ARCH 48-200
Architecture Design Studio: Composition

Carnegie Mellon University
School of Architecture
Fall 2008

PROJECT 2b – A Museum Annex to the Mattress Factory

For the remainder of the semester, you will be involved in an extended exploration of a complex cultural program dedicated to the arts in a dense urban setting. You are to design a small but innovative exhibition center for an evolving institution, the Mattress Factory. The building must enrich the visitor's understanding of the relationship between space and works of art. There will be several agendas in this project:

- A focus on conceptual IDEAS in the arts and design METHODS in architecture as a way of composing and shaping memorable experiences for visitors to a work of architecture.
- A focus on the role of the PROGRAM and the process of determining the hierarchy, adjacency, intensity, and quality of each space as an integral part of the design process.
- A focus on the urban setting, the implications of a SITE and its context, and understanding the influences of architecture on the surrounding city and vice versa.

It will be crucial to develop an investigative design process that allows you to synthesize solutions for a wide array of complex issues in a systematic and progressive way, making and exploring important decisions along the way. With such a complex program and site, you need to develop your approach methodically.

The Site and the Mattress Factory's Mission
You will be adding an annex to the Mattress Factory (www.mattress.org), an institution founded over thirty years ago to promote and display site-specific installations by artists. The museum expresses its mission through its activities.

> *Created on site by artists from across the country and around the world, our unique exhibitions feature a variety of media that engage all of the senses.*

The museum houses a collection of site-specific contemporary art, much of which can be occupied—artworks that are rooms. The museum also houses the artists themselves, who take residency in the neighborhood and are supported while they explore, experiment, and produce the site-specific works. The Mattress Factory building is a reused industrial brick structure nestled in the fabric of the Mexican War Streets, in Pittsburgh's North Side. This historic neighborhood has a well-defined scale and a tight network of streets. The museum's site is located between Jacksonia Street and Sampsonia Way, a narrow alley that provides a front entrance. The Mattress Factory has expanded its presence on the alley through outreach projects on neighboring properties, making the alley a part of the museum experience.

Conceptual and Design Issues
You should keep many issues in mind as you approach the project:
- Building a container for artwork and the possibility of creating a dialogue between artworks and architectural space.
- Engagement of the senses, experiences for building occupants and urban neighbors.
- Natural light as a building material.
- Organizational structure and actual structure.
- Entry and the sequence through the building.
- Central spaces, organizing devices, links between floors, spatial continuities.
- Defining the street, alley, and/or other public open spaces or gardens on the urban site.
- Connections through the site (the street level and alley level are different) and from the annex to the existing museum.

Program

Gallery spaces for temporary, site-specific installations **2,500 SF**
The indoor exhibit spaces (you may define how many) should be flexible to allow a great variety of installation types, including surfaces for wall-mounted objects and open space to place partitions, sculpture, or display cases. The Mattress Factory encourages artists to adapt spaces for their site-specific pieces. In its mission, the museum seeks to promote art where spaces are—or become part of—the artwork. Designing for this condition poses a challenge. Should the space be generic, thus allowing artists to transform it? Or should it be diverse and specific to give artists a context with which to work? Spaces should range in scale and height to provide the possibility for large works in bigger spaces as well as small works in intimate settings. In addition, these spaces should be clearly linked horizontally, vertically, or diagonally into a carefully choreographed sequence for the museum visitor. They can be open to each other, or separated by moveable partitions, doors, or short circulation spaces such as corridors or stairs. You may wish to have connections to existing museum galleries as well.

One additional gallery space dedicated to a permanently installed work **500-1,500 SF**
Choose a work of art (or possibly a few works if the pieces are smaller) by the artist you studied in the research phase. While all works at the Mattress Factory are designed for a specific space by the artist, in this case you will reverse the process: designing a space for an existing work of art. Consider this gallery to be dedicated to the artist. Thus you must address how the architecture and experience of space responds to the specific concepts and perceptions engendered by the work(s). You must consider the way the viewer approaches the piece, the lighting conditions, the sequence of movement, and connections to the outside world. The scale and material qualities of the space must be conceived in concert with the work itself.

One outdoor exhibition space **As Required**
This exhibit space may be exposed to the elements. It could be located on the roof, as a large balcony, as an open space partially nested in the building volume, or on the ground as a garden. The outdoor space can be any size, although it should be large enough to hold a reception for twenty-five people alongside site-specific installations.

An entry space, lobby, and public program **800-1000 SF**
As part of your proposal, you are encouraged to rethink the public program on the ground level of the existing museum and imagine how it might work with the ground level of your addition. The Mattress Factory would like to expand (and possibly relocate) its museum store and café, while reconfiguring its arrival and entry setup. Your expansion of the entry space should clarify the relationships among these various program elements. It should connect to the various galleries and provide a memorable entry sequence from Jacksonia Street and Sampsonia Way. It should also connect to any gardens or courtyards in your proposal and be amply illuminated by natural light. The entry level must provide the following services: a ticket and information counter, an area for a group to gather and individuals to sit, and a coatroom.

Building services and support spaces **As Required**
The annex may rely on existing museum services in the original building. However, the following new services are required: a mechanical room of 400 SF; at least one women's and one men's handicap accessible toilet. Vertical circulation (two means of egress and one elevator) is required, including ADA accessible circulation to all the rooms in the museum (vertical circulation provided by elevator or ADA-approved ramps).[1] The annex may rely on existing vertical circulation that meets these needs.

[1] The Americans with Disabilities Act (ADA) guidelines require a slope no steeper than 1:12 — one foot change in elevation for every twelve feet of length. This means you need one foot of run for every inch of rise. You are permitted to make ramps with a more gradual slope. Public buildings require two means of egress from every primary floor for fire and emergency situations. Ordinarily, a museum like this would be subject to many more code regulations. Because this is your first complex program, you are encouraged (but not required) to investigate and include egress and ADA standards in your building.

Process

This is a complex project that deserves a layered and sophisticated design process. Over the coming week, you should have a three-part strategy for design thinking:

- First, synthesize the knowledge you gained from your research into the existing museum and your artist's work. Think about the ideas and methods at play in each. Study the role of the viewer and architectural space in relation to works of art. Expand upon your understanding of the conceptual ideas inherent in the works you studied. Explore how they might influence your work and approach.
- Second, you should explore the contingencies of the urban site, which includes the existing buildings and public spaces of the city's fabric. Examine how you might occupy and alter the site—and how you might impact the urban realm around you.
- Third, consider the program to be a mechanism for social and experiential design. You should review the program carefully, prepare diagrams of the relationships of parts, and explore the possibilities to charge the numerical requirements with conceptual purpose. You should expand your design thinking to include ideas about light, material, experience, structure, and space in relation to the needs of the program.

Project Deadlines

A mid-review will occur on Monday and Wednesday, November 10 and 12, with a submission deadline on Sunday, November 9 at 10:00pm. The final review will occur during the week of December 1-5. All final drawings must be completed by **Tuesday, November 25 at 8:00pm**. At this time you will be required to submit 11x17 prints and a digital file of your work. You may not work on any drawings after this date (the set you submit must be a reduced copy of your final drawings exactly as you will hang them for the final review). You may plot at any time before or after this deadline, however it is strongly encouraged that you plot in advance of leaving for Thanksgiving break. After this deadline, you will be permitted to work on your model only, and may do so until **Sunday, November 30 at 11:00pm**, when models must be submitted for final check-in. All plots must be complete at this time as well. The goal of this schedule is to allow you to work intensely before the break, to spend some restful time with family, and then to have time on Sunday to wrap up any last details on your model or to plot. Reviews will begin on Monday, and no work of any kind will be permitted after Sunday's deadline. Some students may be required to pin up on Sunday night. Those who miss any of the deadlines risk substantial deductions in final grades. Those who continue working after the deadline risk failing the course. If you are unable to check in your model on Sunday evening, you must leave it on your desk and arrange to have a classmate check it in for you.

Requirements

The overall presentation should be carefully composed of an integrated set of technical and experiential drawings, as well as computer and physical models, likely at 1/4-inch scale. A list of final presentation requirements and the review schedule will be distributed after the mid-review.

Preliminary Schedule

Wednesday, October 15	**DUE: Submit two hard copies of research assignment drawings in studio** Upload individual analysis drawings as PDFs to Blackboard by 8:00pm *Submit to folder labeled "Diagrams"* *The file name for your PDF (2-3MB at most) should be:* *Instructor'sLastName--StudentLastName_StudentFirstName.pdf* *Example: Pasnik--Doe_John.pdf*
Friday, October 17	Fall break (visit museum over weekend)
Monday, October 20	**DUE: Tasks 1-4 as listed below** Meet with faculty in studio
Wednesday, October 22	**DUE: All group site documentation must be complete** **DUE: Task 5 as listed below** Meet with faculty in studio

Task 1 – Site Visit

The museum (at 500 Sampsonia Way) is accessible via the 500 bus, which runs from Forbes to several stops near the museum (the trip is approximately 35 minutes). The best stops are along North Avenue, because you can walk through the gridded streets northward until you hit Sampsonia Way (approximately three blocks north). Make sure you bring a map. When visiting, you should remember you are in an unfamiliar urban place. As such, we recommend that you travel with classmates and visit during daylight hours. You should walk around the neighborhood to get a feel for its scale and the types of public life that occurs nearby. Plan for time to see the exhibits (the permanent installations such as Turrell's three pieces as well as *Inner and Outer Space*, the current show). You should return several times during the remainder of this project. In order to access the site, you must visit during regular museum hours, **Tuesday-Saturday 10:00-5:00 and Sunday 1:00-5:00**. The museum has asked that students **avoid visiting on Thursday October 16**, as there will be many other groups on site that day. You should be prepared to document the site (bring tape measure, camera, sketchbook, etc.) as necessary for your studio.

Group Site Documentation: Each studio should organize itself to prepare common, shared digital documentation, including a site plan, plans, site sections, elevations, photography, and a computer model of the site and area. Agree to divide tasks, coordinate drawing and software types, and share resources with one another. Organize yourselves with your faculty member prior to site visits. Complete all group documentation by Wednesday, October 22.

Task 2 – Site Analysis

Analyze the site based upon your visit and research into the neighborhood and the institution itself. Draw a series of diagrams that demonstrate important relationships and forces that you have discovered on the larger site (not just the area you are permitted to build on, but the areas surrounding as well). Think about the types of connections you wish to make on the site and draw a representation of these. What views are important? What pedestrian links between the alley and street are possible? How will you integrate the lot you build on with the spaces around it? How will you react to the existing outdoor garden, designed by Winifred Lutz? What areas will you preserve and what areas might you modify, contain, shape? What other landscape elements are important to retain? How will you address the sectional qualities of the ground as well as the relationships to building masses adjacent to your buildable lot? How will you connect to the existing building? What issues of orientation and light are important to consider? What approaches to the site will you engage with? Study the extents of the lot provided to you and understand what areas you might build on within this and what areas you might program as open space.

Translate and Diagram: Once you have narrowed to a series of questions that are most important to you, prepare at least FIVE DIAGRAMS in plan, section and/or axon that document these issues. The diagrams should help you shape the site, determining important nodes of activity, essential connections, and how the massing of the building can be shaped to support these considerations. Refer to the diagrams on the course website for further inspiration.

Task 3 – Program Exploration

Analyze the attached program in detail. As you read, take visual notes of ideas for each space by sketching approaches to natural light, connections between spaces, scales of spaces, locations and orientations, characteristics of spaces, etc. Consider how this museum compares to the one you have studied in the past, and imagine how you might transform this list of information into three dimensions. Use a drawing or modeling system to chart relative sizes of each space. The simplest one is drawing a series of separate boxes with correct square-footages on paper, on the computer or in a physical model. Try to include ideas about adjacency (what is next to what), light (direction, amount), views (enclosed or open spaces), materials (dense and closed compared to light and open), and general spatial quality (long and skinny, tall or short, etc.) while imagining the implications of the program. As you create each space, keep coordinating it with the overall intent. What kinds of experiences are you trying to compose? In what relation to one another?

Organize and Diagram: Organize the great complexity of the program into smaller sets of masses that will begin to define your museum addition. Start to include your own more conceptual ideas for a museum. Should each gallery be its own form? Or do you want them to merge? How will each space be proportioned? As you abstract the groups of spaces, you should confirm a HIERARCHY (which elements of the program are the most important? Which are the biggest?) Think about SEQUENCES (which comes first, how does it lead to the next, where does it end, what is the return trip?) Stay ABSTRACT. Think in plan and section (you should assume your museum will be several stories tall, so spaces will be not only side-by-side, but on top of one another). Your process of reducing the complexity, abstracting the program, and organizing the pieces should eventually translate into a DIAGRAM of some of your spatial and programmatic thinking—hopefully with the same level of sophistication that you studied in your artist and museum. This should be a conceptual exercise more than a technical one related purely to square footages.

Task 4 – Art Selection

Choose your work of art to be included in your dedicated gallery space. When selecting a work (or works if small), keep in mind the ideas you discovered during your research phase. Bring drawings and photographs of the work for discussion with your faculty member. Think about and sketch ways you might consider this work influencing the spatial approach you take in the gallery.

Task 5 – Program and Site Synthesis Model

Construct a series of three-dimensional massing sketch models that include adequate volume to fit your program and that respond to the forces of the site from your contextual studies. Build your conceptual ideas in relation to the context around them (you need to construct representations of the streets, surrounding buildings, and the ground plane). The model's scale may be small and gestural at this point (1/16 inch is a good scale). Keep the model open, porous, and conceptual, such that you can think of interior relationships, not just the exterior mass. Use multiple materials to represent your ideas. Enclose space with lines, planes and masses, sometime implying rather than constructing enclosure. Choreograph the kind of spatial experiences you want visitors to have. Remember: this is NOT about determining a final form. Make this model about the relationships among the parts of the site and program. Work quickly and flexibly. Your first three-dimensional thinking can be done as sketches, on the computer, or in small practice models. Then translate these thoughts into at least two physical models at a defined scale. Work without glue in the first model (tape is faster) so you can rearrange easily and experiment with relationships of parts. The second model should refine some of the initial discoveries or offer another variation on your ideas. These models are due on Wednesday, October 22.