

Digital aMUSEments: Playing with Case Studies

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What happens when you require students to engage one architect for the duration of a semester? This case study brings to light a digital media course that asked students to do just that. As architectural educators, we often see students use the “precedent building study” as a one-off idea that is meant to inspire via direct influences such as form, materiality, details, etc. Yet, arguably, in all cases, there is a chronicle of numerous other ingredients that make up the final recipes of an architect’s work. Encouraging the investigation of such ingredients, this fifteen-week-long case study cultivated a more accurate example of how buildings as ‘precedent studies’ are linked to a greater sequence in an architect’s development. And largely, it gave early design students time to discover such components.

The digital media students were in their first year of design, and many of them had not yet been made aware of celebrated (st)architects. Each chose their own, separate ‘muse’ in which to bond with, and the entirety of the class was ultimately introduced to thirty-six noteworthy designers. The course was structured in such a way that parameters were set up through weekly assignments that allowed young design students the freedom to make choices related to both the confines of the task and the breadth of their architects’ work. All the while, the course objectives were related to discovering, learning, and visually communicating through digital software. Yet, there was also an undisclosed, alternate agenda that focused on whether a fifteen-week engagement would enrich the students’ understanding of architectural processes, methods, and precedents that move beyond representational media.

Through the weekly digital media assignments, the design students began to establish relationships with and opinions of their architect; learning where they are from, where they build, their education, their mentors, and their sensitivities as designers. In addition to this exploration, the students were given opportunities to use their architects’ already-authored designs—be it through section, plan, photograph or even sketch—to mimic them, to alter them, to relocate them, to re-envision them: to play with them through digital software.

While imposing play in this extended student-architect relationship, it provoked (and continues to provoke) pedagogical questions such as: Are design styles, methods, or techniques passed on from architect to student throughout the course? [How] can we infuse architectural insights through both play and digital media courses that transcend software techniques and representational skills? And is this semester-long engagement beneficial to the students? This semester-long case study results in both quantitative and qualitative assessment of what transpires when students absorb the work of one architect through the lens of a digital media course. Tune in to find out whether or not some students will fight with and break off their architectural engagements mid-semester!

INTRODUCTION:

As representation in the field of design becomes increasingly more digital, teaching students how to leverage an array of software tools early in their architectural education is paramount. The discussion is centered around a semester-long course for first-year architecture and interior architecture students engaging fundamental design thinking skills using InDesign, Photoshop, Illustrator, and AutoCAD software. To go beyond what is offered through online tutorials, the challenge at hand was to provide students with a framework that would allow them the freedom to experiment with digital software. Without solely being a mouthpiece for ever-present introductory tutorials offered throughout the internet, the objective was to relate the semester’s content to richer, broader themes that enhance the student’s overall architectural education. In the profession, the ability to communicate design ideas graphically in addition to analyzing and referencing work for precedents is critical. Deliberately paired with a case study architect and their associated prolific body of work, the act of seeing, analyzing and communicating design intent formed the investigation. Each student engaged with one architect throughout the fifteen-week long semester. Using the four different software programs presented, they embarked on a total of twelve unique assignments leading to a final project that would encompass their analysis graphically. The format for this paper will briefly describe a few of the assignments relative to the specific software, then follow-up with overarching questions that paralleled the semester.



Figure 1. Student work using Adobe InDesign software.

In the spirit of play, simultaneously with thoughtful investigation, the design of the course was guided by the term “muse.” A brief definition, that helped guide the playful-yet-educational attitude toward the experimentation:

muse (n):

A state of deep thought or dreamy abstraction

A source of inspiration..a guiding genius

DIGITAL EXPLORATIONS: ADOBE INDESIGN

Explorations in InDesign included composing, organizing and creating an ordering system to structure the communication of information. Setting up guides and a compositional grid and consequently breaking the grid became an important starting point. Students introduced color and atmospheric palettes as they relate to compositional elements of their architects’ work. Graphic text was also investigated as a continuation of revealing architectural intentions. The first assignment involved laying out a poster of gathered research using Adobe InDesign. Focused primarily on layout, the students used already-created content to begin design assignments related to spatial configurations in a two-dimensional format.

This poster will be a collection of information about your architect and significant influences on their body of work. Your poster should include brief information on your architect (approximately three sentences) including information such as their country of origin, architectural style/language, influential travels, mentors, education, etc. Additionally, your poster will also represent a healthy body of their work (three projects, minimum) including images, location, year built, and function. In a subtle location on your poster, you will need to cite your sources.

Another early assignment asked students to demonstrate their understanding of InDesign and early manipulations in Photoshop by assigning the creation of a mood board.



Compose a sheet that considers the general moods and material palettes that are consistent to your architect. Is there a certain style that your architect exemplifies? Perhaps there is a certain part of the world where they design that influences consistent material palette? If your architect has a prolific body of work that ranges across many styles, locations, and moods, you may pick a certain time period, phase, or potentially, even a particular building to focus your mood board on. Consider repetitive materials (concrete, steel, wood), colors, textures, natural elements (sunlight, trees, water, light). Perhaps the work of your architect goes beyond purely their built work, but also hints of their graphic styles, product design and even furniture design.

DIGITAL EXPLORATIONS: ADOBE PHOTOSHOP

Following InDesign, Photoshop was introduced beginning with photo editing and manipulations. Later, students would explore the connectivity of architectural elements through form, overlap, materiality, and lighting considerations of their architects’ work. The following assignments continued to encourage the students to research their architects’ body of work. Through means of composing and decomposing using the tools of photoshop, the students became keen observers and began drawing connections between their architects’ projects.

To demonstrate your understanding of Photoshop thus far, RE-CREATE an image from your architect’s body of work. When re-creating the image, you must assemble and photograph elements that will be used to RE-PLACE the existing elements of the base image. You will then use Photoshop to finalize and adjust your photographs so that you can express your base image in a fresh and compelling new way. Be creative when determining the library of photographs duplicated and manipulated in unique ways to re-create certain textures, qualities, shapes, etc. The more these images relate to your subject the better! Be mindful that actions such as cropping, color-collection, distortion, and repetition can be accomplished in the software program.

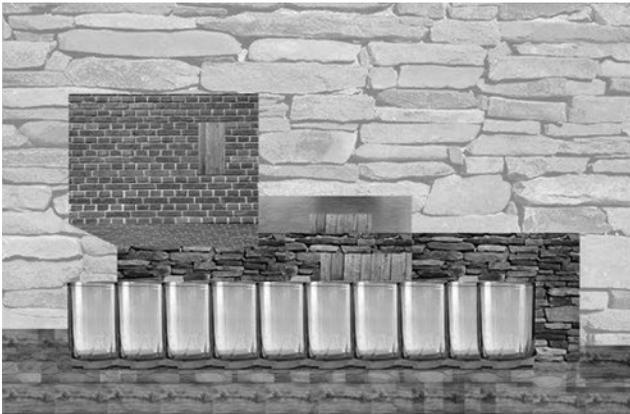


Figure 2. Student work using Adobe Photoshop software.

Another mid-semester assignment had a more playful spin to it, considering the context and environment of their architects' work. By creating a photomontage of one of their architects' buildings placed into a scene that they are familiar with, the students get a better sense of the scale of their work. While some projects fit seamlessly into the city of Scranton, Pennsylvania, others towered above the existing skyline or sprawled across several city blocks.

To further demonstrate your understanding of Photoshop thus far, you will create a "photo montage." Through the software, you are to "place" one of your architect's buildings into SCRANTON using a collage/montage method.

Often, hints were given on how to approach the project. For the assignment above, the student had to consider the following when planning their digital workflow:

Do you find/take images in and around Scranton and then find a building to match? Do you find the right photograph of your architect's building and then match it to a viewpoint in Scranton? You will likely need to adjust (or Transform>Distort) the image(s) so that perspective alignments match up. Do not overuse this tool! Too much distortion likely means that your pictures are not suitable for a seamless photo-montage.

The students would additionally modify the base image to clearly show their architects' building in the final graphic. One way to do so included modifying the surrounding context (Scranton) to black and white so that their architects' building was clearly distinguishable in color (or vice versa: context in color, building in black and white). They were also tasked with considering context in the foreground and in some cases adding entourage to create a more integrated image.

These representational techniques are translated to both conceptual and finalized means of expressing design ideas in relationship to their surrounding context. The approach used in this assignment becomes a starting point for students

to experiment with further in the representation of the complex relationship between building and context in their studio projects.

DIGITAL EXPLORATIONS: ADOBE ILLUSTRATOR

Explorations in Illustrator pushed the students to synthesize and refine the work of their architect. Many of the assignments that utilize Illustrator required students to look more closely at the work, sometimes even reducing complex buildings into a few simple lines and forms. The output of these investigations primarily included editing, pairing down, and diagramming. Technical parallels that emphasized the application of vector outputs played a role in how students integrated Illustrator into their own workflow. An example assignment is included below:

To demonstrate your understanding of Illustrator thus far, you will create a "flat rendering" of a detail (or detailed portion of an image) from your architect's body of work. The idea behind this assignment is to stylize a photograph (raster image) into a simplified vector image using Adobe Illustrator. This is an exercise in simplifying images while making them graphically clear and legible: an ability that all designers strive for! Experiment with techniques, tools, and efficiencies in your work.

After the introductory assignments for each program, students were more free to choose the approach and the software that would help them complete their desired graphic for each assignment. Many of the assignments required the use of more than one program and were geared toward combining the software to gain an optimal outcome. This also allowed the students the freedom to explore their own representational expression. In contrast, this also challenged the students to go out of their comfort zone and develop ways to push their own understanding of the tools at hand. The following is an example of this type of approach:

Create a map (at any scale or various scales) that locates buildings done by your architect. Create thoughtful, strategic, clear



Figure 3. Student work using Adobe Illustrator software.

icons that represent your architect's projects. You must include a minimum of five projects. Using multiple platforms of your choice, experiment and strategize how best to incorporate mapping, icons, and text into a single file. Consider methods of tracing, collage, labeling, clear shapes, and use of color (to name a few). Maps should not be simply extracted maps (copied from the internet). Consider altering and/or clarifying existing maps to include only what is necessary for the viewer. Clear visual communication at all scales is paramount to the profession and education of architecture.

DIGITAL EXPLORATIONS: AUTODESK AUTOCAD

AutoCAD explorations considered organizational strategies and graphic hierarchies of their architects' work. In using AutoCAD, students were challenged to identify architectural ordering systems in addition to establish their own through the use of layers. As the final software introduced to the students, AutoCAD was often used in combination with other programs to achieve a desired graphic outcome. In the following assignment, AutoCAD was used to create a base vector image that the students then take into Illustrator to begin diagramming buildings by their architect:

To demonstrate your understanding of both AutoCAD and Illustrator, you are to create four diagrams of ONE of your architect's projects. Each diagram should describe some characteristic of the design and inform the viewer of a function or performance of the design. Make sure to include a title of what each diagram is showing, along with a graphic scale, north arrow, and key or minimal text to support your graphics.

The introduction of AutoCAD requires a more practical application of conventional and traditional methods of architectural drafting. Students began to explore and apply drawing conventions as they created each layer of their drawing. Line weights as a mechanism to express hierarchy became essential at this point in their exploration. The following assignment outlines

an opportunity to explore graphic outcomes that combines AutoCAD with the Adobe programs:

To demonstrate your understanding of AutoCAD, Photoshop, and Illustrator, you are to re-create a site plan that includes a roof plan or overhead view of one of your architect's projects. Include surrounding context: adjacent roads, buildings, trees, bodies of water, etc. Emphasize the natural surroundings (water, foliage, greenery, etc.) by experimenting and adding color and texture to these elements. AutoCAD will be used to trace necessary linework over an attached image (this can be a found image or a satellite image). This linework will then be opened in Illustrator for necessary graphic adjustments. Include a title for the site plan along with a graphic scale and a north arrow.

DIGITAL EXPLORATIONS: ESTABLISHING A DIGITAL WORKFLOW

Inherent to the structure of the software, each program utilizes layers as a mechanism of organization to aid the workflow and often define hierarchy in the final outcome. The ideas of layering, organization and synthesis of information remains constant between both the investigation of the software and the architect. This didactic approach to a digital media course goes beyond what is available through online tutorials, creating a richer educational experience that transcends the software.

The second half of the course focused more specifically on the integration of these programs and each student establishing their own digital workflow. A heavy focus is beyond the capabilities of each individual program but on the appropriate application of this set of tools. To conclude the semester, the case study assignments were bound together in the final submission containing all of the semester's content. Using InDesign, the students' final project was to include all revised versions of the semester's twelve assignments into a calendar. The students' case study became the thematic interest of the calendar. The students designed the ordering system,



Figure 4. Student work using Autodesk AutoCAD software.

color scheme, and structure to align with the work of their case study. An example is seen in Figure 5. In this exercise the differences of the assignments were celebrated in correlation to months while still retaining a cohesive whole as inspired by their architect “muse.”

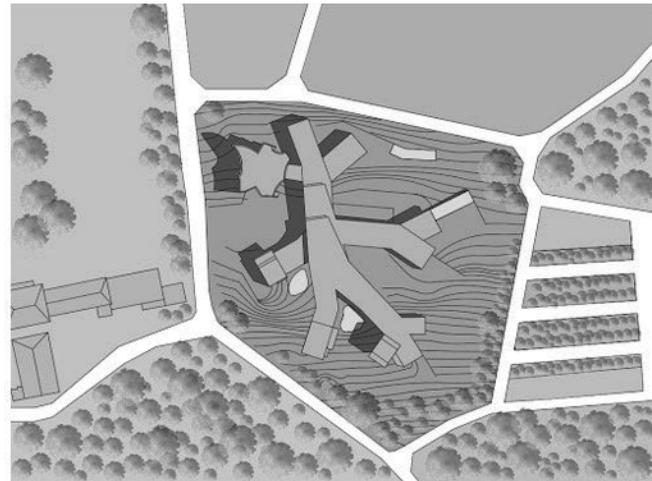
FINDINGS + DISCUSSION:

Within the framework of the case study and the software programs, many of the assignments introduce the types of graphics that architects use to convey their design ideas. Although not the guiding intention of the course, drawing conventions and the variety of representational methods are presented to the students and executed in both their assignments and studio work. The take aways are vast including but not limited to sketching techniques, introduction of grid, color, form and overlap, materiality, play with light, writing, joinery, and connection.

The following questions include both our own reflections in addition to those gained through fruitful discussion. Located in the curriculum during the first-year, this course serves as an introduction not only to digital programs but also to composition, design thinking skills, and also the analysis of a case study. Situated as an introductory course this allows students to simultaneously develop their investigative skills while exploring representational techniques.

[How] can we infuse architectural insights through both play and digital media courses that transcend software techniques and representational skills?

By crafting an educational environment through creative assignments that focus on play and exploration, this approach places an emphasis on the student’s own curiosity and empowers them to learn about their architect within the framework of each assignment. Each assignment proposed an investigation of both the architect and the software. Through the



introduction of software students are encouraged to collaborate, reference online tutorials, and experiment. The unique case study portion of the assignment requires that students become independent researchers by analyzing the intentions of their architect through representation. Between the case study and software exploration, the act of seeing and interpreting design remains an important aspect of the course that parallels the foundation studio curriculum.

Are design styles, methods, or techniques passed on from architect to student throughout the course?

In addition to the examples given in class to demonstrate the digital tools, the case study guides the student through the course. Inherently, as each student studies the work of their architect, they are exposed to their style, both graphically and formally.

The first examples are seen clearly through architects that emit a distinct color palette. Some of these correlations include the color palette in the work of Le Corbusier, the vibrant red in the work of Eero Saarinen, the pristine natural whites in the work of Aires Mateus, or the monochromatic and grid like pattern seen in the work of Ludwig Mies van der Rohe.

As the semester progresses the relationship with the work of the architect is strengthened. After the first few weeks, students begin to establish connections between the projects they are researching. Beyond color, these connections engage formal tendencies such as an established ordering system that guides several projects of their architects’ breadth of work. Students begin to recognize the trends of the architects, for example the use of a grid, free form shapes, or the playful tension between the two deployed in the architect’s work. For some students, structure and framework become an element of focus as they work to decode the system that enables the architect to achieve a complex form or structural feat.

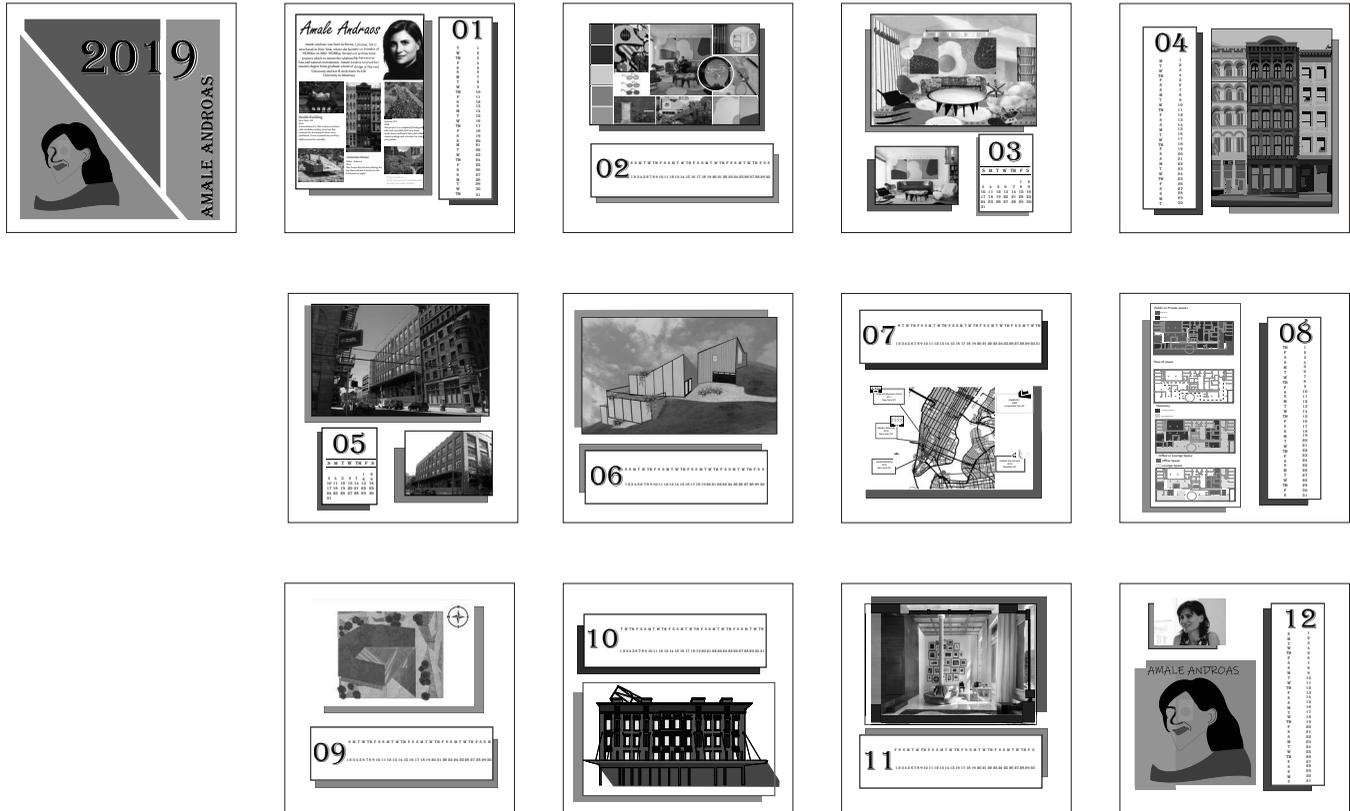


Figure 5: Student work, case study architect calendar.

Much of these connections are found as the students revisit the work. In an effort to encourage discovery and refinement, students are encouraged to revise their work as they increase their proficiency with the digital software. Through this process, students are often surprised by the projects initially selected to pursue in each assignment now that they have become more familiar with the work of their architect.

In end of semester discussions with students, insight was gained on their architects' style from many of the assignments, in particular through completing the mood board and flat rendering. Both of these assignments required a heavy amount of analysis into a specific project or the entire breadth of the architects' work, followed by synthesis of those findings to create the final image. Neither held concern for drawing conventions, but rather the overall graphic representation and narrative expressed by the image.

Are the given architect's design styles evident in studio work?

While not a specific goal of the course, hints of the architect's style were often evident in the experimentation of the students' studio work; for example, the ways they investigated and iterated based upon the findings of their chosen architect. Coinciding with first-year studio, often the translation into studio work is more aligned with the students' design process. In

studio work, at an introductory level, the design styles that carried into their work were often found in the manipulation of light and shadow. From their architects' work they tended to take different design approaches, for example allowing light from above, a repetitive vertical element, or carefully carved apertures. The styles were also often evident in the ways that the students took risks, tried a new composition, and even engaged methods of joinery. Above all, the collaboration among students in the studio was enriched with observations of students reviewing the work of their peers and suggesting they take a look at a specific project done by their case study architect.

ENDNOTES

1. Merriam-Webster's Collegiate Dictionary. 11th ed. Springfield, MA: Merriam-Webster, 2003.



Figure 6: Student work, case study architect portraits.