Homework 2A:

Sections Through Envelope in General

Background

In the preface to his very informative "Time-Saver Details for Exterior Wall Design" Fred Nashed states:

"The building envelope, which comprises the exterior walls as well as the roof, represents one of the most challenging segments of architecture practice. The majority of professinoal liability litigation, cost overruns, and client discontent is concentrated in this area."

The National Architectural Accrediting Board Inc.'s criteria for the knowledge and skills about Building Envelope Systems by graduates of architectural programs is:

There must be an "Understanding of the basic principles involved in the appropriate application of building envelope systems and associated in assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources."

Resources

1. An excellent overview of the principles of designing a building envelope may be found at: http://www.johnpilling.net/Designing_Details/Summary_files/Design-Strategies-for%20Moisture-Control.pdf
2. A study of alternative strategies for buidling envelopes in Massachusetts may be found at: http://www.mass.gov/?pageID=eopsterminal&L=4&L0=Home&L1=Consumer+Protection+%26+Business+Licensing&L2=License+Type+by+Business+Area&L3=Construction+Supervisor+License&sid=Eeops&b=terminalcontent&f=dps_inf_bbrs_sample_detail&csid=Eeops

Research Work

1. Become familiar with the information in the two sets of resource materials
2. Using the examples from the Comm. Of Mass. Materials as a guide, propose a strategy for your builidng envelope.

Question to Answer:

1. Explain your strategy for moisture control for the wall and roof of your building envelope.
3. Continuing the ideas from your in-class work, describe what changes, if any, you would make to your envelope design if the building were located in a) Mobile, AL and b) Santa Fe, NM

Drawing Work

Become familiar with the design by drawing it,

Create and draw the configuration and sizes of an envelope concept

1. Building on the ideas developed during class and answering the questions, illustrate your detailed strategy for the building envelope by designing a building cross section: scale: 1/2" = 1'-0"
2. Choose a section location to include a cut from the window with light shelf on the south side of the building up to and through a skylight and photovoltaic panel.
3. Account for your insulation strategy to meet Passivhaus goals
4. Account for any mechanical equipment between the buidling envelope and the interior finish.
5. Use cuts as needed to fit all the element of the drawing onto the sheet.

Criteria for marking this homework:

General Criteria

This Homework counts as 10% of your marking for the course
Homework will be marked from '4' to '0.'
Answers to questions count as 1/3 of the mark for the homework
Drawings designed count as 2/3 of the mark for the homework

Criteria for Answers to questions

General: The response to this question is written, criteria are based on recommendations from 'Understanding by Design,' page 175

Requirements for a mark of '4' - "A clear, well developed [explanation] that deals in a sophisticated fashion with [key] components of the question.

Requirements for a mark of '3' - "Clear, developed [explanation] that deals with [key [components of the question]]."

Requirements for a mark of '2' - General [explanation] responding to all components superficially."

Requirements for a mark of '0' - "Little or no analysis."

Criteria for quality of drawings

General:

Drawings are evaluated in terms of completeness, accuracy, and legibility

Specific Criteria

Requirements for a mark of '4' -

Work product capable of being incorporated into a project using building information management.

Requirements for a mark of '3' -

Work product could be submitted to a plans examiner. Criteria are as described by Liebling (Wiley, publisher) - BAC library reference: http://library.the-bac.edu/vwebv/holdingsInfo?bibId=5814 and in material provided in class web site.

Requirements for a mark of '2' -

Work product could be used to present an idea to a job captain

Requirements for a mark of '0' - Minimal drawing