

Assignment 01A: Case study research – Examples of digital fabrication in architecture and design

DUE: Thursday, February 15th, 2013

“Architecture continually informs and is informed by its modes of representation and construction. Perhaps never more so than now, when digital media and emerging technologies are rapidly expanding what we conceive to be formally, spatially, and materially possible”.

- Lisa Iwamoto, Digital Fabrication: Architectural and Material Techniques, (Princeton Architectural Press, 2009), p. 4

Find 2-3 case study examples of recent projects that have in some way utilized digital fabrication. These projects should clearly show how the designers took advantage of either parametric computation or digital manufacturing processes or both. These projects may inspire you because of the type of material used, the type of geometry or form created or the type of technology or technique used to generate the forms. The projects can be at a range of scales as long as you are able to find enough material to explain the project to us. Here are some digital fabrication companies and design firms for you to explore and get started.

- IWAMOTOSCOTT.Architecture
- SITU STUDIO
- SITU FABRICATION
- Associated Fabrication
- Design to production
- AA Studnet project
- Radiolaria Project
- FLATCUT
- Oyster Wu Collaborative

Each research project show the following: See the in-class presentation: “Digital Fabrication_Case Studies_Installation + Screens” for examples of how your research should look

1. Images and text describing the project
2. Name of the project
3. Name of the architect or designer
4. Location of the project
5. URL to project website or equivalent if possible

Assignment 01B: Plexi Sphere – Connection and Form

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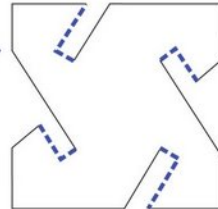
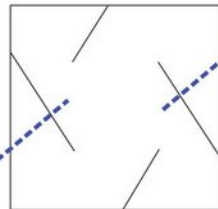
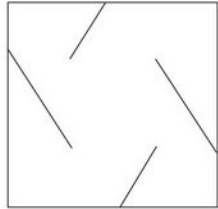
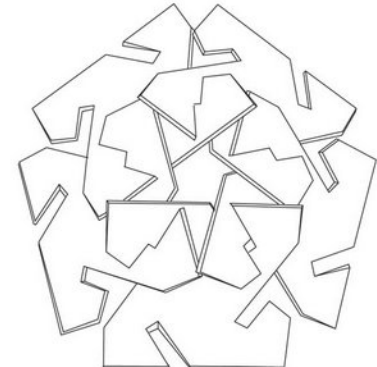
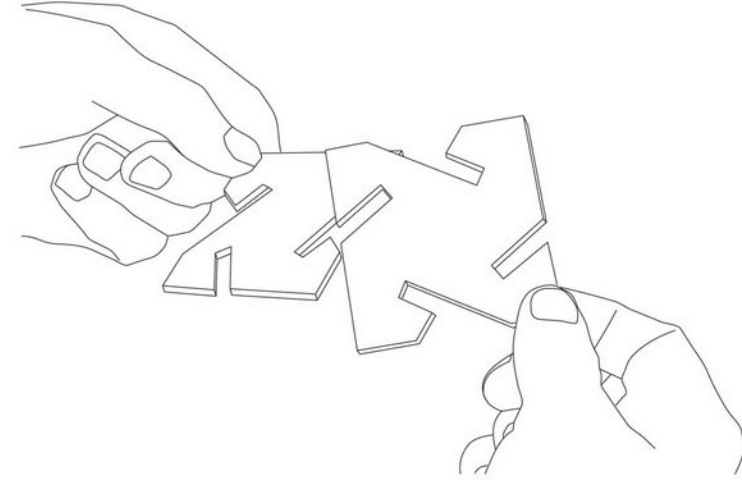
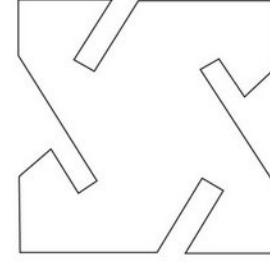
The challenge is to make a sphere that fits into a 1' x 1' x 1' cube and holds together without glue or other hardware, using only the detailing and material itself for structural stability. The material is 1/8" plexiglass.

Critical issues to remember:

1. Remember to test the material as you develop ideas, specific joints or techniques for assembly BEFORE you cut your final pieces
2. Possibly starting points for research are the PLATONIC SOLIDS and the ARCHIMEDEAN SOLIDS. Look up these forms.
3. How to make a detail that will allow assembly of flat material into a 3d dimensional structure?
4. Is the detail repetitive while the structure it holds together varies or is each detail unique?
5. Are detail and the structure one and same or are they separated? In other words, Are you creating one component that can attach to itself to create the sphere (structure and detail in one) or are you creating separate logic systems in several different components.
6. Look at the attached student projects as examples of what we want

What you need to bring to class:

1. Final model (whether complete or not) with extra component pieces cut for us to play with
2. One 11 x 17 page with drawings explaining your design and showing an assembly diagram



EXPLODED SOCCER BALL

