

Course Overview for External Evaluators

“Architecture Design Studio: Materials” (48-205)

Coordinator: S03, S05, S06, S07, S08

Taught as Instructor: S00, S02

2nd Year, Architectural Design Studio

18 units, required course for all majors

Course Website: <http://www.andrew.cmu.edu/course/48-205-gutschow/>

The 2nd Year Spring Studio focuses on developing designs for small-scale buildings informed by greater knowledge related to materials and the act of construction. Following the “New Materiality” evident in architecture today, and acknowledging the importance of materials, fabrication, and assembly techniques for sustainable design, this studio seeks to explore the aesthetic and experiential meaning of materials and the technical knowledge related to the use of materials and the processes of construction. At a variety of scales and in a variety of materials, students explore the design implications within their choices of materials and assembly. The creative opportunities and implications of using varied materials, structural systems, and assembly techniques are elaborated, especially as they determine the *artistic, conceptual, poetic, creative, spatial, and experiential* aspects of architecture. The studio projects, lectures, and the required building study will focus on the application and integration of knowledge acquired in a parallel “Materials & Assembly” course.

The semester consists of four inter-related projects on Pittsburgh’s South Side, communal to all studios, though all instructors will have slightly different point of emphasis: Project 1 Fire Tower: design a fire tower featuring masonry construction that both a poetic landmark, and a functional training tower; Project 2 Block System: design a masonry block system and craft prototypes using digital fabrication technology; Project 3 Building Analysis: analyze a building focusing on how a specific (assigned) material functions to determine form, space, experience, and meaning. Material to be selected in association with assignments in concurrent M&A class; Project 4 Research Center: design of a small, urban research center inside an old industrial shed focusing on the role of materials and assembly in reference to context, function, experience, space, and meaning. A detail of the building will be explored at large scale, and modified structural drawings will be prepared for the design in the concurrent M&A class.

I am including in this packet several of the project statements that I have generated for the studio, along with examples of student work, all of which is achieved under my close supervision as a “floating critic” for each of the separate studios. The student work is presented in its original format, unedited by me, as the students submit it to the department using a standard “template” or “framework,” with black square at the top left. These templates help the students create portfolios, give a shared identity to the 2nd year studio, and facilitate the departments efforts to promote the school and the students. I initiated these templates in the 2nd year in 2003, and the program has now been adopted by all studios in the School of Architecture at CMU.

For other materials, including examples of student work, and class handouts, please refer both the course website listed above, as well as my professional website:

www.andrew.cmu.edu/user/gutschow



Architecture Studio: 2nd Year Spring

Spring 2008, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(3/12/08)

S'08 SYLLABUS

"As architects, we are united in our love of the physical world. We like to touch and make real things." - B. Tsien

"Material itself is dead and lifeless. It is only given life by form, breathed into it by the creative will of the artist." - W. Gropius

OVERVIEW:

Building on the fall studio, the spring semester is concerned with more in-depth understanding and development of designs for small-scale buildings, now informed by greater knowledge related to materials and the act of construction. Following the "New Materiality" evident in architecture today, and acknowledging the importance of materials and assembly techniques for sustainable design, we seek to explore the aesthetic and experiential meaning of materials (WHY?), and the technical knowledge related to the use of materials and the processes of construction (HOW?). The creative opportunities and design implications of using varied materials, structural systems, and assembly techniques are elaborated, especially as they determine the *artistic, conceptual, poetic, creative, spatial, and experiential* aspects of architecture. The studio projects, lectures, and the required building study will focus on the application and integration of knowledge acquired in a parallel "Materials & Assembly" course 48-215.

Objectives: To analyze and think critically about the role that materials, assembly methods, and construction play in existing architectures, and applying this with intent as part of a larger, synthetic and creative design process in your own designs. To define strategies for problem solving, conceptual development and poetic expression at all levels of the design process, large and small, conceptual and real. To develop structured arguments about your design intentions and the means to communicate them effectively, especially with regard to materials and construction.

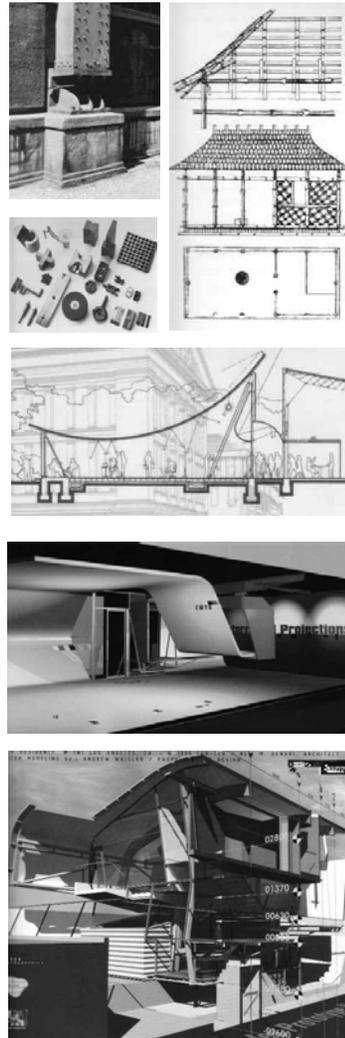
PROJECTS:

The semester will consist of four inter-related projects on Pittsburgh's South Side, communal to all studios, though all instructors will have slightly different point of emphasis:

- **Proj. 1 Fire Tower:** design a fire tower featuring masonry construction that creates both a poetic landmark, and a functional training tower for firemen and their equipment.
- **Proj. 2 Block System:** design a masonry block system with several different inter-related components, then craft prototypes using digital fabrication technology

- **Proj. 3 Building Analysis:** analyze a building focusing on how a specific (assigned) material functions to determine form, space, experience, and meaning. Material to be selected in association with assignments in concurrent M&A class.

- **Proj. 4 Research Center:** design of a small, urban research center inside an old industrial shed focusing on the role of materials and assembly in reference to context, function, experience, space, and meaning. A detail of the building will be explored at large scale, and modified structural drawings will be prepared for the design in the concurrent M&A class.



Architecture Studio: 2nd Year Spring

Spring 2008, CMU, Arch #48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu

(2/29/08)

S'08 Schedule (Subject to Revision: see www.andrew.cmu.edu/course/48-205)

Week / End	Monday	Wednesday	Friday (Lec. MM103 1:30-2:50)
#1	Jan. 14 Lec.1 (MM A14): Intro. to Studio, Proj.1 & Proj.2	16	18 Lec.2: Intro. Proj.2, dfab (Ficca) Assign Block System & Masonry charette VELUX Jury (3-5pm, MM203)
#2	21 MLK Day - No Studio Wats:ON Lec.: K. Sejima 1/22 →	23 Crit Block System & Masonry Charette M&A Masonry Field Trip, 1/24 →	25 Review indiv. Block Systems (analog model, 3D renderings, + "shaded elevation" dwgs.)
#3 Work group Block System	28 Crit Fire Tower Review group Block System project Velux Lec.: P. Lewis, 6:30	30 Lec.3: Visible Mill (Ficca)	Feb. 1 Lec.4: New Materiality DUE: Group Block System (3D, Shaded Elev.+ Milling Dwg)
#4 Create Milling Files	4 PROJ.1 - MID-REVIEW (Lubetz & Wolff; O'Toole & Price) (Site, Plans, 1/4' Section(s), Views)	6	8 Lec.5: Craft Crit Fire Tower Review Block System
#5	11 Digital Fab. Lab Grand Opening	13 Begin milling in dfab lab Structures Midterm Exam →	15
#6 DUE: Proj.1, 10pm	18, 20 PROJ.1&2 - FINAL REVIEWS (Lubetz & O'Toole; Wolff & Price // Lubetz & Price; Wolff & O'Toole)		22 Start Proj. 4 in studios
#7	25	27 Proj.4 Site Visit, 2600 Jane	29 Lec.6: Research Center Intro DUE: Proj.1 Documentation Deadline Proj.2 Milling (Sun. 3/2) →
#8	Mar. 3 PROJ.4 - Concept Review Lec.: Lars Lerup, 6:30, BH A14	5 DUE: Proj.2 Documentation M&A Midterm Exam →	7 Mid-Semester Break
Mar. 10-14 Spring Break			
#9	17 Lec.7: TBA (MM A14) REVIEW: Block System (MM203)	19 Structures Midterm Exam →	21 NCMA Jury (3-5pm, MM203) Good Friday
#10 <i>Easter</i>	24, 26 PROJ.4 MID-REVIEWS (AL+SW; JO+TP // AL+JO; SW+TP) DUE: Design of typical opening with chosen material 2/24, NCMA Lec. Lisa Iwamoto		28 Lec.8: TBA
#11	31	Apr. 2	4 Lec.9: TBA
#12	7 DUE: Proj.3 Building Analysis	9	11 Lec.9: Chicago Intro. DUE: Full presentation printout!
#13 CHICAGO TRIP	14 CHICAGO TRIP Lec.: S. Behnisch, 4/15, 6:30, CMoA →		18 Spring Carnival No Studio
#14 Passover begins	21 Lec: Hornbostel & 4 th Yr. Awards	23	25 Deadline Proj.4 Printing (Sa.4/26) → / Scream, 4:30
#15 DUE: Proj.4 10pm	Apr. 28 - May 2 PROJ.3 FINAL REVIEWS (All instructors together)		DUE: Documentation for Proj.4 (Sa. 5/3) → End of CMU Classes
	5/5 Studios Clean	5/6 2 nd Year Semester Review	5/9 Studios EMPTY

Concurrent courses: **M&A**, 48-215, Prof. Steve Lee, T/R 10:30-11:50, Homework Due Thursdays
Structures I, 48-217, Prof. I Oppenheim, T/R 9:00-10:20am; section Tu 8-9:20pm

Architecture, Design & Materials Studio

Spring 2007, CMU, Arch #48-205, MW/WF 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307
(716/07)

PROJECT 2: BUILDING STUDY (M&A)

MINDSET

The single most important source, and tool, for learning about architecture, is architecture. This is never more true, than when studying the materiality and unique construction of great works of architecture.

This graphic and modeling assignment will focus on two important issues pertaining to the making of architecture. The first is to understand how designers use structure & materials to inform space or, at times, use space to inform structure. The second aspect of this assignment is to study how details can be used to create a thematic whole to the building of which they are apart.

WORK PROCESS:

Depending on your studio instructor, each student will choose or be assigned a building to study over the course of the semester (see next page for final list).

The first step is to gather as much documentary evidence of the design of your building as possible, from the overall context, to the detail level, from as many sources as possible (internet, library, books, journals, foreign language sources, letters to the building owner, etc.). Thorough research takes time: your instructor may send you back several times to look for images or drawings of relevant parts of the building, or ask you to draft to-scale plans from photos, if accurate drawings seem unavailable. Create a large poster-sized exhibit about the "Materials & Assembly" aspects of your building so that your whole studio can learn from the building.

Once you understand the basic formal principles, materials experiences, and construction details of your building, determine how to re-represent these ideas. While a certain level of abstraction is always necessary in making a drawing or model, an attempt must be made to maintain the essence and accuracy of the building. Through sketches, axonometric drawings and a chip board model, analyze any two of the following aspects of your building:

1. Structure: Primary and Secondary
2. Structure: Structural System 1 & 2, # etc.
3. Enclosure: Skin/ envelope
4. Components: How the assembly of small parts lead to form and space
5. Material: How primary building materials lead to form and space
6. Material: How the ground or roof plane is manipulated
7. The relationship of circulation to structure
8. Loadbearing to non-loadbearing

DELIVERABLES

Every student must create at least one large scale analytical drawing, and one analytical model of their building, and must prepare a 2-page "template" about the analysis of your building. Individual studio instructors will add more requirements, as appropriate.

Readings:

The Architecture of the Well-Tempered Environment by Reyner Banham

"Slowness", T. Williams & B. Tsien (on course website)

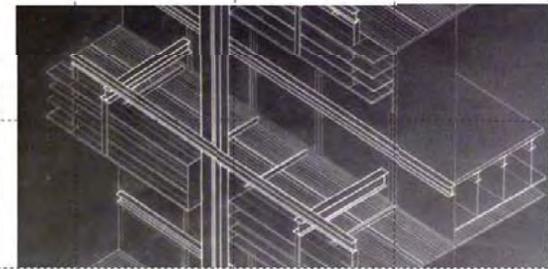
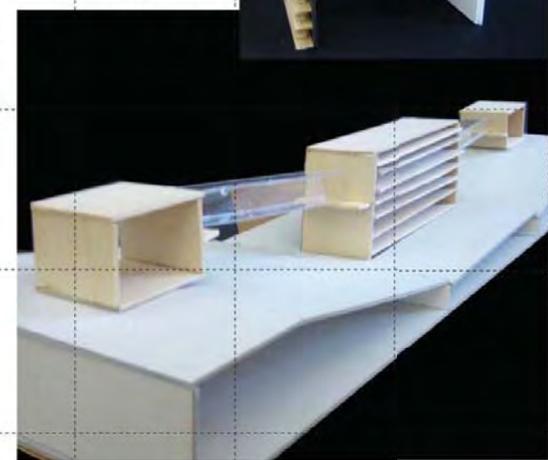
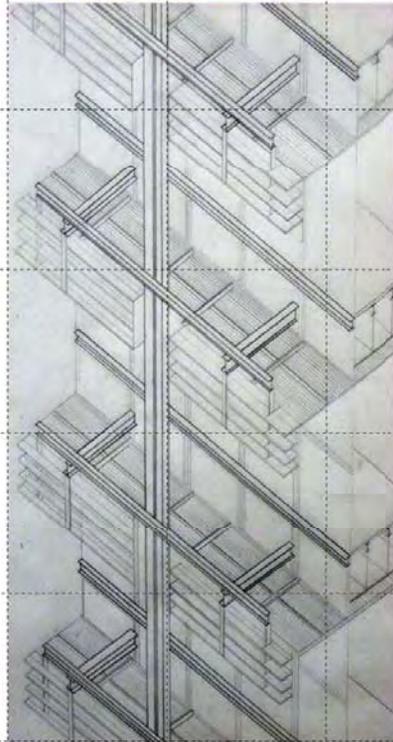
"Is Drawing a Lost Art?" Bill Bouchev



BUILDING STUDY

John Deere Headquarters-1964
Moline, Illinois- Eero Saarinen

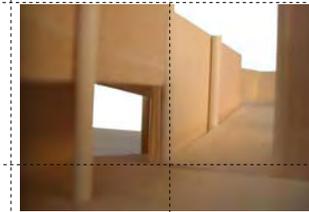
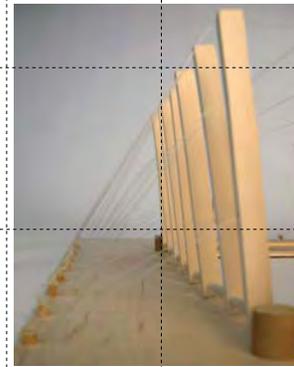
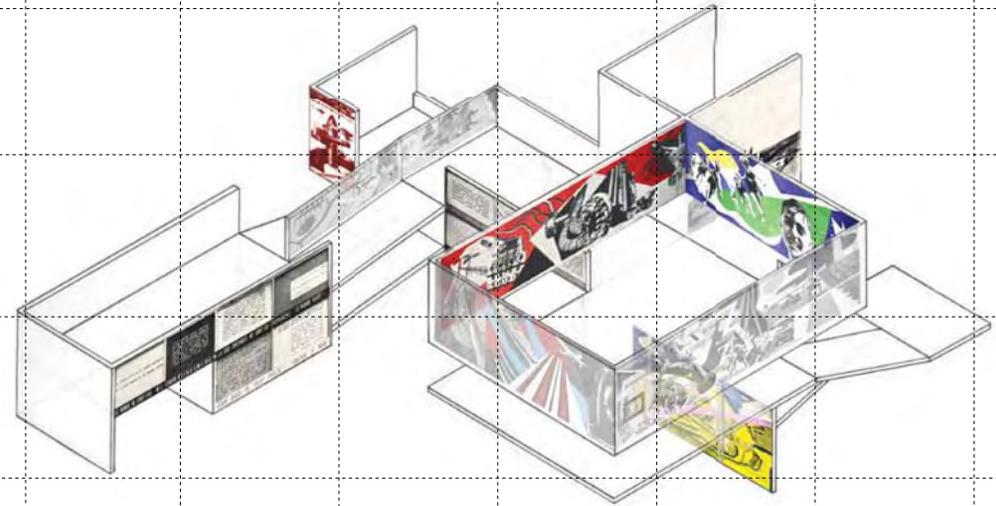
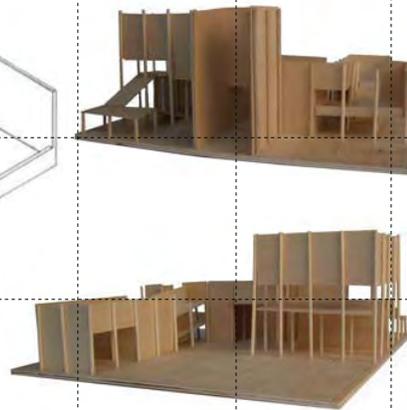
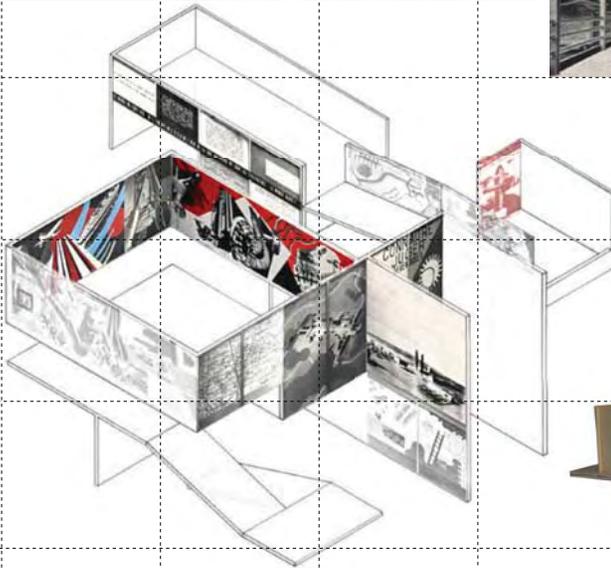
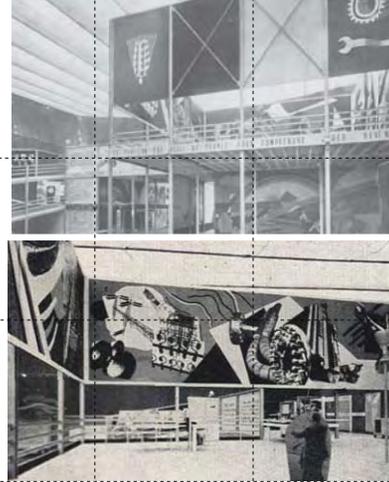
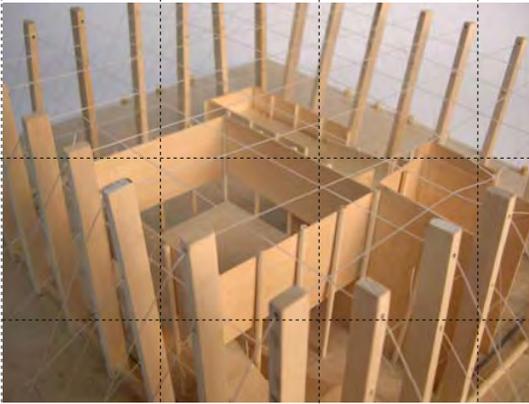
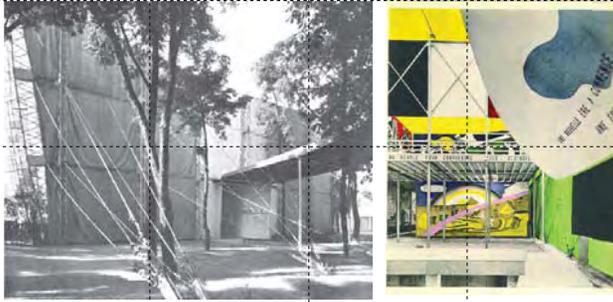
Elizabeth Cohn
48-205 Materials Studio / 507
Instructor: Damiani
CMU School of Architecture



BUILDING STUDY

Pavilion des Temps Nouveau
1938 Paris, France
Le Corbusier

Alyssa Kuhns
48-205 Materials Studio / S07
Instructor: Gerard Damiani
CMU School of Architecture



STATEMENT

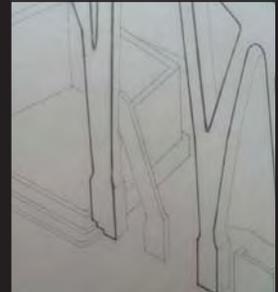
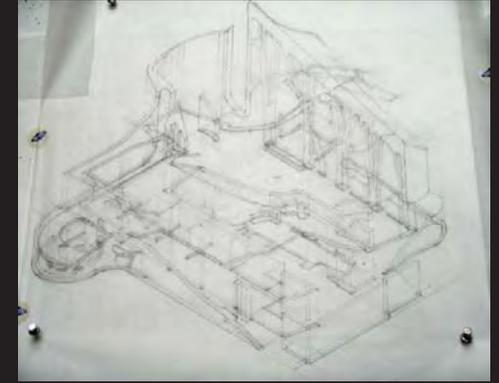
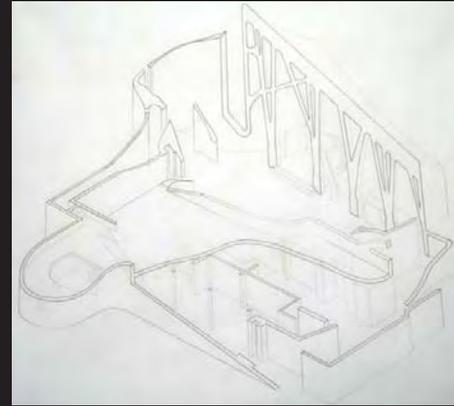
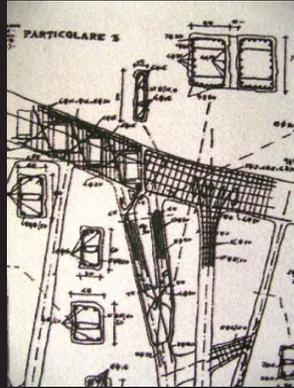
The Pavilion des Temps Nouveau, or Pavilion of New Times, was a museum for contemporary art in the 1938 Paris World Fair. It was an exhibition that held many of Corbusier's sculptures and murals. Corbusier used his artwork to express Paris' current political and economical situation. He commented on Paris' history as a city and the industrialization that brought about cultural change. The pavilion itself is made up of two independent structures. The exterior shell uses steel trusses and cables in tension to suspend a canvas tent. It is a lightweight skin that acts translucent when hit with direct sunlight. The interior is a series of panels and ramps supported by a gridded system of steel I-beams. The panels fold and wrap in order to create space. These panels house the colorful murals, and, therefore, the murals themselves become three-dimensional space. Corbusier's juxtaposition of these two structures creates an interesting dialog. This museum served as both a cultural exhibit and a means for Corbusier to express his ideas about the future. It depicted the past, present, and future of Paris in times of industrialization and change.

Alyssa Kuhns

BUILDING STUDY

Chiesa dell'Autostrada
 Florence, Italy, 1960-1964
 Giovanni Michelucci

Misha Varshavsky
 48-205 Materials Studio / F'07
 Instructor: Gerard Damiani
 CMU School of Architecture



STATEMENT

In 1960 Giovanni Michelucci, Italy's most nationally esteemed architect, was commissioned to design a church off the Autostrada del Sole freeway in honor of the 100 workmen who died during its construction. The site constraints included the already laid foundations of a previous controversial design from which Michelucci raised his revision. The primary materials of concrete, masonry, and copper were chosen to utilize the artisan skills and building traditions of the area. His design carries metaphors of pilgrimage tree and tent that manifest themselves in the sitecast reinforced concrete columns and roof. The irregular shapes wrap in a vortex to reverse support and its covering; so too the contained space and the container. Four different engineers cycled through the work with Michelucci, but the true heart behind it lay in his bond with the craftsmen. Though in his 70s, he visited the site every day for three years, redesigning on the fly in response to the various improvised material tests to make the gestures possible. Everywhere the conscientious hand of the maker is made visible.

For my drawing documentation, I focused on piecing apart the sequence of spaces while highlighting the building's unique character of form. In model, I reinterpreted the solid concrete mass as transparent resin to reveal the ingenuity of its making and in wood directly express the masonry walls assembly.

Misha Varshavsky



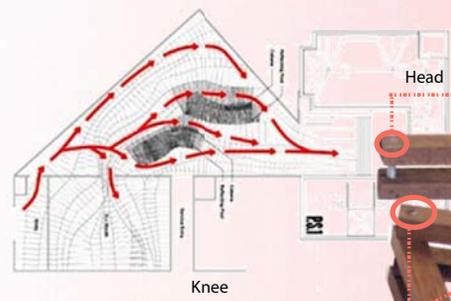
BUILDING STUDY

Dunescape, 2000, NY
SHoP Architects

Daniel Zhang
48-205 Materials Studio / 507
Instructor: Spike Wolf
CMU School of Architecture



The study of the body in relation to Dunescape by SHoP

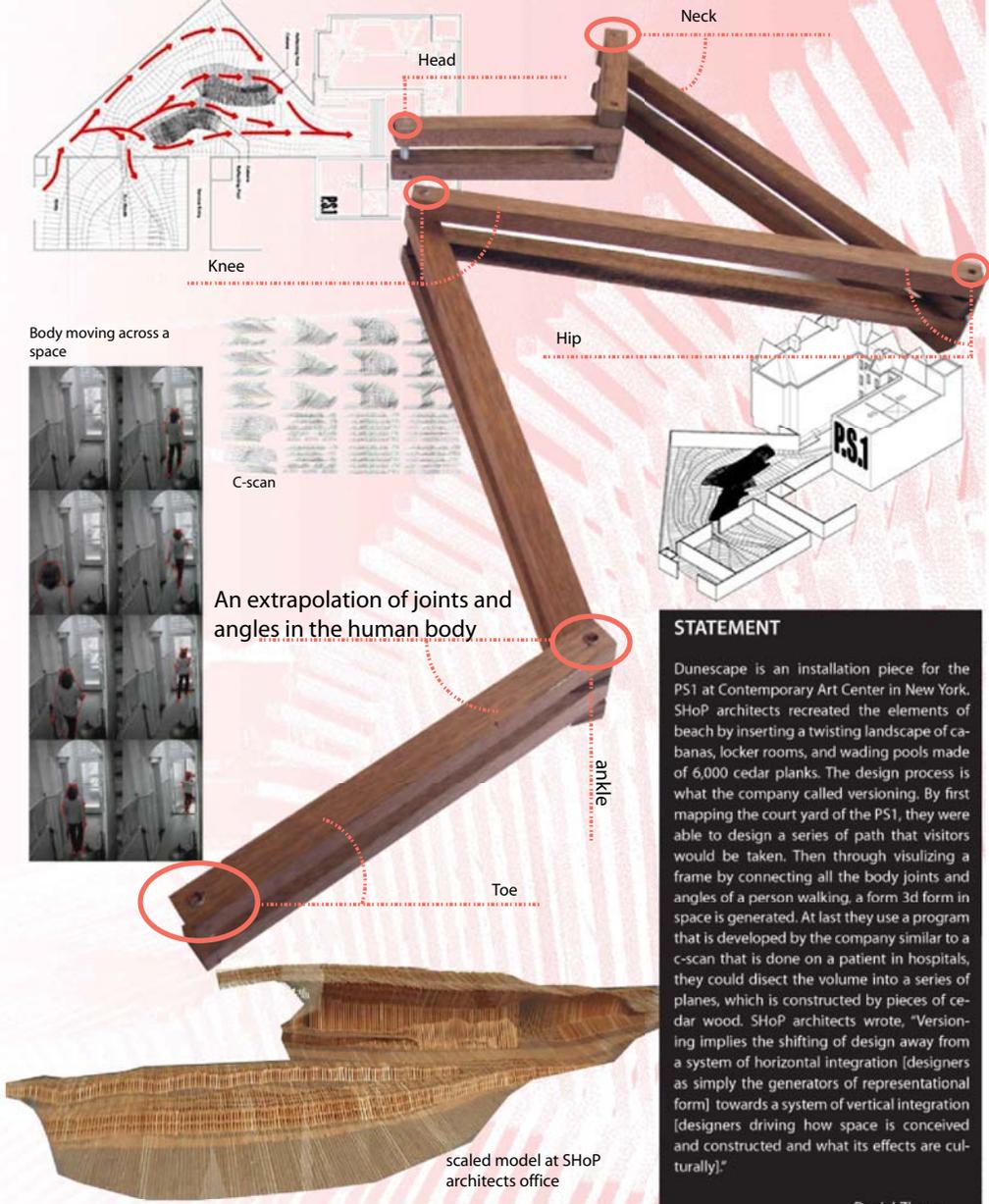


Body moving across a space



C-scan

An extrapolation of joints and angles in the human body



STATEMENT

Dunescape is an installation piece for the PS1 at Contemporary Art Center in New York. SHoP architects recreated the elements of beach by inserting a twisting landscape of cabanas, locker rooms, and wading pools made of 6,000 cedar planks. The design process is what the company called versioning. By first mapping the court yard of the PS1, they were able to design a series of path that visitors would be taken. Then through visualizing a frame by connecting all the body joints and angles of a person walking, a form 3d form in space is generated. At last they use a program that is developed by the company similar to a c-scan that is done on a patient in hospitals, they could dissect the volume into a series of planes, which is constructed by pieces of cedar wood. SHoP architects wrote, "Versioning implies the shifting of design away from a system of horizontal integration [designers as simply the generators of representational form] towards a system of vertical integration [designers driving how space is conceived and constructed and what its effects are culturally]."

Daniel Zhang

Architecture Studio: 2nd Year Spring '08

Spring 2008, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/F 12:00-1:00pm & by appt. in MM202
(1/18/08)

PROJECT 2 - BLOCK SYSTEM

MINDSET: This project is intended to enrich the design process of the Proj.1 Fire Tower by engaging in architecture at the level of detail, by fabricating models of masonry building components at the scale of 1:1, and by seeking to understand the opportunities (and limitations) of working with a single, elemental building material. In addition, the project will introduce some of the thinking, software, and techniques of working with the new digital fabrication technology available to architects today and how they might begin to inform our design process.

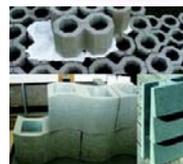
PROJECT: Your charge is to design and digitally fabricate a flexible "family" or "system" of masonry block components that can be dry-stacked, arranged to form the corner, and begin to "frame an opening," within the following constraints:

- All the components, including any kind of lintel or spanning member, must be milled out of a single block of 4"x8"x4" white foam using a large, flatbed CNC router, using only 2D tool path files (more on these technical limitations in a lecture by Jeremy Ficca)
- For efficiency reasons, we will be milling foam, as a substitute or model of a real building material. In order to integrate with the Fire Tower project, your design should model a high-end, custom concrete block of some kind (concrete can be formed in many shapes, colors, textures, etc.). Remember, however, to consider both the final design of the white foam model as an object in itself, as well as the "real" blocks you are representing and modeling.
- Your "system" may include as many different kinds of blocks as you wish.
- Your blocks may be any "size" you choose, and can be at any "scale" to a "real" building material (i.e it's fine to create "miniature" versions of "real" blocks).
- No matter what the "size" or "scale" of your blocks, you should work at a 1:1 scale in your analog and digital drawings, and models. A recommended starting size is 5"x2"x2": blocks that are much smaller will not work well with the grain of the foam, the size of the router bit, and will be too light weight to assemble. Blocks that are much bigger will not yield enough blocks to assemble into a meaningful "system"
- You should work to maximize the overall number of blocks you can cut out of a single sheet of foam, while minimizing the "left over" material and waste.
- When cut out, the blocks should be assembled without glue to display the inherent design potential of your block system, including the variety of configurations that are possible. To stabilize the lightweight material, toothpicks may be used to keep small foam pieces in place during assembly and display, but should not form structural components of your system.

You will be evaluated on: 1) the formal design quality of the set of individual blocks and their relation to each other; 2) the experiential qualities of the overall system in aggregate, including the connections, texture, perforations, and their ability to turn the corner and create an opening; and 3) the efficiency with which you create the "2D nested milling drawing" and "tool path" files and use the foam. The results will be exhibited and reviewed during the same week as the Fire Tower reviews, and considered as part of an in-house competition sponsored by the National Concrete Masonry Association to promote student research.

PROCESS: In order to make efficient use of time, and to maximize the learning potential for all, we have scripted the design constraints and fabrication process quite closely according to the following schedule (subject to change):

- Fr. 1/18 - lecture by Jeremy Ficca on the technical constraints imposed, and the opportunities afforded, by the CNC router and the configuration in which we intend to use it, including issues of router-bit size, limiting cuts to 2D tool paths, efficient use of the material, creating the "nested milling drawing" and the "tool path files" from Rhino and other digital drawings.
- all students start individual Block System designs.
 - each studio divides into 3 groups, and each group begins "Masonry charette" to design a small installation in masonry, to be constructed 1/24 (see M&A)



National Concrete Masonry Association
FOUNDATION



NCMA Competition "CMU's at CMU", 2008, p.2

Proj.2 Block System in Concrete (Group Projects)

The jury was enthusiastic about the project's ability to allow the students to experiment with, and fabricate a complete system of life-like blocks that begins to explore how digital fabrication may begin to change how we produce, assemble, and design with concrete block.

Winners:

Grand Prize (\$650) : Karen Branick, Daniel Hudock, Ranjit Korah, Mekha Abraham & Lindsay Mannion

Jury: "A sophisticated system that is both expressive and functional, with a clear strategy of joinery and performative characteristics. A rigorous geometry is concealed by flowing forms that intrigue both at the scale of the individual block, and the overall wall. The wall can be built in two configurations: as a load-bearing, non-orthogonal wall that filters light, and as a delicate yet animated porous screen. A building or wall of this material would certainly challenge our notion of a concrete masonry structure."

Runner Up (\$300): Kaitiin Miciunas, Giacomo Tinari, Elizabeth Duray & Bum Yeol Kim

Jury: "A compelling play off of existing concrete masonry units that can be stacked or interlocked to create either conventional orthogonal walls, or highly textured walls, and even cantilevered and vaulted spaces. The holes provide both ornamental patterns and a handhold for picking up the blocks."

Hon. Mention (\$200): Patrick Amorosa, Sam Carter, Max Arocena, Katherine Kokoska & Jarrod Coleman

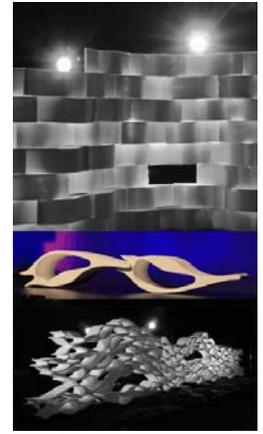
Jury: "A structurally viable block system that has the potential to create an incredible variety of subtle and sophisticated textures and patterns based on only four different block types."

Jurors :

Dutch MacDonald, AIA, Maya Design (formerly of EDGE Studio)
Ron Dulaney, architect at Bolin, Cywinski, Jackson
Lee Calisti, AIA, architect at LeeCalisti Design (on leave from CMU)
Kurt Rosander, CEMEX (NCMA Rep.)
Jeremy Ficca, AIA, CMU
Moderator: Kai Gutschow, PhD, CMU

2nd Year Studio Instructors

Coordinator: Kai Gutschow, PhD
Arthur Lubetz, AIA
Spike Wolff
Jim O'Toole
Tom Price, AIA



Grand Prize: Branick, Abraham, Hudock, Korah & Mannion



Runner-up: Miciunas, Tinari, Duray, Kim



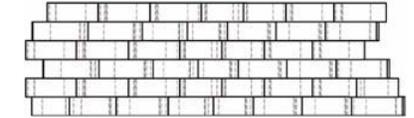
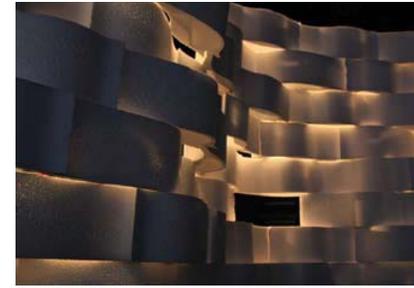
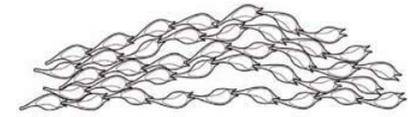
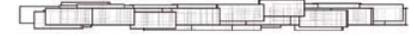
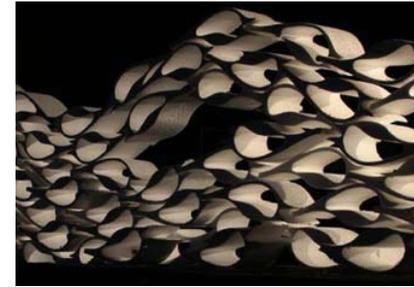
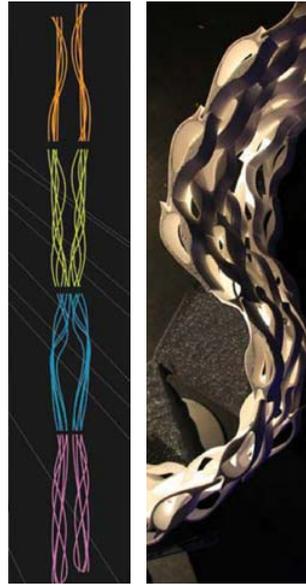
Honorable Mention: Amorosa, Carter, Kokoska, Arocena & Coleman

Block System
Instructor: Tom Price

Grand Prize Team:
Mekha Abraham
Karen Branick
Daniel Hudock
Ranjit Korah
Lindsay Mannion

19

"A sophisticated system that is both expressive and functional, with a clear strategy of joinery and performative characteristics. A rigorous geometry is concealed by flowing forms that intrigue both at the scale of the individual block, and the overall wall. The wall can be built in two configurations: as a load-bearing, non-orthogonal wall that filters light, and as a delicate yet animated porous screen. A building or wall of this material would certainly challenge our notion of a concrete masonry structure."



20

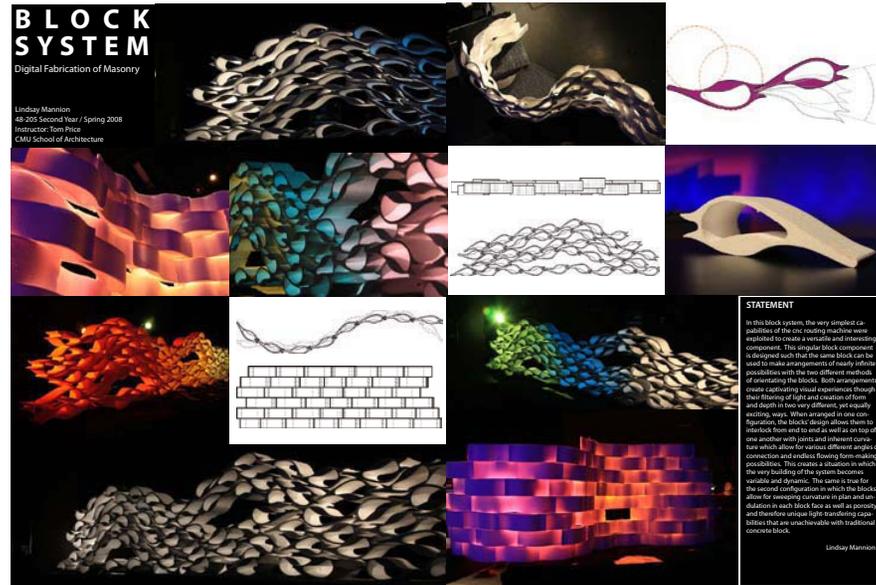
STUDENTS' DESIGN STATEMENT

While still similar in scale to a standard masonry unit, the individual components of the block system offer a more versatile masonry unit through multiple orientations. The system can be constructed either as a non-load bearing screen wall, or as a more structural load-bearing wall that is able to maneuver freely in corner conditions. Both orientations seemingly trap light within interior pockets in the individual blocks to create a glowing interior-exterior contrast. Varying uses of artificial colored light inside and outside of the system evokes unique perceptions of volume, space, and tactility from individual viewers.

This singular block component is designed such that the same block can be used to make arrangements of nearly infinite possibilities with the two different methods of orientating the blocks. When arranged in one configuration, the blocks' design allows them to interlock from end to end as well as on top of one another with joints and inherent curvature which allow for different angles of connection and various form-making possibilities. In the second configuration, the blocks' connections allow for sweeping curvature in plan. The porosity created by this configuration allows for a unique light diffusion that is unachievable with traditional concrete block.



21



STATEMENT
In this block system, the very simplest capabilities of the extruding machine were exploited to create a versatile and interesting component. This singular block component is designed such that the same block can be used to make arrangements of nearly infinite possibilities with the two different methods of orientating the blocks. Both arrangements create captivating visual experiences through their filtering of light and creation of form and shape in two very different, yet overlapping, ways. When arranged in one configuration, the blocks' design allows them to interlock from end to end as well as on top of one another with joints and inherent curvature which allow for various different angles of connection and various form-making possibilities. This creates a situation in which the very building of the system becomes variable and dynamic. The same is true for the second configuration in which the blocks allow for sweeping curvature in plan and undulation in each block face as well as porosity and therefore unique light-transferring capabilities that are unachievable with traditional concrete block.

Lindsay Mannion

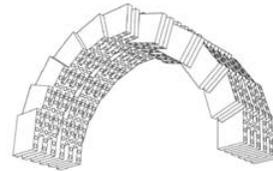
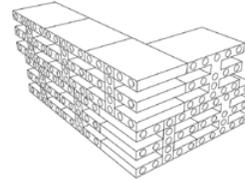
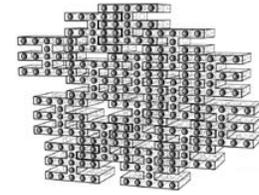
22

Block System

Instructor: James O'Toole

Runner-up Team: **Elizabeth Duray
Bum Yeol Kim
Kaitlin Miciunas
Giacomo Tinari**

"A compelling play off of existing concrete masonry units that can be stacked or interlocked to create either conventional orthogonal walls, or highly textured walls, and even cantilevered and vaulted spaces. The holes provide both ornamental patterns and a handhold for picking up the blocks."



STUDENTS' DESIGN STATEMENT

The strength of the concrete masonry unit lies in its physical tangibility and accumulative manipulative nature. But it lacks in compositional flexibility. The gravitational dependence of the ordinary brick inhibits masons from being able to form complex three dimensional structures and spaces. By integrating finger-like joining components within the block, an expansive opportunity is available.

This simple method of joining allows for multiple possibilities in composition and orientation to one another eliminating necessity for dependence on simple stacking. This redefines the characteristic of the block, literally overlapping the boundaries between units in some configurations or creating micro boundaries within the unit in others. The boundary between units dissolves in the pattern-making of the drilled grid to suggest a whole greater than its parts. Units are scaled in relation to the human body for easy interaction with human hands: the holes serve both as finger sockets, and as ornament to create surface texture.



BLOCK SYSTEM

Digital Fabrication of Masonry

Kaitlin Miciunas
Liz Duray
Giacomo Tinari
4th 2015 Second Year / Spring 2008
Instructor: James O'Toole
CMU School of Architecture

STATEMENT

The block system is based on the idea of one component with a great variety of ways for connection using friction rather than gravity. When combined, the surface can then be hung, and easily manipulated and reformed to create complex geometries. The drilled holes form a grid that begins to manipulate light in different directions as the small bits of light left from the jacking technique. This allows for light to come through and creates a systematic aesthetic, encouraging the component combination as something greater in when combined.

Kaitlin Rose

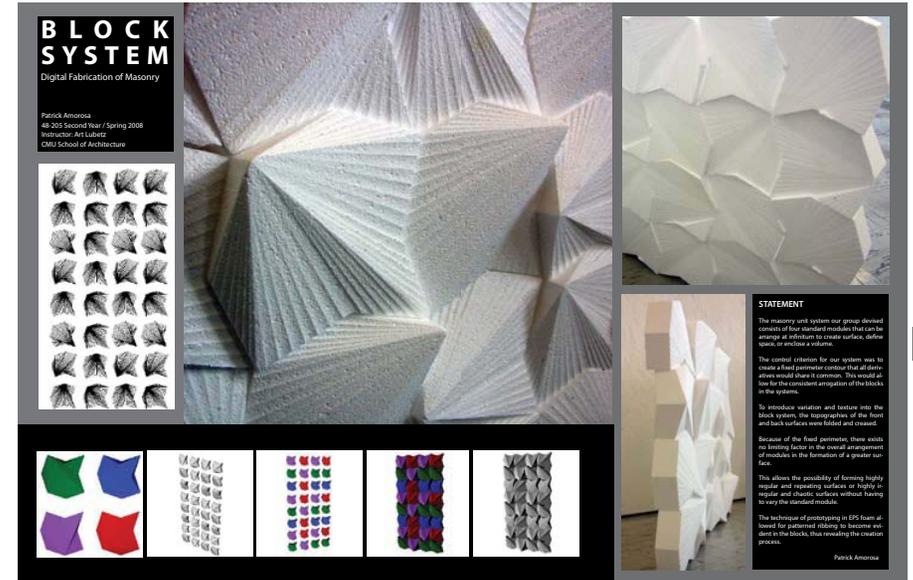
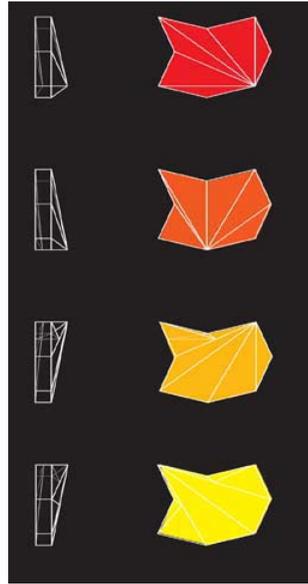
Block System

Instructor: Arthur Lubetz

Honorable Mention: Patrick Amorosa
Max Arocena
Samantha Carter
Jarrod Coleman
Katherine Kokoska

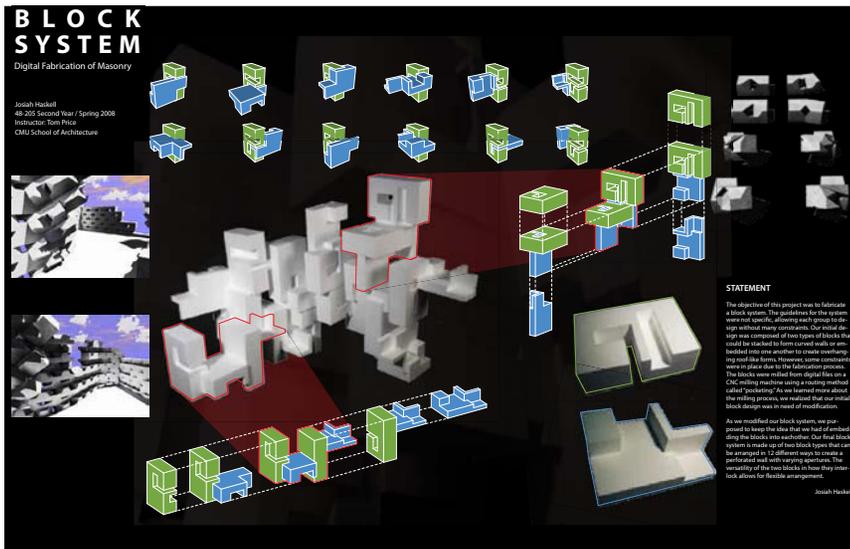
27

"A structurally viable block system that has the potential to create an incredible variety of subtle and sophisticated textures and patterns based on only four different block types."



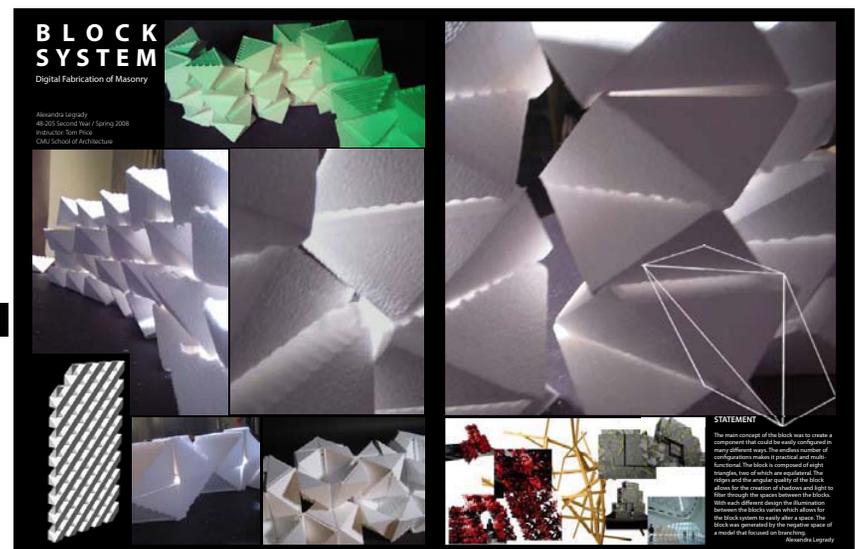
28

Team Members: Adam Aviles, Josiah Haskell, Euginie Kwan, I-Shan Tam
Instructor: Tom Price



40

Team Members: Conor Doyle, Alexandra Legrady, Drew Lightfoot, Randi Smith, Lingshui Wang
Instructor: Tom Price



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Architecture Studio: 2nd Year Spring '08

Spring 2008, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/F 12:00-1:00pm & by appt. in MM202

(3/12/08)

PROJECT 1 - FIRE TOWER

MINDSET: Building on our investigation of composition, concept, and spatial experience last semester, we will undertake a more intensive exploration of the role that materials and assembly methods can play in creating a small piece of architecture. We will focus on the scale of the human body encountering the physical presence of building materials. We seek to explore how to elevate ordinary construction to poetic expression, how real materials, structure, enclosure, joinery, craft, and building techniques can lead to significant architecture. A key focus of the studio is on the joining of architectural elements, especially of concrete masonry and other materials.

PROJECT: Your charge is to design a Fire Tower, featuring masonry construction, adjacent to the South Side Works. The tower is to function both as a poetic landmark for the community, and as a functional fire training tower for the fire department. Part of the charge is to conceptualize and invent the precise program, function, and use of the tower in terms of identity, fire training, possible use in community events, historic or symbolic meanings, as well as its relationship to the South Side works, to the adjacent industrial parks, to the historic South Side, including the former J&L steel works on the site, or to the Monongahela river and greater Pittsburgh.

PROGRAM: You are charged with inventing the exact program brief for the Fire Tower according to the criteria listed above, and creating a building with the following constraints:

- it must fit within a 24'x24' footprint, except for small cantilevers above
- it can be no more than 75' tall to its tallest point
- it must contain multiple interior levels, though not necessarily "full" levels
- one interior stairwell must connect each level with the other. At a minimum, firemen must be able to drag their hoses up this stairwell.
- at least one "room" and one part of the stairwell must be fully enclosed, for possible use as a "burn room" and "smoke stair" for fire training.
- for pedagogical, symbolic, contextual, and funding purposes the tower construction must "feature masonry" (i.e. much of the building should be made of masonry, particularly concrete block). Emphasis should be placed on the joinery of masonry units to each other, and to other materials.
- it must contain at least one wall-opening, and one roof-top access-point for a fire ladder truck to approach and train firemen to enter the building.
- as a result, the tower must be sited and contain hard-scape paving such that a long ladder truck can approach, maneuver, and leave the site.

PROCESS: A primary goal of the studio is to foster a robust design process, including enriching your work through: 1) extensive research; 2) iterative techniques; and 3) working simultaneously at several scales, from corner detail to site plan. As part of this effort, all students will design a masonry "block system" concurrently with this project. This "block system," which may become part of the masonry fire tower, will be designed with both analog and digital techniques, and will be fabricated at a large scale using the school's CNC router in the new digital fabrication lab. In addition, the studio will work closely with the M&A course to do materials research, and to integrate a masonry charette and masonry-related field trips into the design process.

DELIVERABLES: This is a short project, with many phases, requiring you to work quickly and effectively, and to commit to early ideas in order to resolve your design from the level of site plan, to the masonry block details. The final presentation requirements will be determined at mid-review, but will include large scale details and your "block system" design. Those dealing extensively with concrete block will be entered into an NCMA competition.



National Concrete Masonry Association
FOUNDATION

NCMA Competition "CMU's at CMU", 2008

CMU School of Architecture, 2nd Year Studios, 48-205

Jury: Fri. Mar. 21, 2008, 3-5pm, MM203, CMU

Award Lecture: Mon. Mar. 24, 2008, 6:30pm, BH A51, CMU

A distinguished jury of local architects and professors met to review, discuss, and decide on the winners of the 2008 NCMA Competition in the 2nd year studios of the Carnegie Mellon School of Architecture. The competition featured two student design projects that ran concurrently during the first 5 weeks of the spring studio. The first was a "Fire Tower" featuring masonry, and the second was a "Block System" in concrete that students fabricated in styrofoam using a CNC router in the School's new digital fabrication lab. The two projects allowed the students to focus on masonry both at the scale of the overall building, and through details of a masonry block system. Judging was both quantitative and qualitative, evaluating both projects on the basis of aesthetic quality, program, innovative use of concrete, functional use of concrete, and constructibility.

Proj.1 Firetower featuring Masonry (Individual designs)

The jury commended the program's attempt to improve on the functionality of a usually unremarkable building type, and the many strong presentations, though it wished for a greater focus on the detailing of concrete block as either an appropriation of existing conventions, or a projection of alternative assemblies.

Winners:

Grand Prize (\$500):

Adam Aviles

Jury: "This Firetower offers a clear diagram that expresses the power of fire and concrete block in a straight-forward way, and leads to a good balance of form and idea. Details such as the perforated masonry wall generate both surface variation and light modulation, as well as a visible symbol of the fire inside. The masonry is confronted almost as one confronts a fire: it is with respect and care, without the use of tricks."

Runner Up (\$250):

Karen Branick

Jury: "Highly articulated drawings successfully communicated a simple concrete masonry shell that rises from the ground and hides a glowing, perforated metal burn-room for fire-fighting practice, and a display of historical images for the public that ventures up the stair."

Honorable Mentions for Design: (\$50 each)

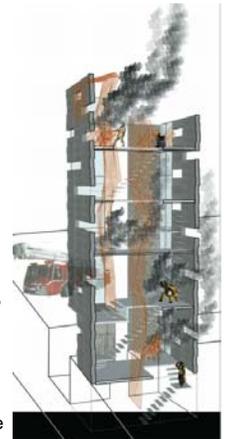
Kaitlin Miciunas

Matthew Huber

The jury sought to give two honorable mentions for general design excellence and outstanding graphic representation. Although not primarily about concrete masonry, both projects present strikingly poetic landmarks and intriguing variations on masonry and concrete.



Honorable Mention: Kaitlin Miciunas



Grand Prize: Adam Aviles



Runner-up: Karen Branick

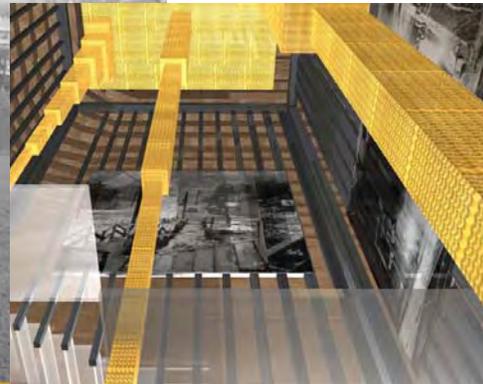
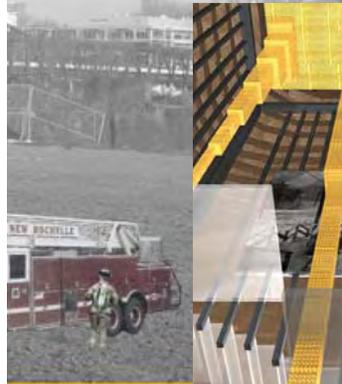
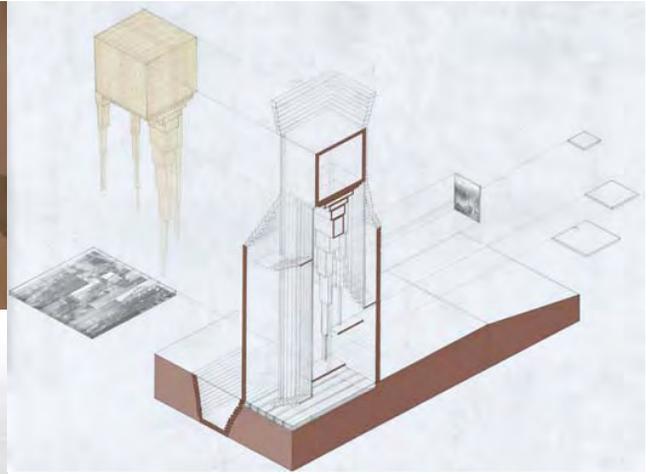
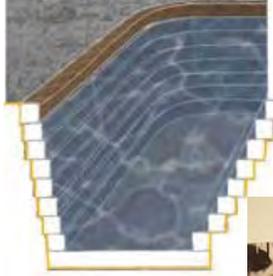
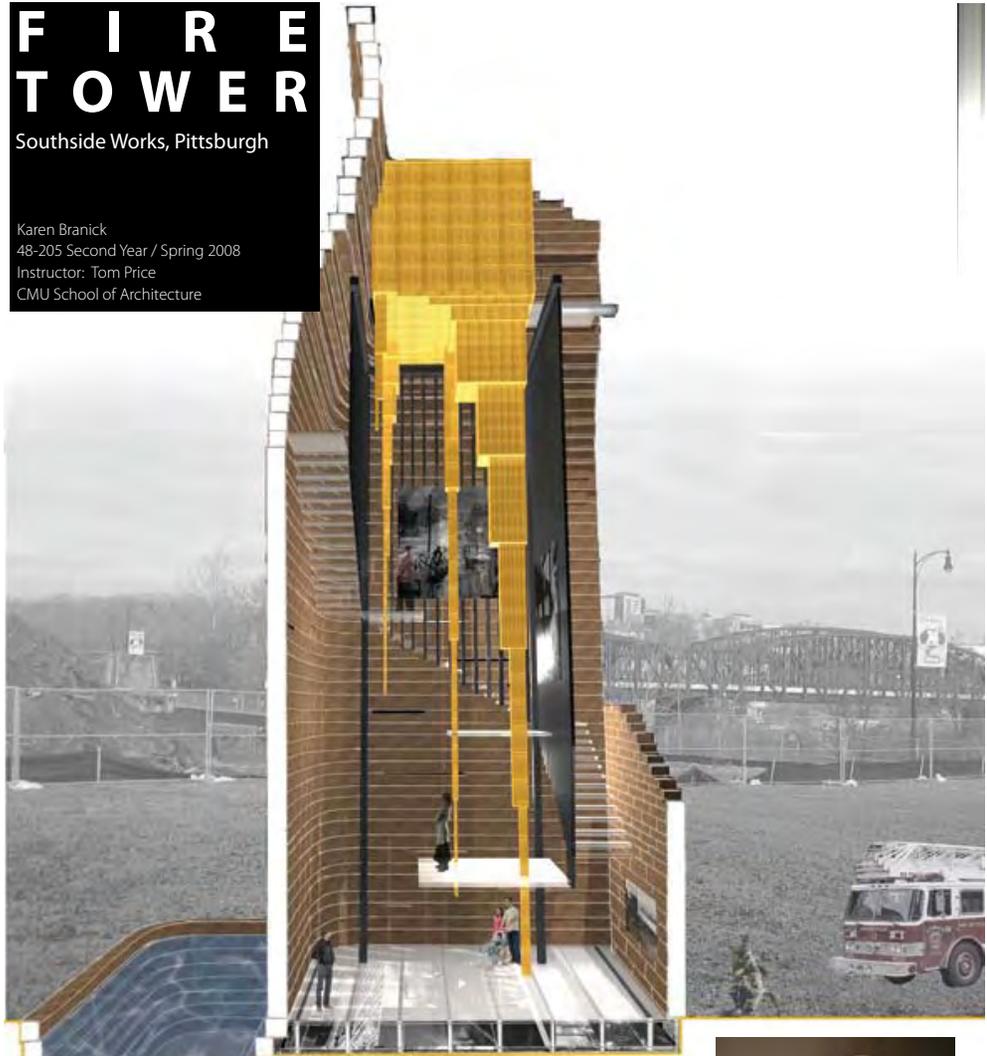


Hon. Mention: Matthew Huber

FIRE TOWER

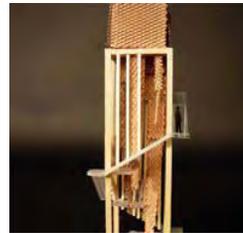
Southside Works, Pittsburgh

Karen Branick
48-205 Second Year / Spring 2008
Instructor: Tom Price
CMU School of Architecture



STATEMENT

As the Southside develops into a new commercial area, the history of the site is largely ignored. My fire tower provides both a functional space for firemen to train as well as a public space for the visitor to reflect on the industrial history of the site. The burn room, clad in perforated metal, glows when activated and "drips" into the interior core of the building. These drips provide a space for the fire to be ignited. The interior core is shielded from the newer, superficial Southside Works. Historical images within the core along with the limited views to the site encourage the visitor to reflect on how the site was in the past, how it is in the present, and where it may go in the future. As a visitor ascends the stairs, small slits in the brick wall provide light without offering a view out. Furthermore, the historical images attached to the steel stair supports are images mosaics. A visitor on the stairs would see a series of smaller images, whereas someone inside the core on one of the three "viewing platforms" would see a large singular image (composed by the smaller images).



Karen Branick

Architecture, Design & Materials Studio

Spring 2007, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(1/11/07)

PROJECT 1: A TEMPORARY LIBRARY

MINDSET: This is the beginning of a semester-long research and creative process to design a neighborhood library. Building on our investigation of composition, concept, and spatial experience last semester, we will undertake a more intensive exploration of the role that materials and assembly methods can play in creating a small piece of architecture. We will focus on the scale of the human body encountering the physical presence of building and books. We seek to explore how we can elevate ordinary construction to poetic expression, how real materials, structure, enclosure, joinery, craft, and building techniques can lead to the creation of significant architecture.

PROJECT: The Carnegie Library of Pittsburgh (CLP) has commissioned you to design a new library to serve Pittsburgh's Southside neighborhood. To inspire the research and exploration necessary to create any great piece of architecture, the CLP is first commissioning you to design a small, temporary library unit nearby, using a very limited palette of materials and simple assembly methods.

The temporary library will allow the CLP to serve its clients until the larger, permanent library is finished. A significant challenge will be to decide in what way a building--often thought of as permanent--can be "temporary", perhaps in how it is made, in its life-cycle, or in its subsequent reuse. This design should also allow you to do preliminary research into the urban context, the definition of a library, the place of books and information in our society, and how a careful choreography of materials & assembly methods can achieve these goals.

PROGRAM: Create a temporary library unit to display and circulate books and magazines. Although you should define your library's program, it must include computer terminals, space for reading, and a librarian's desk or workspace.

- Your library should include no more than 500sq.ft. of floor area
- Your library must sit on or above the ground (thus requiring minimal excavation or foundation work), and should be no more than 14ft tall (one main floor, though not necessarily all at one grade).
- The only site-service will be electricity. No water or bathrooms allowed.
- The main space of your library must be ADA accessible.

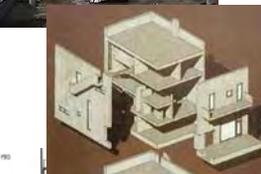
PROCESS: Work with your instructor and peers to plan a rigorous design process and schedule before you start the 5-week design. Create a process that will allow you to address in an integrated, iterative, and progressively more detailed manner, issues of identity and meaning, context and site, materiality and assembly, space and experience, openings and construction.

- In order to get quickly to the fundamental issues of how materials influence design, choose either a very limited palette of materials (1-2 main materials), OR a simple, well-established assembly method (e.g. masonry, post-and-beam with infill or cladding, panel construction, stud-frame construction, or tensile systems).

- Be sure the your choice of materials and assembly techniques are integrally related to the structure and spatial system for the main space in your library. Consider both the surface experience of the materials, and the structural principles implied, particularly in the spanning systems (no chipboard roofs!).

- You should develop a common sense understanding of the component parts, details, and assembly methods of your library. Consider purchasing or creating near full-scale models of your building materials to understand them.

SITE: The site of the temporary library will be on the empty lot at the NE corner of Carson Street and 11th Street on the Southside. The future neighborhood library will likely be built at the SE corner of Carson and 12th Street. Both are accessible by bus 54C from Craig Street.



Architecture, Design & Materials Studio

Spring 2007, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(2/8/07)

FINAL PRESENTATION GUIDELINES TEMPORARY LIBRARY (= PHASE I OF NEIGHBORHOOD LIBRARY)

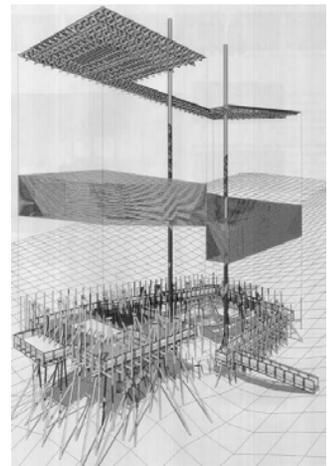
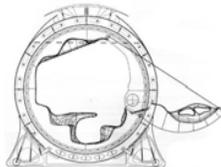
DUE: Sun. Feb. 18, 2006, 10:00pm, MM317

REVIEW: Reviews will be **Mon. Feb. 19 & Wed. Feb. 20, 1:30-5:00.**
Lubetz & Wolff Studio in MM203; Damiani & Calisti studio in MM313.

OVERVIEW: ABOVE ALL, REMEMBER THE PURPOSE OF THE PROJECT: TO CREATE A TEMPORARY LIBRARY THAT INVESTIGATES MATERIALS AND ASSEMBLY AS A MEANS OF CREATING SIGNIFICANT ARCHITECTURE and EXPERIENCE.

1. **Plan** (1/4"=1'-0") Plan of the entire project, including any site features you are creating
**** All plans MUST clearly indicate the programmatic features of your library, as well as details of how materials, wall-thickness, etc. create rich experiences.**
2. **(Long Site) Section** (1/4"=1'-0"). Section through the main space and the entire site.
**** All sections MUST include a human scale figures, and should show books to scale**
3. **Model** (1/4"=1'-0"). Model of the entire project at the same scale for ALL studios/students.
**** All models MUST include evidence of a) specific materials; b) ground plane surrounding the building's footprint, and c) scale figures; d) all site features and design**
4. **Large Section or Large Sectional Model or Building Detail** (sections 1/2"=1'-0" or bigger; detail 1 1/2"=1'-0") Section through the main space of your library, or detail of a construction element. **** Make clear the materials and construction techniques. Render the INTERIOR space in the background of your section.**
5. **3-D "Component" Drawing** (no min. scale). A detailed drawing showing how the specific components of the building, from building elements like walls, to specific materials and assembly schemes, create space and experience. Possible drawings include: 1) exploded axonometric; 2) cinégram or storyboard of the construction sequence; 3) sectional perspective or cutaway that reveals underlying structure, systems, possibly showing both interior and exterior. **** This drawing is among the most important that will make your project "understandable," and more than just an image. It should reveal every piece of material and equipment needed to construct your mobile library. If you can not imagine how to make something, reduce the complexity, so every piece is clear to you! ****
6. **Perspective(s)** showing the EXPERIENCE / PERCEPTION of materials, space, light, views of the interior & exterior of your building in a hypothetical context. **** Work to make the seven senses come alive!**
7. **Other:** Your scheme or studio instructor may require other drawings or objects, including diagrams, interior perspectives, models at other scales, collages, materials samples, etc.
8. **Project Documentation** for GRADING, website, and portfolio:
DUE: Fri. Mar. 2.

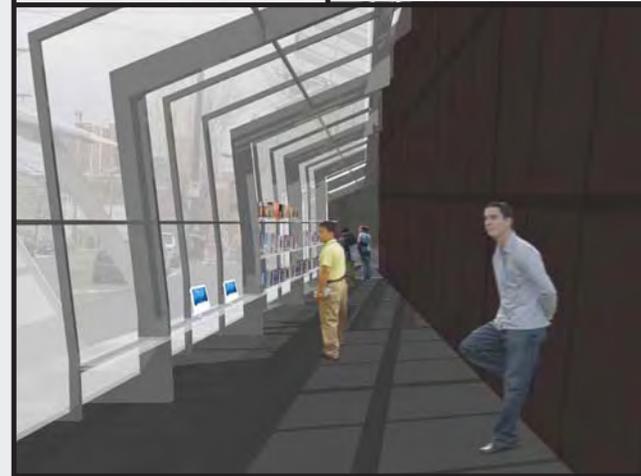
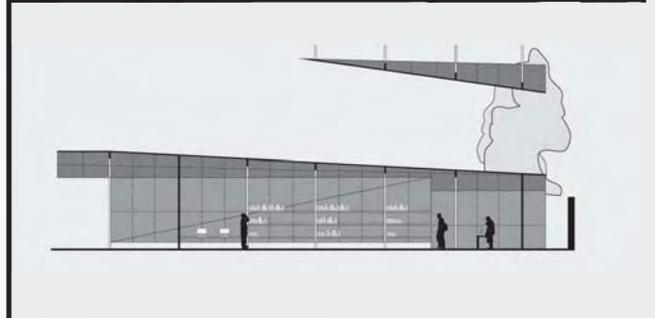
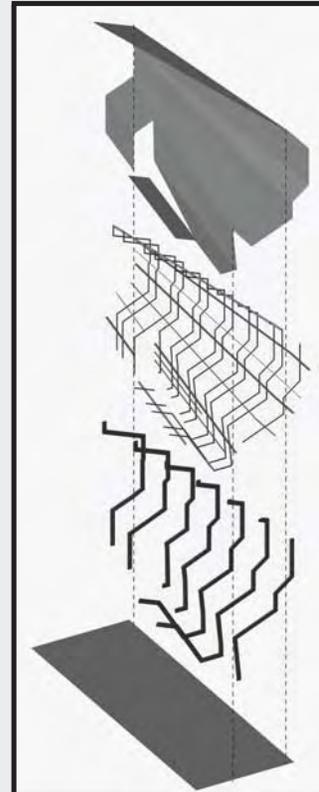
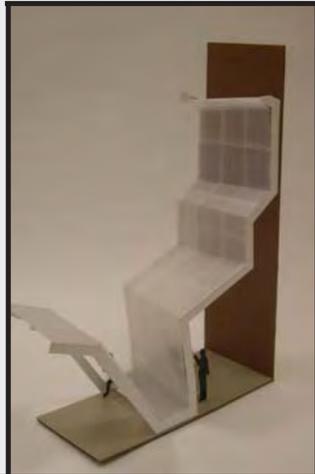
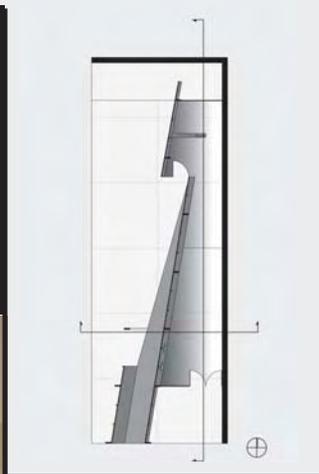
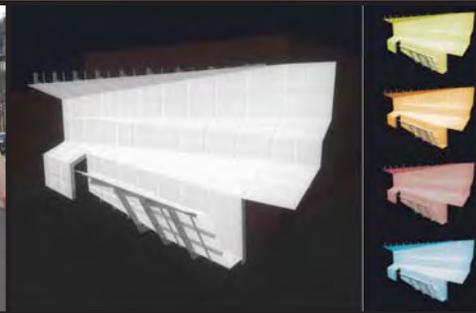
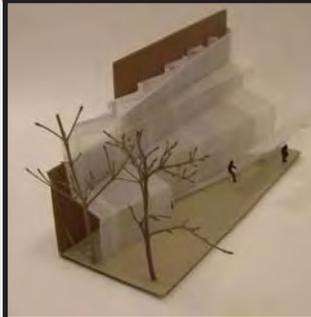
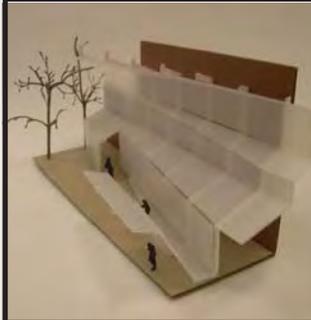
All requirements are minimums. Instructors may assign more items or larger scale work. ALL WORK to be presented on 44"x88" vertical panels, suggest 22"x22" MINIMUM paper size!



TEMPORARY LIBRARY

Pittsburgh, PA

Craig Rosman
48-205 Materials Studio / S07
Instructor: Arthur Lubetz
CMU School of Architecture



Concept Statement

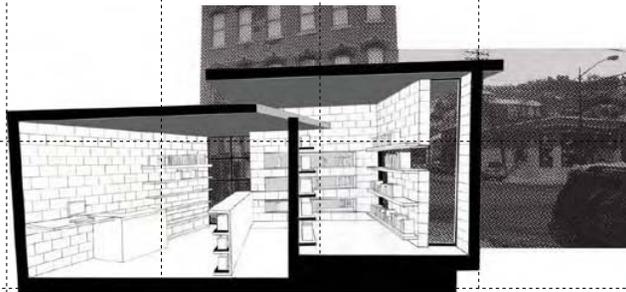
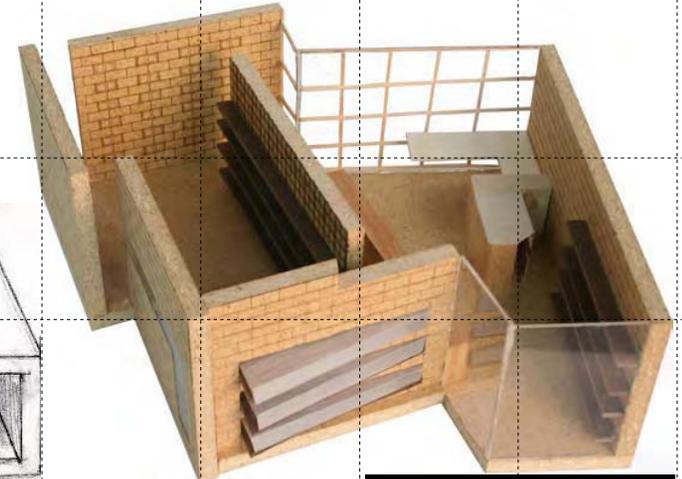
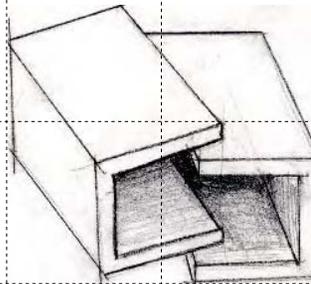
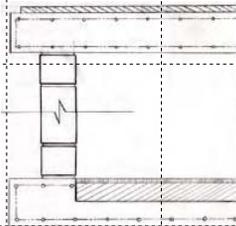
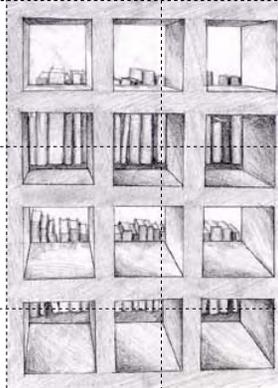
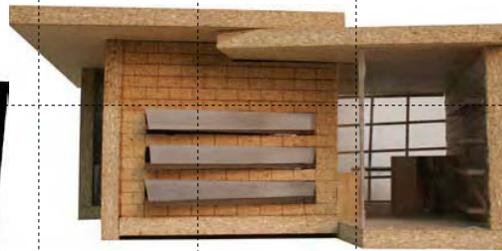
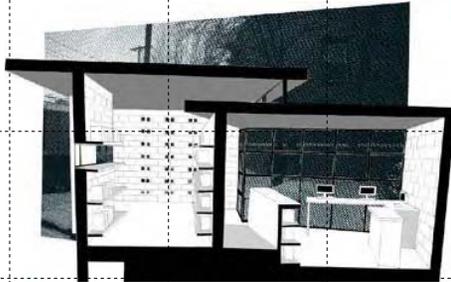
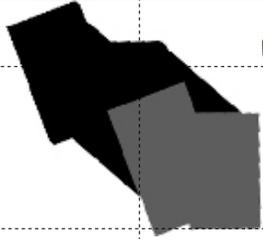
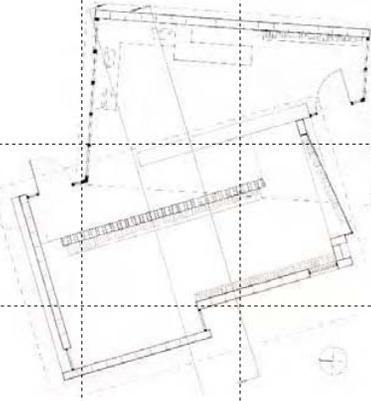
The passage of time can be perceived as the linking together of memorable events. In this reading, an immeasurable lapse of time/space exists between two moments. The site, context, and program of the temporary library provide many such situations for edges, gaps, and overlaps of space. This place can be read as an edge between the horizontal ground plane and vertical building plane, a gap between sky and earth, an overlap between traditional and new sources of knowledge. The proposed library investigates these conditions and their inherent instability and impermanence. The polycarbonate screen blurs the context and camouflages itself against the wall. The interpretation of the space inside fluctuates as one progresses through it, defining an experience through motion and not appearance.

Craig M. Rosman

TEMPORARY LIBRARY

Pittsburgh, PA

Diego Taccioli
48-205 Materials Studio / S07
Instructor: Lee Calisti
CMU School of Architecture



STATEMENT

Being given a temporary library I designed around the idea of creating an inviting public place in order to maximize its use during its time. I did this by separating the library into two main spaces, one of which continues the Southside grid, and the other is shifted west facing the city limits. The facade of this shifted space is directed toward coming visitors and welcomes them. This shift creates a hierarchy of space within the library which is divided by a wall composed of concrete block. The block is oriented as shiners in order to partially reveal the more secluded space which houses the books and seating.

Diego Taccioli

Architecture, Design & Materials Studio

Spring 2007, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307
(2/23/07)

PHASE II: NEIGHBORHOOD LIBRARY & GYM

MINDSET:

This project should continue your research and creative process from Phase I, the "Temporary Library." We shall deepen our investigations on the role that diverse materials and innovative assembly methods can play in creating a small piece of architecture, with a more complex program. We will maintain the focus on the scale of the human body encountering the physical presence of building, and continually explore how we can elevate ordinary construction to poetic expression, how real materials, structure, enclosure, joinery, building and craft techniques can lead to the creation of significant architectural experiences. As a capstone to the 2nd year studio, we will extend the length of this project in order to allow for a more thoroughly detailed exploration of your design, both in how the materials are used, and the power of the final presentation.

PROJECT:

Based on the success of your "Temporary Library" on the South Side, the Carnegie Library of Pittsburgh (CLP) has commissioned you to design a combination neighborhood library and gym, on a nearby site. Your design should integrate 1) a small, fully-functioning, modern library that inspires the discovery of knowledge for all residents of the South Side, with 2) a covered ½ basketball court that will supplement the neighboring public park. The project is meant to build on, and update, the CLP's long tradition of combining important social and cultural functions to serve and appeal to a broad section of the community (including a library, gym and theater in the first CLP). An important part of your charge is to establish how and why two disparate functions can strengthen and reinforce each other through a careful and thoughtful use of materials, assembly and architecture. How body and mind can both be exercised to achieve a whole greater than the sum of its parts.

PROGRAM:

Primary Functions:

Library (2500 sq.ft max):
Circulation Desk
Computer Terminals
Stacks/Special Collections
Reading Areas
1/2 -Court Gym:
Court to be 47'x50'
Easy access to park

Support Spaces:

Men's toilets (1 handicap accessible stall, 1 urinal)
Women's toilets (1 reg. & 1 handicap accessible)
Staff space (a common workspace)
Small storage space for gym equipment.
Circulation space, including handicap accessibility to all spaces, 2 means of egress from all floors, and "controlled" entry and exit points.
Parking will occur on the street.

SITE

The site is parcel #15 on the corner of Carson & 12th Street. The building must fit entirely on the site. Students should establish a firm position regarding the building and its relationship to the sidewalk, the park, and the larger urban context. How is the context for this site different than the one a block away for the temporary library? How does your building engage the particular context? Why?



PROCESS / REQUIREMENTS

In order to promote a synthetic and integrated design process that constantly works at multiple scales (from the site plan to the construction detail), as well as in multiple modes of representation (model, plan, section, perspective), and strives to integrate conceptual ideas with physical construction, students will be asked to come to an early resolution about their basic library-gym concept, building parti, and detailed materials selection. Throughout the design process, the building must be designed alongside its presentation to the public!

DESIGN SUMMARY:

All students must prepare and submit a "Design Summary" of their designs as part of the first mid-review on **Mar. 26 & 28**. The 2pp. "Design Summary" should be submitted as a printout and a pdf to coordinator & instructor. It should indicate the design of the building, and begin to indicate the most clear and effective means of presenting the idea and details. It must include at least: a) a site plan; b) a 3D massing drawing; c) plan and sections; d) a 3D construction drawing; and e) a 100 word statement about the central concept for the library, especially the use and meaning of the materials and assembly.

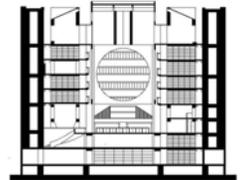
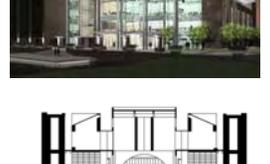
CARTOON:

The rest of the semester will be spent flushing out, intensifying, detailing and communicating designs with ever greater clarity, depth and creativity. Substantial deviations from the first "Design Summary" will impact the depth to which you can carry out your design intentions. Since this project represents the culmination of the 2nd year studio experience, you will be expected to consider more independently than before what drawings and models will best represent your idea at all phases of the project. In discussions with your instructor and the coordinator, you should work to determine your own "Final Requirements." Work to create a memorable presentation with respect to effort, composition, knowledge about M&A, creativity, and inspiration of your work. For the 2nd mid-review, on **Mon. Apr. 9**, every student will be required to submit a detailed "Cartoon" of their final presentation. It must contain miniaturized versions of the actual drawings (NOT just a rectangle indicating drawing size), showing relationship between drawings, and indicate what the particular contribution is of each drawing.

In parallel with this project, all students enrolled in Prof. Steve Lee's "M&A" class will be required to consult Steve in order to strengthen their understanding of structure and the construction process of their particular design, and to communicate these through large-scale details, mock-ups, and assembly drawings. In addition, all students will be expected to submit a thorough "Project Documentation" for use on the class website and School Archives.

Louis Kahn:

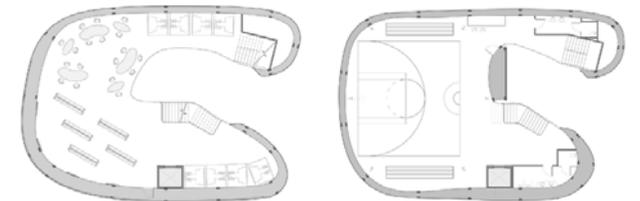
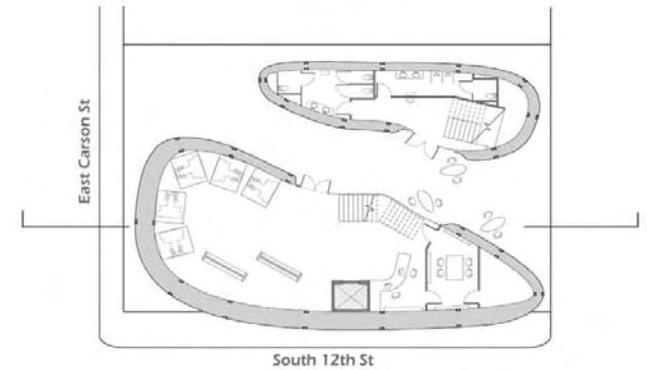
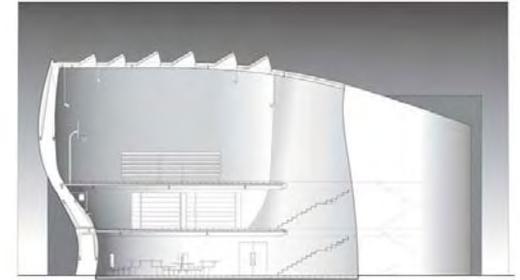
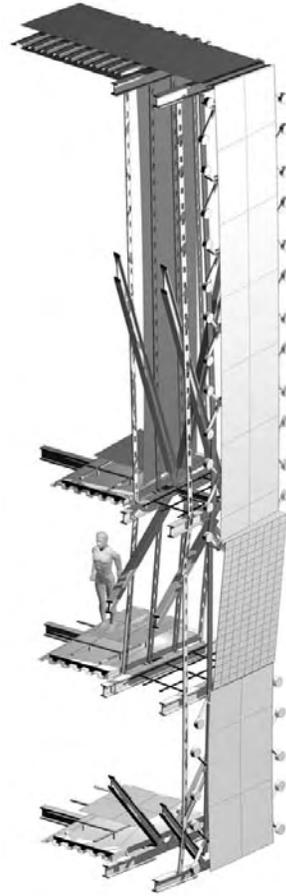
"A man with a book goes to the light. A library begins that way"
"Architecture is the threshold where silence and light meet. Silence with its desire to Be, and light the giver of all presences."
"A great building must, in my opinion, begin with the unmeasurable and go through the measurable in the process of design, but in the end be unmeasurable."



NEIGHBORHOOD LIBRARY-GYM

Pittsburgh, PA

Misha Varshavsky
48-205 Materials Studio / S07
Instructor: Gerard Damiani
CMU School of Architecture



STATEMENT

Surfaces are the focus in Pittsburgh's Southside Library-Gym. An exterior of mirror-finished stainless steel sparks a new awareness of the immediate corner condition to passersby. This reflective surface is then interrupted by a band of LCD panels displaying virtual images of signage, neighborhood announcements or events, activities occurring inside, or views to locations around the world. The architecture thus attempts to connect both on a local and global scale.

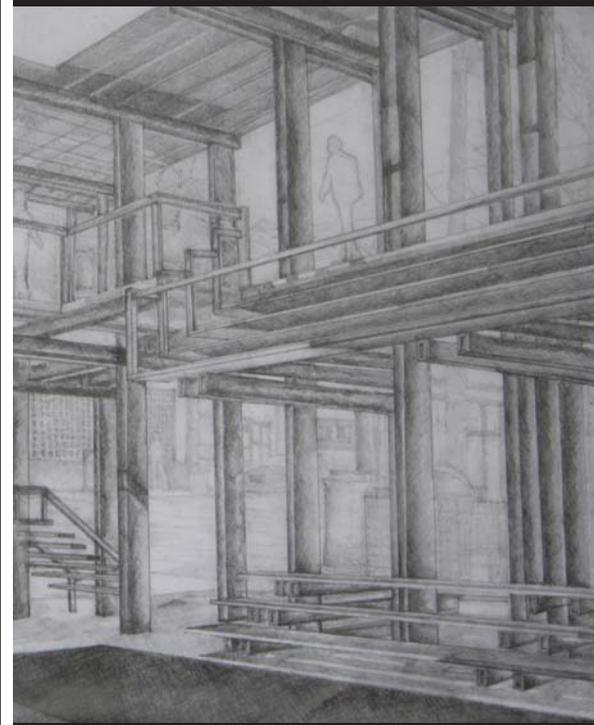
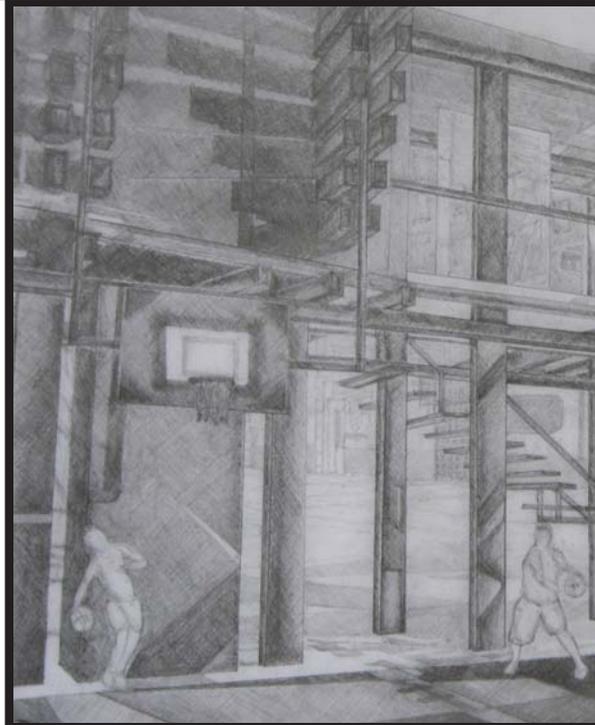
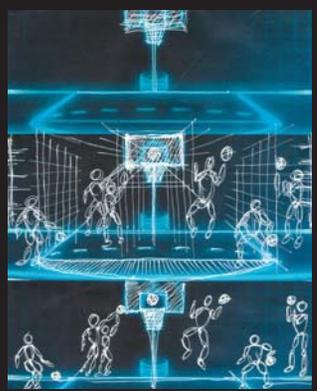
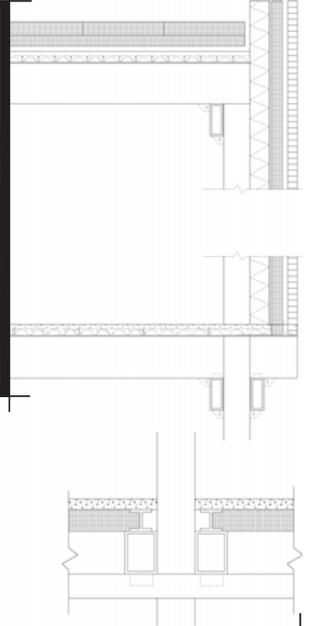
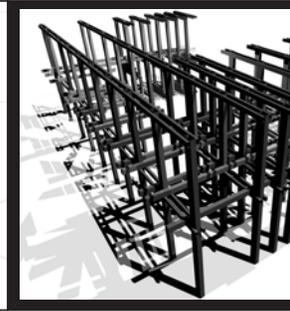
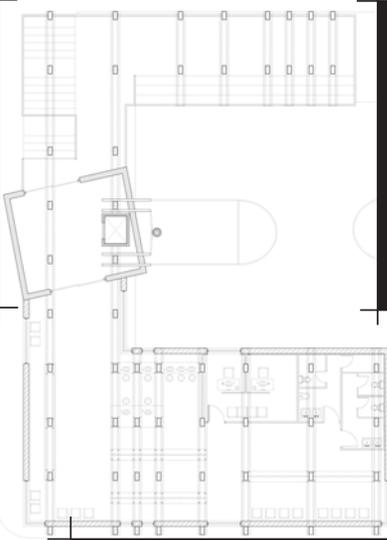
Virtual surfaces are also found inside physical private reading spaces and stacks. These trigger spontaneous interactions between visitors by providing surveys, quizzes, and image projections to acquaint two strangers with each other and hopefully prompt them to read together at the public tables. Clear acrylic panels painted matte white constitute the interior surfaces to maintain continuous curvature. The paint on this surface fades away for light to penetrate in from the courtyard form intrusion. Detail considerations aim to hide all structure such that the surfaces prevail both conceptually and experientially.

Misha Varshavsky

NEIGHBORHOOD LIBRARY-GYM

Pittsburgh, PA

Rachelle Roll
 48-205 Materials Studio / S07
 Instructor: Lee Calisti
 CMU School of Architecture



STATEMENT

The proposal for a neighborhood library and gym started when the framework of the steel tubed structure was distributed on the site. The densities of columns allowed and shielded views into the park. Visually connecting the park and the library while giving the basketball court its own privacy. The structure also acted as an acoustic connector when it interrupted the threshold between the double door entrance into the library. This threshold reminded and enhanced the public atmosphere of the corner condition as well as emphasizing the privacy of the library. The intensity of the structure, created rows of views that led the visitor through the site. The structure also enable the sounds of the physical activity occurring on the basketball court to be translated into the library, physically connecting the two programmatic elements. The visitor is constantly reminded, visually as well as acoustically, of the dual performances occurring on the site located at East Carson Street and 12th Street, in the South Side.

Rachelle Roll

Architecture Studio: 2nd Year Spring, S'08

Spring 2008, CMU, Arch #48-205, M/W/F 1:30-4:20
Class Website: www.andrew.cmu.edu/course/48-205

Coordinator: Kai Gutschow
Email: gutschow@cmu.edu
Off. Hr: M/W 12:30-1:30pm & by appt. in MM307

(2/22/08)

Proj.4 - SOUTHSIDE RESEARCH CENTER

MINDSET:

Reuse: Much as in Proj.1, this project demands that you reconceive an old industrial site: in this case a former manufacturing shed. Your aim should be: 1) to create an architecture that reinhabits, reuses, renews, and re-visions, rather than tears down and starts anew; 2) to rethink and engage critically with the past & present, so that you can envision and inspire the future;

- Context: Work with the site, not in spite of it; draw out the opportunities of the old building and specific site in order to intensify our understanding of what the existing building is, and how to point it to a better future.

- New Paradigm: The building is a remnant of the "manufacturing age," an age that has slowly given way to an "information age." The world today is governed by knowledge and information, which are created through research. You should use your program as a vehicle for investigating what research is, and will be, for projecting a new architectural vision of what that research will bring to our lives; and for proposing the next life of this building.

- Materiality & Making: Unlike information, human beings and architecture remains wedded to the material world. Architects are in the business of materializing ideas, not just giving form to them, and as a result should develop a passion for "making." Use this project to deepen your explorations on how diverse materials and innovative assembly methods can create a small piece of experientially rich architecture.

- Communication: This project is the capstone to the 2nd year studio; use this opportunity to deliver a more detailed exploration of architecture than before, both in terms of how materials are assembled to create experiences, and how to communicate these ideas most powerfully in the final presentation.

PROJECT:

- Your charge is to insert a small "research center / library" into the old J&L manufacturing shed on Pittsburgh's Southside.
- The new structure can be located anywhere inside the old shed, and any part of the old shed (such as pieces of the facades, structure, or roof) can be removed to reveal or intensify the use and experience of the new research center; as long as it meets the reuse/recycle "mindset" criteria above.
- The maximum floor area of the new research center should be 3000sf.

PROGRAM:

Each studio will focus on a different kind of research and subject matter, but the underlying program spaces will be the same for all research centers:

- storage space(s) for research materials such as books, data, artifacts, or whatever other information and substances are being researched;
- research space(s) for engaging with the research materials, such as a laboratory, a reading room, or processing center;
- public interface space(s) that mediates between the operations of the research center and the various contexts in which it operates: the rest of the industrial shed, the streets surrounding the site, the Southside, etc.
- support spaces, including: a) men's & women's toilets (1 handicap accessible stall + 1 regular stall); b) staff office space; c) circulation space, including handicap accessibility to all spaces, and 2 means of egress from all floors; e) mechanical equipment spaces.

Use your studio's particular research program, in combination with your own specific architectural vision, to craft a more specific program brief that assures pieces come together to create a whole that is more than the sum of its parts.



Pinnas



Herzog & De Meuron / Schaubjager



Air & Space Museum



Boullée, Library



Materiality, Site Photos

SITE: Pittsburgh's Southside Sites for Proj.1 & Proj.2



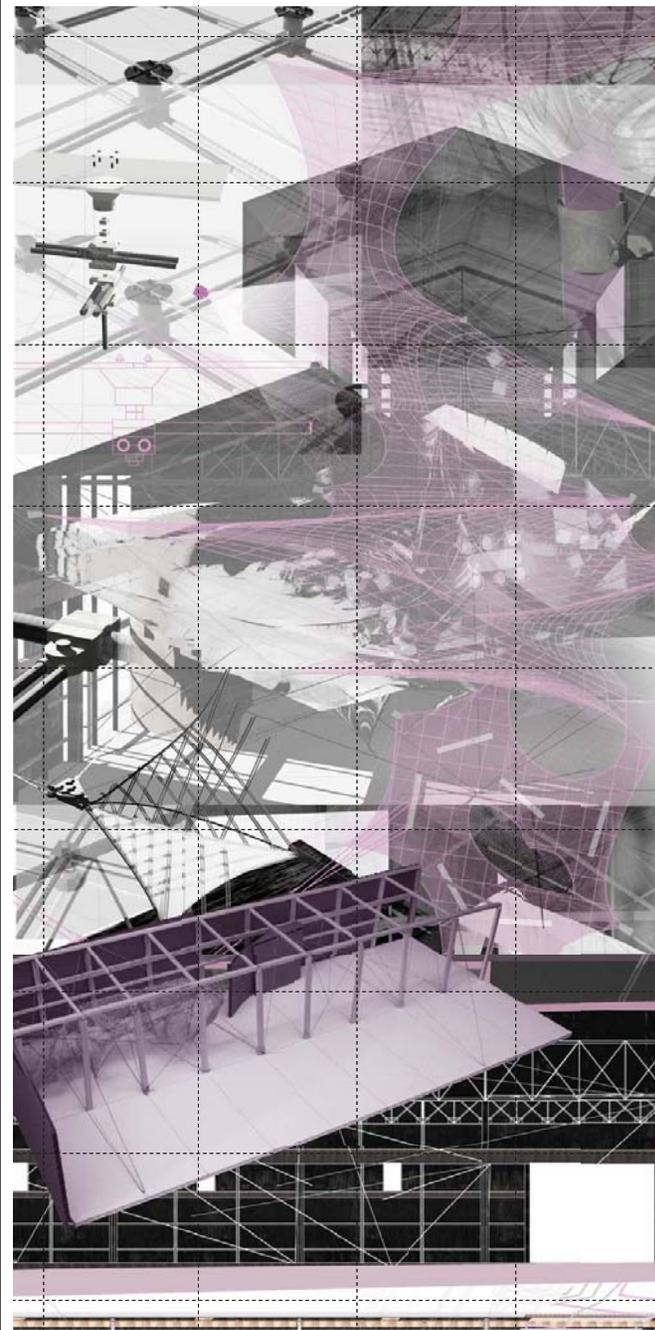
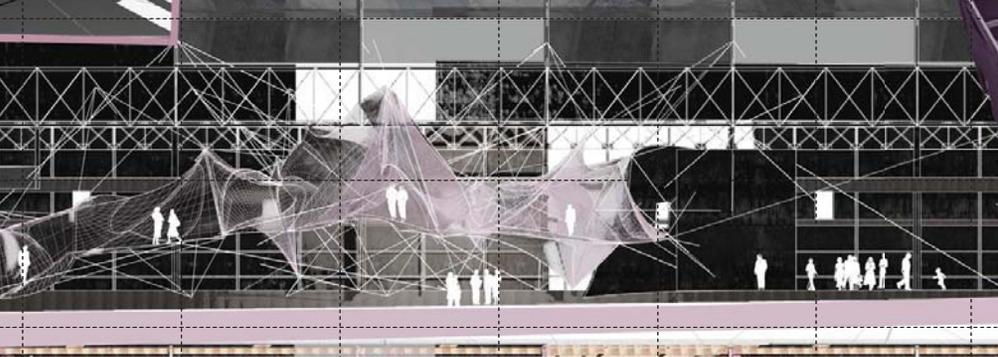
SITE - Jane St. btwn 26th & 27th - Former J&L Steel Manufacturing Shed, presently used for storage



RESEARCH CENTER

Southside Flats, Pittsburgh

Matthew Z Huber
48-205 Second Year / Spring 2008
Instructor: Art Lubetz
CMU School of Architecture



STATEMENT

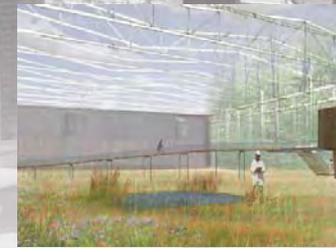
The very nature of research – of discovery, of interpretation, of exploration – requires an active “searching”, a seeking of knowledge, found not in the immediacy and homogeneity of a singular image, but in the accumulation of difference – of comparison, of contrast, of reevaluation. Today, information disappears into technological nothingness. The new hovers in stark contrast to the old, suspended from the industrial shed, light and ephemeral. Additionally, the inexorable, peripatetic path to understanding, imbeds itself in temporality and juxtaposition: architecturally, the traversing of space through time – experienced through the motion of the body and shifting perception of vision. By collapsing the three dimensionality of form to the thinness of a cable, the stationary image is flattened to obscurity. The cable-net structure clad with flexible plexi panels engages the body through its deformation, varying for programmatic accommodations. Spatial ambiguity arises in the oscillation between the cables and the membrane, and is further emphasized through projections of bodies in motion, reinforcing bodily awareness. By replacing the purity of vision with the raucous interchange between haptic movement and the sublime sensation of excess, an active searching, the ephemeral negotiation of information, is achieved.

Matthew Z Huber

RESEARCH CENTER

Southside Flats, Pittsburgh

Karen Branick
48-205 Second Year / Spring 2008
Instructor: Tom Price
CMU School of Architecture



STATEMENT

The current model of the urban environment lacks an adequate amount of green space, depriving cities of the sustainable benefits of nature, including enhanced air quality, sun filtration, and also emotional benefits. As urban infrastructure continues to be abandoned in cities, local communities face the challenge of how to reuse these buildings. My research center proposes to establish an urban park within this industrial shed as a model of how urban infrastructure can be reused to create sustainable gathering spaces for communities. Over time, the vegetation in the park would overtake the shed and the inserted program spaces as well. A visitor to the park travels on a wooden path that weaves through different environments and vertical levels, giving the visitor the unique opportunity to explore the special qualities of the tree canopies and shed structure. The path transforms to create the public programmatic spaces, including a small reading room and a cafe. The private spaces of the research center are shielded from public view through the use of reflective glass walls that camouflage the building into its surroundings. The main research area and library in the center are exposed to public view to allow visitors to watch the sustainable research occurring inside.

Karen Branick