

Applications of the Air-Spade
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The Air-Spade is a handheld tool that produces a supersonic stream of air and can cut through and loosen most types of soil. However, this tool is harmless to any non-porous items that might be in the soil, for example, plant roots, buried pipes, or cables. The Air-Spade has many applications in arboriculture, including root collar excavation, reduction in soil compaction, radial trenching, bare rooting, transplanting, and moving, large tree work, and root structure analysis. Some additional applications are new construction and landscape architecture, installing irrigation lines, and locating utilities. Root collar excavation is an important part for plant care. It eliminates girdling roots and checks for disease and/or pest problems. Air excavation reduces the excavation time by fifty to seventy percent. Air excavation can be done with the Air-Spade.

The City of Bowling Green purchased an Air-Spade in 2005. We have used Air-Spade to preserve trees during the sidewalk installation and replacement. Andersons of Maumee, Ohio donated 10 trees for the Simpson Garden in April 2006. Our City crews made radial trenches with the Air-Spade to improve drainage, increase oxygen in the soil, and promote root growth in the planting locations. We aerated all large mature trees in City Park to improve the overall health of the trees. Our City crews have performed root collar excavation on City and Parks trees planted too deep or volcano mulched too high to improve the health of the trees. In October 2005, we hosted an Air-Spade Workshop for the communities of Northwest Ohio sponsored by the ODNR Division of Forestry.

Our goal is to aerate or radial trench all mature trees in City owned green spaces to increase the oxygen in the soil and improve drainage on trees. We plan to use the Air-Spade to correct and remove girdling roots that cause a tree to decline due to lack of water. This another tool in our tool box to preserve the trees of Bowling Green.