Symbol of Resilience and Rebirth

A Q&A With the People Behind the Oklahoma City Survivor Tree

Trees can be beautiful just on their own, but when a tree takes on special meaning and serves as a symbol for human resilience and rebirth, its beauty is multiplied many times over.

Such is the case of a solitary American elm tree that once shaded a parking lot of the Alfred P. Murrah Federal Building in Oklahoma City, Oklahoma. In April 1995, when the building was bombed in one of the worst terrorist attacks on U.S. soil, the tree miraculously survived, despite being heavily damaged. The force of the blast ripped most of the branches from the tree, and fire from the cars parked beneath it burned much of what was left. The tree—estimated to be about 100 years old—was nearly chopped down during the initial investigation because workers wanted to recover evidence from the tree, including debris hanging in its remaining few branches and embedded in its trunk.

Most thought the tree could not survive. But almost a year after the bombing, people gathering for a memorial ceremony by the tree noticed that it was beginning to bloom again. When planning began for the Oklahoma City National Memorial & Museum, those involved in developing its mission statement—including community citizens, family members of those who were killed, survivors, and rescue workers—said that one of the components of the memorial must be the “Survivor Tree,” as it is now known.

And so began great efforts to save the tree and incorporate it as part of the overall memorial. One of those contacted early in this endeavor was Mark Bays, an urban forester with the Oklahoma Department of Agriculture, Food, and Forestry, who was enlisted to help develop a plan to save the tree. Another key player has been Gabriel Taylor, director of facility operations at the memorial. Gabriel and his crew take care of the Survivor Tree on a daily basis. Without Mark’s help and the dedication of the Oklahoma City National Memorial & Museum’s Facilities & Grounds staff and many others, the Survivor Tree would not exist today.

ASCA had a chance to interview Mark and Gabriel regarding their roles in the project and the steps that were taken to save this beautiful tree.

ASCA: What did the tree look like after the blast? How was it damaged?
Mark Bays: Photos from the early 1900s show that the tree was actually in the yard of a home. As Oklahoma City continued to change, the house was taken down but the tree remained. The tree was in the middle of a parking lot for close to 20 years and somehow was able to withstand and survive those conditions. The asphalt of the parking lot was around its entire root system, including all the way up on the trunk of the tree. When the bomb was detonated just across the street, the tree took the full force of the blast, along with glass and debris from the building that was blown into its trunk and branches. Cars caught fire and scorched its trunk and branches. It was in pretty bad shape.

ASCA: What were the most important things to consider as you began work on this project?
Mark Bays: I had been working with Richard Williams of the General Services Administration with the tree recovery on the plaza area above the parking garage on the south side of the property. In 1996, Rowland Denman, the Memorial Foundation’s volunteer executive director, reached out to me and asked if I would be willing to help with the recovery efforts around this now very special tree. I pledged that I would not only bring the entire lot of Oklahoma Forestry Services resources to the table, but I was also networked with well-established horticulturists, foresters, arborists, and tree care companies in Oklahoma that would be willing to help as well. Across the country, we are a committed group of people in the community forestry field. It’s a true team effort, with many folks working together, including the Facilities & Grounds department at the Oklahoma City National Memorial & Museum, who take care of the Survivor Tree on a daily basis.

ASCA: How were you selected to lead the Survivor Tree project?
Mark Bays: I had been working with Richard Williams of the General Services Administration with the tree recovery on the plaza area above the parking garage on the south side of the property. In 1996, Rowland Denman, the Memorial Foundation’s volunteer executive director, reached out to me and asked if I would be willing to help with the recovery efforts around this now very special tree. I pledged that I would not only bring the entire lot of Oklahoma Forestry Services resources to the table, but I was also networked with well-established horticulturists, foresters, arborists, and tree care companies in Oklahoma that would be willing to help as well. Across the country, we are a committed group of people in the community forestry field. It’s a true team effort, with many folks working together, including the Facilities & Grounds department at the Oklahoma City National Memorial & Museum, who take care of the Survivor Tree on a daily basis.

ASCA: What were the most important things to consider as you began work on this project?
Mark Bays: We worked very closely with the Oklahoma City National Memorial Foundation and developed a plan for
recovery, and the first thing was to begin the process of carefully removing the asphalt parking lot around the root system. In doing this, we didn’t want to cause any additional damage. For the most part, this was done manually. We were also concerned about the overall health and condition of the tree, so we had to consider how we might best address this without causing additional issues.

**ASCA:** Why were seeds taken from the tree at the beginning of the project?

Mark Bays: Initially, we were not sure if we were going to be able to help the Survivor Tree fully recover, so one of the first things we did was to collect the seeds off the tree so we would be sure to have its offspring. A tree care company donated its time and equipment that first year. They picked what few seeds we could find off the tree by hand. We also took a cutting from the tree so that we could eventually clone it and make sure the special genetics of this individual tree were protected.

**ASCA:** When excavating the site, did you use any special equipment to survey or evaluate the root system of the tree?

Mark Bays: The Oklahoma City Public Works Department sent out a street crew to assist. Technology was different back then, and they showed up with every imaginable heavy piece of equipment you can think of. It was decided to put away the heavy equipment and remove everything by hand. Jack hammers were used to break through the asphalt, and the gravel bedding material was slowly excavated down to the original soil level. We did use one piece of heavy equipment called a Gradeall excavator that allowed us to carefully pull back the asphalt and gravel inch by inch. When all that was removed, we used hand picks to break through the heavily compacted soil. Rich organic compost was spread around the entire root system of the tree. I can only imagine how the tree was feeling when we were able to directly water its roots that first time.

**ASCA:** What aspects of the root system made things particularly challenging? How were these challenges overcome?

Mark Bays: Most trees’ working roots are shallow in the soil and can be crushed when driving across them. We didn’t use any heavy equipment around the root system of the tree for risk of further damaging the root system.
Tree roots continue to grow and die throughout the life of the tree in response to the changing conditions. One of the big concerns before starting with the removal of the asphalt was whether the tree had developed a root system that was growing within the gravel aggregate after the parking lot was put in. As we carefully excavated the parking lot from around the tree, we were quite happy to find that this was not the case.

ASCA: Did you have to treat the trunk and/or branches of the tree in order to heal or save it?
Mark Bays: After close inspection, we were thankful to find there were no major wounds in the trunk or branches. It’s not necessary to apply any wood sealant to recently pruned or damaged branches. It is an American elm (*Ulmus americana*), and it has been treated with a product to help prevent it from contracting Dutch elm disease.

ASCA: Can you tell us about the aeration systems that were put in place? Why are they necessary?
Mark Bays: Trees need a certain amount of oxygen exchange in the soil for root development and good health. The design called for additional soil fill to be placed around a small portion of the Survivor Tree root system, so we designed an aeration system to be installed at the existing grade to continue to allow for this air exchange. We utilized two-inch PVC pipe with half-inch holes drilled with close spacing. Fabric cloth and gravel were used, and then it was covered with soil and eventually the turf. We also designed a subterranean drip watering system to water the roots that were covered, if needed.

ASCA: What does the routine maintenance for the Survivor Tree entail? How is the ongoing health of the tree monitored?
Gabriel Taylor: Those of us in the Memorial’s Facilities and Grounds department inspect the Survivor Tree every morning for anything that looks out of the ordinary. The changing seasons dictate the type of care required. Limb removal is used to prevent pest infestation in lieu of chemical treatments. Occasionally, we remove sap from the cavities in the tree. During ice storms, we are on standby to remove ice buildup on the limbs. Sometimes, we find coins, paper, and other objects stuck in the tree bark and remove them immediately. In 2015, we installed a new cast-iron tree well cover because of the growth of the tree trunk. Outside experts, including Mark Bays, are brought into the discussion as needed.

ASCA: Can you talk about the seedling program associated with the tree? How are the seeds/seedlings collected and distributed?
Gabriel Taylor: When the Survivor Tree begins producing seeds, the Memorial Facilities & Grounds crew collects the
seeds on a daily basis for about a month. We dry out the seeds in a cool, dark room. Steve Bieberich with Sunshine Nursery in Clinton, Oklahoma, grows them until the following year, when they are distributed on April 19, following the Memorial Museum’s annual Remembrance Ceremony. In addition, grow kits of the Survivor Tree are available from The Jonsteen Company. With the kit, you can grow a true descendant of this historical tree. A portion of the proceeds of these sales benefits the continuing mission of the memorial and museum. There are now thousands of Survivor Tree offspring planted around the country, spreading the important message of resilience, renewal, and rebirth.

ASCA: The inscription around the Survivor Tree reads, “The spirit of this city and this nation will not be defeated; our deeply rooted faith sustains us.” Describe what this quote means to you, having been so intimately involved in the project.

Mark Bays: Oklahoma City and our nation were forever changed that day. I, like so many others, am committed to continuing to do all we can do together to never forget what happened and honor those who were taken from us before their time. I’m one person among so many others who are standing strong in so many different ways to show our continued support to the Oklahoma City National Memorial. I take great pride and am honored to continue to play my role as this work continues.

Gabriel Taylor: The Survivor Tree, standing on the highest point of the memorial, helps tell the inspirational story of an entire nation coming together after one of the worst domestic terrorist attacks on American soil. We were not defeated but made stronger. For me, the Survivor Tree is a daily reminder of the hope, resilience, and growth Oklahoma City has shown for the past 24 years. I’m honored to be part of the team responsible for the care of such an important symbol.