

Arch 464  
ECS  
Spring 2010

Name \_\_\_\_\_

Quiz #3

## "Is the Row Haus a Green Haus?"

Read and look at everything before you write!

### Community Rowing Boathouse ; Boston, MA, by Anmahian Winton Architects

Community Rowing, Inc. (CRI) is the largest rowing organization in the country, and fully 40 percent of the boats on Boston's Charles River belong to the club. Yet until last fall, it had no place to call home. After operating seasonally out of the nearby Daly ice-skating rink for over 20 years, CRI has finally laid down its roots on the city's edge with a 30,000-square-foot boathouse designed by Cambridge, Massachusetts—based Anmahian Winton Architects.

#### Program

The sleek Community Rowing Boathouse makes a bold statement on the banks of the Charles, where historic and historicist facilities dominate. Neither the client nor the architects were interested in reiterating this precedent. "We wanted the building to be of its time," says principal Alex Anmahian, AIA. The unconventional approach is in line with the club's mission. "There are a lot of elitist boathouses on the Charles," continues Anmahian. "This one is like the YMCA of rowing — it's open to everyone." The nonprofit organization, founded in 1985 by individuals who rowed for renowned coach Harry Parker on the national team and at Harvard, welcomes the public and runs a number of recreational and competitive —

as well as community-outreach — programs, and has outfitted the facilities for visually and physically challenged users. The awkwardness of the city-owned, triangular, 3.5-acre site, previously used as a staging area for nearby infrastructure projects, posed challenges. The facility had to accommodate storage for over 170 boats and include a repair shop, training and locker rooms, administrative spaces, and classrooms. Additionally, the architects insisted on creating a public path along the riverbank, in contrast to other boathouses that tend to block the waterfront with broad ramps.

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#### Solution

To house the large number of boats, Anmahian Winton split the facility into two separate volumes — one glass, one wood — rendering a court that visually and functionally connects the buildings to each other and the water. While most boathouses store boats perpendicular to the river, the architects oriented this project parallel to the water, allowing maximum efficiency in terms of boat storage (the 8-oar shells measure up to about 60 feet long) and minimal impact on the land. Budget constraints had forced the architects to abandon their vision for an all-glass main building, but created other opportunities.

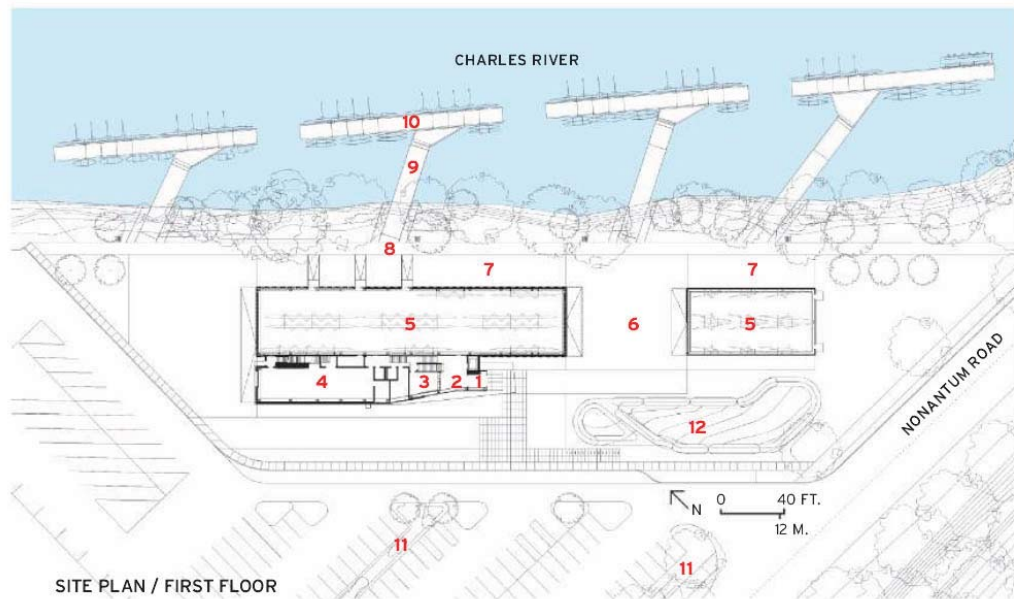
For inspiration for the wood Community Rowing Boathouse, the architects looked to regional vernacular linear buildings, such as covered bridges and tobacco sheds. Tobacco sheds provided a particularly compelling model because sculls and shells, like tobacco leaves, need proper ventilation. This observation led the architects to the idea of a kinetic building. Eighteen-foot-tall bifolding vents clad in high-density composite panels with sustainably farmed ayous-wood veneer line the 200-foot-long bays, and are manually operated with a chain pull with gear reducers to admit light and air. Timber piles support the building's steel moment frame, and boats are carried out through modified hangar doors at the east and west ends.



*Community Rowing Inc.'s glass and wooden pavilions as seen from the Charles River.*

Illustrations from Architectural Record Oct 2009.

1. Main entrance
2. Lobby
3. Office
4. Boat repair bay
5. Boat storage bay
6. Courtyard
7. Boat washing/derigging
8. Pedestrian path
9. Fixed pier
10. Floating dock
11. Bioretention swale
12. Bioretention basin



"It's really a warehouse with a special functionality about it," notes Anmahian. Vertical cladding continues on the second floor. On the southwest, street-facing side the cladding takes the form of horizontal louvers to shade the building, mask mechanical vents, and shield locker-room clerestory windows.

The steel-framed Ruth W. Somerville Sculling Pavilion houses the smaller, one- and two-person sculls and shells. It realizes the original transparent scheme with 1/4-inch tempered-glass shingles fastened to the structure with aluminum clips. The pavilion, a vitrine for the streamlined fiberglass and carbon-fiber vessels within, admits light and facilitates natural ventilation while functioning as a billboard seen by cars zipping along the busy surface road and the Massachusetts Turnpike just beyond.

The team employed many sustainable features and approaches. In addition to the boat-storage bays, which are naturally ventilated, 50 percent of the second-floor window area is operable. The entire facility is heated and cooled with ground-source heat pumps supplied by a 1,500-foot-deep geothermal well. And by expanding the thermal comfort boundaries to 68 to 84 degrees from the typical 72 to 76, it was possible to reduce the size of the mechanical equipment. Extensive glazing provides direct sight lines to the outside for all occupants, and low-flow plumbing fixtures mitigate water consumption. Storm-water runoff is managed by a hardscape of permeable pavement and crushed stone, and bioretention swales recharge groundwater rather than directing rainwater into the river. A green roof will be installed once funding is secured, say the architects. The team did not seek LEED certification, notes Anmahian, citing the cost of the process.

### Commentary

Aside from the bays, interiors are bland and basic, with a preponderance of dropped ceilings and drywall. Rowers' focus lies outside, of course, and Anmahian explains that limited resources — \$11.45 million for construction — were used where they would have the greatest civic impact. Indeed, Anmahian Winton has helped Community Rowing successfully transform a neglected patch of riverfront into the club's calling card. The handsome new facility eschews nostalgic, Victorian pastiche and in a Modern language lifts the shroud of exclusivity from an age-old sport, bringing it down to earth and into the present day. With membership up 30 percent and youth-program participation up as much as 100 percent since the boat-house opened in October 2008, CRI is furthering its cause of making rowing, and the Charles River itself, accessible to all.

—Beth Broome, *Architectural Record*

## Site Analysis

4 points

1. Given the site development and building siting and orientation point out two features of the site design that have potential to highlight sustainable design and two features that are detrimental to sustainable design. Fully explain your nominations of these four features.

1



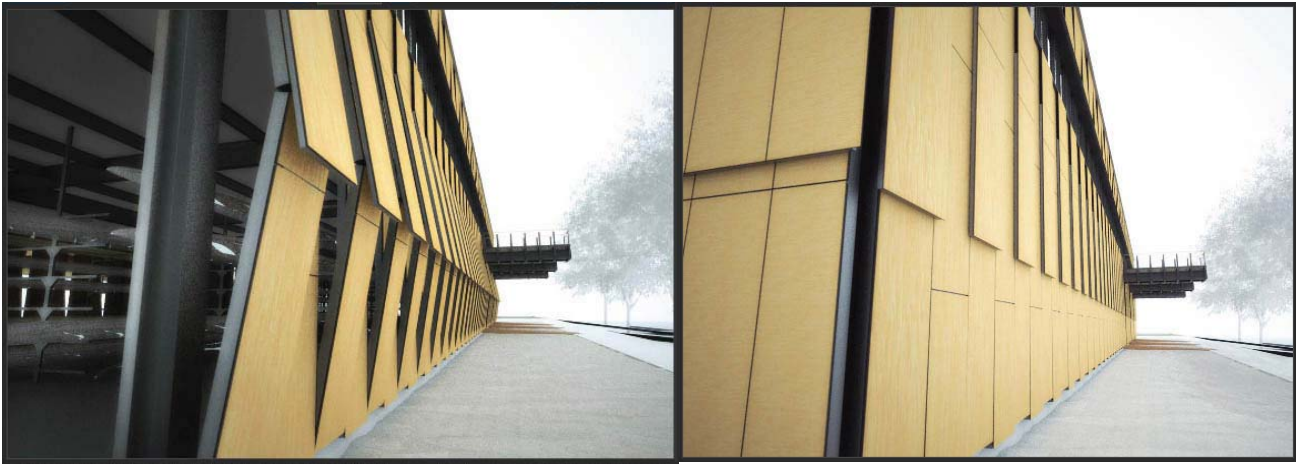
*The river side (northeast facade) has a boat prep area and pedestrian trail between it and the riverbank.*

2

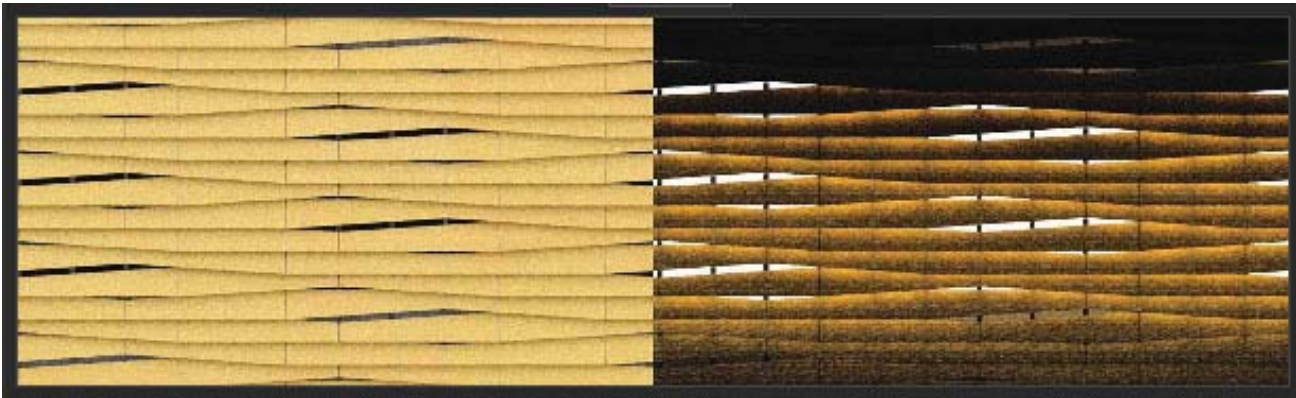
1

2

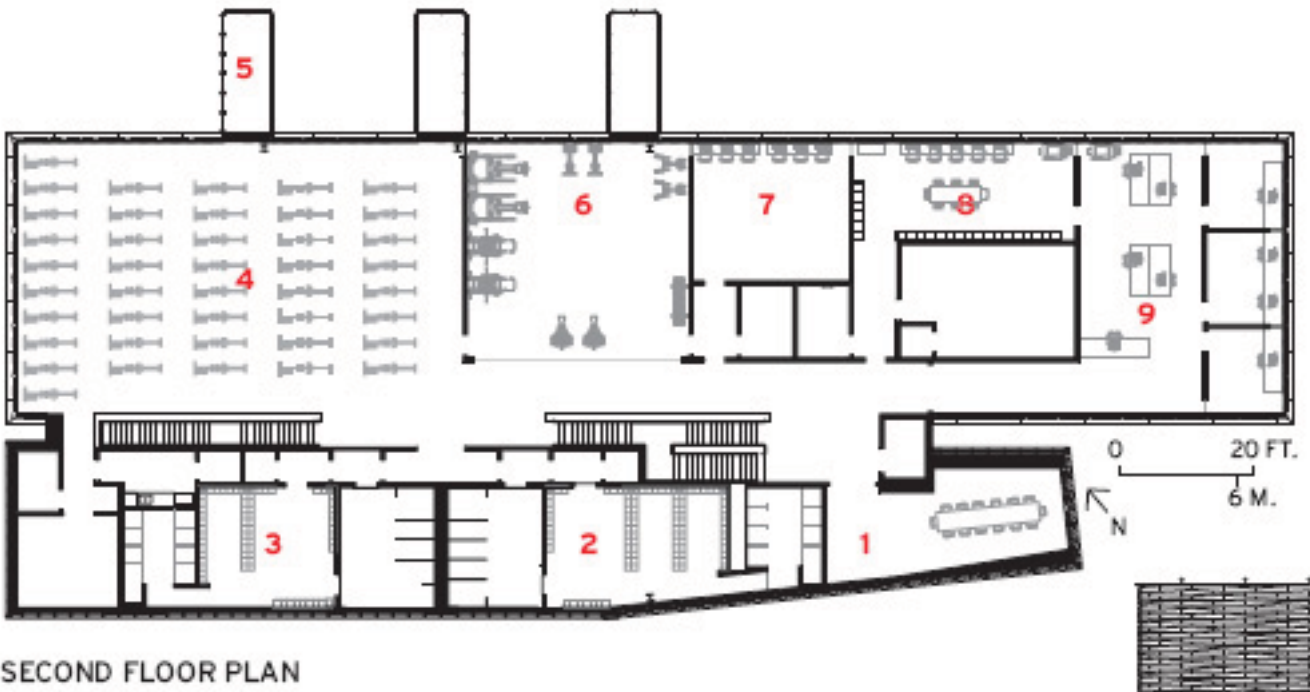




The boat storage walls can open for natural ventilation (left) and close for security and weather resistance.



Louvers on the second story wrap the southwest-facing street side of the building and are angled and lapped to create a textured surface. These louvers are used as a sunscreen that shields locker rooms and other private spaces from the outside and conceal mechanical systems.



SECOND FLOOR PLAN

- |                   |                    |                  |                             |
|-------------------|--------------------|------------------|-----------------------------|
| 1. Community room | 2. Women's lockers | 3. Men's lockers | 4. Ergometrics/multipurpose |
| 5. Balcony        | 6. Weight room     | 7. Classroom     | 8. Coaches' office          |
| 9. Administration |                    |                  |                             |

## Wood-Clad Building Analysis

2. Focus your attention on the two-story wood clad building in answering this question. The *Architectural Record* article quoted on pages one and two gives vague reference to sustainable design features implemented in the building. Fully explain how three of these features should be implemented for optimal greenness. Use words and sketches as appropriate.

3 points

1

2

3

# Regeneration-Based Checklist for Carbon-Neutral, Zero Net Energy Design and Construction

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**Project:** \_\_\_\_\_

		degeneration				sustainability			regeneration	
		-100 always	-75 usually	-50 sometimes	-25 a bit	0 balances	25 a bit	50 sometimes	75 usually	100 always
planet	destroys the planet									regenerates the planet
	consumes energy disproportionately									consumes energy equitably
	serves few									serves many
	differentiates man-made and natural									conflates man-made and natural
	imports all its energy									exports energy from site
	emits carbon									sequesters carbon
site	pollutes air									cleans air
	pollutes water									cleans water
	wastes rainwater									harvests rainwater
	is built on a greenfield									is built on a brownfield
	consumes food									produces food
	destroys rich soil									creates rich soil
	dumps wastes unused									uses wastes as resources
	destroys wildlife habitat									provides wildlife habitat
	lacks site integration									is integral to the site
	decreases density									increases density
	promotes fuel-powered transportation									promotes pedestrian and transit access
	destablizes local weather									maintains local weather patterns
building	ignores building size issues									optimizes building size
	excludes natural light									uses natural light effectively
	uses mechanical heating and cooling									uses passive heating and cooling effectively
	is unconcerned with performance									monitors and improves performance
	discourages user control of systems									encourages user control of systems
	produces human discomfort									enhances human comfort
	uses inefficient equipment									uses highly efficient equipment
	uses non-renewable fuel-powered circulation									uses benignly powered circulation
	pollutes indoor air									enhances indoor air quality
	needs cleaning and repair									maintains itself
	uses high-carbon materials									uses carbon-sequestering materials
	is designed for demolition									is designed for disassembly
culture	uses materials wastefully									uses materials carefully
	cannot be recycled or reused									can be recycled or reused
	serves as an icon for the apocalypse									serves as an icon for regeneration
	discourages community interaction									encourages community interaction
	is socially and ecologically exclusive									is socially and ecologically inclusive
	is a bad neighbor									is a good neighbor
	is crassly ugly									is sublimely beautiful

negative score 3700 possible		positive score 3700 possible
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final score:

## Subjective Evaluation of Sustainability

3 points

3. Use the new Wells' checklist on page 6 to rate the CRI boathouse project. Since it's a subjective system, use the info provided here in text and images as well as your educated guesses to make your rating. Based on your rating, is the project sustainable? Explain your rating and the major assumptions that you made.



*The glass-clad, steel-framed Ruth W. Somerville Sculling Pavilion houses the one- and two-person sculls and shells.*