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New properties are going up, while old landmarks are being refreshed for another century of service.

LANDMARK POWERED GROWTH

One of those historic properties literally helped power the city's rapid growth. The Powell Avenue Steam Plant was built to supply electricity to the young city's bustling downtown district and keep a busy streetcar system on track.

Clayton McKinnon, Project Manager for Hoar Construction, says the Alabama Power facility was built in 1895.

"It was the original power plant for downtown Birmingham," he notes. "We started down here decommissioning the plant once it closed in 2013. A lot of our work has focused on a structural restoration, getting the building rehabbed, and doing a lot of demolition to get the space usable for future use."

CHALLENGE: REDUCE WALL STRESS

Hoar Construction, based in Birmingham, is a national general contractor with offices in Orlando, Nashville, Houston and Washington, D.C., and one key component of their restoration work targets the north side of the 120-year-old building.

"One of the challenges is, how do we water proof the back wall on the north side of the building," says McKinnon. "In the 1930's, the railroad was elevated through downtown Birmingham so that the north side of the building was backfilled up against like a basement would be. When we realized we needed to excavate back there to install the water proofing we realized there were probably some stresses on the wall we could help alleviate."

LIGHTWEIGHT UP TO TASK

After considering several options, geotechnical engineers chose lightweight aggregate from ARCOSA to protect the timeworn, but well-built wall. "The geotechnical engineers at Bhate Geosciences as well as LBYD Civil and Structural Engineers presented lightweight as one of the options, so

120-YEAR OLD INDUSTRIAL SPACE RENOVATED AS HISTORIC DESTINATION

Lightweight aggregate from Arcosa Lightweight is being used to protect and preserve part of a Birmingham, Alabama landmark. The Powell Avenue Steam Plant, built in 1895, is being redeveloped by Alabama Power to become a historic destination in the heart of 21st Century Birmingham.

Forged in a fire of iron and steel, Birmingham, Alabama grew to become the industrial center of the South. The city developed so rapidly some people called it "The Magic City".

Now, 145 years later, Birmingham is known worldwide for its medical research facilities, banking and high tech manufacturing. Today, there's a move to redevelop and rethink the city's historic central core. Signs of the rebirth can be found all across the city.

we investigated to see what the properties were and if it was going to work for us and it sounded like a good option,” says McKinnon.

Manufactured at the Livingston, Alabama plant, the unique properties of the lightweight material make it ideal for such a sensitive project. Lightweight aggregate can reduce the density of such compacted geotechnical fills by up to one-half. This advantage, coupled with its predictable high internal friction angle, can also significantly reduce lateral forces.

Many of the brick walls around the perimeter of the former steam plant are up to 18-inches thick. “At the end of the day, lightweight aggregate has reduced the stresses on that wall by about half so it should last for another 100 years,” McKinnon says.

A NEW FUTURE

Hoar Construction continues to prepare the old landmark for its new future: a unique historic destination in the heart of 21st century Birmingham. “I think the idea is to feature the historic look of the building,” says McKinnon. “All of the structure and the brick and all the steel; Birmingham was an industrial town so they want to maintain that look for sure.”

Follow the renovation at www.powellsteamplant.com.



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