# 4.501 Massachusetts Institute of Technology

# Assignment 2a

# Design Modeling with Digital Fabrication

October 26 2005

#### Model in Class Due Monday 31

## **Project Scenario**

- Empyrean has purchased a CNC router to improve manufacturing time and to increase production speed and component variety
- Patrick Gilrane (the Owner) was recommended by you that the company purchase a laser cutter to complement the CNC router in the shop
- You have been hired by Empyrean to research (explore) the relationship of the two machines. The
  first goal is to find ways to integrate design and shop fabrication with these digital machines by
  example in model form.





## Assignment

- Build a design model of one corner or an area of your groups design at 1'' = 1'-0''
  - Include a scale figure
  - Include a base of concrete
- Redesign the manufacturing concept for your house
  - If Panel design redesign the panel for cnc cutting
  - Not all parts can be cut which parts do you recommend
- Consider redesigning all parts of the building for manufacture with digital fabrication
  - Is this possible?
- Be prepared to present your new method it should enable the designer to redesigned and manufactured one house in month.
  - What is the system of digital fabrication will be used?
  - Is the process repeatable?
  - Is the method flexible?
  - How are you taking advantage of machine precision?

