

Arch 202	Intermediate Design
Spring 2011	

Credits: 5
Type of Course: Required Studio
Class Meetings: M/Th 2pm-6pm
Prerequisites: Arch 101/ 102 / 201 or equivalent with at least a grade of "C"
Enrollment Capacity: 15

Instructor/Section/Location:

Lawrence Blough, Coordinator	.01	M/Th 2pm-6pm	HHS 410A
Richard Sarrach	.02	M/Th 2pm-6pm	HHS 410B
Philippe Baumann	.03	M/Th 2pm-6pm	HHS 410C
Dan Silver & LJ Porter	.04	M/Th 2pm-6pm	HHS 410D
Evan Tribus	.05	M/Th 2pm-6pm	HHS 415A
Fred Levrat	.06	M/Th 9:30am-1:30pm	HHS 415B
Christian Lynch	.07	M/Th 2pm-6pm	HHS 415C
Richard Scherr	.08	M/Th 2pm-6pm	HHS 218A
Rodney Leon	.09	M/Th 2pm-6pm	HHS 415D
Sal Tranchina	.10	M/Th 2pm-6pm	HHS 413
Chris Benedict	.11	M/Th 2pm-6pm	HHS 412
Borja Ferreter	.12	M/Th 2pm-6pm	HHS 218B
Sebatian Misiurek, Digital Consultant			

COURSE OVERVIEW

The course continues an emphasis on the critical role and correspondence that site, program, material and structure offer as determinants of an architectural project by addressing a medium scale public building in a semi-urban context. Through a thorough analysis of preexisting site information, architectural precedents, theoretical models of significance to the program, and relevant social and cultural parameters, a critical conceptual approach will be articulated aimed at producing a comprehensive project.

NAAB Requirements¹

5. Formal Ordering Systems

Understanding of the fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design, architectural composition, and urban design

7. Collaborative Skills

Ability to recognize the varied talent found in interdisciplinary design project teams in professional practice and work in collaboration with other students as members of a design team

11. Use of Precedents

Ability to incorporate relevant precedents into architecture and urban design projects

¹ **Understanding**—means the assimilation and comprehension of information without necessarily being able to see its full implication.

Ability—means the skill in using specific information to accomplish a task, in correctly selecting the appropriate information, and in applying it to the solution of a specific problem.

14. Accessibility

Ability to design both site and building to accommodate individuals with varying physical abilities

17. Site Conditions

Ability to respond to natural and built site characteristics in the development of a program and the design of a project

Learning Objectives

This studio focuses on a broader examination of architecture and design through an investigation of the physical and programmatic requirements of public buildings and their larger site implications. Programmatic strategies are developed through analysis of conceptual and programmatic issues. Appropriate interventional and transformational site strategies are explored. Spatial and tectonic configurations are then structured to mediate the external forces related to a semi-urban fabric, natural systems and the internal complexities of building program. The end product of this process of investigation will be the fully integrated design of a **kindergarten school** located on a **sloped semi-urban site**.

In 1990 the US congress passed the American's with Disabilities Act which brought into law for the first time in the United States a set of building regulations that insures equal access and equal treatment of the physically disabled in all new construction. The core intent of the law is to equal rights of access and barrier free design to all, including those with physical disabilities. The design of the library must meet current requirements for the physically disabled including handicap compliant restrooms and should allow equal access and participation in the projects spatial organization. All spaces must be fully accessible and barrier free according to the guidelines of the ADA's latest requirements as well as locally applicable building codes. See attached diagrams – for complete guidelines go to <http://www.access-board.gov/adaag/html/adaag.htm>

Learning Objective Summary

- Gain the ability to comprehensively research, analyze and extract essential knowledge from significant architectural precedents.
- Gain the ability to critically develop a project based on a specific conceptual approach and methodology.
- Gain the ability to comprehensively research, analyze and extract essential knowledge from a specific preexisting site context.
- Gain the ability to produce a comprehensive site design including basic grading (manipulation of site contours), planting strategy and planning for future structures.
- Gain the ability to apply basic organizational, spatial, structural and constructional principals to the conception and development of interior and exterior spaces, building elements, and components.
- Gain the ability to identify and assume divergent roles that maximize individual talents, and to cooperate with other students when working as members of a design team and in other surroundings.
- Gain the ability to provide a coherent rationale for the programmatic and formal precedents employed in the conceptualization and development an architectural project.

Course Requirements & Grading Criteria

- Regular attendance at twice weekly studio sessions (3 unexcused absences will result in an F)
- Timely completion of all projects and assignments
- Work completed with the highest standards of criticality, quality and craft

Project #1A & #1B: Learning Assemblage & Precedent Analysis (30% of final grade)

-due: Thursday, February 17th

Project #2: Site Strategy – Analysis & Organizational Systems (20% of final grade)

-due: Monday, March 21st & Thursday, March 24th

Project #3: A New 9,100 SF Froebel Kindergarten (50% of final grade)

-due Monday, April 25th -27th (Final Review date on the week on 04/25 for each studio TDB)

PROJECT #1A: LEARNING ASSEMBLAGE, 2.5 WKS

Introduction

Freidrich Froebel, an innovator in child education, developed a model for kindergarten based on the notion of play “as a leisurely pursuit that can foster an individual’s relationship to the physical world”. Play becomes a productive exercise that allows the individual to not only “make” the world at a micro scale but to place himself/herself within a larger conception of the world and see the interdependence all things within it. Froebel structured play through the two interchangeable devices: the materials or “gifts” and the “occupations” or practices – how the individual puts the material into action. Critical to this way of thinking is the relationship between part to whole as both a material and cultural practice. Through a close reading of the Froebel system, parallels can be drawn between the kindergarten pedagogy and the design of the school – how each can inform and shape the other.

Students are required to present models for a contemporary *learning assemblage* from the pragmatics of a given programmatic brief. The design shall develop a set of spatial and tectonic relationships for a small group of 18 children of kindergarten age supervised by two full time teachers as “sample” that can later be extended and generalized into the organization of the kindergarten. The *learning assemblage* will investigate the making of fundamental spaces for the human body (spaces to work, play, collect, display and exchange). Students will develop a given set of surfaces to produce scenarios to accommodate programmatic doubling and flexibility – how individual components of the program can become systems of enclosure and support at different scales through repetition, variation and adaptation is the goal of the exercise. Other important issues are adjacency to natural light, the sequence between individual and collective spaces, the interdependence between indoor and outdoor space and the underlying concept of part to whole/whole to part communication across scales.

Required reading for all studios: Norman Brosterman. Inventing Kindergarten – see PDF, Chaps 1-3.

Considerations

Child Development

- How does space – the interior and exterior landscape of architecture contribute to and support the individual and group needs of childhood intellectual and emotional development?
- To what degree does it provide security and stimulation?
- To what degree does it allow for and support flexibility in curriculum activities?

The Language of Architecture

- How does the architecture of the kindergarten contribute to the 3 dimensional, material, structural and sensorial awareness and growth of the child?
- How does it help to form the basis of sensorial memory?
- How is the important role of scale addressed in the physicality of the environment?
- In what way is natural light manipulation a creative factor in the environment?

The Natural World

- How does the architecture relate to the concept of the garden vis-à-vis Froebel and incorporate it into the kindergarten pedagogy?
- How does the design contribute to the understanding of the relationship between the natural and built environment and part to whole/whole to part.

Programmatic Components

Indoor space and infrastructure to accommodate 18 children and 2 teachers approximately 750 s.f. The assemblage must be a minimum of two floors and should address sectional scenarios – the minimum requirements below can be extended depending on each student’s investigation:

- Clothing cubbies with changing area – 1 for each child
- Work tables – 3 with seating for 6 children each
- Stage/storytelling area
- Shelves for materials and books + display surfaces
- Kitchenette – countertop with sink and undercounter refrigerator

Outdoor space and infrastructure to accommodate 18 children and 2 teachers approximately 1,000 s.f. – the minimum requirements below can be extended depending on each student's investigation:

- Garden and playscape
- 25% softscape and 75% hardscape

Presentation Requirements

Design statement 1 page typed

Plans 1/4"=1'-0"

Sections 1/4"=1'-0"

Basswood sectional model 1/4"=1'-0"

Diagrams

Section, montage or perspective that proposes how the assemblage can be repeated into a system with at least two other adjacent assemblages to form a network or larger scale organization

PROJECT #1B: PRECEDENT ANALYSIS, 1 WK (to be done in teams of two students)

Introduction

This project deals with the research and analysis of precedents within the building type of the school. Choose a precedent from the attached list (or as assigned by studio professor). Provide precise analytical drawings and diagrams of the following:

Programmatic Affiliations

- play / work / rest zones (classrooms, athletic facilities, library)
- inside / outside (classrooms to courtyards, school building vs. outdoor playing fields)
- student / teacher / administration (hierarchical systems of authority)
- program sequence and adjacency logic
- sequence of light to dark

Building Site Strategy

- north / south orientation (direct vs. indirect sunlight)
- orientation to street, neighborhood and site features (accessibility and views)
- site section/contour logic (hardscape vs softscape)

Geometry and Morphology

- proportional systems
- solid / void relationships
- typological references
- conceptual analogue (building as artificial landscape, sanctuary, etc)

Circulation

- vehicular and pedestrian
- hyper efficiency vs. purposeful delay (time based techniques)
- inside / outside connections
- public vs. private zones (primary vs. secondary systems)

Structure and Enclosure

- building assembly systems (steel frame, truss, masonry, precast concrete, etc)
- modular structural bay (free plan vs. load bearing walls)
- fenestration (punched windows, panel systems, glazed curtain wall, sun control system, etc)

Presentation Requirements

Each team will present two 22x34 boards producing a minimum of four diagrams, e.g., measured analytical projections (plans, sections, elevations, perspectives, axonometrics). Each team's analysis will be reproduced on 11x17 paper (oriented in landscape format with a 1" strip on the left side of the paper for binding) to be assembled into a book of precedents for reference throughout the semester. Note all diagrams should acquire a key set of terms or "traits" classifying the conceptual value of the material.

PROJECT #2 SITE STRATEGIES – ANALYSIS & ORGANIZATIONAL SYSTEMS, 4 WKS

Introduction

Infrastructure works not so much to propose specific buildings on given sites, but to construct the site itself. Infrastructure prepares ground for future building and creates the conditions for future events. Its primary modes of operation are: the division, allocation, and construction of surfaces; the provision of services to support future programs; and the establishment of networks for movement, communication, and exchange. Infrastructure's medium is geography.

- Stan Allan, Points + Lines

The location for the semester project is a neighborhood in the St. George section of Staten Island. **Directly east of St. Peter's Church @ 53 St. Mark's Place**, the site is a sloped 75'x157' parcel with a change in grade of over 30' from front to back. Approximately 1 mile from the Staten Island ferry terminal, the site has clear views of New York harbor. The land is part of the Special Hillside Preservation District adopted in 1987 to guide development in the steep slope areas of Staten Island's serpentine ridge. The special overlay districts cover approximately 1,900 acres in Community District 1, including portions of St. George in the northeast, Snug Harbor to the west and extending south to the Staten Island Expressway. While the Special District is predominantly residential, it also includes several large parks and institutions such as Clove Lakes Park and Wagner College. See the attached site plan – St. George Terminal is walking distance to the site, go to <http://www.siferry.com/> for schedule and other information.

Students are required to do 1. an analysis of the site and 2. extract two strategies to “construct” the site in such a way that the organizational system of the school is generated from an attitude of how to negotiate the unique traits of the serpentine ridge, e.g. topography, circulation, access, views, etc.

Considerations

General Context

- historical, cultural, political, social, etc

Infrastructure

- vehicular and pedestrian circulation systems, land retaining systems

Typological Analysis

- assessment of existing building types, public spaces

Ecological Systems

- coastline weather patterns, prevailing winds, orientation/sun angles

Natural Dynamic Systems

- land forms, topography, drainage patterns

Conceptual Framework

- What are the terms of a negotiated relationship that combines residential and institutional programs in a neighborhood like this?
- What is defined as nature in a site like this? What is natural vs. artificial?
- How does various information related to the material infrastructure or rules and regulations that govern this space offer specific clues to the site, e.g., geography, environmental factors, property ownership, set back requirements, air rights, zoning restrictions, private property vs. public space, neighborhood / regional history?
- What is the relationship of the building to the site? How is it accessed?
- What programmatic elements desire view and/or natural light?
- What elements require enclosure and/or an intimate relation to the exterior?
- How do the topographical conditions influence the organization of the neighborhood's building fabric?
- What is the relationship to the street and neighborhood?

Presentation Requirements: Analysis

Each student will present one 22x34 board producing a minimum of two diagrams, e.g., measured analytical projections (plans, sections, elevations, perspectives, axonometrics). Note all diagrams should acquire a key set of terms or “traits” classifying the conceptual value of the material.

Presentation Requirements: Organizational Strategies

Develop 2 alternate schemes showing circulation, classrooms, outdoor play/garden spaces and how the site is geometrically organized and graded. Schemes must be a minimum of two floors.

1/16”=1’-0” Basswood models

1/8”=1’-0” Section and plan of each scheme

Perspectives/ axonometrics and diagrams

PROJECT # 3: A FROEBEL KINDERGARTEN SCHOOL, 5 WKS

Introduction

One of the most critical issues this society continually faces is the education of our children. In the typical learning environment child development may be understood as an actual process traditionally structured and facilitated by parents, teachers and administrators. This studio project will serve to communicate how this process of child development may also be facilitated and expressed through the designed environment. The architecture of schools in a consciously designed educational environment can connect with children in a way that encourages their own independent process of self development and critical inquiry.

Over the course of the semester students have been working with two scales simultaneously as an analogue to the Froebel system of the nesting of part to whole, whole to part. Where the assemblage project revolved around the specific – the form emerging from the program as shaped by the body, the site analysis developed an attitude about the larger scale infrastructure of the site – the organization of the school growing from a strategy of how the site can be “constructed”. The final phase of the project challenges the student to interlock these two approaches through the interrelationship of form, program and site by designing a kindergarten school.

Conceptual framework

All studios are required to expand upon lessons learned and systems generated in the previous assemblage/organizational strategies and the precedent/site analysis to formulate unique and creative solutions for a **9,100 sf kindergarten school** sited adjacent to St. Peter’s Church in Staten Island. All designs are required to develop concepts that integrate the following distinct tectonic systems in a manner that clearly articulates the relationship between program, form and site.

1. Structural system (engineered wood and concrete)
2. Exterior enclosure system (panel, curtain wall, cavity wall, etc)
3. Circulation systems (stairs, ramps, elevators, corridors)
4. Fenestration systems (windows, skylights, sun control)
5. Grading and hardscape systems (retaining walls, terraces, exterior stairs, etc)

Considerations

Architectural Language

- What spaces are most appropriate to the new educational facility? What spatial types and groupings create activities and relationships conducive to specific educational scenarios?
- What is the role of history and typology in the evolution of the design?
- In what way does tectonics contribute to the specific effect of the environment, the reinforcement of the educational philosophy, and the appropriate operations of the facility?

Program

- What are adjacency requirements?
- Which program elements need to be linked? Separated?

- What is the sequence of spaces from entry to classroom?
- What is the connection between inside and outside activities?

Site

- What is the relationship of the building to the site?
- What programmatic elements desire view and/or natural light?
- What elements require enclosure and/or intimate relation to the exterior?
- What topographical or contextual influences exist or should be taken into account?

Circulation

- How do various users, in particular children, approach and enter the school?
- Do the various users have different needs in regards to movement within and around the building and between various levels of site and building?
- In what way is the children's dismissal and exit different from their arrival?
- How are the various facilities serviced in an efficient way that does not interfere in the circulation?

Structural System

- All students are required to define appropriate structural system that is integrated with, flexible and responsive to program, site, building envelope issues.
- Are there any important roles for the structure to play as an integral part of the educational environment beyond simple pragmatic ones?

Enclosure System

- What types of enclosure systems are used and how are they implemented to support a larger pedagogical idea?
- How is natural light controlled and modulated through the building and for what purpose?
- How does fresh air enter the various spaces?

Programmatic Components

On the given semi-urban site (see attached) develop the design for a **9,100 sf kindergarten school**. The programmatic elements are as follows:

<u>Academic</u>	6,300 sf
• 5 Classrooms @ 25x30 each	3,750 sf
• Performance/gym space	1,500 sf
• Music room	1,050 sf
<u>Administrative</u>	900 sf
• Lobby	200 sf
• 3 Offices (2 administrative + nurse)	450 sf
• Conference room with kitchenette	250 sf
<u>Service</u>	1,900 sf
• MEP Space	350 sf
• 1 Lavatory for each classroom @ 35 sf each	175 sf
• 2 Lavatories for administration @ 35 sf each	70 sf
• 2 Lavatories for performance/gym @ 90 sf each	180 sf
• Circulation	1,125 sf
<u>Secure Outdoor Garden and Play Spaces</u>	4,500 sf

Drop-off and pick-up space for 3 cars (on-street parking provided in designated areas for staff)

Presentation Requirements

Other presentation elements at individual instructor's discretion

Design statement	1 page typed
Diagrams	3 minimum
Plans	1/8"=1'-0"

Sections	1/4"=1'-0"
Basswood model	1/8"=1'-0"
Class site model	1/8"=1'-0"
Building component detail	1/2" =1'-0"
Perspectives / axonometrics	2 minimum

Note: Model or drawings should make a proposal about color

PRECEDENTS AND BIBLIOGRAPHIES

Partial List of Precedents for Analysis

Altamira School, Santiago, Chile, Mathias Klotz. *Architecture Magazine*, July 2001
 Amsterdam's Children Home, Amsterdam, Holland, Aldo Van Eyck, 1955-60
 Apollo Schools, Amsterdam, Holland, Herman Hertzberger 1981-83
 Boarding School, Morella, Spain, Miralles and Pinos, 1986
 Corning Child Development Center, Corning, NY, Scogin Elam Bray. *Architecture Magazine*, July 1994
 Darmstadt School Project, Darmstadt, Germany, Hans Sharoun, 1951
 Diamond Ranch High School, Diamond Bar, CA, Morphosis. *Architecture Magazine*, Jan 1997
 Dragen Children's House, Odense, Denmark, C.F. Moller, 2009
 Elementary School, Fagnano Olana, Italy, Aldo Rossi, 1972-76
 Fuji Monstessori School (Roof House), Toyko, Japan, Tezuka Architects, 2007
 Geschwister Scholl School, Lunen, Germany, Hans Sharoun, 1958-62
 Head Start School Competition, Reiser Umemoto, 1994
 Kindertagesstette, Frankfurt Griesheim, Germany, Bolles + Wilson, 1992
 Kol Ami Worship and Education Center, Scottsdale, AZ, Will Bruder, 1994
 Long Beach International Elementary School, Morphosis + Thomas Blurock, 2002
 Milwaukee Montessori School, Milwaukee, WI, Studio Works. *Architecture Magazine*, April 1998
 Montessori School, Delft, Herman Hertzberger 1960-66
 Munkegardsskolen, Sonborg, Denmark, Arne Jacobsen, 1948-57
 Petersschule, Basel, Switzerland, Meyer and Wittwer, 1926
 School at Marl-Drewer, Westphalia, Germany, Hans Sharoun, 1960-71
 Secondary School. Broni, Italy, Also Rossi, 1979
 Shiroishi Municipal No.2 Elementary School, Taro Ashihara & Ko Kitayamad, 1996
 Strawberry Vale Elementary School, Victoria, BC, Patkau Architects. *Architecture Magazine*, Feb 1997

Bibliography – Schools

*Norman Brosterman. [Inventing Kindergarten](#) (required reading for all studios – see PDF, Chaps 1-3)
 Peter Blundel Jones. [Hans Sharoun](#)
 Mark Dudek. [Architecture of Schools, The New Learning Environments](#)
 Mark Dudek. [Kindergarten Architecture, Space for the Imagination, Educational Facilities, New Concepts in Architecture & Design](#)

Bibliography – Site Work

Stan Allen. [Practice: Architecture, Technique and Representation](#)
 Carol Burns. "On Site", from Andrea Kahn ed., [Building Drawing Text. Essays in Architecture Theory](#)
 Bernard Cache. [Earth Moves](#)
 James Corner. [Recovering Landscape: Essays in Contemporary Landscape Architecture](#)
 Deleuze and Guattari. "Smooth and Striated", [A Thousand Plateaus](#)
 Rosalind Krauss. "Sculpture in the Expanded Field", [The Originality of the Avant-Garde and Other Modernist Myths](#), "Double Negative", [Passages in Modern Sculptures](#)
 Isamu Noguchi. "Contoured Playgrounds"
 Toshio Shibata. [Visions of Japan, Landscape](#)
 Robert Smithson. "A Tour of the Monuments of Passaic, NJ", [The Collected Writings](#)
 Denis Wood. [The Power of Maps](#)
 Department of City Planning. [Special Hillside Preservation District Zoning Study](#)

SEMESTER SCHEDULE

Interim reviews at individual instructor's discretion

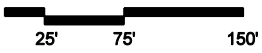
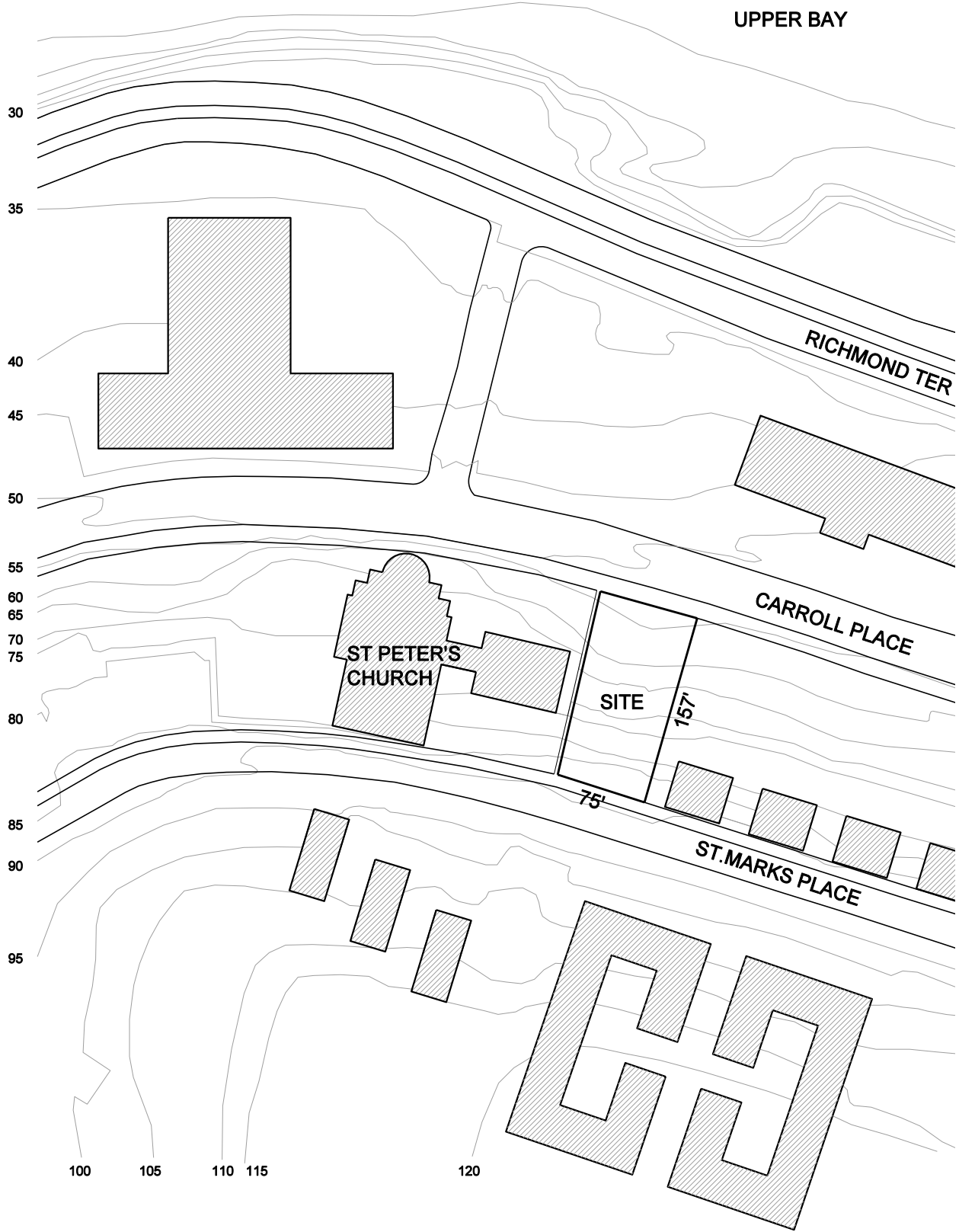
JANUARY

Week #1	01/20	Thursday	Studio Selection Day, Memorial Hall First Studio Class, Issue Project #1A & #1B
Week #2	01/24 01/27	Monday Thursday	Desk Crits DFG Workshop, Assembling Desk Crits
Week #3	01/31	Monday	Desk Crits
<u>FEBRUARY</u>	02/03	Thursday	Desk Crits
Week #4	02/07 02/10	Monday Thursday	Desk Crits Desk Crits
Week #5	02/14 02/17	Monday Thursday	Desk Crits Pin-up: Project #1A & #1B, Issue Project #2
Week #6	02/21 02/24	Monday Thursday	Desk Crits DFG Workshop, Siting Desk Crits Structures Lecture, HHC 35, 1pm
Week #7	02/28	Monday	Desk Crits
<u>MARCH</u>	03/03	Thursday	Desk Crits
Week #8	03/07 03/10	Monday Thursday	Desk Crits Desk Crits
Week #9	03/14 03/17	Monday Thursday	Spring Break – No class Spring Break – No class
Week #10	03/21 03/24	Monday Thursday	Midterm Review: Project #1A, #1B & #2, Issue Project #3 Midterm Review: Project #1A, #1B & #2, Issue Project #3

The midterm jury in the spring is scheduled as a two day event. All studios will be paired on each of the two days in order to allow the students to see alternative methodological perspectives – 1/2 of the students from each of the paired studios will present each day. It is each faculty team's responsibility to arrange their schedule in advance to accommodate the midterm review schedule and coordinate with their paired studios. Each faculty should also arrange to invite outside critics given the importance of this pre-final event. Studio pairings TBD.

Week #11	03/28 03/31	Monday Thursday	Desk Crits Environmental Systems Lecture, HHC 35, 1pm Desk Crits DFG Workshop, Representing
<u>APRIL</u>			
Week #12	04/04 04/07	Monday Thursday	Desk Crits Desk Crits
Week #13	04/11 04/14	Monday Thursday	Desk Crits Desk Crits
Week #14	04/18 04/21	Monday Thursday	Desk Crits Desk Crits
Week #15	04/25 04/25-4/27	Monday-Friday	Final Review Week Final Review: Project #3

Note: Pin-up and Review locations TBD. Final Review date on the week on 04/25 for each studio TDB. Final dates, times and locations for Digital Futures Group workshops TBD.





View Looking NE



View Looking SW