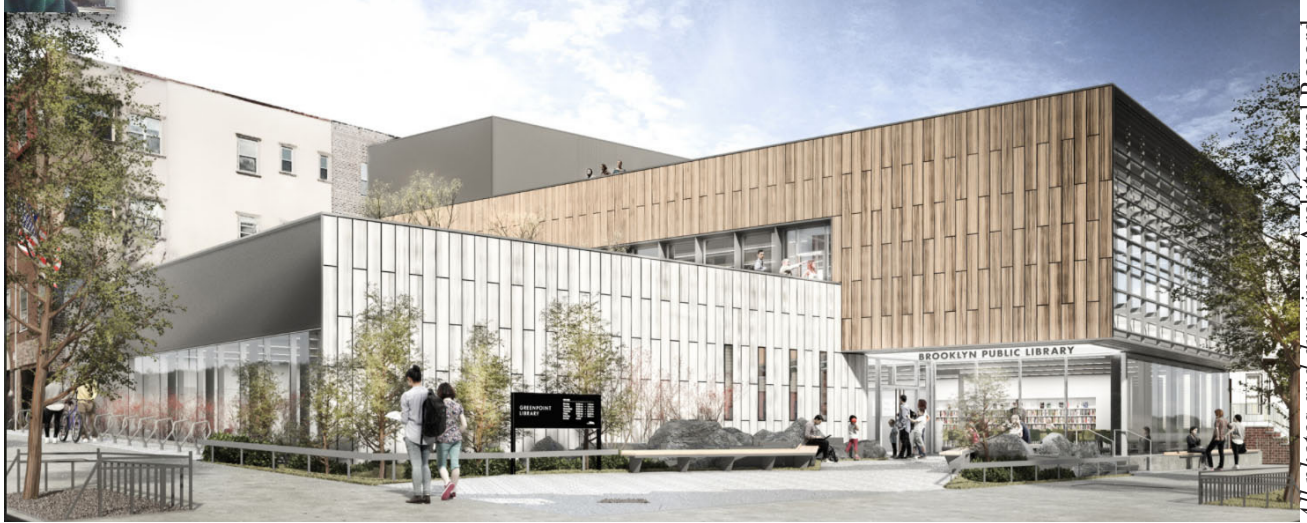


Arch 464  
ECS  
Spring 2021

Name \_\_\_\_\_

Quiz #2

## "Green Points for Greenpoint?"



All photos and drawings: Architectural Record  
March 2021 and Marble Fairbanks Architects.

For this problem you are the water use and conservation critic for Marble Fairbanks' Greenpoint Library and Environmental Education Center in Brooklyn, NY. Your role is to critique their green, educational, and poetic alternatives for water use and treatment in the building and on its site.



*Entry elevation as designed (top) and as built (above).*

**READ THE ENTIRE QUIZ BEFORE YOU BEGIN!**

## Greenpoint Library and Environmental Education Center by Marble Fairbanks

Open since October, the Greenpoint Library and Environmental Education Center is more than a repository of information. Designed by Marble Fairbanks, it is a symbol of an ecological effort that dates back more than 40 years. In 1978, one of the largest oil spills recorded in the United States (at least 50 percent greater than that of the Exxon Valdez) was discovered in a tributary of New York's East River. Between 17 and 30 million gallons of oil and refining products leaked from processing facilities in Greenpoint, Brooklyn, and seeped deep into 55 acres of soil and aquifer in both industrial and residential areas. After years of litigation and slow remediation, this disaster became a catalyst for the new public library, which offers a unique focus on sustainability and the local ecosystem in a building that exemplifies the principles of good stewardship.

Situated on a prominent corner, the 15,000-square-foot steel-and-concrete structure immediately grabs your attention with a gracious plaza. Marble Fairbanks wanted to introduce public green space where there had been none and so massed the building by stacking a pair of orthogonal volumes and rotating them at right angles to establish three tiered outdoor areas: the plaza at grade, a second-level reading garden, and a rooftop horticultural classroom. Broad expanses of deep-set louvered and insulated glass span the southeast and west facades to visually connect passersby with the reading rooms, and to infuse the interior with strategically shaded daylight. The massing also enabled the creation of a welcoming backlit entrance canopy beneath an overhang.

The architects clad the upper volume with sandblasted-cedar panels made in the nearby Brooklyn Navy Yard, then used the same wood as formwork for glass-fiber-reinforced concrete panels on the lower volume. This move, says project architect Jason Roberts, places the more durable material at the street level and contrasts it with the wood, which will age, above. The split levels and bold materiality also minimize the bulk of the structure so that it fits within Greenpoint's patchwork of old and new buildings faced in wood, brick, and vinyl siding.

Besides collaborating with the client (the Brooklyn Public Library), Fairbanks and her team worked with the community and local environmental groups, as well as landscape architect SCAPE and ads Engineers, to develop the programmatic, material, and sustainability strategies, ultimately targeting LEED-Platinum certification. Products, sourced within 500 miles when possible, include the work of local artisans and fabricators; 87 percent of the wood comes from sustainable forests; and low-VOC adhesives, coatings, and flooring were used throughout. Efficient systems include low-velocity-displacement ventilation; controlled LED lighting; and bidirectional solar panels on the roof, estimated to offset more than 10 percent of the building's annual energy consumption. These components (and more) are identified and explained on wall plaques.

SCAPE introduced immersive landscapes that connect to the urban and ecological context. In homage to the region's geological history, bands and outcroppings of granite on the plaza trace the movement of the Laurentide Ice Sheet across Brooklyn 18,000 years ago. Native plantings, bio-swale, and permeable pavers manage runoff, with excess rainwater directed into a retention tank below ground. More native plants and fruit-bearing shrubs in the reading garden on the second floor provide food and habitat for birds and insects, and water from a 1,500-gallon cistern is used by student and community groups who pump it by hand to tend raised beds and a green roof on the upper level.

Walking in from the street, you'll find adult and children's reading rooms on either side of a cherry-clad main desk. Such local wood figures prominently throughout the interior, as do select shades of green. Marble Fairbanks seized every opportunity to insert details that reinforce the program: four narrow south-facing windows near the entrance highlight the angle of the sun on the concrete floor at noon during an equinox or solstice.

The actual environmental center is one flight up, where a lounge opens to the reading garden. This central space, or "eco lounge," is bordered by a glazed "teen lab" and 1,400-square-foot community room that can be divided in two for simultaneous educational and social activities. The lounge also features a display wall to showcase projects, art, and other materials that will increase awareness about sustainability. A digital monitor explains the building and presents data such as its energy use and how much the solar panels generate.

— Linda C. Lentz, *Architectural Record*, March 3, 2021





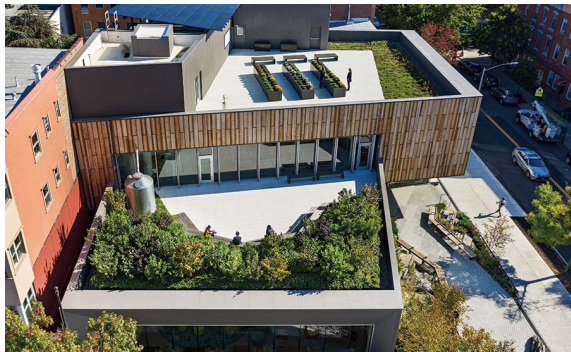
- 1 Roof Garden Lobby
- 2 Outdoor Classroom Seating
- 3 Demonstration Planters
- 4 Pollinator Habitat
- 5 Exposed Aggregate Pavers
- 6 Custom Hand Pump
- 7 Solar Panels



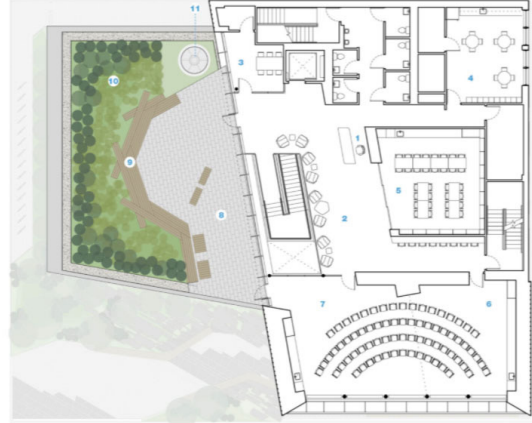
3rd Floor Plan

Greenpoint Library  
Environmental Education Center

*Birdseye view as designed (above) and as built (below).*



- 1 Service Desk
- 2 Eco-Lounge
- 3 Meeting Room
- 4 Staff Lounge
- 5 Teen Eco-Lab
- 6 Eco-Lab 1
- 7 Eco-Lab 2
- 8 Exposed Aggregate Pavers
- 9 Nest Seating
- 10 Mounded Green Habitat Planting
- 11 Children



2nd Floor Plan

Greenpoint Library  
Environmental Education Center



*Section perspective through entry looking west.*

- 1 Main Entry Vestibule
- 2 Information Desk
- 3 Children's Area
- 4 Children's Flexible Seating
- 5 Meeting Rooms
- 6 Staff Workspace
- 7 Book Sorting
- 8 Private Office
- 9 Adult Reading Room
- 10 Plaza Seating
- 11 Permeable Pavers
- 12 Bioswale
- 13 Bike Racks
- 14 Outdoor Break Area w/ Green Wall
- 15 Solar Alignment Windows



1st Floor Plan

Greenpoint Library  
Environmental Education Center

LEONARD STREET

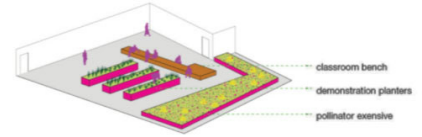
NORMAN AVENUE

8 pts. 1. **Identify and critique** the pluses and minuses of four (4) strategies employed by the roofs and landscape in managing **stormwater** on the site. Cite evidence from prose, plans, and photos throughout the quiz to **validate** your critique.

1.

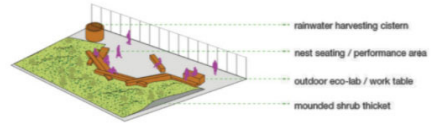
**ALPINE CLASSROOM**

Vegetation reflecting higher elevation landscapes found throughout the region provides a distinctive space for learning and relaxation.



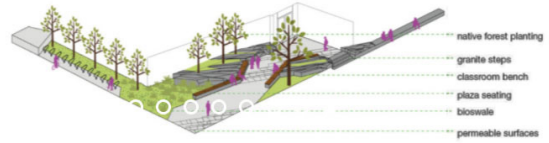
**READING NEST**

Wood benches sit at the edge of a mounded shrub thicket, creating an intimate setting for solitary reading or group activities.



**GLACIAL STREETSCAPE**

Features an outcropping manufactured from stone skins recycled from New York State quarries, creating a destination on this highly-visibility corner.



*Architect's planting proposal for the library.*

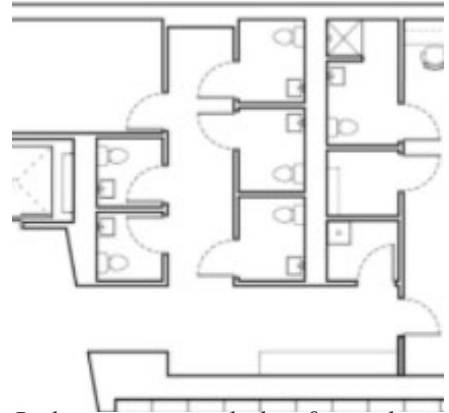
2.

3.

4.

6 pts. 2. **Propose three** possible strategies for reduction (beyond code requirements) of **black water** in the building. Cite evidence from the plan below as well as in plans and photos throughout the quiz to **validate** your critique. **Fully explain each strategy** for its merits, aesthetics, and missed opportunities.

1.

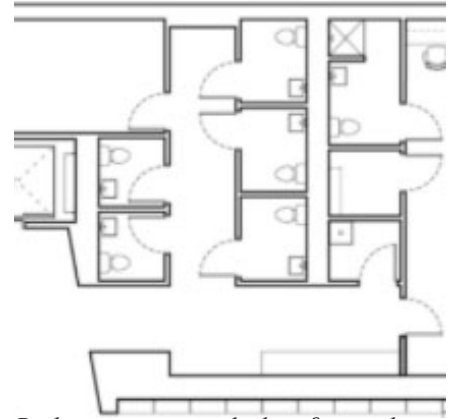


*Bathroom core, stacked on first and second floor.*

2.

3.

4 pts. 3. **Redesign** the bathroom core for more capacity and better socialization while retaining the gender neutrality of the proposed design. **Sketch and label** your redesign.



*Bathroom core, stacked on first and second floor.*

2 pts. 3. Detective work. **Point out and discuss** a feature of the architects' proposed design that was not included in the as-built design. What impact does this deletion have on the building's performance and sustainability?