

LIGHT MODULATING WALL 3

ARCHITECTURE 2202
Architectural Design II
Spring Semester 2012

A. DESIGN OF A SECTIONAL PLACE: LIGHT MODULATING WALL

The purpose of this assignment is to design a place in section. Each group will design a wall section that gives an adjacent space a sense of place through the modulation of natural daylight. A place is something memorable or unique that affects your spirit in a positive way. You notice a place and interact with it on a personal level. A place interacts with your senses, and stays with you as a part of your collective memory. Your place should create a dialog between architecture and occupant by creating a poetic interaction with natural daylight. Your design should explore the creation of space using natural daylight to create a unique and memorable experience.

Humans rely on sight as their primary means for understanding space. Light is an important aspect of sight, necessary to reveal forms and shape our experience of space. This semester, you will work with light as a medium, to design a component of a building that captures, manipulates and modulates light and its dynamic qualities.

You will design a south facing wall section that modulates natural light conditions. Your wall section should be an exploration of architecture interacting with and controlling natural daylight. Your project should create a "place" that is memorable and has a unique character. You should consider all aspects of light interacting with architecture in creating a memorable place through creative and controlled use of natural daylight.

DESIGN REQUIREMENTS

Your wall should be 10' wide by 15' tall and cannot exceed 8' in depth (thickness). Your wall will be located in Chicago and is facing due south. Walls should be developed in high detail and should simulate actual material properties of architecture. Refer back to your study of material properties during the nature of materials project. Your wall must also include a structural system to support it and an adjacent roof. Groups will need to research the material and structural properties of the systems that they choose. Wall designs should show full detail including materials, connections and a structural system. Models should be constructed with a sturdy base.

LIGHT TEST: DRAWINGS

Each group will draw 2 wall sections at 1-1/2" scale. Drawings must show a fully detailed wall assembly. On one of the wall sections render the light conditions at the summer solstice, June 21 at noon. On the other wall section render the light conditions on the winter solstice, December 21 at noon.

LIGHT TEST: MODEL PHOTOGRAPHY

You will study your design through the use of photography to simulate light conditions. Create a “white” space 20’ deep with one wall, a floor and a ceiling to capture the affects of your light wall in an adjacent space. Photograph your model simulating light conditions at different times of the day and during different seasons. As a class, you will create a system to control the accurate angle of the light at all conditions.

LIGHT TEST: 3D COMPUTER MODELING

Groups are strongly encouraged to utilize 3d computer modeling as a means to develop and test multiple design solutions. Computer modeling will allow groups to more accurately simulate light conditions and their ever changing qualities throughout the day. Use of 3d-studio max and or sketchup is strongly encouraged.

PRECEDENT RESEARCH

Each group is required to do precedent research related to your wall designs. Precedent research should include architectural precedents that deal with poetic responses to daylight, material precedents, and precedents illustrating structural systems and detailing. Each group will submit a precedent board which illustrates their architectural, material, and structural precedents.

EVALUATION

This is a group project, and all members of the group are expected to work together equally as a team to develop the projects. You will be evaluated as a group by the instructor based on the quality of the work you submit. You will also be evaluated by your team members for your participation in the group. Peer evaluations will count for a portion of your final grade.

PROJECT SCHEDULE

STUDY 1: MONDAY, JANUARY 23rd (PRESENTATION)

100 POINTS

- 1-1/2" scale study model of your wall section. Model should show full detail including materials, connections and a structural system.
- Design process, including sketchbook sketches and computer renderings.
- 1-1/2" scale section drawings showing light conditions at noon on June 21st, September/March 21st, and December 21st. Special emphasis should be placed on the legibility, detail and quality of the section drawings.
- Precedent research board including research on architectural precedents manipulating light, material precedents, and structural precedents. Precedents must be illustrated through images, drawings or diagrams. (all boards should be hand assembled for this presentation)

FINAL MODEL: MONDAY, JANUARY 30th (NO PRESENTATION)

- 1-1/2" scale final model of your wall section. Model should show full detail including materials, connections and a structural system. Models must be complete for in class model photography and include an adjacent 20' deep space, floor and ceiling.

FINAL PRESENTATION: WEDNESDAY, FEBRUARY 1st (PRESENTATION)

200 POINTS

As a group, you will present the following information:

- 1-1/2" scale final model (DUE MONDAY, JAN 31ST)
- 1-1/2" scale section drawings showing light conditions at noon on June 21st, September/March 21st, and December 21st. Drawings should be hand drawn pencil on vellum.
- 1-1/2" scale plan drawing
- Design process, including sketchbook sketches and computer renderings.
- Model photography simulating light conditions on both June 21st and December 21st, and other light conditions as necessary to communicate your design concepts.
- Precedent Board illustrating research.

Presentations should be a unified, complete presentation illustrating the entire project process. Each group may print up to (2) 24"x 50" boards. Special emphasis should be placed on the legibility, detail and quality of the section drawings.

TEAM MEMBER EVALUATIONS

50pts

You will also be evaluated on an individual basis by your team members. A portion of your grade for this assignment will be based directly on your contribution to the group as evaluated by your peers.

Your Name _____

Grade Evaluation Sheet – GROUP MEMBER EVALUATION

Name: (person being evaluated)	
Attended all group meetings	1 2 3 4 5
Was prepared for each class / meeting and contributed to the group effort	1 2 3 4 5
Completed individual work on time, appropriate to the goals and objectives of the group.	1 2 3 4 5
Participated in all aspects of the design and presentation process	1 2 3 4 5
Participated in the organization and delivery of group presentations	1 2 3 4 5
Which portion or portions of the project was this group member primarily responsible for? Please list all:	

1=Poor (0-3) 2=Fair (4-5) 3=Average (6-7) 4=Good (8-9) 5=Excellent (10)

Please list any other factors that you think should be weighed in determining this student's grade:

Grade Evaluation Sheet – STUDY 1

Name:		
MODEL 1-1/2" scale study model of your wall section. Model should show full detail including materials, connections and a structural system.	1 2 3 4 5	/ 30
DRAWINGS 1-1/2" scale section drawings showing light conditions at noon on June 21 st and December 21 st .	1 2 3 4 5	/ 30
PRECEDENT RESEARCH Initial precedent research board including research on architectural precedents manipulating light, material precedents, and structural precedents. Precedents must be illustrated through images, drawings or diagrams.	1 2 3 4 5	/ 20
DESIGN PROCESS Illustration of design process, including sketchbook sketches and computer renderings.	1 2 3 4 5	/ 20
TOTAL		/ 100

1=Poor 2=Fair 3=Average 4=Good 5=Excellent

Comments:

Grade Evaluation Sheet – FINAL PRESENTATION

Name:		
DESIGN / FINAL MODEL 1-1/2" scale study model of your wall section. Model should show full detail including materials, connections and a structural system.	1 2 3 4 5	/ 50
FINAL SECTION DRAWINGS 1-1/2" scale section drawings showing light conditions at noon on June 21 st , September/March 21 st , and December 21 st . Drawings should be hand drawn pencil on vellum. Drawings should be final quality drawings.	1 2 3 4 5	/ 50
MODEL PHOTOGRAPHY / COMPUTER MODELS / DESIGN PROCESS Final boards illustrating design process and computer simulations. Boards also contain final model photography simulating light conditions on both June 21 st and December 21 st , and other light conditions as necessary to communicate your design. <i>Drawings and Photography should be composed and professionally presented.</i>	1 2 3 4 5	/ 25
PRECEDENT RESEARCH Final precedent research board including research on architectural precedents manipulating light, material precedents, and structural precedents. Precedents must be illustrated through images, drawings or diagrams. Precedent presentations should be organized on the boards to communicate themes.	1 2 3 4 5	/ 25
PEER EVALUATIONS		/ 50
TOTAL		/ 200

1=Poor 2=Fair 3=Average 4=Good 5=Excellent

Comments: