

THE LAST DROPS

AN ATLANTA BUILDING RENOVATION PUTS A PREMIUM ON HARVESTING RAIN.

BY JONATHAN LERNER

ABOVE
Stormwater moves from several areas of the building to storage or into the ground.

Perkins+Will's adaptation of a 1980s mid-rise for its Atlanta headquarters toned down the building's formerly brash and quirky facade. That's a gift to the stretch of Peachtree Street where it faces Richard Meier's and Renzo Piano's arts center, the High Museum of Art. The building's renovation also turned what had been a driveway into a quasi-public streetside plaza. But the project makes a valuable but less visible urbanistic contribution in its handling of stormwater, which is part of an extensive new sustainability strategy for the property.

"The architects and landscape architects worked very closely together on this project, both because it's a very tight urban site and also because we value an interdisciplinary process in our work," said the project's design principal, Leo Alvarez, FASLA. Some cities are now enhancing requirements for on-site absorption of stormwater, and Atlanta has a new ordinance requiring infiltration of the first inch of rainfall. The Perkins+Will team, though, wasn't trying to meet requirements, "but to absorb everything we could. Literally every horizontal surface that we put in has some level of permeability," Alvarez says.

PLAZA PLAN

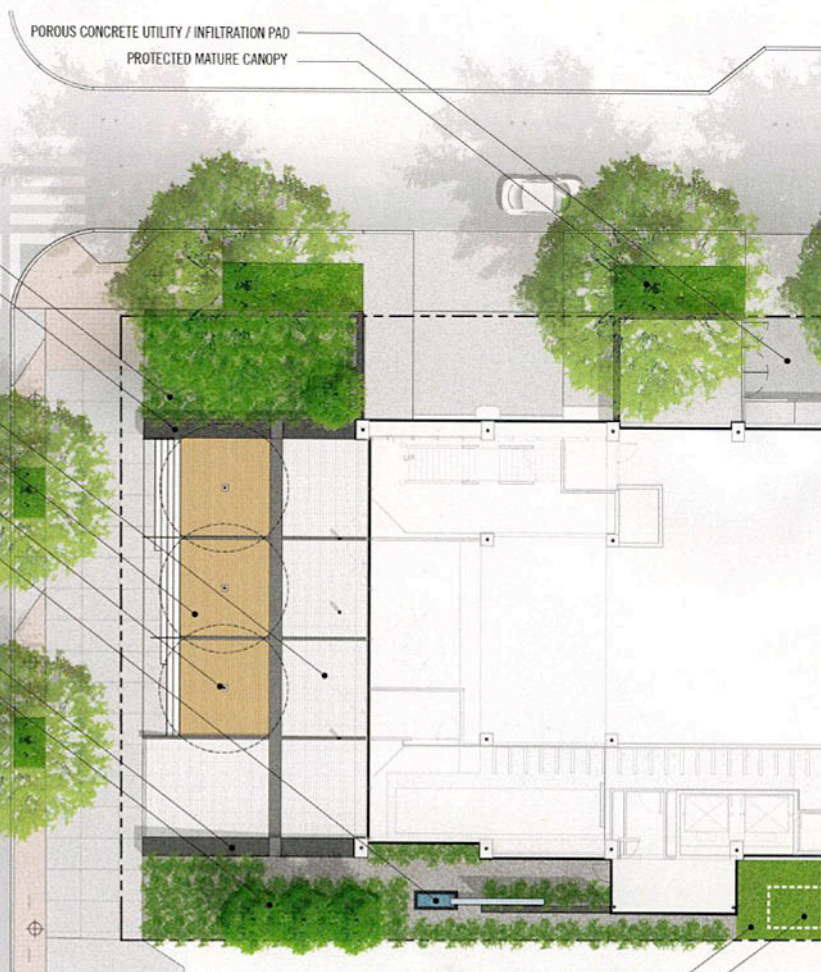
- NATIVE RAIN GARDEN
- LOW CONCRETE ACCENT WALL
- PERMEABLE UNIT PAVING PLAZA
- RAISED FSC-CERTIFIED DECKING / INFILTRATION ZONE
- SPECIMEN PLAZA TREES WITHIN A CONTINUOUS ROOT ZONE
- RUNOFF-DRIVEN WATER FEATURE
- LOW CONCRETE ACCENT WALL
- NATIVE RAIN GARDEN

RIGHT

A pedestrian-friendly, open space plaza.

BELOW

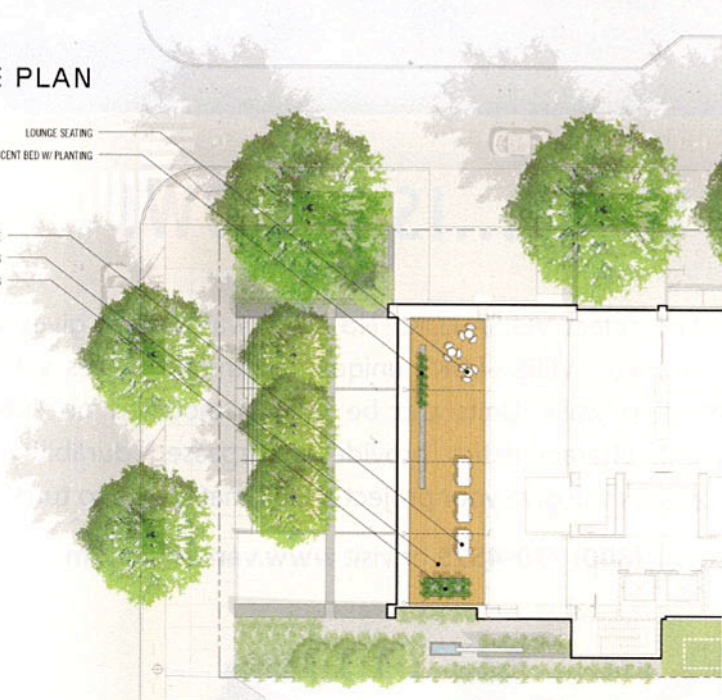
An upper level terrace overlooks Peachtree Street.



- NATIVE GRASS PLANTING
- 10,000-GALLON UNDERGROUND CISTERN

TERRACE PLAN

- LOUNGE SEATING
- RIVER ROCK ACCENT BED W/ PLANTING
- OUTDOOR DINING FURNITURE
- RAISED GREEN ROOF DECKING PANELS
- MEDICINAL GREEN ROOF PLANTING

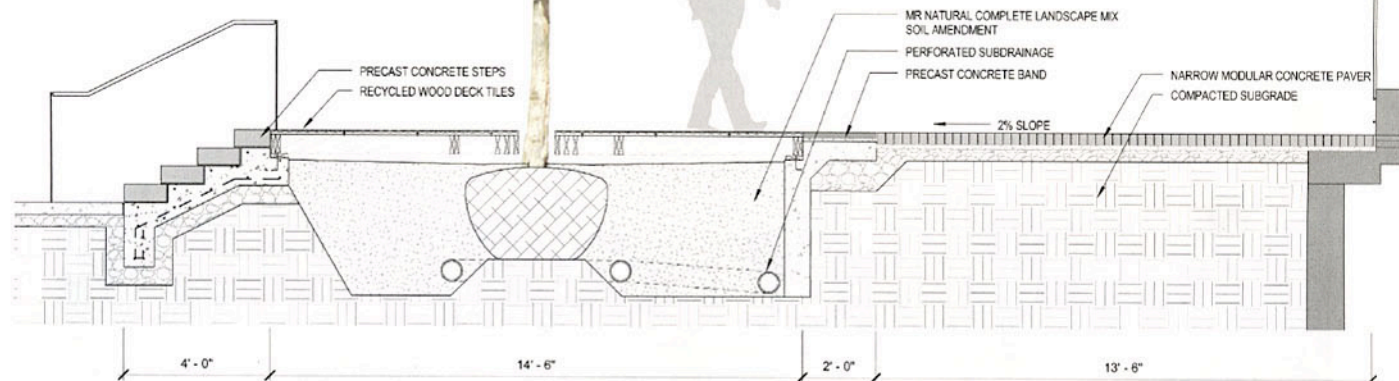


Rainwater from the roof and an upstairs terrace is directed into a 10,000-gallon underground cistern. It is then filtered and treated for use in all of the building's flush fixtures, in a water feature on the plaza, and as the sole source for irrigation. Excess stormwater goes into a pair of infiltration gardens; only in the event of an extraordinary rainfall does it overflow into the storm sewer system.

That water feature on the plaza is a narrow steel channel along which water sluices, then pours onto a bed of pebbles, to disappear into the infiltration gardens. It flows only when water is available from the cistern. It is visible both on the plaza and through a glass wall from inside the

RIGHT
Plaza section.

BOTTOM AND INSET
The building's previous street front and the renovated exterior.

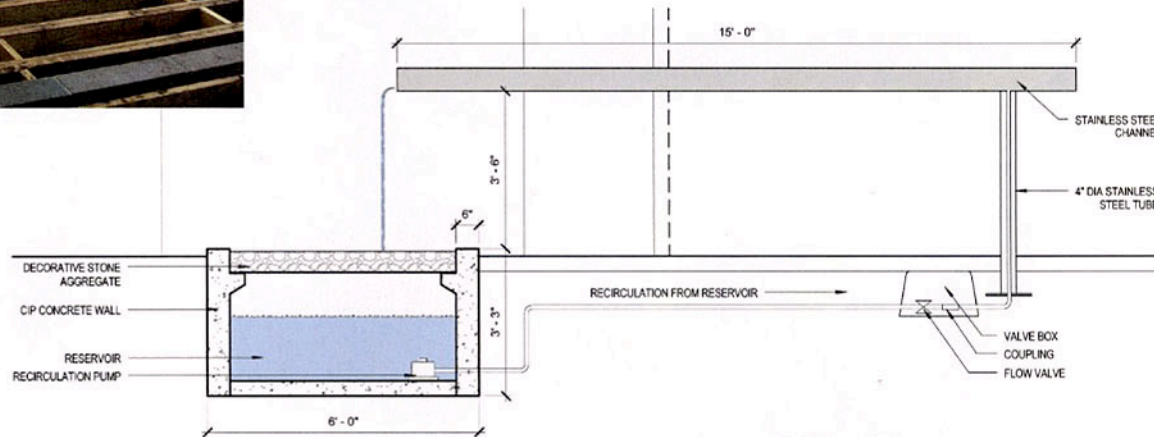
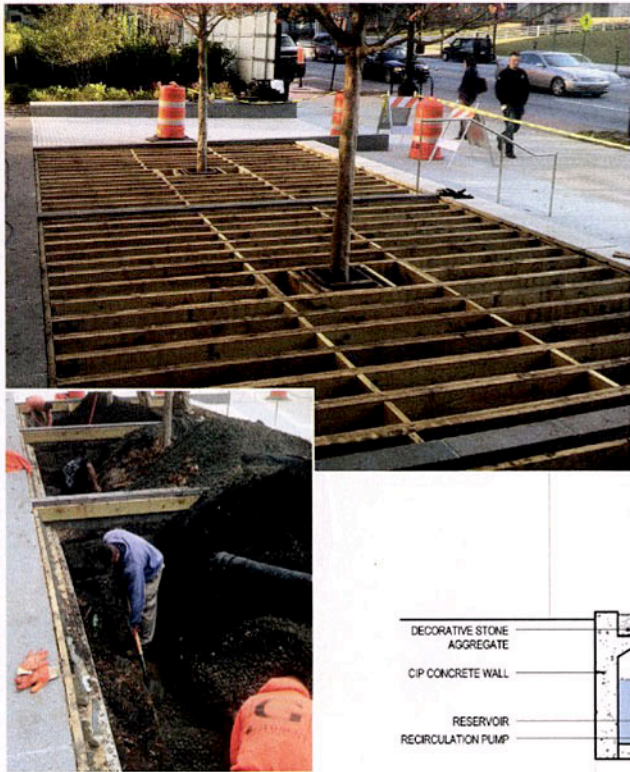


lobby and is meant to “emphasize the preciousness of water as a resource...as a means of communication to our staff and visitors,” Alvarez says. “It’s designed to visually tell the status of our water resources.”

The plaza is surfaced with Stepstone precast unit pavers of high recycled content and with Forest Stewardship Council-certified massaranduba wood decking. The wood tiles sit on joists about 15 feet above the root zone of three trident maples that pierce the deck area, leaving the remediated soil in which these trees are planted uncompacted. One of the new trees died quickly because of poor drainage; it was located directly in the former driveway path, where soil was especially compacted. An arborist then helped design a dry-well system of deep auger holes back-filled with crushed stone to ensure proper drainage for its replacement.

Both the concrete pavers and wood tiles are spaced to allow stormwater to infiltrate freely between them. The pavers stack on sand, which is necessarily compacted for stability but does allow some permeability. The spaces between them capture and hold rainwater as it slowly percolates. Their dimensions add capacity. Four inches deep, compared to the usual two and three-eighths, the gaps between pavers can accommodate nearly double the volume of water; they are also three inches wide, compared to the typical four-inch paver, increasing the number of gaps. “But the larger component [of the plaza surface] ended up being the wood deck,” Alvarez says. “It’s all fluffy underneath. We were thinking about both stormwater and the success of the trees.”

Existing concrete on the side of the building at the entry to a below-grade parking area was also replaced with



TOP RIGHT

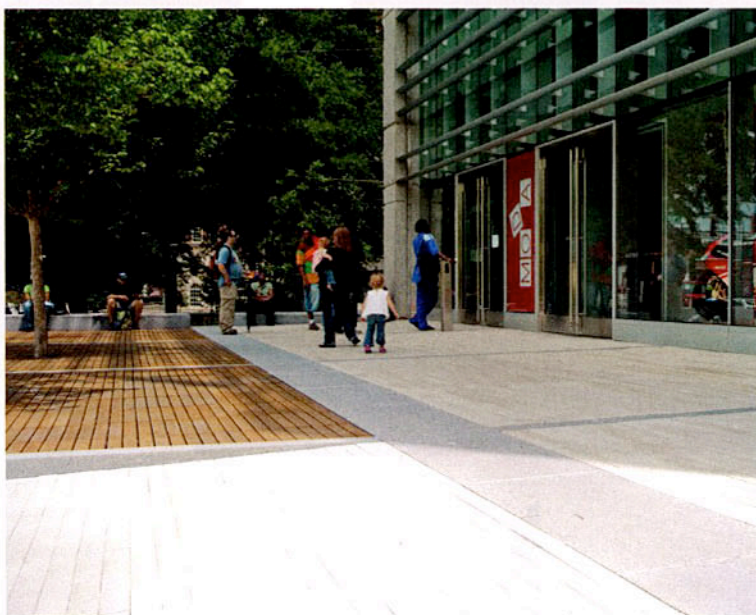
Water is harvested from the roof and routed to an underground cistern or emerges in the form of a water feature.

ABOVE AND INSET

Wood decking creates a root bridge; special soil and subdrainage provide optimum growing conditions. Each trident maple in the plaza is surrounded by 768 cubic feet of soil.

RIGHT

The entrance plaza at street level.

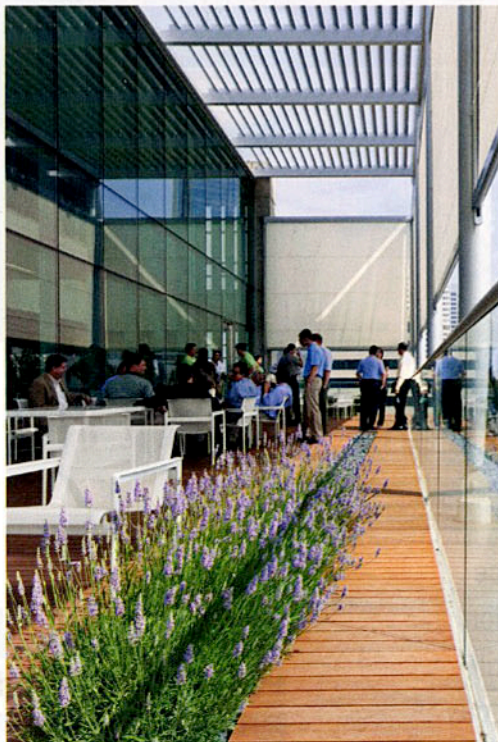
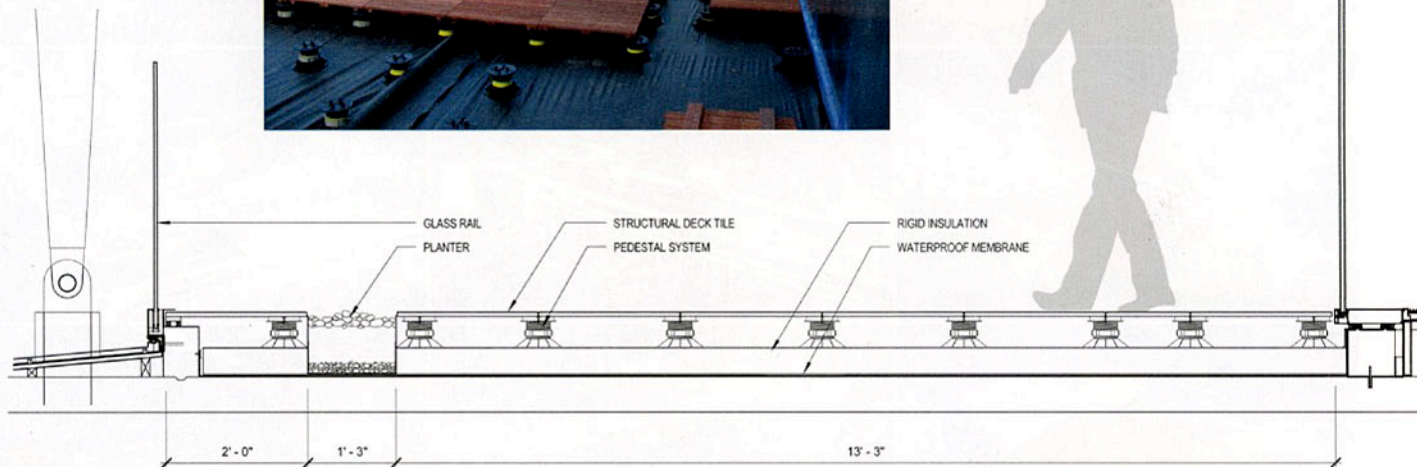


permeable concrete, poured on site. After a block party the firm recently hosted on the plaza, huge kettles of water used for a Low-Country seafood boil were dumped onto that paving. The result was a pleasant surprise for the design team. "All that water went directly into the concrete. It didn't run off at all," Alvarez said.

As in every project, there were competing programmatic needs to balance. "The design went through a series of changes to make the plaza engage the street more," said John Threadgill, a landscape architect and project manager with Perkins+Will. "This meant that a prior scheme that was more focused on stormwater reuse was modified to eliminate a bioswale at the street-sidewalk edge." The designers also considered using Eco-Stone interlocking

RIGHT
Terrace construction.

BOTTOM
Plant selections
come from a palette
of medicinal herbs.



pavers on the plaza, which have higher permeability. But the plaza is meant to accommodate art installations and performances; spillover crowds from openings at the Museum of Design Atlanta, which occupies the building's ground floor; and other gatherings. The interlocking pavers were ultimately rejected because they create a less uniform and crowd-friendly surface.

For buildings in locations this urban, absorbing the impact of big downpours is a challenge. "Short of building everything with a green roof, you just don't have enough area to retain it all on site. And in a typical project there's going to be some cost consideration," Alvarez says. "Not everybody's going to put in that 10,000-gallon cistern, for example. Even the wood deck out front, that's considerably more expensive than paving with concrete or using con-

crete pavers." But the firm intended its headquarters to serve as a demonstration. Interpretation has a bigger role in this design than in most projects. The considerable recognition the project has received—including the highest LEED Platinum rating—has sparked interest, and tours of the building are given to explain the sustainable technologies used.

"We are trying, on our own project, most of the things we ask our clients to include in their projects," Alvarez says. "One of our goals was to make it visible. A lot of these things are great for the environment, but if no one's seeing it, it's not moving the needle." ●

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