

<b>4.442</b> <b>BT3 - Structures II</b>	<b>FALL TERM 2001</b> <b>SCHOOL OF ARCHITECTURE AND PLANNING : MIT</b>
<b>PROFESSOR JOHN E. FERNANDEZ</b>	

### 4.442 BT1 – Assignment 2

Due: Finished Poster + Model Superstructure = 4 days after Class # 9

Finished Model = 1.5 weeks after Class # 9

**First Review of progress: The day after Class # 9**

## Exterior Envelope Classification and Analysis

### Introduction

The intention of this assignment is an examination of the morphology and a detailed description of the physical systems that constitute the exterior envelope assembly and perimeter superstructure of a completed building. The documentation provided, and further documentation that you may obtain, will be used to establish the material and dimensional characteristics of the assembly.

The investigation will be accomplished through a number of distinct steps intended to fully ascertain the physical relationship between all of the elements that constitute both the exterior envelope and the superstructure and the relationship between these sets of elements. The product will be a physical model of the assembly rendered in as much realistic material detail and dimensional accuracy as possible.

You should consider using the laser plotter and other advanced physical modeling techniques to model a realistic scalar representation of a slice of the building's exterior envelope and superstructure.

The coming assignment will be analogous to this one in that it will also ask for a physical model, but one conceived of as a fragment of your studio design project. That assignment will be given in your studio section.

### Methodology

Phase 1: Poster

Drawing and Description

Scan images of the envelope (Photos and drawings) to a resolution appropriate for use on a poster size presentation of the system.

1. Establish a clear argument for the morphology of the exterior envelope assembly
  - Skin Envelope
  - Structural Envelope
  - Exoskeleton
2. Trace the exterior envelope and superstructure elements along the wall section drawing of the assembly, noting the locations in which one system (superstructure or exterior envelope) crosses another.
3. Write a narrative describing the exterior envelope assembly. List the general performance requirements of any exterior envelope and qualitatively state how your system addresses each.
4. Complete a legend that details each component.
5. Add dimensions to the wall section

Phase 2: Model  
Assembly

Model the supporting fragment of superstructure of the assembly such that you have enough of an armature from which the exterior envelope may be attached.

If possible, design the model such that the exterior envelope (or a significant portion of it) may be removable in order to illustrate the separation between the structure and the envelope. Also it is necessary for the model to clearly illustrate the internal assembly of the exterior wall. Therefore, the model is a *sectional* fragment of the exterior wall assembly.

**Products**

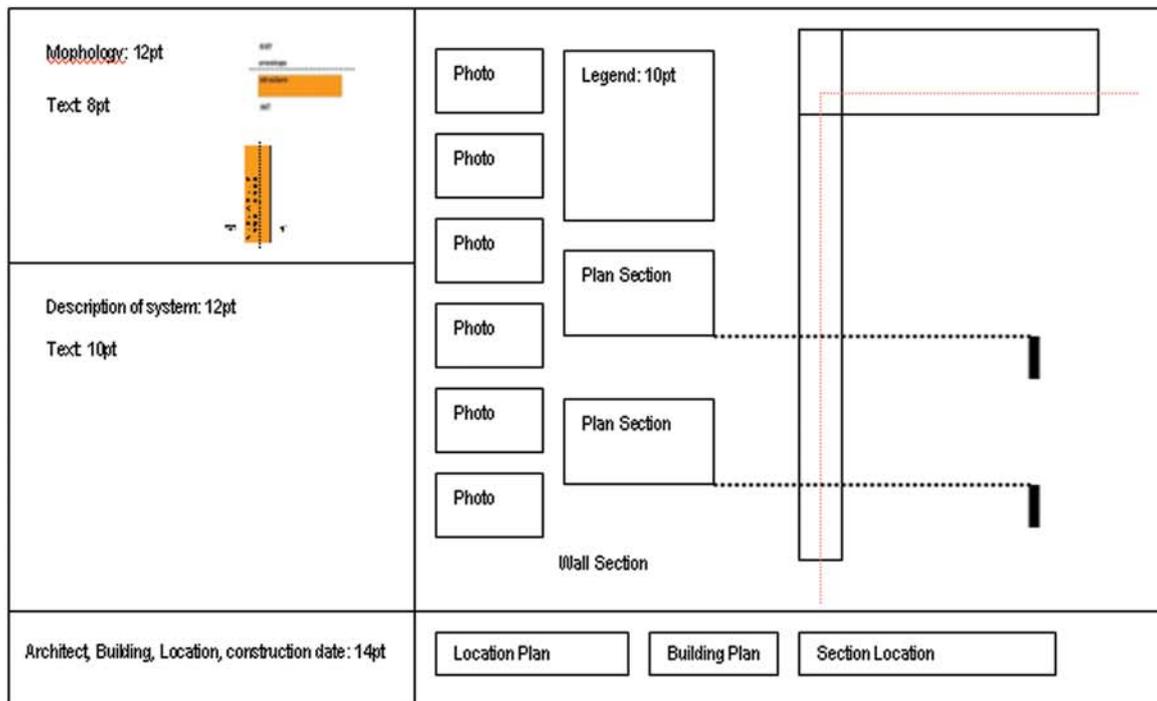
1. Poster: 11" x 17"
2. Model
3. Analysis (to be assigned next week)

**Diagrams of products**

Poster: 11" x 17"

All font - Arial Narrow

Format of the sheet (not to scale)



## Diagrams of products (continued)

Model

Various materials

Scale: not less than

$1 \frac{1}{2} = 1'-0''$

(or equivalent metric)

