



An esplanade is a long, open, level area. In New Orleans, these narrow strips of land are lined with green canopies of sensitive live oak trees.

# LIGHTWEIGHT AGGREGATE PROTECTS NEW ORLEANS LIVE OAK TREES

**New Orleans attracts thousands of visitors each year eager to experience the city's music, history and hospitality. The scenic beauty of this celebrated city is enhanced by some its oldest living residents: ancient live oaks which grace the city's neighborhoods. Arcosa Lightweight is being used to ensure these iconic trees stay healthy for future generations.**

In New Orleans, live oak trees are as important to the city's identity as its distinct architecture, unique culture, and vibrant history. Maintaining the health of thousands of trees scattered throughout New Orleans falls to the city's Parks and Parkways Department. And that's a big responsibility according to Hailey Bowen, the city's chief landscape architect.

"We have many historic trees, particularly our live oak trees and we've actually been involved in a lot of restoration projects," says Bowen. "We have an urban forestry division here at Park and Parkways and they're focused entirely on working with the city's canopy. We have over 500,000 trees that we manage in the city."

Bowen has been in the field of landscape architecture for over 20

years. The last ten years of her career have been with the City of New Orleans. She joined the city's Parks and Parkways Department in the years following the massive rebuild following Hurricane Katrina. After the storm surge, many of the city's live oaks were damaged and dying. And, more than a decade later, repairing the scars of the deadly storm is still underway.

"Since Hurricane Katrina we've sought a lot of funds to restore various corridors within the city," says Bowen. "The destruction wasn't limited to buildings. It included trees, neutral grounds, green spaces, and parks. Our historic live oaks canopy was really showing serious signs of decline."

Historic Esplanade Avenue was particularly hard hit. "Esplanade

Avenue is a tree-lined corridor and without the live oaks it would lose a lot of what its special," notes Bowen. "Esplanade Avenue without the grand old live oaks would just not have the heart and soul. It's the creole version of St. Charles Avenue."

Bowen says in the days following Hurricane Katrina, trees planted along the neutral ground (a New Orleans term for a median) were damaged by flood waters and debris from damaged 19th century homes.

"Refrigerators and household debris got piled on the tree roots in the months after the storm," says Bowen. "There was a lot of heavy machinery that rolled over the roots. There has been road work where they removed curbs and further damage to the roots over time. Of course, a lot of



pedestrian compaction has occurred out there so the trees were showing serious stress. The canopies were dying back. Our arborist evaluated the trees and we were very concerned for the future of Esplanade Avenue.”

Undertaking restoration of the grounds presented a series of issues. The roots of live oaks extend close to the surface, making any type of excavation impossible. Soil tests indicated high alkalinity, so chemical changes to the surrounding environment would be risky to the plant’s health. And, the addition of an established walking path could lead to further soil compaction.

“Another one of our problems was that on Esplanade Avenue we wanted to restore it back to the original turf and trees,” says Bowen. “Over the years a lot of neighbors had taken house plants and plants from their yard and placed them on the neutral ground. But the historic character of the neutral ground was what we were trying to restore. And there’s an issue where people have historically walked down the center of the neutral ground on Esplanade Avenue and we knew that we could not just go back and put sod down there because there’s no way that was going to withstand the pedestrian traffic.”

To aid in the restoration project, Bowen consulted with urban forestry experts at the Louisiana State University’s AgCenter in Baton Rouge, including Associate Professor Hallie Dozier. “She pointed me towards James Urban’s books,” says Bowen. “He’s a landscape architect, world renowned for his work in keeping urban trees that have had a lot of human interaction stay healthy and live longer lives.”

The solution to the challenges faced in the Esplanade Avenue restoration project was found in one of his books: expanded shale and clay. “I saw expanded shale and clay and I was like what is that? I started reading more about how the product is used particularly in areas where there’s a lot of root compaction or threat of compaction to the root zone.”

After discovering expanded shale and clay, Bowen realized the material would be ideal for the unique circumstances faced in the restoration. “We needed to do something that was a surface application that would not further contribute to the compaction out there and we didn’t want anything that was going to alter the PH and so we learned about the structural qualities of expanded shale and clay.”

After two years of planning, work along Esplanade Avenue finally began. Crews cleared out dead trees, invasive plants and unsightly debris. Lightweight aggregate, produced at Arcosa’s nearby Erwinville, Louisiana facility, was specially blended to ensure good plant health and provide a structural surface for the pedestrian pathway.

“We really liked the fact that its PH neutral. Our soil tests had indicated that our soils were extremely alkaline which is a problem we have throughout New Orleans and we certainly didn’t want to use a material that was going to increase that alkalinity. We also liked the way that expanded shale clay is structural so it would allow for pedestrian activity, yet it would maintain the openings for the tree roots and prevent further compaction of the soil.”

Additional lightweight material was also placed in trenches dug in a radial pattern around the tree roots. “We actually went in and did what’s called radial trenching using grow guns, which are like air guns, and opened up in a radial pattern around the tree zone so that there would be some opening in the root zones. We also went in with organic material. It went down deep so that the roots will continue to have access to the openings and oxygen, rainwater, no matter how much pedestrian compaction occurs the expanded shale and clay is going to help; its structural qualities are going to help prevent that.”

Today, a winding path made up of lightweight meanders through the restored neutral ground. The health of the historic live oaks is protected, while neighbors along Esplanade Avenue now have a new walkway to enjoy.

“It worked out well,” says Bowen. “I think it’s so important there are green infrastructures. Everybody knows the values that trees bring: environmentally, aesthetically, they make people happy and really my goal and my personal mission on this job is to reforest the city as much as possible and to protect our heritage trees as much as possible because that is what this job is about for me.”

The New Orleans Parks and Parkways Department manages the grounds of many of the city’s national landmarks sites including Jackson Square, one of New Orleans’ most recognizable landmarks. Learn more about the important work they do by visiting this web address: [nola.gov/parks-and-parkways](http://nola.gov/parks-and-parkways).