Site, Type and Composition

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Office hours by appointment

Course Description

This course is structured around analytical exercises and design projects intended to develop fundamental design skills – both intellectual and technical – including:

– site analysis and its application as an architectural design tool
– spatial and tectonic composition
– building typology and precedent analysis

Projects will build on the drawing, modeling and visualization skills introduced in the freshman studio curriculum. The course will stress the use of drawings and models both as investigative and communication tools, with a particular emphasis on diagramming and on the composition of plans, sections and elevations.

Prerequisites

This course requires that the following prerequisites be completed satisfactorily before you will be allowed to take this course: ARCH 1110 Fundamental Representation and ARCH 1120 Fundamental Design. If it is discovered that you have not completed these prerequisites, you may be dropped from the course at any time during the semester.

Course Requirements

Studio. You will be expected to work during studio hours so come prepared to work on your assignments with the necessary materials (laptop, drawing tools, model-making equipment, etc.). The course will require both manual and digital work as specified by the instructor for each assignment. ALWAYS have the following for desk-crits:

– drawings, prints (to scale) or models of your project to discuss with the instructor
– trace paper and drafting pencils or pens for sketching
– sketchbook (unlined) for taking notes and for making sketches and diagrams of your project

Critiques (Pin-up, Review). Requirements for each critique will be specified for each project. No work can continue during a critique unless it is designated a “working critique.” There are NO acceptable excuses for not presenting work, including digital media issues. Please produce and print your digital work well before the due date.

Attendance and Participation. Three unexcused absences will automatically drop your grade by one letter-grade, i.e., from an A to a B (24 meetings; 3 absences is 12% of the course). You should be present for the entire studio time and actively engaged in project development. All students are required to participate in class discussions; dialogue is encouraged and required. You are also required to attend all the evening lectures offered during this term.
Evaluation

Your final course grade will be calculated as a composite of the grades for each project, according to the criteria below. Process work is factored by the instructor into each project grade. Evaluation of your process work is based on the quality of design work at each class session, your use of studio time, and consistent effort throughout the project duration:

- Analysis Projects: 25%
- Design Project 1: 30%
- Design Project 2: 45%

The School of Architecture guidelines for Design Studio course grading are as follows:

**A** superb quality work. The student:
- demonstrates one of the best efforts/projects the instructor has seen at Northeastern or any other accredited school of Architecture
- demonstrates true intellectual passion, curiosity, initiative, and exploration
- consistently brings strong ideas to fruition with a high level of craft
- conveys a strong affinity for design culture

**A-** high quality work. The student:
- demonstrates one of the best efforts/projects within the studio
- demonstrates true intellectual curiosity, initiative, and exploration
- consistently brings ideas to fruition with a high level of craft
- conveys strong interest in design culture

**B+** good quality work. The student:
- consistently brings strong ideas to fruition with a good level of craft
- conveys broad interest in design culture

**B** above average work. The student:
- demonstrates good initiative and above average craft
- conveys interest in design culture

**B-** average work. The student:
- demonstrates average effort and craft and initiative
- meets attendance requirements

**C+** below average work. The student:
- demonstrates below average initiative, effort and craft
- meets attendance requirements

**C** well below average work. The student:
- demonstrates well below average initiative, effort, and craft
- engages in excuse-making, tardiness, and absence

**C-** minimum work. The student:
- demonstrates minimum initiative, effort, and craft
- engages in chronic excuse-making, tardiness, and absence

**D** unacceptable work. The student:
- demonstrates unacceptable initiative, effort, and craft
- engages in chronic excuse-making, tardiness, and absence

Academic Honesty

Northeastern University is committed to the principles of intellectual honesty and integrity. 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.
## Course Schedule

<table>
<thead>
<tr>
<th>Wk</th>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11-Sep</td>
<td>Course Introduction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analysis 1 Issued</td>
</tr>
<tr>
<td>2</td>
<td>15-Sep</td>
<td>REVIEW Analysis 1</td>
</tr>
<tr>
<td></td>
<td>18-Sep</td>
<td>Design Project 1 Issued</td>
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<tr>
<td>3</td>
<td>22-Sep</td>
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<td></td>
<td>25-Sep</td>
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<tr>
<td>4</td>
<td>29-Sep</td>
<td>REVIEW Project 1</td>
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<td></td>
<td>2-Oct</td>
<td>MID-REVIEW Project 1</td>
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<td>5</td>
<td>6-Oct</td>
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<td></td>
<td>9-Oct</td>
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<tr>
<td>6</td>
<td>13-Oct</td>
<td>FINAL REVIEW Project 1</td>
</tr>
<tr>
<td></td>
<td>16-Oct</td>
<td>Design Project 1</td>
</tr>
<tr>
<td>7</td>
<td>20-Oct</td>
<td>Analysis 2 Issued</td>
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<tr>
<td></td>
<td>23-Oct</td>
<td></td>
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<tr>
<td>8</td>
<td>27-Oct</td>
<td>REVIEW Analysis 2</td>
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<tr>
<td></td>
<td>30-Oct</td>
<td>Design Project 2 Issued</td>
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<tr>
<td>9</td>
<td>3-Nov</td>
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<td></td>
<td>6-Nov</td>
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<td>10</td>
<td>10-Nov</td>
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<tr>
<td></td>
<td>13-Nov</td>
<td></td>
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<tr>
<td>11</td>
<td>17-Nov</td>
<td>MID-REVIEW Design Project 2</td>
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<tr>
<td></td>
<td>20-Nov</td>
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<tr>
<td>12</td>
<td>24-Nov</td>
<td>REVIEW Design Project 2</td>
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<tr>
<td></td>
<td>27-Nov</td>
<td>THANKSGIVING RECESS</td>
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<tr>
<td>13</td>
<td>1-Dec</td>
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<td></td>
<td>4-Dec</td>
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<tr>
<td>14</td>
<td>8-Dec</td>
<td>Last regular class session</td>
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<tr>
<td></td>
<td>11-Dec</td>
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</tbody>
</table>

**Exam Week**

FINAL REVIEW Design Project 2
Date to be determined
Context Analysis and Response – South End

Issued: Friday, September 11
Due: Friday, September 18

Boston’s South End District, like the Back Bay, is the result of a major nineteenth century landfill operation. The original plan for filling in the tidal flats around the Washington Street causeway – or “Neck” – dates from 1801. However much of the work did not begin until the 1830s, with the current street and block layout dating from mid-century and most of the area built up by the 1870s. As a neighborhood, the South End escaped much of the demolition caused by Urban Renewal in some other urban districts, the most notorious being the West End. Much of the central portion of the district contains intact blocks of rowhouses, often recently renovated, in addition to commercial streets such as Tremont and Washington, where a number of chic restaurants and arts and entertainment facilities have been added in recent years. The revitalized neighborhood offers a physically coherent, significantly unaltered zone of 19th-century built fabric. Therefore a site within this district is chosen as the location for a small, infill project that should critically but considerately respond to such a rich context.

You will be given a project site to document in the South End. This assignment asks that you analyze the site and its surrounding context for the length of a city block – particularly in elevation – and then use your analysis to propose a façade for the site. The procedure involves documentation of patterns that define the interface between the site, adjacent buildings and the larger public realm of the city.

Possible subjects to document and diagram include:
- scale, composition, massing, hierarchy, proportion, meter, repetition, materiality, layering, solid/void, addition/subtraction, transparency/opacity, disruption, heights and sectional qualities; setback, entry sequence.

Diagrams should carefully establish patterns (and exceptions within the patterns) based on observations of different types of elements and at different site scales.

This should not be considered as simply a two-dimensional “elevation” analysis but will take into account the three-dimensional devices and entry sequences that spatially engage with the sidewalk. This analytical exercise will then form the basis for an active, projective study where you will propose an intervention on the selected site. Your intervention will establish a zone that transitions from the public realm to a more private realm within. The proposal should both respond critically to the surrounding context as understood through site analysis, as well as establish an entry sequence strategy that will begin to inform internal development for a later, more specific design project.
Constraints

The articulation of the proposed façade and entry strategy should not be treated as a simple plane in elevation with a node or point of entry. The façade should be conceptualized as a “thickness” or threshold that begins at the line of the sidewalk and ends at a minimum of 5 feet inside of the main plane that delineates the “interior”.

In anticipation of a small, semi-public institutional program, you are to propose up to two entrances to be incorporated into your façade response. As the interface between the public and the interior realms, the entry sequence within the “thick” zoning envelope should be well considered. You may, for instance, propose two entrances where one is for a public use and the other serves a more secluded, privatized program, implying a certain hierarchy. The entrance(s) should have direct or indirect access to the street.

All other aspects of your façade proposal are not program-based, but rather, suggestions based on your context analysis. For particular site and zoning constraints, refer to the attached site diagram.

Requirements and Schedule

Before the second studio meeting, each student should visit the site and document conditions of the general context that you find interesting. Each studio will need to generate a 1/16” scale elevation of the overall block, so you will also be responsible for more detailed documentation of one specific zone.

On Tuesday, September 15th, for desk crits, each student must have three preliminary diagrams (1/32” or 1/16” = 1’). You should begin to understand the consistent aspects of the block elevations as well as any variation or disruption of this consistency.

Review [Friday, September 18]

This assignment will require orthographic and paraline drawings (manual or 2D CAD – no digital modeling or cuts from 3D programs) with a strong emphasis on the clarity and hierarchy of line-weights. When considering the composition and layout of individual drawings for presentation, your analytical and design narrative should be evident.

1. Elevation analysis diagrams: (2) @1/8” = 1’ with context, (1) @ 1/16” = 1’ with complete block.
Three elevation diagrams of the site’s context, analyzing at least three patterns (or combination of patterns). The elevations should not just describe the context, but analyze it, and make critical projections into the site. These elevations should not show a façade design in your site.

2. Proposed intervention elevation @ 1/8” = 1’.
Set within existing block elevation showing context as directed by your instructor.

3. Physical model @ 1/4” = 1’.
Represent your proposed façade. The model should begin at the centerline of the street and terminate within your design, at least 5’ in from the enclosure line. The entry sequence within the “thick” zone should be clearly represented to express the transition from sidewalk to first floor, and should show parts of the upper floors as they attach to facade. Do not show party walls.

Required Readings:


The Boston Ballet School has evolved over its 56 year history into the largest such program in the United States. With 10,000 students overall, the school has three regional studio locations in addition to its main, 60,000 square foot South End facility. The school is now proposing an Artist in Residence program which will be located in new facilities on Warren Street, near the main building. This annex will house, for a period of up to four months, a notable visiting dance artist. The artist will serve as a “Master Instructor,” under whom six selected students will study (or in some cases the visiting artist will be accompanied by their own dance troupe). The students or dance troupe will also live within the annex for the allotted period of time.

The annex, in addition to the residential component, will include a multi-purpose room that may be utilized as a practice/rehearsal studio space or for small impromptu performances or exhibits. Another smaller studio and a shared common room for the residents will complete the program.

The 2,800 square foot program includes the components listed below. You should consider the size and hierarchy of these components. Beyond the stated sizes, you should also zone the component areas based on notions such as: public vs. private, open vs. closed, shared vs. individual, and formal vs. informal. Consider the adjacency of program areas and their overlap. Last, what spatial qualities would you ascribe to each type of program area (e.g., cellular vs. open plan, additive vs. subtractive, dark vs. light, compressed vs. expansive)?

Following the earlier façade response exercise, individual decisions regarding the number of entrances should be re-evaluated. In addition to this, the vertical circulation system will, for the most part, require two separate stairs. As you develop your scheme, you should carefully consider how the stairs are distributed, how they relate to each other, and how they transition between program spaces, the entrance(s), and the street. You may find appropriate parallels with dance, ceremony, rhythm, and rigor that relate to the discipline of ballet.
**Constraints**

The Warren Street site is to be considered empty as an existing condition. The building footprint is set at 18’ x 40’, with the possibility of projections on the façade consistent with the context. For the alley side, the proposed building must fit within the 40’ building lot line at grade but with the possibility of projections at the upper levels.

The proposed building’s height on Warren Street should match its neighbors. You may exceed the height limit by up to 12’, provided the raised zone is set back from the façade by a distance equal to its height (plot a 45 degree line back from the parapet).

**Program**

<table>
<thead>
<tr>
<th>Program</th>
<th>400 sf (minimum height 18’-0”)</th>
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<tbody>
<tr>
<td>Multi-Purpose Room</td>
<td>400 sf</td>
</tr>
<tr>
<td>Small Studio</td>
<td>200 sf (minimum height 12’-0”)</td>
</tr>
<tr>
<td>Public Restrooms</td>
<td>100 sf (M and F - for use by visitors)</td>
</tr>
<tr>
<td>Storage Room</td>
<td>100 sf (consider adjacency to Multi-Purpose Room)</td>
</tr>
<tr>
<td>Visiting Artist Apartment:</td>
<td>400 sf</td>
</tr>
<tr>
<td></td>
<td>150 sf. Living Room /Office</td>
</tr>
<tr>
<td></td>
<td>120 sf. Bed Room</td>
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<tr>
<td></td>
<td>80 sf. Kitchen / Eating</td>
</tr>
<tr>
<td></td>
<td>50 sf. Bathroom</td>
</tr>
<tr>
<td>Student Residential:</td>
<td>700 sf</td>
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<tr>
<td></td>
<td>80 sf ea (6) sleeping cells with storage</td>
</tr>
<tr>
<td></td>
<td>120 sf. Rest Room and Dressing with 3 shower stalls</td>
</tr>
<tr>
<td></td>
<td>100 sf Shared Kitchen</td>
</tr>
<tr>
<td>Shared Common Space</td>
<td>200 sf (informal space for all residents)</td>
</tr>
<tr>
<td>Mechanical Room</td>
<td>50 sf</td>
</tr>
<tr>
<td>Circulation</td>
<td>Stairs and corridors, approx. 15% of total floor area (350 sf)</td>
</tr>
</tbody>
</table>

**Section Concept Model** (due Tuesday, September, 22)

This project begins with a spatial investigation that uses section to explore zoning and vertical circulation systems as the interface between the main programs.

For Tuesday: the point of departure for the initial design studies will be developed exclusively as a series of quick sectional study models and accompanying section drawings at 1/8” scale. These are longitudinal sections that articulate internal programmatic and spatial ideas, separately from the plan.

After this first set of process models, you will transform the front façade you developed in the context analysis exercise. Consider the dialogue between the internal sectional logic and your context-based façade. Also develop and revise your argument about the transition from the external public realm of the street into the different internal programs and their associated degrees of privacy.

Requirements for mid-review and final review will be issued at a later date.
**Final Presentation Requirements** (Review on Friday, October 16th)

This assignment will require orthographic and paraline drawings (manual or 2D CAD, no section cuts from a digital model). Perspective renderings can be generated by any method. You should construct the plans and sections with a strong emphasis on the clarity and hierarchy of lineweights. In the composition and layout of your individual drawings for presentation, the analytical and design narrative should be evident.

1. **Sectional Diagram at 1/8" = 1'.**
   Similar to initial section model design, clarify the general spatial/zoning idea with revised model.

2. **Final Model at 1/4" = 1'.**
   The model will be sectional (i.e. no fixed side walls) and should show all interior walls, stairs, and major design elements. The model will also show the street and alley facades with glazed openings represented as voids (except where materials such as translucent acrylic, might better show design intent). The adjacent context should also be built as a separate piece within which the section model can be placed and easily removed. Your instructor will specify a minimum amount of context and each student should consider the extent appropriate as this relates to their individual design.

3. **Sections at 1/4" = 1'.**
   Three minimum (one lateral) with at least two cut through the vertical circulation. Show context in section. Include figures.

4. **Floor Plans at 1/4" = 1'.**
   Show party wall and context in plan. Include sidewalk in first floor plan.

5. **Elevation at 1/4" = 1'.**
   Warren Street elevation, showing appropriate context. Alley elevation is optional.

6. **Perspectives.**
   Manual or digital. Include figures.

7. **Three diagrams (scale TBD).**
   Illustrate the major themes of your project (circulation, public/private, light, etc).

**Process Materials**
For the final review, pin-up your study models and any relevant process drawings, diagrams, sketches, etc. that aid in explaining your design development and methodology.
Library Architecture: Type Analysis

Issued: Tuesday, October 20
Due: Friday, October 30

Overview

This project will serve as an introduction to the second program you will design, a new branch library for the Boston public library system. Using analytical tools that work in tandem, you will be asked to both diagram and model the program elements of a precedent library.

In diagram, you will be asked to isolate and present those architectonic and organizational elements that operate in specific ways to address the library program. That is, what are the compositional characteristics of the library type? As you draw, consider carefully how spaces and rooms are defined in section, and how views from one space to another, and between outside and inside, are created or controlled. Pay particular attention to the heights of the spaces and how these correlate to programmatic use.

In model, you will be asked to compose spaces through massing – grouping or breaking down programs as you see fit for your analysis. Consider the given library program as a framework in which to work, thinking about how your library relates to prototypical models. Based on your research, decide what relationships should be emphasized, which should persist and what should change.

Assignment

Diagrams: 1/8”=1’ or 1/16”=1’

Three diagrams will be required. The objective of the diagrams is to develop a cohesive set of documents that together explain how the architecture is shaped in response to the library program. Referencing library types from your own research and from the readings as a guide, formulate your diagrams in tandem with the spatial reasoning of your models. Use each drawing type to your advantage to convey information, whether it is about circulation, massing, sequence, lighting, etc.

1. Public space, community space, reading space. 3-dimensional drawing.
   Develop a drawing of a sequence of spaces that together define a spectrum from most public space to the most private.

   Can you differentiate the circulation patterns intended for daily library use from the egress circulation? Diagram the different library programs and how they are connected by circulation.

3. Books and Tectonics. 3-dimensional drawing.
   How is the location of the books themselves used to define space or create an institutional image for the library? Create a drawing that considers the books and book-stacks as equal to structure and/or other tectonic elements in defining the spatial qualities of the architecture.

Choose one as your primary diagram and draw it at 1/8”=1’, and draw the other two at 1/16” scale. (For larger precedents, use 1/16” for primary diagram and 1/32” for secondary diagrams).
Diagrams are interpretive but should show appropriate standards of representation. As you devise the diagrams, carefully select the drawing forms, views, and techniques that best suit each topic and precedent. The diagrams taken together should present a cohesive understanding of the precedent. Discuss with your instructor a specific analytical technique to employ, following today's lecture.

Models:  
1/16”=1’ or 1/32”=1’

Make two models that interpret the arrangement of the library program, based on your analysis of the precedent. One should be a massing model using color, solid/void, or materiality to differentiate or group masses. The other should connect these masses with a circulation system.

**Precedent List**

1. Bibliothèque St. Genevieve: Henri Labrouste (1845-51)
2. Public Library, Stockholm: Gunnar Asplund (1918-27)
4. Beinecke Rare Book Library: Gordon Bunshaft, SOM (1963)
5. Library of Mount Angel Benedictine College: Alvar Aalto (1965-70)
6. Atlanta-Fulton County Public Library, Marcel Breuer (1969-70)
7. Library at Phillips Exeter Academy, Exeter, NH: Louis Kahn (1965-72)
8. Library of the University of Aveiro: Alvaro Siza (1988-94)

**Readings**

Borges, Jorge Luis. “Library of Babel.” [required]


The South Boston Branch of the Boston Public Library system is undergoing an expansion. With increasing local residential population, the existing collection is scheduled for a 20% expansion over five years, and a near 50% expansion in twenty years. Additionally, computer facilities and online access usage has increased, and the library has promised to expand its technological offerings to the general public. These changes require a significant overhaul of the current building, and the collection expansion will not fit in the current site.

Increases in neighborhood density are being driven, in part, by condo sales, and a growing population of professionals is changing the dynamics of the previously working class neighborhood. The library is highly valued and well used by the population of long time local families. There is some tension in the midst of this transition, and the library finds itself in the position of catering to several generations of South Boston residents, while seeking ways to adapt its offerings to a young population of professional newcomers.

The collection consists of a comprehensive adult fiction library, including best sellers and many recently published listings. As well, there is a popular collection of historical materials on South Boston. A large periodical listing and subscriptions to several daily newspapers are included.

The proposed site is adjacent to the Broadway Red Line subway stop, on Dorchester Avenue and Broadway Street. The city would like to locate a new branch library there, along with an outdoor space for public use.

### Program

<table>
<thead>
<tr>
<th>Program</th>
<th>SQ FT</th>
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<tbody>
<tr>
<td>Collections, 30,000 Volumes:</td>
<td>4300</td>
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<tr>
<td>Fiction</td>
<td>1200</td>
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<tr>
<td>Local History</td>
<td>350</td>
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<tr>
<td>Non-fiction</td>
<td>1800</td>
</tr>
<tr>
<td>Periodicals</td>
<td>400</td>
</tr>
<tr>
<td>Children’s</td>
<td>400</td>
</tr>
<tr>
<td>Re-shelving/Book Cart Docking</td>
<td>150</td>
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<tr>
<td>Reading Rooms:</td>
<td>3000</td>
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<tr>
<td>Periodicals</td>
<td>400</td>
</tr>
<tr>
<td>Children’s Reading/Work Room</td>
<td>250</td>
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<tr>
<td>General Reading Room</td>
<td>1000</td>
</tr>
<tr>
<td>On-line catalog Work Stations</td>
<td>350</td>
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<tr>
<td>Research Work Stations</td>
<td>1000</td>
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<tr>
<td>Circulation Desk:</td>
<td>300</td>
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<tr>
<td>Meeting Room:</td>
<td>800</td>
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<tr>
<td>Small auditorium-like space to seat 80.</td>
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<tr>
<td>Fixed or movable seating.</td>
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</tbody>
</table>
Staff Work Space: 1000
   Offices (4 @ 125 ea.)  500
   Bookbinding/Work Room  200
   Conference Room (10 Seats)  300

Loading Dock: 400

TOTAL NET SQ FT: 9800

Grossing Factor (30%) 3000
   Circulation 600
   Vestibules 100
   Egress 300

TOTAL GROSS SQ FT: 12800

Constraints

OPEN SPACE REQUIREMENT: 6,700 SF (minimum, 50% of site)

Open space should be “unconditioned” and accessible from grade.
Part of open space can be “private” to library.
Open space calculation may include service/loading area.
50’ maximum building height. Proposal can build 12’ below grade.
The available site includes the air-rights over the Broadway T station.

Passenger elevator must be included.
Two means of egress are required from every floor.
Ramps should slope no greater than 1:12.
15’ minimum loading dock ceiling/soffit height.

Library Design Reference:
   Book-stack reference standard: 84” high x 12” deep per side, 5’-0” to 5’-6” O.C.
   ADA book-stack aisle width: 36” min. / 42” strongly recommended
   Periodicals: Require both display shelves and storage shelves

Final Review Requirements:

1/16” = 1’. Site plan.
1/16” = 1’. Model in group site model.
1/8” = 1’. All floor plans.
1/8” = 1’. Three sections, at least one longitudinal.
1/8” = 1’. One elevation.
1/8” = 1’. Model.

Perspectives, one interior and one exterior, minimum.

Four diagrams (structure, circulation required).