STATE UNIVERSITY OF NEW YORK

Technology Division, Architecture Program

Architecture 370 - Architectural Design IV
Spring Semester 2009 6 Credit Hours
2:00 to 6:00 pm, MWF

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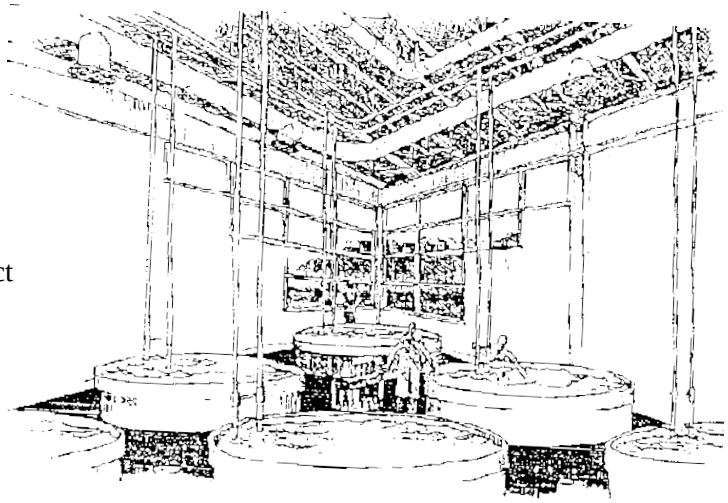


COURSE GOALS

This course is built on the basis of the previous. In that course, designers grappled with inspirational sources from other fine arts in order to give them formal architectural expression. In this term, designers will put forth a higher level of precision in the layout and analysis of functional architecture and task oriented spaces. Also, designers will take special care to understand context, site planning, and ultimately master planning, both in suburban and rural settings.

This term is clearly divided into two units, each with its own set of challenges.

UNIT I: Design of a Private Laboratory Free Standing Building in Suburban Setting

The expansion, redesign, and new creation of laboratory units, floors, and complexes has experienced growth in all quarters in the last several decades, and more is expected. S.T.E.M. (Science, Technology, Engineering, and Mathematics) occupations are anticipated to grow as much as thirty percent in the next decade. (U.S. Bureau of Labor Statistics). New laboratories are currently under construction or expansion in many leading universities, hospitals, government facilities, and in the private sector. Not every architectural firm has a hand in the design of these facilities, but the exactitude requisite in their design can be extended to mastery in all areas of architecture.

- RESEARCH: Since each student will be given a different type of facility, it behooves him to immerse himself in the requirements and daily operation of this specific type. The best projects will arise from research done with websites, texts, and with personal contact.
- PROGRAM: A basic program will be provided. The task of the design student is to engage in the adaptation of this program for individualized purposes. Utilize the program as a source of inspiration, and flexibly stretch it to accommodate your direction.
- DIALOGUE: Designers will create a strong underlying design schema and engage in continuous dialogue between the abstract organizational principle, i.e., concept, and programmatic rigors.
- INFLUENCE: In his articles in Science Journal, Jon Cohen posed the question "Does the architecture of a laboratory influence a scientist's creativity and productivity?" The architect must enter the realm of the laboratory specialist and see from the perspective of this person in order to fulfill these aspirations.
- SITE: Delve into your site and make it your own. Create a project that both responds to site concerns respects its neighbors and is transformative of its surroundings.
- TECTONICS: Get a handle on the materials in your building and assemble and connect them in appropriate ways. Study how you selection of technologies impacts and realizes your design.
- GRAMMAR: Expand your architectural vocabulary to put together exciting new languages of form.
- PRESENTATION: Use all tools at your disposal, be they analog or digital, traditional or hi-tech and cutting edge. Hand methods are preferred, but hybrids are given deference also.

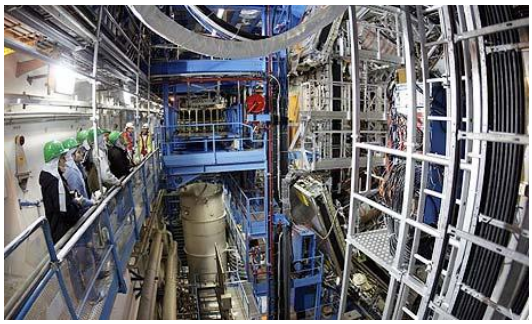
- FINALLY... QUIESENCE: Bring a cool analytical approach to the laboratory design process.

THE FIRST STUDIO PROJECT: LABORATORY

The first unit of the semester will be the design of a laboratory facility for a private corporation on a site in suburban Albany, to be determined. Ten distinct lab programs will be developed by students, but these will be paired to facilitate research.

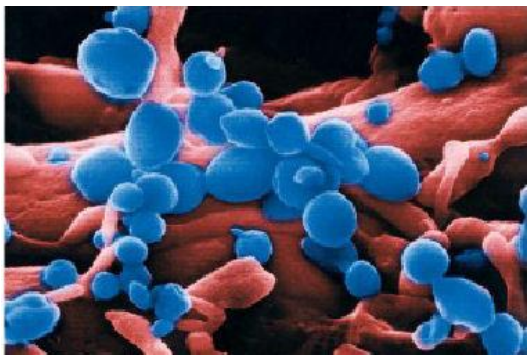
Pair One: Physics Laboratories

1) Particle Accelerator Laboratory
2) Nuclear Radiation Laboratory



Pair Two: Medical Laboratories

1) Neuroscience Laboratory
2) Pathology Laboratory

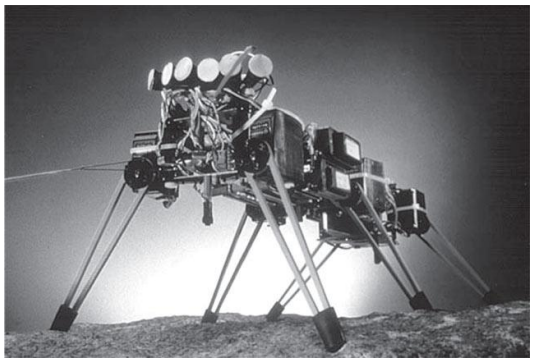


Pair Three: Materials Testing Laboratories

1) Metallurgical Laboratory
2) Space Materials Laboratory

Pair Four: Applied Technology Laboratories

1) Robotics Laboratory
2) Artificial Intelligence Laboratory



Pair Five: Applied Technology Laboratories II

1) Renewable Energy Research Laboratory
2) Jet Propulsion Laboratory

You are responsible for researching, expanding, and articulating the following three-story program for your specific assigned area of expertise. You will be expected to undertake research in the campus library, through interlibrary sources, via the world wide web, and with an expert from the field to which you have been assigned. Conduct your research with all due respect for the time and level of expertise of your own selected Science, Technology, Engineering and Mathematics mentor. Some mentors will be recommended, others you may find on our campus, others you must seek further on our own. Your mentors should be cordially invited to your reviews.

The square footages given below are initial allotments only, and are customizable per the laboratory assigned. The major elements are:

I.	Entry and Offices, First Floor	
	A. Entry and Reception	600 square feet
	B. President's Office	350 square feet
	C. Assistant's Office	300 square feet
	D. Open Office	800 square feet
	E. Boardroom	400 square feet
	F. Employee Lounge / Lockers	600 square feet
	G. Restroom Facilities	800 square feet
	H. Mechanical / Electrical	750 square feet
	I. Storage	500 square feet
	J. Loading Dock	250 square feet

II.	Laboratory Space, Second Floor	
	A. One large laboratory	1000 square feet
	B. Four small laboratories	500 square feet
	C. Common space	300 square feet
	D. Restroom Facilities	500 square feet
	E. Storage	200 square feet
	F. Security	400 square feet
	G. Mechanical / Electrical	150 square feet

III.	Laboratory Space, Third Floor	
	A. Five small laboratories	500 square feet
	B. Laboratory manager office	300 square feet
	C. Common space	300 square feet
	D. Storage	200 square feet
	E. Security	400 square feet
	F. Mechanical / Electrical	150 square feet

TOTAL SQUARE FOOTAGE 13750 square feet

UNIT II: Design of a Master Plan for a Wilderness School Rural Master Plan

Master Plans address the size, form, character, and image of a particular environment. They describe all proposed new building growth on a site while at the same time defining outdoor spaces that unify functions of a particular campus. Master planning is a skill required by many disciplines, including urban and regional planners, landscape architects, and civil development authorities. Architects are key players in master planning developments, often chairing boards or serving in other capacities. The ability to see buildings in context is crucial. One building, if well designed and sensitive to its surroundings, can become a keystone element for the contextual integration of a campus. As such, poorly designed buildings can contribute to a loss of character and genus loci (spirit of place), and a profound sense of disintegration and loss of harmony.

The wilderness school in question here has requested a green solutions for their architectural programs. The two texts selected for the course describe two approaches to green building. The first is an integration of green techniques and materials into already widespread common traditional construction methods. The second is alternative green building, with earth based materials and labor-intensive construction. As green architecture is unequivocally the strongest movement in the profession today, each of these will inevitably become part of the repertoire of a trained creative architect. Consider this a first exposure to your future as a green practitioner.

- SUSTAINABILITY: Study and develop strategies for the camp that consume resources at a slower rate than they are produced. Become intimately aware of the social, technological, and scientific solutions that create a sustainable environment. Implement these in your solution.
- PROGRAM: Learn and respect the underlying principles of our hosts, so as to design an expansion in keeping with the camp philosophy. Study and understand the curriculum taught at the school.
- LAND ETHICS: Obtain a direct and very real, palpable relationship to the site, and conceive of your project as an action upon the earth. Strive to create an action that merges with the site with a conscious and highly sensitive recognition of place and aspect.
- LAND PLANNING: Grasp the land tacitly as a tapestry of elements, each contributing to the aesthetic and the purpose of the wilderness school campus. As such, give proper due to both occupied, built ground and also to unbuilt territory, in the form of forests, meadows, thickets, wetlands, and streams.
- SITE CIRCULATION: Plan for the movement of vehicle, man, and animal through the territory, all the while learning to tread lightly upon the resource.
- SITE SPACES: Identify spaces for gathering, learning, working, and experiencing solace with nature. Develop a site plan with an intentional order and sequencing of these spaces.
- GREEN SKILLS: TRADITIONAL: Apply these to the building methodologies with which you are already familiar and well-versed, with a newfound sensitivity to materials and methods.
- GREEN SKILLS: ALTERNATIVE: Expand your familiarity to earth building technologies, such as earth sheltering, rammed earth, straw, adobe, and earthships.
- FINALLY...DISCOVERY: Bring an open-eyed enthusiasm for the great outdoors to the project.

Hawk Circle,
Aerial View
of Camp

THE SECOND STUDIO PROJECT: CAMP MASTER PLAN AND ELEMENTS

This semester's second studio experience will be a Master Planning exercise for an outdoor education school within a short drive from the Delhi campus, in Cherry Valley, New York. The school is the Hawk Circle Wilderness Education School. Students will be expected to each develop a Master Plan and building solutions for six new buildings on the site. Each building has very specific requirements which will be the baselines for the evaluation of your work, both aesthetically, functionally, and structurally. See http://www.hawkcircle.com

The owner is a non-for-profit agency, and truly benefits from your study as an act of service to your community. A commendable job here is not just a piece in your portfolio, but a tangible point of beginning for the Hawk Circle planning process.

For the Master Planning Phase:

1) Create a solid existing site plan and site analysis
2) Determine the location of new buildings, outdoor spaces, open areas, transition spaces, and site circulation corridors. Determine site approach and arrival
3) For new buildings, create guidelines for
    a) Building typology (types of use)
    b) Massing requirements
    c) Story and volumetric requirements
    d) Aesthetic requirements and detailing
    e) Relationship with existing context
4) For outdoor spaces, create guidelines for
    a) General theming and decor
    b) Landscaping and placemaking, nodes
    c) Outdoor walls, fencing, edge delineation
    d) Outdoor furnishings, signage
5) Create Master Plan Document

Existing Buildings

1) Main Farmhouse
Community room, Family room, Kitchen, Private Bedrooms, Infirmary
2) Log Cabin, Private
3) Barn / Workshop, Natural arts
4) Cabins, 8, 12' square
5) Traditional Outbuildings, Native American

Requisite for all new buildings:

1) Self-sustaining, not grid dependent
2) Natural materials whenever possible
3) Integration of timber framing
4) Alternative building systems
5) Natural aesthetic, tectonics

Proposed Architecture

1) Workshop Building
   - Two stories, approximately 40'-0" x 30'-0"
   - Utilizing earth sheltering and passive solar
   - Alternative energy solutions to be explored
   - Timber framed with primitive earth building technologies
   - Interior in open floor plan
   - Kitchen and Half-bath

2) Dining Hall
   - Two stories
   - Commercial Kitchen with appropriate food storage and preparation
   - Dining area with seating for fifty people
   - Again, alternative building and energy considerations
   - Offices and storage
   - Staff housing on upper level

3) Nature Center
   - In place of upper old barn
   - One story, with open floor plan
   - Includes library and classroom

4) Student Housing (2 Buildings)
   - Two buildings, can be very similar
   - Earth sheltered, built into hillside
   - Each to house twelve students, with two per room
   - Two closets and two desks per room
   - Two full bathrooms (presumably one per gender)
   - Small kitchen and eat-in area per building
   - Open shared living area per building
   - Large mudroom for boots and coats

5) Barn for Outdoor Projects
   - Utilized for classes in timberframing and woodworking
   - Heated by a woodstove (or other technologies)
   - One end of bar to house five-six animals
   - One story (presumably with hayloft

6) Additional Traditional / Native Camp Outbuildings
   - To Be Determined by designer

EVALUATION :
Because of the character of these projects, you will be engaged in team work as well as individual production, and your explorations will embrace both pre-design activities and schematic design. While the semester schedule is outlined below, the evaluation of your work will include the following:

Pre-Design Activities
These will include site analysis and precedent studies.

Schematic Design
This will include program development, concept generation and development, and site planning and building design.

Other Considerations
This includes individual development and growth, risk taking, cooperative abilities, role of research in design, exploration processes, personal attitude, and so forth.

GRADING CRITERIA:

Work of the highest echelon, work nearly representative of that of a professional architect: A

Work of a higher than average quality, workmanlike projects at a student level: B

Work of average quality, reasonably well-wrought, but with few distinguishing characteristics: C

Work lacking in quality of assembly, creativity, or craft: D

Work with nary a trace of redeeming value whatsoever: F

OTHER:

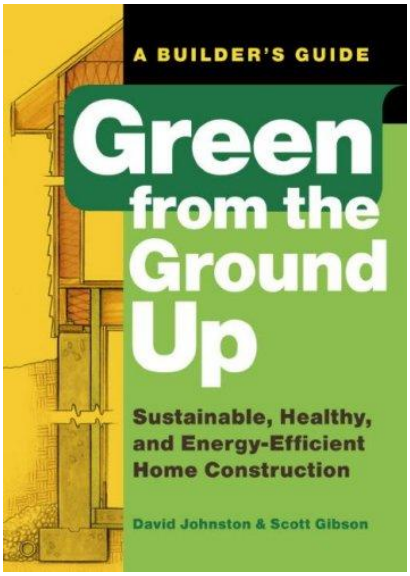
You had also best believe that participation in the class and cooperation with ones colleagues are essential.

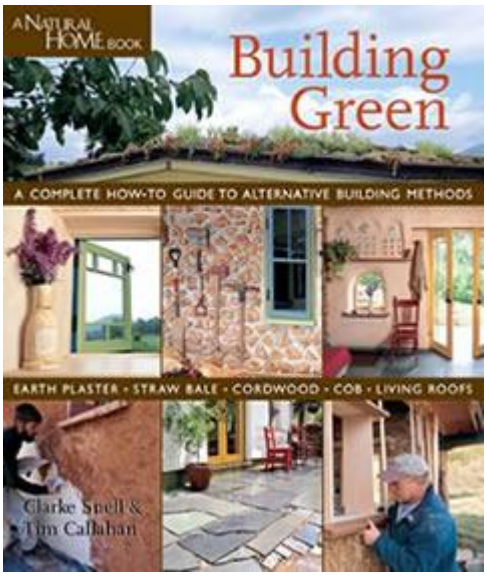
A commitment to the evolution of the intellect is required, a mutual inspiration of the creative fire is requisite, and tantamount above all else, find within each of yourselves and within all your creations a passionate striving for the true meaning and essence of beauty.



Images from the Hawk Circle

REQUIRED TEXTS: (Students must acquire by Mid-Winter Break)





1) **Green From the Ground Up**, Taunton Publishing

This book was first published this year and primarily describes how fundamental green construction practices are now being integrated into familiar, conventional, standard, everyday, popular construction.

It will make a solid reference at your first architectural internship. $16.47, Amazon

2) **Building Green - A Complete Guide**, Sterling Publishing

This book is about not-so-conventional construction. The unusual building materials and methods. This will be a solid go-to text for those of you using earth-designs with countercultural methods...which hopefully will be many or most of you for this particular design. $19.77, Amazon

RECOMMENDED TEXTS: No other texts are specifically recommended, except of course Ching's Form, Space, and Order, which was heavily utilized last term.

MATERIALS REQUIRED: Architectural / Construction drafting kit, Architectural Design drawing kit, and other supplies as recommended by the instructor. Most available at Campus Store. Rendering materials and model materials as appropriate. Please be proactive in providing your own supplies and materials rather than depending on the dwindling or non-existent funds of the college.

PROJECT DOCUMENTATION

Documentation of all studio projects (including models, drawings, sketches, and all relevant developmental work) is important for your portfolio and for the architecture program review process. You will be required to submit a CD of high quality images at the end of this semester. This documentation will not be graded, however, students who do not submit the CD will receive an incomplete grade (I) for the course.

The CD is **due Friday, May 15, 2009 by 5:00pm**.

SEMESTER SCHEDULE

This is the general schedule for design this semester, as we know it at the beginning of the semester.

	Monday	Wednesday	Friday .
January			
Week 1	19-Introduction Charrette Assigned	21- Charrette Work Laboratory Project Assigned	23- Begin Establishing Outside Mentors
Week 2	26-Charette Review Introduction to Laboratory Project	28- Precedent Studies & Site Analysis Assigned	30- **Albany Trip FRI-SAT-SUN**
February			
Week 3	2 -Desk Critiques	4- Desk Critiques	6- Desk Critiques
Week 4	9- Pre-Design Package Due	11- Conceptual Intro & Programming	13- Desk Critiques
Week 5	16- Programs Due	18- Desk Critiques	20- **Major Review #1 Laboratory Conceptual**
Mid-Winter Break			
March			
Week 6	2- Schematic Design Discussion	4- Desk Critiques	6- Desk Critiques
Week 7	9- Desk Critiques	11-Desk Critiques	13- Desk Critiques
Week 8	16- Interpersonal Critique	18- Experimental Critique	20- **Major Review #2 Laboratory Schematic**
Week 9	23- Camp Project Assigned	25- Introduction to Master Planning and Site Analysis with Professor Tessier	27- Weekend at Camp (Tentative Plan)
		April	
Week 10	30 - Desk Critiques	1- Desk Critiques	3- Desk Critiques
Spring Break			

Week 11	13- Inter-Personal Critiques	15- Desk Critiques	17- Desk Critiques
Week 12	20- Desk Critiques	22- Desk Critiques	24- **Major Review #3 Camp Conceptual**
			May
Week 13	27- Desk Critiques	29-Desk Critiques	1-Desk Critiques
Week 14	4- Desk Critiques	6- Desk Critiques	8- Desk Critiques
Week 15	11-Desk Critiques	13- Desk Critiques	15- **Final Review Camp Schematic**

CD OF ALL WORK must be turned in.