

Arch 464  
ECS  
Spring 2022

Name \_\_\_\_\_

Quiz #3

## "A Marvel, a green Y?"

Read and look at everything before you write!



All photos and drawings: Architectural Record, March 2022 and Marvel Architects.

*Google Earth view of the Northeast Bronx YMCA taken from the East.*

For this quiz you get to investigate Northeast Bronx YMCA with an eye on evaluating its performance as an aspiring (LEED Gold?) regenerative building and site.



*SE elevation with glazed entry.*

## Northeast Bronx YMCA by Marvel, Bronx, NY

Although unmaintained and strewn with trash, the sloping, rocky Bronx site for a new YMCA was blessed with 100-year-old trees and a rugged beauty waiting to be rediscovered. It sat across the street from Cardinal Spellman High School and near the Baychester and Edenwald public-housing projects with 51 buildings and nearly 2,500 low-income apartments. “The first thing we did was survey the trees and figure out which ones we should save and which we might move,” says Lissa So, a partner at Marvel.

The firm met with members of a local citizens group that had been fighting for a community center for years. The group wanted a new recreational facility with spaces for wellness and learning. Throughout the design process, the architects had to juggle the perspectives of various stakeholders—the YMCA; the surrounding underserved community; the city, which owned the land; and the Christopher School, which would lose some of its campus. Most new Ys in New York are in larger projects built by developers, who include them to meet requirements for community facilities. A rare ground-up project, the Northeast Bronx Y could respond to the needs of different groups. “We wanted to make a statement,” says Joe Chan, senior vice president of real estate and property management for the YMCA of Greater New York. “It’s not often that three acres of land becomes available in New York.”

Taking advantage of the three-acre site, Marvel designed the 52,100-square-foot complex as a trio of “pavilions” nestled within the landscape, and arranged to preserve as many of the old trees as possible. (Two of the firm’s five partners are landscape architects.) Founder Jonathan Marvel, born and raised in Puerto Rico, is the son of Thomas, an architect who often integrated inside and out. “Landscape is an essential part of our architecture,” he says.

The architects set the aquatics pavilion on the lower portion of the sloping site on the north, so they could reduce the need for excavation, and put the gym on a higher elevation on the south, since it didn’t require much cutting and filling. On the east, the three-story community center serves as a hinge between the parking on one side and a landscaped courtyard between the three pavilions. A glazed corridor connects all three structures, taking visitors from the entry lobby to a lounge looking into the aquatics center. The four volumes slip into one another like pieces in a puzzle.

Throughout the building, views to the landscape animate indoor spaces—helping visitors navigate the facility, while surrounding them with nature. Whether walking along the corridor, swimming in the pools, or taking classes in the learning kitchen in the community center, you can easily forget that you’re in a densely populated part of New York. Asked what he liked about the Y, Walchsin Valle, one of the lifeguards, swept his arm toward the pool and the carefully framed view of the courtyard and said, “It doesn’t feel like an actual building.” Hearing this, Marvel, So, and Yadiel Rivera-Díaz, the partner in charge of the project’s landscape design, smiled broadly.

Each of the three pavilions is a steel-frame structure, though the aquatics center also has laminated timbers spanning over the pools. Translucent Kalwall panels bring soft daylight into the pool, the gym, and exercise spaces in the community center while maintaining privacy. On the exterior, the architects specified weathering-steel panels, overcoming the client’s initial resistance to what seemed like an industrial material by explaining how the warm reddish hue would complement the trees outside. “It’s an organic material that changes over time, just like the landscape,” says Marvel. Inside, the designers used southern yellow pine for ceilings over the pool, hemlock on ceilings in the lobby and above the entry ramp, and ceramic floor tiles that look like slate, but are less slippery, in the corridor. For interior surfaces, they used a subtle palette of colors—white, gray, taupe, and beige—to focus attention on what’s happening outdoors.

With a high-performance thermal envelope and a highly efficient mechanical system adjusted to the different needs of its three pavilions, the project is targeted to achieve LEED Gold. It also has a cogeneration plant that produces about 55 percent of the building’s electrical need and recycles waste heat to warm the water in the swimming pools. Even before it was completed, its gym served as a vaccination site in early 2021, showing how such facilities help support the health and well-being of the community at large.

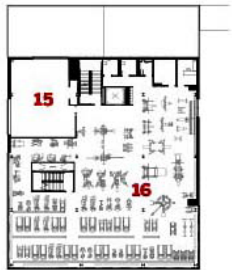
Since its founding in London in 1844, the YMCA has tended to build imposing structures as civic landmarks, with gyms and pools. The Northeast Bronx YMCA breaks free of this model, making the architecture disappear so nature can play the leading role—a feat all the more remarkable for its location in a neighborhood known for urban grit, not leafy retreats.



*Entry walk along SE facade.*



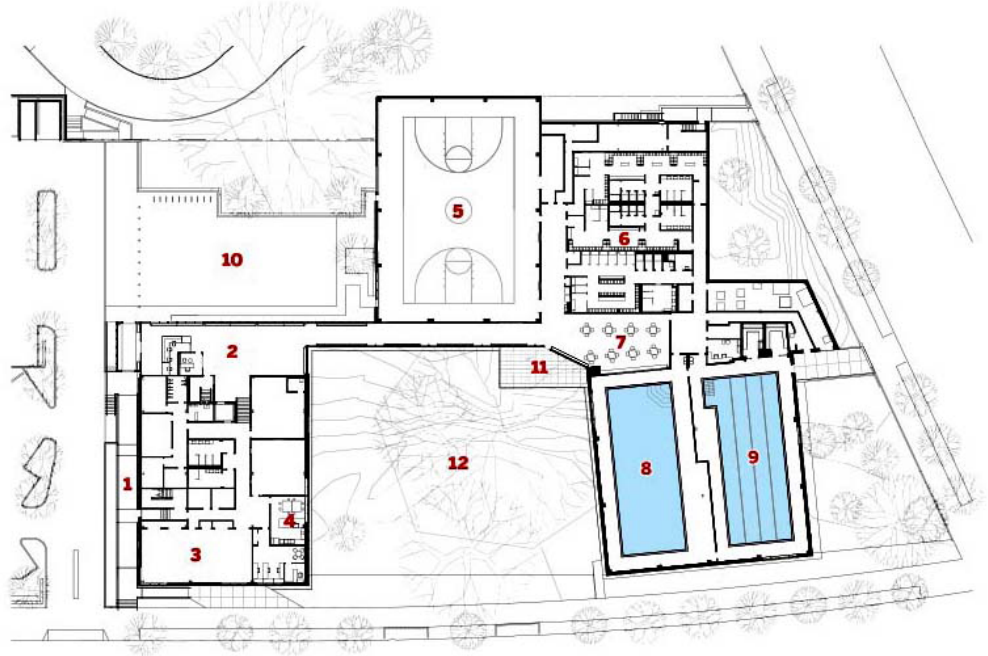
SECOND-FLOOR PLAN



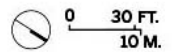
THIRD-FLOOR PLAN



ROOF PLAN



FIRST-FLOOR PLAN



- |                    |                  |                         |
|--------------------|------------------|-------------------------|
| 1 ENTRY RAMP       | 7 VIEWING LOUNGE | 13 MAIN EXERCISE STUDIO |
| 2 LOBBY            | 8 FAMILY POOL    | 14 SPIN STUDIO          |
| 3 COMMUNITY ROOM   | 9 LAP POOL       | 15 MIND & BODY STUDIO   |
| 4 TEACHING KITCHEN | 10 PLAZA         | 16 FITNESS CENTER       |
| 5 GYMNASIUM        | 11 TERRACE       | 17 COMMUNITY GARDEN     |
| 6 LOCKERS          | 12 COURTYARD     | 18 ROOF TERRACE         |



*The glazed corridor connects the courtyard on the left with the daylighted gym on the right.*

## Site Energy

1. The design team opted for on-site energy generation via a cogeneration plant that produces 55% of the electric energy needed. **Make a case** for or against supplementing the cogeneration with wind turbines or with photovoltaics. **Discuss** the merits, placement, and drawbacks of PV and wind turbine placement. Use diagrams to **illustrate** your ideas.

4 points

# PVs

# Wind



*Street view of the Y and its courtyard.*

## Regeneration-Based Checklist for 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

Rate the building for each of the checklist items and give a total score.

	-100 always	-75 usually	-50 sometimes	-25 a bit	0 balances	25 a bit	50 sometimes	75 usually	100 always												
the site										pollutes air											cleans air
										pollutes water											cleans water
										wastes rainwater											stores rainwater
										consumes food											produces food
										destroys rich soil											creates rich soil
										dumps wastes unused											consumes wastes
										destroys wildlife habitat											provides wildlife habitat
										imports energy											exports energy
										requires fuel-powered transportation											requires human-powered transportation
										intensifies local weather											moderates local weather
the building										excludes daylight										uses daylight	
										uses mechanical heating										uses passive heating	
										uses mechanical cooling										uses passive cooling	
										needs cleaning and repair										maintains itself	
										produces human discomfort										provides human comfort	
										uses fuel-powered circulation										uses human-powered circulation	
										pollutes indoor air										creates pure indoor air	
										is built of virgin materials										is built of recycled materials	
										cannot be recycled										can be recycled	
										serves as an icon for the apocalypse										serves as an icon for regeneration	
									is a bad neighbor										is a good neighbor		
									is ugly										is beautiful		

negative score 2200 possible		positive score 2200 possible
final score:		

## Regeneration Rating

2. a) Explain what your final rating of the building means in terms of regeneration and LEED Gold.

2 points

b) Explain your rating for "serves an icon for the apocalypse vs. serves as an icon for regeneration."

## Building Scale Regeneration

3. Given the building plans and orientation **point out and discuss three** features of the **building design** to which you awarded regeneration points on the SBSE checklist (page 4) and **one** feature of the **building design** to which you awarded degeneration points on the SBSE checklist. [Fitness Center (left) and Pool (right) below]

8 points



1(+)

2(+)

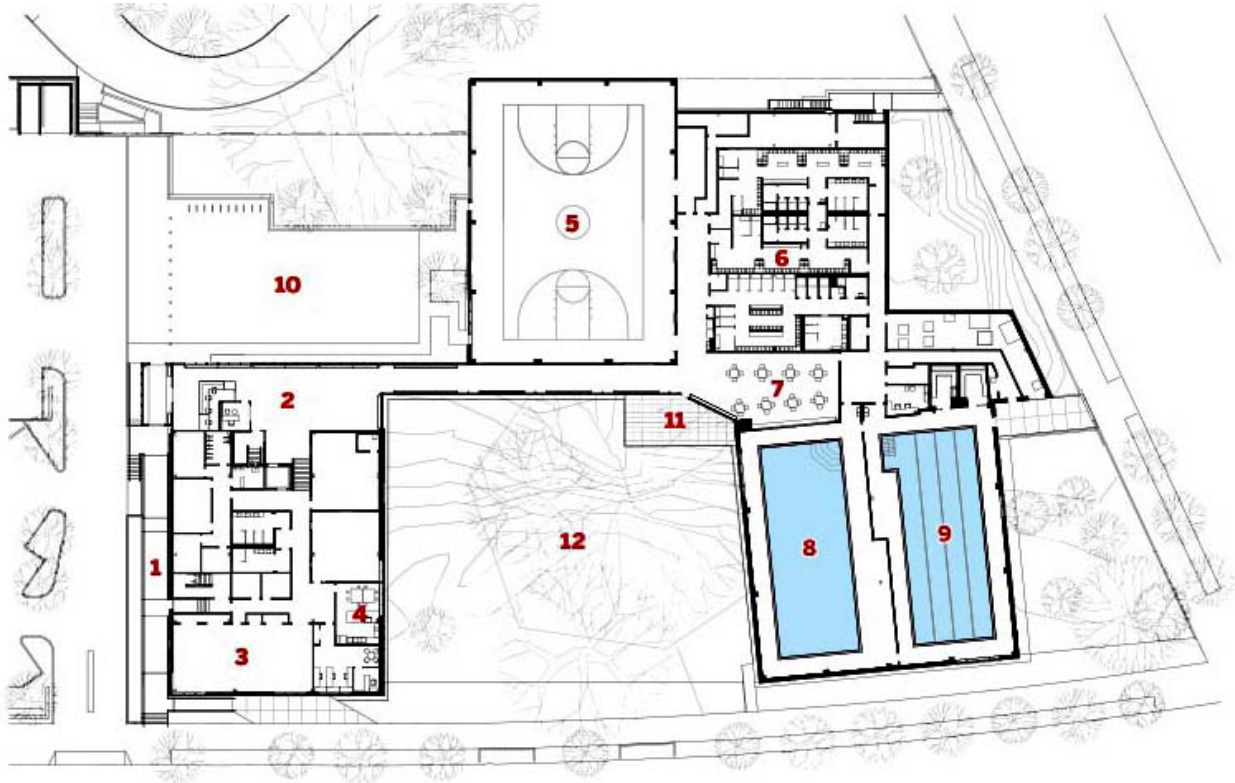
3(+)

1(-)

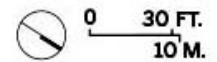
## Site Scale Regeneration

4. Given the building plans and orientation **point out and discuss two** features of the **site design** to which you awarded regeneration points on the SBSE checklist (page 4) and **one** feature of the **site design** to which you awarded degeneration points on the SBSE checklist.

6 points



**FIRST-FLOOR PLAN**



1(+)

2(+)

3(-)