include an integrated light and desk, and an opportunity for voyeurism. In addition to all of these criteria, this designed place was to promote critical and creative thinking.

At the start of the project each student had to design three one inch equals one foot scale models of their design: one each based upon a palette of two-by-twos, of two-by-fours, and of one-by-sixes (see Figure 4). Other materials like plywood and Plexiglas could be used in addition to these principal materials, but structural components had to be exclusive to the primary building system.

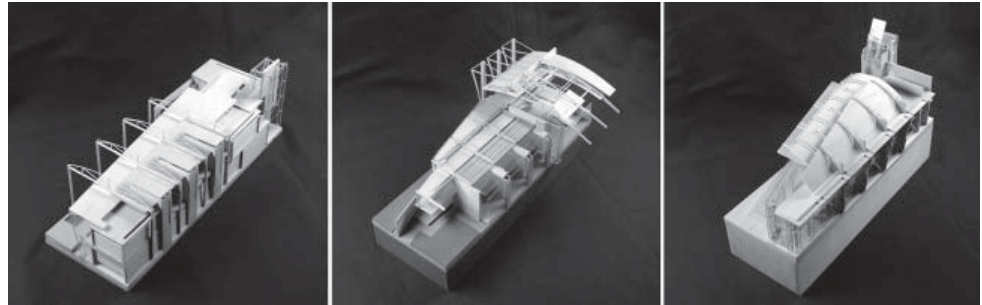
After the first week of design students brought these models to class and were asked to debate and select one student’s design for further development and execution. In the design development phase students priced materials, sought out sources, developed working drawings, acquired the materials, and tested details. This was quickly followed by construction: each studio worked together to complete one full-sized propagator (see Figure 5). From start to finish the project lasted only four weeks.

For The final project of the term students returned to the warehouse of the original documentation project but were now asked to look at this place anew, as the starting point for a community art center. Adaptive re-use is not very common in South Florida where buildings are too often razed once they no longer serve their original function. Revisiting this

Figure 5 - Completed *Design Propagators* by (left to right) Kaizer Talib, Anthony Abbate, José Vasquez, and Javier Negroni’s studios (2003).



Figure 6 - *Community Art Centers* by (left to right) David Gonzalez, Carlos Villareal, and Nicholas Meeks (2003).



location, a nearly historic structure in this very young city, students were asked to consider both the material qualities of the existing building and the material discoveries of their recently completed *Propagators*. Students were asked to design the new art center based upon this recently tested palette of material.

The most typical disadvantage of this last project is the short five or six-week timeline. Locating this third project in the warehouse, a known site, we hoped students would move more quickly into the development of their building designs. Unfortunately it appears that time gained by using a familiar location was undermined by the demands of adaptive re-use: students struggled with the intersection of new and old construction. Ironically, the most articulate art center designs were often least respectful of the original building.

Conditions – A Study of Precedent in Studio 6

For several semesters we have been doing a very successful analysis project at the beginning of Studio Six. The project, called *Conditions*, assigns a particular architectonic condition to each student in a studio. The assignment was developed in response the way students were using precedent. Too often they were not able to separate out a building's lessons from its form, or style, or program. This project asks students to look at a very particular aspect of a building condition and to establish a varied library of solutions. Typical topics are:

- A window opening as finished on the exterior wall
- A shift in the exterior envelope to accommodate an entrance
- The overhang of a roof meeting an exterior wall
- A space frame connecting into a column or bearing wall
- The open string of a staircase
- A lattice or screen wall
- A handrail and pickets with their connection to a wall, floor or column

Each student must find twenty strong and varied examples of each condition. These examples must come from twenty different buildings, illustrate the condition clearly, and show a broad range of variation. There are several objectives to this exercise: it forces them to research a variety of buildings in a short amount of time, it shows the students several precedents for a particular situation and helps them discover precedents as a way of looking at details and assemblies as well as whole buildings.

The project is brief, usually two weeks long, but permits enough time to show students how to scan and crop images effectively and allows enough time to review the selected conditions in class before the students compose the final poster.

Students use a template for this assignment, so there is consistency in how the posters read collectively. The poster images are required to be quite large, five inches by four inches at three hundred dots per inch. They must find examples in printed materials; images taken from the internet are not sharp enough. This is not meant to dismiss the Internet as a resource; in fact students are encouraged to begin their research using the web, but rather to make sure that they also discover the resources available in the library.

The work is graded for variety, image clarity, and completeness: each example must include the architect's name, the building name, location, and year built. The finished poster is 24"x31" and reduces proportionally to a letter-size handout. We use the handout version as an opportunity to teach scholarly citation methods – the source for each image is cited on the back. The posters are hung in the studio (see Figure 7) for the duration of the term to act as a library of resources and the letter size handouts are copied and distributed so each student has a copy of the whole set (approximately 300 images).

Percolating Up – Is it really still a ‘foundation’ exercise applied at this level?

Since beginning the new Studio Five sequence there has been noticeable improvement in the graphic communication and craft of student work. The success of this re-beginning model has encouraged other ‘foundation derived’ projects in subsequent studios. In each case these projects were founded upon a desire to isolate particular concepts or skill sets preceding a more complex and integrated building design project to follow.

By abstracting an exercise to focus on a particular skill set, the student begins to take on the task for its own ends, apparently free of any constraints or preconceptions about a larger program. In the context of the design process, the *ability* to abstract carries with it a dependency on content rather representation. An effective outcome is directly related to the student’s ability to abstract, evaluate, and then synthesize findings in the context of the design studio assignments.

Recent assignments in both the Vertical Studio and the Studio Ten courses intended to:

- a. Apply analytical and evaluative skills in researching project conditions.
- b. Identify, clarify, and specify program as a graphic composition in order to promote the visual aspects of program and context.
- c. Utilize the language of design, i.e. spatial relations in both two and three-dimensional media as a way to evaluate and imaginatively respond to observed phenomena.

Vertical Studio – A Series of One-Week Steps

A vertical studio is offered every summer for students in studio levels six through eight. This past summer the vertical studio was developed as a cumulative series of one and two-week lessons beginning with a very abstract composition exercise and progressing through issues of ordering systems, transparency, analysis, and rhythm that culminated in a complex building project for a waterfront site.

While students expressed some initial hesitation due to the atypical format, ultimately the students seem to have responded similarly regardless of their level. More advanced students were appreciative of the fact that the formalized approach validated their design habits. Less skilled students felt less “pressured” to perform, and were more at ease discussing the need to develop their weaker skills. The reviews took on more of the aspect of a coaching session, and students were more communicative with each other and with the instructor about content. This is significant, as the more subjective, emotional characterization of design responses were simply not addressed.

Studio Ten – A More Complex Consideration of Program

A recent project in the thesis studio asked students to reconsider their approach to programming their building. Rather than starting with a list of rooms, square footage, or functions, each student was asked to develop a graphic depiction of program (see Figure 8). The assignment emphasized graphic composition, spatial relationships, and the combination of image and text to effectively communicate information. The intent was to maintain an emphasis on the primarily visual nature of architectural design communication. Through critique students were asked to determine what constitutes a “good” presentation, i.e. graphic communication that is clear, descriptive and meaningful.



Figure 7 - *Conditions* precedent study posters by Aron Temkin’s studio (2003).



Figure 8 - Graphic representations of a building program by (left to right) Jaime Calabrese, Carlos Cordero, Robert Draper, Morr Yeashoua, Javier Baena, Matt Bechtel, and Anette Bahamonde (2004).

In addition to the regular studio work, each Thursday the first half hour of studio was dedicated to a sketching problem, usually a black and white image of rural American buildings, or banal suburban landscapes. The purpose of the exercise is to continue to develop observation, composition and drawing skills. Students are shown techniques for abstracting and recording the organizational structure of a visual composition (reveal the hidden lines, superimpose lines to uncover relationships between forms, determine the primary and secondary readings of form in light, shadow, and finally record detail and texture). This exercise is required, but it is emphasized that the students are doing this “for themselves” and they will not be graded. In this way, they learn that they are the ultimate arbiter of what is required to produce something that satisfies them. By establishing a standard for their own work they can better determine which areas or skills need more attention.

Conclusion

Skill and practice is achieved through repetition. In the context of educating a professional designer, “foundation” occurs throughout the process of education, and should not be considered complete by the end of the second year or the end of the fourth year.

The Re-Beginning sequence in Studio Five was founded on a desire to bring students from varied educational backgrounds “up to speed” with the expectations and pace of the architecture school. The curriculum was intended to re-iterate several of the most fundamental lessons of design method and craft. The challenge continues to be the assimilation of these beginning lessons with the curriculum requirements of a third year studio.

While the overall success of this intention is apparent in the studio work, now that we are looking at the curriculum from this perspective there is an apparent need for this method to continue forward through other studios since it is also apparent that these lessons are best retained with additional practice. The success of other foundation inspired exercises indicates a positive evolution in this direction.

In certain situations, such as preliminary abstract form and composition studies, students may not anticipate a relationship with subsequent assignments. By demonstrating how these initial studies can inform their investigations into program, site, context, and ultimately spatial responses, they begin to understand the importance of the research and its semiotic value in the design process.

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