

2007 Arboricultural Project-of-the-Year Nomination

Project: 5th Street Commons: The Preservation of “George,” the Historic Live Oak
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Background

In the spring of 2007, Gables Residential, a development, construction, and management contractor, completed plans to develop an area near downtown Austin, Texas, into a multi-use residential complex. The site of this significant project includes a neighborhood as old as the city of Austin, near the banks of the Colorado River and not far from the famous Treaty Oak. This site is also home to a huge, native Live Oak growing between, what was for years, the old Cut-Rite Saw Shop (an icon to old-time Austin arborists) and a busy downtown feeder road, West 5th Street. The Gables design team will preserve the turn-of-the-century “saw-shop” building, now known as The Mean-Eyed Cat bar.

Just north of the building resides the historic, 52-inch Live Oak, which the Gables team affectionately named “George.” Both the City of Austin and Gables Residential deemed George integral to the site and his preservation critical. Jennifer Weibrand, Development Associate with Gables, worked closely with Matthew Tobola, Arborist Representative with Bartlett Tree Experts, to diagnose, prescribe, and treat the tree for both existing issues and those anticipated from the construction project that would ensue. From the start, the tree’s base was choked with fill soil, most probably a result of nearly 100 years of accumulation. Any additional construction damage could mean the tree’s demise. Jennifer and Matt formed a preservation team and went to work on George, Jennifer as the owner representative, and Matt as the arborist.



Images 1 and 2: George prior to construction of 5th Street Commons. Note the lack of a root flare in the right hand image and the presence of impervious asphalt on the critical root zone.

Assessment

Despite many years of neglect, George was a good candidate for preservation because of a healthy crown and good branch structure, but concerns were multiple. The buried trunk (See Image 2) could have developed physical deformities and disorders that might eventually kill the tree. The impending development project could reduce internal drainage in the area, critically affecting this upland tree. Finally, traditional Plant Health Care would need to be implemented to help the tree survive construction activities. Measures to address these concerns would include exploratory root collar excavation, diagnosis, and remediation; removing the significant dead wood in the tree's crown; managing foliar, branch, trunk, and root pests; and installing protective barriers for the construction phase.

Process

The obvious first step was pruning. Crews pruned all dead, dying, or diseased branches, and raised the canopy to provide clearance for construction equipment. With all resulting debris out of the way, the preservation team turned to root zone tasks.

Initially, with use of an air spade, the arborist conducted an exploratory excavation of the root collar to determine depth of the original grade. The crew removed four feet of fill soil from the tree's base before locating flare roots and native soil.



Image 3: Exploratory root collar excavation.

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Next, the crew wired two-by-four boards to the tree to prevent mechanical damage from any equipment used in both the protection and construction project phases. With this protection installed, a backhoe operator then carefully removed the large amount of overburden, taking out soil for a distance of ten feet from the trunk and a depth of four feet around the tree's circumference. The resulting tree well was 20 by 20 feet.

As with any urban excavation, the team encountered obstacles during removal of the overburden. First, they discovered unmarked water, gas, and sewer lines but managed to avert infrastructure damage by using skilled operators who conducted careful excavation under vigilant supervision. Next, during excavation, the team confronted critical decisions regarding removal of adventitious root tissue that was impacting and girdling the trunk. This process created significant concern for the Gables owner representative. The arborist's skills at communicating an informed rationale in an understandable way were put to the test, and he managed to allay the owner's anxieties and garner her additional trust in his abilities as an arborist.

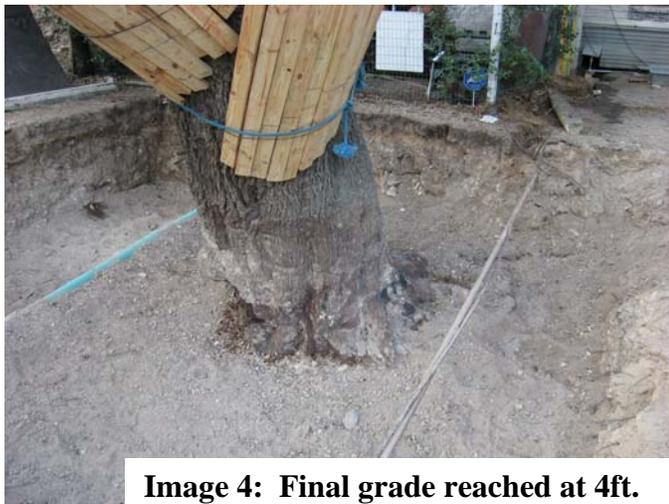


Image 4: Final grade reached at 4ft.

The next step came after excavation was completed. The team tested internal drainage to determine the percolation near the tree. Post-excavation drainage was in excess of one inch per hour, more than adequate for tree health.

The arborist could now implement the Root Invigoration Program, patented by Bartlett, to help create a better environment for new root development. Developed in Austin, Texas, tested by the Bartlett Tree Research Laboratories, and used internationally, this process incorporates organic matter and fertilizer into the critical root zone to help promote new root growth. This program aids in root growth, greatly improves health of a stressed tree, and also functions proactively to maintain tree health.



Note trunk impacted by adventive roots girdling the tree.

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Image 5: Completion of Root Invigoration.

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Finally, crews installed additional physical protections. First, they placed plywood in the newly excavated tree well to prevent compaction from foot traffic and building materials during construction of a retaining wall around the hole's perimeter. This wall would function in several protective ways: to prevent soil from collapsing back into the tree well and to create a protective moat against construction equipment and foot traffic. Finally, the crew installed a permanent fence at the drip line to increase the likelihood that this valuable tree would be amply protected. All of these measures, along with a monthly Plant Health Care Monitoring Program for the duration of the construction project should give George every chance to thrive and grace the new development for many years to come.



Figure 6: Completed excavation and retaining wall.

Discussion

This project is arboriculturally significant due to the critical need for informed measures to protect a specimen tree and due to the complexity of the practices used to do so. Modern scientific arboricultural practices were applied to diagnose, prescribe, and treat this tree. Also significant is Gables Residential's entire approach to this effort. As property owners with a historic tree, the Gables team recognized the importance of preserving it, sought verifiably professional advice, and allowed the arborist the freedom to provide every service necessary to help ensure tree preservation both during the construction process and for the future of the site. George's preservation is an example of a committed property owner partnering with a quality arborist to preserve and improve the urban forest resource in a difficult downtown setting.