

INVESTIGATING ARCHITECTURAL TECTONICS

PROBLEM STATEMENT

[I]t was not 'copying' when Le Corbusier, probably the most inventive of twentieth-century architects, drew on his extensive travels through Greece, Italy and Turkey to develop architectural ideas informed by his analysis of monasteries, ancient villas and troglodyte houses. It is not 'copying' either when Zaha Hadid seeks to subvert orthodoxy by distorting the regular orthogonal geometries by which buildings have been ordered since time immemorial. Both evolutionary development and contradictory revolution depend on understanding what has gone before.

Simon Unwin
Analysing Architecture, 2014

This semester, you will be undertaking the critical analysis of an architectural precedent. Using *Introducing Architectural Tectonics* as a template, you will investigate the tectonic makeup of the building. The result of this process will be a written document, complemented by photographs, drawings, diagrams, and a final built work.

In order to properly understand this work of architecture, you need to learn the lessons your precedent has to teach. Although it is certainly useful to have a series of well composed photographs of the project to better understand what it looks like and to start to get a better understanding of the quality of the space(s), the more critical examination of your case study should reveal key lessons that the project was founded upon. It is not the image of the precedent that we want to study, as you are not here to imitate or to replicate. You are here to excavate, to seek out the fundamental principles of architecture and design, and to develop a library of design strategies that you can then repurpose in your own work. The snapshot image of the building will not be of great assistance to you in this endeavor. What will be useful is how a building sits on the ground, how it opens to allow for natural ventilation, how it shifts in plan to create an entrance, or how its structural system is derived from a common spacing or organizational system.

This process involves **ANALYSIS**. Remember this word. You are not finding information and slapping it on a sheet. You are finding information, breaking it down into useful elements, and recreating these elements graphically to facilitate understand. What you analyze is an important consideration. Your precedent likely has characteristics that differ from those of other projects being studied in the class. Any analysis you do must focus on the critical components of that project; what does that project have to teach you? In a typical architectural case study, the lessons to be studied may include formal organization, alternative construction systems, assembly processes, structural systems, materiality and space, means of occupation, programmatic relationships, texture and other non-visual stimuli, incorporation of light and air, relationship to the natural environment and other contextual drivers, relationship to the groundplane, conceptual ideas (partis), ordering systems, circulation and movement, architectural detailing, etc. In this particular course, however, we will be focusing on tectonic ideas, which will be elaborated on in the first few weeks of the semester.

Your investigation into your precedent will require you to utilize a variety of available resources. The KSU library system website has an excellent interface for searching for journals or articles. We will go through this process in class for those of you not familiar with library research. As you begin your research, please keep the following thoughts in mind:

- 1: There are a series of tools that could be useful in your search, including the Avery Index, Google Scholar, the library's general search engine, Amazon.com, etc. Please make sure you are using a variety of resources to ensure that you are finding all of the credible sources available. Do not, under any circumstances, just choose the first items you can find. Take a bit of time and find articles/books that interest you the most and that contain the best information possible.
- 2: The most important thing in doing these searches can be putting in the right search phrases, words, etc.
- 3: Web resources can be easy to find and access, but many (most) are not scholarly sources. Anyone can write anything they want on their blog, truthful or not, backed up with research or not. If your bibliography at the end of this project contains primarily web resources, you have

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PAUL WEIGEL LIBRARY

For additional assistance with library research please visit the Paul Weigel Library of Architecture, Planning & Design. Our librarian, if you have not met her already, is Maxine Ganske. Her email address is mlganske@k-state.edu and her hours are Monday through Friday from 8:00am to 5:00pm. Maxine is ready and willing to help you with your research, so please do not let the office walls behind the circulation desk stop you from visiting her and asking for her assistance.

likely not researched your project properly. This lack of effort will be reflected in the evaluation of your work for the semester.

- 4: Keep close track of your sources as everything you have found from external sources will need to be properly cited. It can be very difficult to go back later and try to figure out where a quote came from. Keep good records of your sources from the beginning. It will make your life much easier at the end of the semester when your time will be precious.
- 5: Many sources you find in the library will have to come from other places around the state or country. Therefore, you need to start your search for materials **AS SOON AS POSSIBLE** to ensure that you will have the materials you need when the research actually starts.

We will use the Chicago Manual of Style for our citations in this course. All written material utilized from outside sources, either directly as quotations or paraphrased, must be cited properly. In your written sections, you will use end notes for citation. In your presentation, please indicate citations of both text and images as appropriate. For a basic understanding of the Chicago Manual formatting, please see: <http://www.chicagomanualofstyle.org/home.html>.

PROJECT TASK I: PROJECT AND ARCHITECT/FIRM INTRODUCTIONS

The first task for this project is to develop an introduction for the reader to both the project and the architect or firm who designed it. For this, we will follow the "outline" provided by the project chapters of *Introducing Architectural Tectonics*.

The first component of this section of your document is the written text. Your written work in this project will be limited by word count and you will find that the overall word count will tend to be relatively low. Initially, you may be excited about this as many of you, in papers that you have written for other classes, have sought to reach a required word count or page limit to complete your assignment. In this project, you have a different challenge: editing. The word counts provided for you are low, requiring you to carefully consider each word you chose in your writing to ensure that each contributes to the overall understanding of the piece without being gratuitous. Editing your own work can be one of the most difficult things to do when writing and it is a skill that essential in the professional world (as well as the academic).

For this task, you have 700 words to write about both the project and the architect/firm. I recommend putting 250 words towards the architect/firm and 450 words towards the project, but that will, of course, vary based on the project and the information available. For this task (as will be the case with all future tasks) you have a +/- 5% margin in the word count, meaning that your final submission should be within 5% of the 700 required words at final submission. As is the case with most of the work we do in the school of architecture, I encourage you to write more words than the final count in your initial drafts and then edit them down to just the essentials. If you only start with 250 words on the architect and then through the process we remove 30 that are unnecessary, you will end up short.

As you are writing, remember to read what you are writing. Set your writing down, walk away for a bit, and then come back to it. How does the writing flow? Is it easy to read, or clunky in its rhythm? Do the ideas carry from sentence to sentence and paragraph to paragraph properly? We are going to strive for the elimination of choppy writing, which can be difficult. It also helps to have others read what you have written to see if it actually makes sense.

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In addition to the written component, you need to have a couple of other items in your final submission.

- 1: You need to have a floor plan (or plans if multi-story) of your building with a north arrow, a graphic scale, and a legend of the primary spaces in the building as indicated by a numbering system. As line drawings show up very poorly as images unless they are at a very high resolution (think 1200 dpi and higher), any drawings involving linework must be configured as .eps files, which is a vector file and not a raster file. This filetype, in my experience, is best generated out of Adobe Illustrator. You have two options here. The first is to contact the architect and ask for a CAD or other digital linework file. The second option is to draw the plan yourself.
- 2: You need to have a building section of your building at the same scale as the plan and with the same legend as appropriate for the drawing. Same rules apply regarding vector linework.
- 3: You need to have five images of the project that, at this point, you believe present it best as an overall piece of architecture and tectonically. You need to make sure you have at least one image of the exterior and one image of the interior in the set. These images may (and probably will) change over the course of the semester. At the end of the semester, all images will be required to have a minimum dpi of 300 and should be a minimum of 4 inches on the short side. At this point, make sure the images are large enough that they do not pixelate when on the screen or printed.

Permissions are a very important part of the publication process. Essentially, you need to fully credit all individuals who are contributing to your work, citing all sources properly, and avoiding any plagiarism issues. Part of that process is securing permission to publish other's work. In your case, all of the items listed above may require you to receive permission from the author to include it in our final book. To go about securing permission, you will need to contact the author of each piece; this could be the architect for the drawings (unless you have drawn them yourself) or a photographer for the images. Sometimes the architecture firm has secured permission to use images of their work already and you can receive permission for the use of images from them; other times this is not the case.

When contacting individuals or companies for permission, please clearly explain who you are and what your intent is for their work. In this case, you are a student working on a precedent study for a class. At the end of the semester we will be creating a small book of the classes work that we will print. The prints will be for our own use only and will not be sold in any way commercially; our work is for academic purposes only and not for retail or profit. Their work will be fully cited and credited in the publication. Later in the semester, I will give you a template to use for formally completing the process. For now, start with a phone call and/or an email. As long as they respond to you, there are rarely any issues with securing permissions for drawings. Photographs can prove to be more of a challenge to secure permissions. When selecting images, make sure you do your best to try and identify who the photographer is for each. We will talk about this topic throughout the semester.

For this task, you will turn in a .doc or .docx file of your written text. Please indicate, within the text, where figures will be referenced. You will also turn in your images and drawings as a single pdf with one image or drawing per page. On each page, also include a caption and an indication of the copyright holder. All materials will also be presented in class formally per the course schedule. The means of presentation will be digital, but the formatting is entirely up to you.

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PROJECT TASK II: ANALYSIS I, II, AND III

The bulk of your analysis is found in this task. You will select three of the tectonic typologies outlined in the source material and analyze your precedent study with respect to each. For this task, you have 1000 words total to write about all three points of analysis. I recommend starting with an equal division of words between the three, but you will likely find that the disbursement will not be even at the conclusion of this task. For this task, you have a +/- 10% margin in the word count, meaning that your final submission should be within 10% of the 1000 required words at final submission. Please use the precedent chapters in *Introducing Architectural Tectonics* as a resource for understanding how to best describe the tectonic principles of your project.

Please keep in mind that all requirements and suggestions for the text stated in the last section apply to this task as well. **Your citations for these sections (as a whole), must include references from a minimum of three of the resources found at the end of the syllabus.**

In addition to the written component, you need to have a couple of other items in your final submission of each analysis.

- 1: You need to have one diagram that graphically illustrates one or more of the points discussed in the text. This graphic will likely be a line drawing of some type and, as such, will need to be configured as an .eps file per the instructions given for the last task. For each of the three analyses, the diagram will be an original drawing created by you, not a found drawing or a replica of one created by someone else.
- 2: You need to assign one of your five selected images from the last task to each of the three analysis sections. As your research develops, this might mean that one or more of your images needs to change to better demonstrate the principles being discussed. Please ensure you follow the strategies outlined above for any new images selected. Also please note that selecting a new image will require you to remove one of those previously selected from the set. You are only allowed five images in the final submission total.

For this task, you will turn in a .doc or .docx file of your written text. Please indicate, within the text, where figures will be referenced. You will also turn in your image and drawing as a single pdf with one image or drawing per page. On each page, also include a caption and an indication of the copyright holder. All materials will also be presented in class formally per the course schedule. The means of presentation will be digital, but the formatting is entirely up to you.

PROJECT TASK III: FINAL BOOK SUBMISSION

For this final submission of the book materials, you will refine all of the components of tasks I and II per class discussion and instructor markups of the work. The final submission packet will include:

- a single .doc or .docx file including all four text components of the project complete with all figure reference, figure captions, and endnotes
- a second .doc or .docx file with a full bibliography of all cited sources and all image references
- five large scale images (300 dpi with minimum length of 4") submitted as .tif files
- two project drawings submitted as .eps files
- three project diagrams submitted as .eps files (or other filetype as approved)
- all permission letters as appropriate from external sources of graphic materials

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After this final submittal, the class will coordinate the formatting for the final book through Blurb.com or another online publisher. We will discuss this in class submittal and its formatting throughout the semester. Ideally, one of the students in the class will take the lead on the graphic presentation of the book, but if no one volunteers, I will take over that responsibility.

PROJECT TASK IV: TECTONIC CONSTRUCTION

The final task of the semester is semi-independent from the other three. In this exercise, you are required to utilize all of your research and the tectonic analysis of your precedent to develop an inspired built work. The nature of your construction is up to you as the assignment is open-ended, but it must satisfy some base requirements. It must be made of traditional construction materials - dimensional lumber, metal, concrete, etc - and not modeling material - basswood, chipboard, etc. Please consult with me if you have questions about your material choices prior to proceeding with the design and construction of your piece. Your construction also must be a minimum of 2'-0" x 2'-0" x 2'-0". It does not need to conform to this size, but it does need to be of a similar scale or larger. Proposals for substantially larger pieces will need instructor approval, but may be allowed.

Your construction could take a variety of different forms. It could be a full scale detail of a piece of the precedent examining and demonstrating how it was built. It could be an analytic model demonstrating principles at work in the project. Or, it could be a abstract composition inspired by the tectonic makeup of the precedent. Any of these would be perfectly appropriate for this assignment. Your goal is to find a way to demonstrate one or more of the tectonic principles at work in the precedent through a built medium.

Intermediate and informal discussions of the project will require you to do design and technical drawings as well as mock ups and models all of which will be used to critique your work. The final submittal of the task will include the final built piece and a single, printed 11x17 sheet that describes the relationship between the construction and the precedent. The sheet will be displayed with the construction when it is on display in the building.