Studio 2: Pattern, Urban Design and the City

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Office hours by appointment

Introduction

This is the second course in the Northeastern School of Architecture sophomore studio sequence, and as such expands upon themes introduced in the final project of Studio 1. It is also the first studio dedicated to a semester-long architectural problem. The objective is to design a medium-scale, institutional architecture that is responsive to its urban context, critically informed by its program typology, and clear in its tectonic development. This process is divided into four sets of exercises. The first three are brief, analytical studies, and the fourth is the design project itself which will require synthesis of your prior analytical work. Through these steps, you will build a rigorous argument for your final project as a strategic, urban intervention.

The studio will focus on public secondary-level schools as a project type. You will learn to uncover the internal logics of “the school” – its typological characteristics – and to understand its external obligations as a building in the city – its site and urban context. The design of your final project will emerge from a dialogue and negotiation between these internal and external dynamics.

Objectives

Assignments will develop the following design skills:

Diagram: Employ graphic and/or visual explanations that isolate and clearly articulate aspects of a composition or space (structure, enclosure, sequence, etc.).

Analysis: Diagram precedents and sites to understand logics that determine their form.

Context: Read and synthesize patterns of the city, edges of adjacent buildings, landscape features, and urban infrastructure as critical forces that shape architecture.

Composition: Arrange architectonic elements to shape space, matter and perceptual experience based on coherent and substantive analysis.

Technique: Refine drawing and modeling skills – i.e., to make a sophisticated and legible drawing, rendering or model – to develop a design, represent form and communicate ideas.

Evaluation

The course is divided into four phases of work. Each student’s course grade is based on a weighted average of the work for these phases, listed below, as well as an overall process grade.

Urban Analysis: 20%
Typology Research: 10%
Module Design: 10%
Final Project: 45%
Process: 15%

Evaluation of your process work is based on the quality and quantity of design work at each class session, your use of studio time, and consistent effort throughout the duration of the semester.
Narrative Outline

1. Urban Analysis

Throughout the semester, we will be working with a single site located in the city of Boston. The first set of exercises will introduce the site and guide you through different modes of analyzing the urban context. The goal of your analysis will be to discover and document various patterns of the city on and around the site, patterns that will inform your reading of the site and ultimately affect your design decisions.

The urban analysis will be undertaken in three steps: a streetscape study, a figure/ground study, and a massing study. The process for each exercise will involve gathering and synthesizing information from personal observation, maps and other sources, and then developing a set of drawings and models that interpret and represent important urban relationships that are relevant to the site. How you view the site, how you document, measure, and photograph it, how much time you spend there – these questions will in many ways determine your architectural approach later in the semester.

2. Typology Research

Before undertaking the process of designing a school, it is important to understand the fundamental characteristics of school architecture. Schools contain typical program elements (classrooms, lockers/cubbies, offices, libraries, cafeterias and kitchens, playgrounds, etc.) and tend to be organized in particular ways. Repetitive elements such as classrooms are strategically aggregated with respect to building circulation, structural systems, and exposure to natural light and the outdoors. Often, dedicated spaces for individual or small-group learning activities are carefully located along with collective spaces for social gathering and administration. On a larger scale, schools are related in distinct ways to their external contexts – the landscapes, cities, and by extension, communities that surround them.

Typology defines the basic, architectural parameters of a project, but also allows for significant variation and invention among projects of the same type, playing the role of common denominator. We have collected a wide range of school designs to demonstrate this concept and to use as examples. For the typology exercise, you will rigorously study one of these precedents and share your findings with the studio. This exchange is central to developing a rich body of knowledge as a foundation for critical design decisions. The means of your investigation will be a set of analytical drawings and models that clarify the school's typological character and also extract aspects unique to its design. Particular attention will be given to programmatic, spatial and structural patterns.

3. Module Design

Based on your typological research, you will design a prototype classroom that could be incorporated into a larger school aggregate. Rules will specify exposures to circulation, plumbing, air, light and exterior space. The small classroom program focuses on the appropriate zoning of the classroom (wet vs. dry, light vs. darker, open vs. closed spaces, etc.). The concepts behind Tim Love’s “Thick Wall Project” will be the basis of this programmatic zoning work. There will be a lecture on the Thick Wall/Zone (e.g., Kahn, Rudolph, Moneo, Rick Joy, Zumthor) to help introduce this phase of work. Basic structural considerations will be discussed as a precursor to tectonic strategies pursued later in the semester.

4. School Design

Based on a comprehensive program and incorporating your work from the previous exercises, you will design a public school for the site. Development of tectonic and spatial strategies for the school will be emphasized, and must be evident in your drawings and models of the project.
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<th>WK</th>
<th>DATE</th>
<th>STUDIO SESSION</th>
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<tr>
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Requirements

-- Conceptual ideas and rigorous design thinking are integral to design work. In sophomore studios, it is equally important to develop drawing and model-making skills that effectively communicate one’s ideas. Understanding conventions of architectural representation in process and review work are a requisite to pass this course.

-- Only complete work will be reviewed and graded at any review (desk crit, pin-up, or jury review). Computer output issues are not acceptable excuses for incomplete or missing work. The requirements are due for each desk crit and review, regardless of the media choices that you make. Lateness of work will reduce its grade.

-- Each project grade will be based primarily upon major reviews. However, process is part of each project grade, and it is also a separate component of the course grade. We record grades based upon your work for every studio session. In addition, a consistent application of serial iterations is highly encouraged (especially for those interested in good work and its associated higher grades).

-- While each student will have their own preference of digital media, raw output from SketchUp is not permitted for reviews. This includes perspective views and orthographic drawings.

-- Studio sessions will be used for work, reviews, lectures, site visits and desk crits only. Absolutely no e-mail, web browsing, instant messaging, texting, cell phone calls, or dvd watching during studio hours. This absence of work will result in an unexcused absence recorded for that day. See attendance policy below.

-- A CD that documents all your work from the semester is a requirement and no final grade will be recorded until a complete CD is submitted at the end of the semester. This documentation is very useful for your portfolio as well. We suggest that you document your work incrementally throughout the semester.

Attendance

Design is a process in which feedback and participation is critical; it is consequently imperative that you attend class and have drawings and/or models to discuss with the instructor. 2 unexcused absences will result in a deduction of the course grade by a full letter grade. 3 or more unexcused absences will result in a failure of the course. Attendance is mandatory at all reviews (refer to course schedule for dates). Any excused absence requires proper documentation.

Grading Standards

In accordance with Northeastern School of Architecture grading policy, grades will be distributed according to the following scale. Refer to:  http://www.architecture.neu.edu/student_resources/grading_policy/studio_course

(A) superb quality work. (A-) high quality work.
(B+) good quality work. (B) above average work. (B-) average work. [i.e., everyone starts here and goes up or down from here based on your work and attendance]
(C+) below average work. (C) well below average work. (C-) minimal work.
[D+, D, D-] marginally acceptable work.

Grade Changes

Any final grade changes will only be discussed in person, during office hours -- not through email. If you want to discuss your grade, take the following steps. Assemble your projects, process work, and attendance from the semester, record their grades in a spreadsheet, and write a one page summary of the perceived differences. After completing this work, make an office hours appointment and bring your documentation of your work to the appointment. All requests of this nature will be reviewed by two faculty of this course.

Academic Honesty

Northeastern University is committed to the principles of intellectual honesty and integrity. All members of the Northeastern community are expected to maintain complete honesty in all academic work, presenting only that which is their own work in tests and assignments. If you have any questions regarding proper attribution of the work of others, contact your professor prior to submitting work for evaluation. For more detail refer to:  http://www.osccr.neu.edu/policy.html
Northeastern University School of Architecture
ARC 2140
Spring 2010

“Critical to my understanding of the role of the site is my conviction that architecture belongs to the site, that architecture should be appropriate to the site, should be to decipher these attributes, to hear how they manifest themselves... I believe that learning to listen to the murmur of the site is one of the most necessary experiences in an architectural education. To discern what should be kept, what could permeate from the previously existing site into the new presence, emerging after the substantial immobile artifact is built... Understanding what is to be ignored, subtracted, erased, added, transformed... from the existing conditions of the site is fundamental for the practice of architecture...

To know the site, to analyze it, to scrutinize it, does not produce an immediate or obvious answer...

I consider site as the first material, the foundation stone, the frame on which to project our architectural thoughts. And yet a site is more than a simple frame; it also provides the clues to the correct direction to take in the process of building. As such the site is an expectant reality, always awaiting the event of construction, through which it's otherwise hidden attributes will appear...”

Jose Rafael Moneo, The Murmur of Site

Site Analysis

In this phase of work we will analyze the site, documenting fundamental patterns on the existing site that will directly inform later architectural production. As such, this is not a passive analytic exercise but rather a critical, active design exercise that in many ways determines what follows later in the project.

How and when you view a site, how you document it, measure it, photograph it, what and how you choose to draw, represent, and analyze site conditions and patterns will all influence your site strategies later in the design process. A primary criterion for your success in this studio is the degree to which your work this semester is intelligently and strategically informed by the city and, in response, what potential contributions to the city your work uncovers.

The first set of exercises will introduce the site and guide you through different modes of analyzing the urban context. The goal of your analysis will be to discover and document various patterns of the city on and around the site; patterns that will inform your reading of the site and ultimately affect your design decisions.

Mixed Talks, Enric Miralles
Urban Analysis: Part 1A
StreetScape Study

Serial Vision

The first part of the StreetScape Study is to draw a series of perspective sketches through the site. The sketches should be organized into a narrative that documents the existing views and emerging views along a path as you progress through and/or around the site. Organize the images so the views are linked to show relationships between the buildings, open spaces, contrasting elements, various scales and progression. Map your path in plan and key in the location of each perspectives sketch. The method of sketching for this exercise may include collage and use of both hand and computer drawing.

The path you choose to document should be a conscious decision that reflects your attitude toward the site. This may result in a path which emphasizes the edge conditions of the site, an approach to the site or from the site, follows a common pedestrian or traffic path, focuses on a point of interest, highlights similar urban patterns etc. The sketches can be free hand, collaged or photo montage. You will have no less than six Serial Vision sketches that should be presented on an 11x17 sheet of paper.

Site Sections

The second part of the StreetScape Study is to cut three “site sections” and nine “street sections” through the site. Each student will be responsible for a total of twelve StreetScape sections. Use the Cad file provided to indicate the location of your eight StreetScape sections.

The StreetScape sections should demonstrate an understanding of the sectional relationships on and around the site. Choose the location of your sections carefully and provide as much information as possible. Articulate the smaller relationships and larger relationships, slopes, building heights, topography.
etc. Pay attention to the content, scale, densities and urban patterns that are revealed through the site sections.

The three “site sections” should include one cut in the NE - SE direction and two cut in the NW - SW direction. The boundary for the site section is defined as the area between Tremont Street (north), Harrison Street (south), Waltham Street (east) and Concord Street (west). Scale: 1/32" = 1’

The nine “street sections” should cut through the boundary edges of the site showing the relationships on and across the street. You may also choose to analyze the sectional relationships of neighboring streets. Scale: 1/16" = 1’

Note: To correctly execute this part of the analysis you will have to count, pace and measure the StreetScape. However, this information will also be useful when you create your site model later in the semester.

Material Observations

To additionally examine the fabric of the site collect 12 detail images of materials that show the content and character of your StreetScape. These photographs should document patterns, colors, scale or textures on and around the site. Compile these images into a 4 x 3 grid on an 11x17 sheet of paper. Label each material and note its location. Print in color.

Site Propositions

Using your observations and analysis from the StreetScape study create a proposal for each of the boundary edges of the site. This exercise does not include the massing or the “meat” of the proposed building but specifically focuses your response to the StreetScape. The proposals should be perspective representations and use your previously gathered photographs, material images, sketches, sections etc. Use a combination of techniques, collage, montage, and line drawing. Each proposal should be printed on an 11x17 sheet of paper.

Due: January 26
Urban Analysis: Part 1B
Urban Morphology

You will document the site, examine urban building precedents, and develop three proposals for the site using figure ground plan drawing techniques.

In figure ground drawings, buildings – the figures - are rendered solid black; open spaces such as streets, plazas, and parks - the ground - remain white. This reductive drawing technique highlights the structure, scale, pattern and density of the urban fabric and will be a tool for examining how buildings respond to the fabric and shape urban spaces.

Documentation:
First, draw a figure-ground drawing of the neighborhood surrounding your site. You will construct two drawings:

1. A figure-ground of the existing site. Use the CAD file that's been provided. The limits of the drawing will be Columbus Avenue (north), Albany Street (south), Herald Street (east) and Northampton Street (west).

2. An historic figure-ground. The scale and density of the South End urban fabric changed significantly in the 19th and 20th century. Construct a figure-ground plan of the neighborhood as it existed in 1902. Research the historic map and construct it in CAD, using the existing CAD file you have been given as a base for this drawing.

   Use http://www.mapjunction.com/bra/ for your map research. You will find the information you need on the following layer: Boston Public Library>Bromley Atlases > 1902. Note that the ‘Legacy Java Viewer’ on the website will allow you to print scaled versions of maps.

3. In addition to the 1902 map, examine maps from 1775 and 1878. Note the changes to the urban fabric, particularly at its edges.

   Print the two figure ground maps on 11x17 sheets.

Precedent Research:
The shape and scale of buildings is often informed by their specific urban situation, and every urban building project necessarily shapes the urban fabric. The following examples will introduce you to some strategies for shaping buildings to respond to specific site conditions and to create urban spaces.

For each of the examples below, you will draw both a figure ground plan and a Nolli Plan. In a Nolli plan – named after the 1748 Map of Rome by Giambattista Nolli shown below – public spaces are rendered as voids in the figure-ground plan. In this drawing type, the urban fabric is understood to include not only exterior spaces, but also public interior rooms. You can find an excellent interactive version of the plan at http://nolli.uoregon.edu/.
Projects:
1. Munster City Library, Munster, Germany (Bolles+Wilson, 1993)
2. Royal Chancellery (project), Stockholm Sweden (Gunnar Asplund, 1922)
3. Ducal Palace, Urbino (Luciano Laurana, 1468-1474)
4. Piazza and Palazzo Piccolomini, Pienza, Italy (Bernardo Rossellino, 1458)

Drawings of each project should include at least one block of the surrounding site and should be scaled to fit on an 11 x 17 sheet.

While drawing the above examples, observe and clearly articulate in a sentence or two the following characteristics of the projects:
- Response to the urban fabric
- Interior public spaces and exterior urban spaces
- Organization of movement through these spaces

Site Propositions:
You have documented the site morphology and have researched examples of buildings on urban sites, now develop three figure-ground proposals for your site. The propositions should respond to the specific site conditions you observed in the figure-ground drawings of the neighborhood: consider density, scale, and movement. Each of your proposals should define three outdoor spaces equal to half the site area. At least one of these spaces must be accessible from the street.

Suggested methods:
1. Subtractive: Begin with the site as a solid figure and carve spaces from this mass.
2. Additive: Assemble discrete figures on the site to define outdoor spaces.
3. Hybrid: Combine subtractive and additive strategies.
Print two 11x17 sheets for each proposal: one sheet should include the entire neighborhood, the other only the surrounding block.

Due: January 26
Urban Analysis Part C: Massing

Step 1
In this work, you will combine your previous propositions into a series of massing studies. Each study should represent a distinct strategy for filling the site with a mixture of buildings and open space. Start by taking your 3 figure/ground proposals and making each into a study model. Before this process, you might revise your figure/ground diagrams based on criticism from the pin-up. Further evolve the schemes as you shape them three-dimensionally. Each should have a clear formal logic related to a typical urban massing strategy. As a set, your 3 schemes should also present a range of approaches. You do not need to adopt the specific approaches depicted below; they simply suggest examples of representative strategies.

As you develop the models, consider the streetscapes you generated earlier in perspective and section. The information and context in that work should guide your decisions about heights, edges, and materials in your massing models. There is no height restriction on the site. How does the context imply heights on each of the site’s edges?

Friday, Jan. 29: Group site model due (1/32" = 1').
3 massing models that fit into site model. Indicate ground materials if desired, as well as changes in ground planes. Do not show floor plates in building.

Step 2
Revise your massing studies into a single scheme. Document that scheme with the following work at the scales indicated. Be prepared with verbal arguments that explain the scheme urbanistically. Also be prepared to discuss how a school program would be located on the site (note, the size of the school program will not take up the entire urban proposal).

Your instructor will give you the overall size of the school program. Assume that half of this program will be classrooms, and the other half will be public spaces (gym, auditorium, etc.) and administration. Redesign your urban proposal to specifically locate the school program. The outdoor spaces should also be reconsidered in location and scale. For review, prepare the following, revise and reuse previous work as appropriate:

Friday, Feb. 5: Massing model at 1/32" = 1' (floor plates of school area optional)
2 site sections at 1/32" = 1'
4 street sections at 1/16" = 1'
Street perspectives, manual or digital
Figure ground diagram, showing context
Plan or axon diagrams of site [e.g., edges, porosity, circulation, etc.]
Site plan at 1/32" = 1', indicating school program
Assignment 2: Typological Analysis

Overview

The previous work understood the project through an analysis of its urban context and defined it as a set of external, site-driven responses. This assignment analyzes the project by its program type and defines characteristics that are essential to its typology. This approach seeks to understand the project as a response to its internal logics, in contrast to the external logics derived from the site.

The precedents listed will be used to define the extents of the typology and the associated architectural strategies and techniques that previous architects have successfully used in school projects. Analysis requires that you take a precedent and distill it into its constituent parts in order to gain a better understanding of it as a whole. You should uncover the conceptual, organizational, programmatic and formal relationships of the school, as well as examine the precedent’s relationship to its context. Special focus will be applied towards understanding the classroom as the basic module of a school. You will analyze the classroom’s own internal logics, its aggregation strategies, and its relationships with the school’s other programs and external context.

Part A asks you diagram basic elements of the precedent and the logic of its organization. Part B requires you to synthesize your findings into a coherent argument about the precedent. As a class, your work on these precedents should encourage comparative analysis and a general understanding of the school as a “type”.

Precedents

<table>
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<tr>
<th>School</th>
<th>Architect</th>
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<tr>
<td>Crow Island School (1939), Winnetka, IL.</td>
<td>Eliel Saarinen / Perkins &amp; Will</td>
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<td>Munkegaards School (1952), Copenhagen.</td>
<td>Arne Jacobson</td>
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<td>Asilo Infantile Sant’Elia (1937), Como, Italy.</td>
<td>Giuseppe Terragni</td>
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<td>Lucy Daniels Foundation (1990’s), Cary, NC.</td>
<td>Clark and Menefee</td>
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<td>Hunstanton School (1949-54), Norfolk, England.</td>
<td>Peter and Alison Smithson</td>
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<td>Gary Middle School (2000’s), Tacoma, WA.</td>
<td>Mahlum</td>
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<td>Burr Street Elementary School (2004), Fairfield, CT.</td>
<td>SOM</td>
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<tr>
<td>P.S #1 Elementary School (1999), Santa Monica, CA.</td>
<td>KoningEizenberg Architecture</td>
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<td>Booker T. Washington School for Performing Arts (2008), Dallas.</td>
<td>Allied Works</td>
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<td>East Harlem School (2009), New York, NY.</td>
<td>Peter Gluck</td>
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<td>La Llauna School (1985-91), Barcelona.</td>
<td>Pinós-Miralles</td>
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<td>PC Primary School, Prinsehaghe (2004), The Hague</td>
<td>Geurst &amp; Schulze</td>
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<td>MFC Presikhaven Arnhem (2009), Arnhem, Netherlands.</td>
<td>Herman Hertzberger</td>
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<td>De Salamander Extended School (2007), Arnhem, Netherlands.</td>
<td>Herman Hertzberger</td>
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<td>Montessori College Oost (1993-2000), Amsterdam.</td>
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Part A: Research, Documentation & Initial Analysis

Acquire complete plan and section documentation of your project. Information on these projects is readily available. Use the Northeastern, Harvard (Loeb), and MIT libraries to acquire information for these projects. Use both book and journal resources. Adequate sources cannot be exclusively downloaded from a Google search. You are encouraged to cooperatively collect and share base information with the students in other sections who share your precedent. However, all documentation drawings must be of your own construction.

Figure out the scale of the precedent and draw it in CAD. If you cannot figure the scale, approximate it (a door is generally 3′-0″). Construct the critical plans and sections of your precedent (at least two of each).

As you research and document your precedent, begin to look critically at the building. What are the major concepts of the precedent? What is the hierarchy of large, medium, and small (or repetitive) spaces?

Using trace paper overlays over your drafted plans/sections, produce freehand diagrams (with high degree of craft) the critical logics of the precedent at two different scales. You will want to document the following:

At the scale of the entire school:
-- hierarchy and relationships of programs: large programs (gym, cafeteria, etc), classroom zones, administration, service/utility zones
-- circulation zones (especially relative size of circulation areas, how they connect and separate programs) and the path from entry to classroom seat
-- key zones and/or dimensions, as determined by program and/or structure
-- relationship of school to its outdoor spaces
-- relationship of school to its context (urban, suburban, or otherwise)

At the scale of a single classroom:
-- hierarchy and relationships of programs zones/elements: learning, reading, dry/wet, storage, service & utility, circulation, etc.
-- key zones and/or dimensions, as determined by program, structure and/or fenestration articulation
-- relationship of classroom to its outdoor spaces

After documenting the school and generating the above series of diagrams, you should posses a basic understanding of the school’s constituent elements, their logics and relationships to each other. Take an attitude as to the basic conceptual idea behind the school’s organization, or its parti. Create a parti diagram (plan, section, axon as necessary).

Friday, Feb. 12:
2 plans and 2 sections (minimum) drafted to a scale (typically 1/16″ = 1’)
1 plan and 1 section drafted of a classroom or a pair (typically 1/4″ = 1’)
Figure/ground diagram showing context (research site info or use Google Earth)
Freehand overlays of the diagram topics listed above, and a parti diagram

Include name of school, location, architect, and north arrow (for plans) on each sheet. All drawings should be to a scale.
Part B: Analytical Models, Thick/Thin Diagrams, and Synthesis

For Tuesday, Feb. 16:
Construct a single sketch model of your precedent. Use modeling techniques and materials to convey the concepts of the school you want to emphasize, as discovered from your diagrams. Carefully choose how you combine diagram topics (program, circulation, structure, etc.) in this first sketch model. This model should be abstract and does not need to represent everything you know about the precedent. It should have a scale (typically 1/16" = 1' but can be smaller).

Throughout the week, you will clarify, combine and synthesize the diagrammatic content from Part A in order to construct arguments about your precedent. Choose the important diagrams from Part A and revise both their content and graphic representation (diagrams should now be drafted). You do not need to represent all of the preliminary work/topics from Part A. Rather, you should re-work key diagrams to supplement the new requirements listed below.

In the specific case of your precedent, consider which diagrammatic topics from Part A are more relevant in isolation (ex., structure, program, circulation). Conversely, how are diagrams combined to reveal information that is not defined by a single topic? In each building, there are spatial relationships and sequences that do not fit into neat categories. Attempt to elucidate your positions on the precedent using some combination of the diagrams from Part A and the vehicles listed below:

Friday, Feb. 19:
   Analytical model: parti or concept
   Analytical model: synthesize 2 common topics (ex., program and structure)
   Thick/thin diagram of entire school (plan, scale to match analytical models)
   Thick/thin diagram of classroom or pair (plan or axon)
   Axon Diagram: circulation path from outside to classroom to individual desk, showing threshold conditions

All work should be to a scale.

In the evaluation of this work, there will be an emphasis on the intensity and insight of the analysis. There will also be an emphasis on the graphic quality of the analysis. Thus, the graphic representation of the analysis must be designed as rigorously as the building is analyzed. The selection of building documentation, views, color, lineweights, and text are all critical decisions in the description of the building and its organization.
Assignment 3: Module Design

This short exercise asks you to design a grouping of classrooms and investigate the different zones within this configuration. This work focuses on the scale of the students and teachers, and should be seen as complementary to the overall schematic development of your school at the site scale. It is up to you if your classroom design exactly “fits” into the general scheme you have now. For this work, consider the group precedent analysis at the scale of the classroom. Basic structural considerations will also be discussed as a precursor to tectonic strategies pursued later in your design.

Assume that each classroom module is 1000sf; one side of each classroom connects to an interior circulation area and one side (usually the opposite) faces an exterior space. Design a grouping of at least 2 classrooms in plan (this could use a linear corridor or cluster). Assume that this grouping is also stacked in section and could continue as a repetitive system in your school scheme.

Your classroom investigation will use the simple program listed below. It is critical to understand the layering of zones from the public space of the corridor through the semi-private spaces of the classroom, and then back out to exterior space.

Zones:

- Circulation area, on this side also consider:
  - lockers, display cases, benches, shared vestibules
- Entry/threshold zone within classroom 15 SF
- Teaching material storage closet (teacher) 50 SF
- Open classroom, contains:
  - wet zone (sink, counter) 30 SF
  - general counters and cabinets 800 SF
- Exterior space (access is optional)
For pin-up, prepare the requirements listed below. You should be able to describe how your scheme addresses these issues:

1. Relationship of classrooms to each other and to corridor in plan and/or section. What is the thick boundary like between rooms? What is the thick boundary like between room and corridor? How do the thick zones address their different sides?

2. Relationship of internal elements of classroom. What is the location of teacher and seating, and how do the utility areas create zones in the room?

3. Relationship of classroom to exterior light and view. You should design the exterior elevation of the classroom module.

Your scheme should show 4 classrooms minimum (at least 2 in plan, then stack in section per your design). Show 12’ of corridor width, minimum, in both drawing and model. Include some extent of exterior space. Show some sense of structure.

The model should include a thickness for ground. In the model, the utility zones, storage, and furniture can be shown diagrammatically.

**Pin-up: Tuesday, March 16:**

1/8” = 1’ Plans and sections (draw furniture).
1/8” = 1’ Sectional model.
1/8” = 1’ Thick/thin diagram of 2 classrooms.
1/8” = 1’ Structural diagram.

*Thick / Thin diagram, overlay on pair of housing units (architect: Peter Zumthor)*
School Program

Middle School, Grades 6-8

<table>
<thead>
<tr>
<th>Program</th>
<th>qty.</th>
<th>area (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditorium (seats 300)</td>
<td>1</td>
<td>3,000</td>
</tr>
<tr>
<td>Cafeteria</td>
<td>1</td>
<td>3,000</td>
</tr>
<tr>
<td>Library</td>
<td>1</td>
<td>2,000</td>
</tr>
<tr>
<td>Gymnasium (two basketball courts @ 42’x74’)</td>
<td>1</td>
<td>7,000</td>
</tr>
<tr>
<td>Locker rooms</td>
<td>2</td>
<td>600</td>
</tr>
<tr>
<td>Gym storage</td>
<td>1</td>
<td>800</td>
</tr>
<tr>
<td>subtotal:</td>
<td></td>
<td><strong>17,500</strong></td>
</tr>
<tr>
<td>Typical Classrooms</td>
<td>15</td>
<td>1,000</td>
</tr>
<tr>
<td>Science classrooms (with lab space)</td>
<td>2</td>
<td>1,500</td>
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<tr>
<td>Art</td>
<td>1</td>
<td>1,500</td>
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<tr>
<td>Music</td>
<td>1</td>
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<tr>
<td>Computer / media labs</td>
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<td>1,000</td>
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<tr>
<td>subtotal:</td>
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<td><strong>23,000</strong></td>
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<tr>
<td>Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reception</td>
<td>1</td>
<td>500</td>
</tr>
<tr>
<td>Principal’s office</td>
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<td>200</td>
</tr>
<tr>
<td>Offices</td>
<td>2</td>
<td>300</td>
</tr>
<tr>
<td>Conference room</td>
<td>1</td>
<td>200</td>
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<tr>
<td>Guidance area</td>
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<td>250</td>
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<tr>
<td>Admin storage</td>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>Sick room</td>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>Staff lunch room</td>
<td>1</td>
<td>250</td>
</tr>
<tr>
<td>Staff Restroom</td>
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<tr>
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<tr>
<td>Restrooms</td>
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<tr>
<td>Custodial rooms</td>
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<tr>
<td>Storage</td>
<td>3</td>
<td>150</td>
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<tr>
<td>Electrical/Mechanical</td>
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</table>

Circulation (approximately 18% of above TOTAL) 8,500
Includes: 1,500 SF lobby
375 lockers @ 1’x1’
Elevators, egress stairs, and ramps as required

BUILDING AREA (total program area + circulation): 55,000

Exterior recreation space for students (minimum area): 20,000
NOTES:

1. The city seeks proposals for a middle school to replace the elementary school on the site. The elementary school is an outdated facility, and school district planning indicates a greater need for a middle school in the area. The city also requires a master plan for the current site that includes proposed buildings that can be developed in the future for non-school uses.

2. Overall open space on the site should be consistent with the urban context (approximately 50% of site area).

3. Parking spaces for staff and faculty have been provided off-site at various garages in the neighborhood.

4. All designs require a school bus and car drop-off area. Visitor / temporary parking spaces are optional. This area requires curb modifications to the site.

5. All designs require a loading area for deliveries and trash pick-up. Deliveries include books, food, furniture, etc. This area can have direct access to any of the streets.

6. Auditorium can be fixed or movable seating. This space is shared with the neighborhood for community functions.

7. Larger parts of the program are to be designed with their own storage (open or closed), circulation, and furniture layout as necessary. This applies specifically to the following sub-programs: Auditorium, Cafeteria, Gymnasium, and Library. Large program areas should have appropriate heights in section as dictated by scale and use.
Northeastern University School of Architecture
ARC 2140: Studio 2, Spring 2010
Tuesday and Friday, 1:35 - 5:05 pm

FINAL REVIEW
Thursday, April 29  
9:00 – 1:00:  Kripper (middle space)  Price (triangle)
2:00 – 6:00:  Genter (middle space)  Gruits (triangle)

Friday, April 30  
9:00 – 1:00:  Choi (middle space)  Riseman (triangle)

Requirements (diagrams in italics):

1. Figure / ground diagram (or Nolli) -- scale at your discretion.  Show your school and block massing scheme.  For context, show at least one full city block in each direction.

2. Urban analysis diagrams.  Revise, re-use, or make new diagrams that explain your site strategy.

@ 1/32" = 1’:

3. Model (this can be an older model if current).  Fits in site model.  Detail at your discretion.

4. Site plan.  This should show the main floor plan or roof plan of your school.  Show massing elements as outlines.  Show public space, streets, curbs, and immediate building context (at least opposite side of streets).  Indicate material changes if important (use tone, hatch, or color at this scale).  Indicate north.

5. Concept diagram, program diagram, circulation diagram, minimum.  Axonometric or plan.

@ 1/16" = 1’:

6. Main floor plan.  Show public space, bus drop-off, adjacent building context.  Indicate exterior materials and level changes.  Indicate north.  Should be in similar orientation as site plan.

7. Upper floor plans.  Show at least 2 upper levels @ 1/16”.  If more, you can show others @ 1/32”.

8. (2) sections, minimum.  Show ground, figures.

9. Model.  Show interior public spaces, stairs (as ramps if you wish), interior partitions as necessary to describe space.  Discuss glazing and elevation model techniques with instructor.  Include context / base as relevant.

10. Classroom module (1/8” = 1’ or discuss scale with instructor):  drawings or model of pair of classrooms.

11. Perspectives.  At least one interior and one exterior.  Images should be processed in a rendering program or Photoshop, Illustrator – please do not present raw Sketchup images.  Use collage techniques for site information, materials.  Include landscape and figures.

**All drawings should use appropriate standards (lineweight, dashes, etc.) of architectural representation.  Floor plans should show some furniture to indicate room program / function (use gray or fine black line).

**Please bring process work, especially process models, to review.  Bring site analysis, classroom module work as necessary.