



ACE Westchester Team • Design Project, 2007-2008

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HARBOR SQUARE HIGH SCHOOL

BUILDING TYPE: High School – Grades 9 through 12

STUDENT POPULATION: 400

LOCATION: Waterfront in Ossining, NY

PROGRAM FOR DESIGN:

THE PROJECT: Conceptual-feasibility Design Studies for:

- **An Alternative High School serving 400 students, grades 9 through 12.** The students have special interests in learning about design and construction standards appropriate to sustain projected population increases of 100% by the year 2030.
- **Educational Program:** The student body is selected from qualified Westchester County applicants. A core curriculum shall maintain the highest standards required by NY State for graduation, compliance with advanced placement courses, and provide exposure to the arts, extra-curricular activities, and physical education. In addition, students will be offered academic, laboratory, and workshop courses and facilities with a focus on programs and skills required to provide sustainable shelter and infrastructure ecologically beneficial for the future. The school expects 96% of its graduates to enroll in colleges to further their education and professional training.
- **Housing and Medical Facilities:** The school expects to provide full time supervised residential housing, dining, and infirmary accommodations for 10% of the student body and faculty. The administration is trying to maintain a student/faculty ratio of 10/1.
- **Environmental Requirements:** Facilities shall be designed to the highest standards of green and sustainable construction and environmentally beneficial usage. The design shall attempt to provide "net zero" energy use.
- **Public Access to the Site:** The design shall accommodate maximum allowable public accessibility to transportation facilities and the waterfront, while maintaining all necessary privacy and security for the school.
- **Building and Site Use Space Requirements:** The following table gives optimum space allowances recommended for the school, residential, and site requirements.



EDUCATIONAL SPACES

DEPARTMENT/ NET TOTAL AREA	NET AREA	AREA/ROOM	SPACES REQUIRED
Core Learning 14,350 S.F.	12,350 S.F.	950 S.F. ea.	13 Classrooms: different subjects (comp., art, etc)
	500 S.F.		Study Area
	1,500 S.F.		Teachers' Area w/ toilets
Science & Technology 4,960 S.F.	4,800 S.F.	1,200 S.F. ea.	Laboratories (4)
	160 S.F.	80 S.F. ea.	Lab. Prep Rooms (2)
Administration 2,350 S.F.	300 S.F.		Reception / waiting room
	100 S.F.		Teachers' mail and time room
	200 S.F.		Records room
	375 S.F.		Principle office with conference area
	125 S.F.		Principle's secretary
	150 S.F.		Assistant Principle office
	450 S.F.		Conference Room
	150 S.F.		Guidance office
	100 S.F.		Guidance waiting room
	400 S.F.		Career center and storage
Miscellaneous 1,950 S.F.	650 S.F.		Entrance
	600 S.F.	1,333 S.F. ea.	Lockers (16" x 12") x 440
	400 S.F.	200 S.F. ea.	2 Restrooms (W&M) – each floor
	300 S.F.	150 S.F.	Electrical/Mechanical Room & Jan. Clo. ea. fl.
Performance/Music 10,800 S.F.	6,700 S.F.		Auditorium (400 seat)
	1,600 S.F.		Stage
	400 S.F.		Storage
	600 S.F.	300 S.F. ea.	2 Green rooms
	200 S.F.		Control room
	1,000 S.F.		Rehearsal (Band, Chorus – 50 to 100 seats)
	150 S.F.	75 S.F. ea.	2 Music Practice Rooms
	150 S.F.	150 S.F.	Instrument Storage
Cafeteria 9,050 S.F.	6,000 S.F.		Cafeteria – 200 seat
	200 S.F.		Chair/Table storage
	300 S.F.		Serving area
	150 S.F.		Food preparation
	1,300 S.F.		Kitchen
	600 S.F.		Faculty dining
	100 S.F.		Delivery access
	400 S.F.	200 S.F. ea.	2 Restrooms (women's and men's)
Library/Internet/Study 3,650 S.F.	250 S.F.		Security/Reception
	2,450 S.F.		Library
	150 S.F.		Office
	100 S.F.		Storage
	400 S.F.	100 S.F. ea.	4 Study rooms
	300 S.F.		Lounge area
PhysEd/Fitness Center 16,300 S.F. Interior Space Only	2,000 S.F.		Fitness center
	2,000 S.F.		Locker rooms
	2,700 S.F.		Gymnasium
	500 S.F.		Equipment storage
	150 S.F.		Athletic Director's office
	250 S.F.		Health instructor's office w/ shower and toilet
	8,700 S.F.	4,700 S.F. 4,000 S.F.	Basketball Court: 94'-0" x 50'-0" Seating

Continue EDUCATIONAL SPACES: SUMMARY on page 3



EDUCATIONAL SPACES: SUMMARY

DEPARTMENT	NET AREA	CIRC./CONSTR. (NET x .5)	DEPARTMENT GROSS AREA (NET x 1.5)
Core Learning	14,350 sf	7,175 sf	21,525 sf
Science & Technology	4,960 sf	2,480 sf	7,440 sf
Administration	2,350 sf	1,175 sf	3,525 sf
Miscellaneous	1,950 sf	975 sf	2,925 sf
Performance/Music	10,800 sf	5,400 sf	16,200 sf
Cafeteria/Lunch	9,050 sf	4,525 sf	13,575 sf
Library/Lounge	3,650 sf	1,825 sf	5,475 sf
PhysEd/Fitness Cntr.	16,300 sf	8,150 sf	24,450 sf
TOTAL	63,410 sf	31,705 sf	95,115 sf

ADDITIONAL FACILITIES ON SITE:

DINING HALL / RESTAURANT / CLUB

DEPARTMENT/ NET TOTAL AREA	NET AREA	AREA/ROOM	SPACES REQUIRED
Restaurant 7,500 S.F.	200 S.F.		Reception
	4,500 S.F.		Dining area – 120 seat
	400 S.F.		Private room
	150 S.F.		Prep area
	1,000 S.F.		Kitchen
	200 S.F.		Storage
	150 S.F.		Office
	500 S.F.		Bar
Night Club 5,050 S.F.	400 S.F.	200 S.F. each	2 Restrooms (women's and men's)
	200 S.F.		Reception
	150 S.F.		Coat check
	4,000 S.F.		Dance room
	400 S.F.		Lounge area
Circulation/Construction 0.35 x Total Net S.F. = 0.35 x 12,550 S.F. = 4,392 S.F.			Corridors: 5'-0" minimum width x length
			Stairs: 3'-6" minimum width
			Aisles: 2'-6" minimum
			Elevator: 4'-0" x 4'-0" cab
Total Gross Area = 16,942 S.F.			



SPORTS COMPLEX

DEPARTMENT/ NET TOTAL AREA	NET AREA	AREA/ROOM	SPACES REQUIRED
PhysEd/Fitness 16,300 S.F.	2,000 S.F.		Fitness center
	2,000 S.F.		Locker rooms
	2,700 S.F.		Gymnasium
	500 S.F.		Equipment storage
	150 S.F.		Athletic Director's office
	250 S.F.		Health instructor's office w/ shower and toilet
	8,700 S.F.	4,700 S.F. 4,000 S.F.	Basketball Court: 94'-0" x 50'-0" Seating
Circulation/Construction 0.35 x Total Net S.F. = 0.35 x 16,300 S.F. = 5,705 S.F.			Corridors: 8'-0" minimum width x length Stairs: 4'-6" minimum width Aisles: 3'-0" minimum Elevator: 4'-0" x 4'-0" cab
Total Gross Area = 22,005 S.F.			
Outdoor Sports 172,935 S.F.	57,600 S.F.	160' x 360'	Football Field
	76,935 S.F.	223' x 345'	Soccer Field
	7,200 S.F.	120' x 60'	Tennis Court
	21,000 S.F.	17,000 S.F. 4,000 S.F.	Hockey Rink: 200'-0" x 85'-0" Seating
	10,200 S.F.	7,200 S.F. 3,000 S.F.	Swimming Pool: 60'-0" x 120'-0" Seating
Total Gross S.F = 172,935 S.F.			

http://en.wikipedia.org/wiki/Basketball_court

http://en.wikipedia.org/wiki/Hockey_rink



HOUSING (For 50 Individuals – 1/10th of Enrollment) / MEDICAL INFIRMARY

DEPARTMENT/ NET TOTAL AREA	NET AREA	AREA/ROOM	SPACES REQUIRED
Residential Suites (Students) 12 x 480 sf = 5,760 S.F.	200 S.F. 200 S.F. 40 S.F. 40 S.F.	100 S.F. ea.	12 Suites for 2 students Two (2) Single Bedrooms Living Room Bathroom w/ shower Kitchenette
Residential Suites (Res.Faculty) 2 x 480 sf = 960 S.F.	200 S.F. 200 S.F. 40 S.F. 40 S.F.	100 S.F. ea.	2 Suites for 2 resident faculty Two (2) Single Bedrooms Living Room Bathroom w/ shower Kitchenette
Residential rooms (Single Student) 24 x 140 sf = 3,360 S.F.	100 S.F. 40 S.F.		24 Rooms for single students Single Bedroom Bathroom w/ shower
Lobby/Reception/Public 850 S.F.	500 S.F.		Lobby
	100 S.F.		Public Restroom off Lobby
	100 S.F.		Storage room for students
	100 S.F.		Mechanical space
	50 S.F.		Public Restrooms: 1 per floor
		50 S.F. ea.	Study rooms: 1 for every 10 students
Medical Infirmary 460 S.F.	100 S.F.		Reception
	100 S.F.		Nurse's office
	180 S.F.	60 S.F. ea.	Exam rooms (3)
	30 S.F.		Restroom
	50 S.F.		Storage
TOTAL NET AREA = 11,390 S.F.			
Circulation/Construction 0.35 x Total Net S.F. = 0.35 x 11,390 S.F. = 3,987 S.F.			Corridors: 5'-0" minimum width x length
			Stairs: 3'-6" minimum width
			Aisles: 2'-6" minimum
			Elevator: 4'-0" x 4'-0" cab
TOTAL GROSS AREA = 15,377 S.F.			



SITE WORK / PEDESTRIAN ACCESSWAY / BRIDGE ACROSS HUDSON

DEPARTMENT/ NET TOTAL AREA	NET AREA	AREA/ROOM	SPACES REQUIRED
Site work TBD			Main garage
			Drop off area and access roads
			Visitor parking
			Faculty parking
			Delivery drive
Pedestrian access way			Pedestrian bridge and paths
Bridge across Hudson			
Watercraft access and mass transit			
Total Gross S.F = TBD			

PROFESSIONAL GROUPS:

Architectural Design:

Programming, Pre-Design Studies, **Conceptual Design & Feasibility Studies**
 Design Development, Construction Docs; **Help Co-ordinate Presentation Documents**

Site Planning:

Circulation: Vehicular; Mass Transit Access; Pedestrian

Landscape Architecture: Solar Gain & Control, Wind & View Control, Wildlife Habitat, Sustainability,
 lighting, signage, water, pavements, plantings.

Civil Engineering: Structures; Paving; Drainage; Bulkheads; Marine Structures; Land Fill

Mechanical & Electrical Engineering: Geothermal sources, Solar & Wind Energy, Site Lighting & Power

Structural and Civil Engineering:

Structures, pavements, foundations, & soil engineering

Mechanical & Electrical Engineering:

Buildings: HVAC, Power, Lighting, Communications, Plumbing Energy Use Calculations

Site: Power, Lighting, Communications, Drainage, Plumbing

Construction Management:

Co-ordinate Client, Design Team, & Contractor; scheduling, estimating, financing, contracting, approvals,
 punch lists & payments.



ADDITIONAL CONSIDERATIONS:

Life Safety Systems

- Fire Suppression – Sprinkler system
- Fire Alarm
- Smoke and Carbon Monoxide Detectors in each sleeping room and entry to each apartment.

Accessibility

- Outdoor paths
- Parking
- Entry to all buildings and spaces by wheelchair
- Access to all floors

Mechanical System

- Radiant Floor Heating and Cooling

Power

- Solar Photovoltaic cells (PV) to generate electricity
- Geothermal
- Wave/Current of Hudson River
- Wind Power

NOTES:

¹. Recommend Redesign of Station Parking, upper level station, platform access, and cross-over bridge(s) as required. Consider redesign for ADA requirements.

². Recommend enlargement and redesign of riverside amenities using the Corp of Engineers' Bulkhead Line as the western limit of the site.