Heritage Arboretum Development Project

Arboretum Introduction

An arboretum is a garden containing trees, shrubs, and other plants that are cultivated for visual enjoyment and educational purposes.

The Interactive Community of Arboreta (ArbNet) Arboretum Accreditation Program provides standards and guidelines for creating and developing an arboretum. The ArbNet Arboretum Accreditation Program is sponsored and supported by The Morton Arboretum, Botanic Gardens Conservation International (BGCI), and the American Public Gardens Association (APGA).

Different levels of accreditation have been established to recognize arboreta at varying degrees of development, capacity, and professionalism. All levels require planning, maintenance, and educational components. Level one requires twenty-five species of trees and woody plants, while levels three and four require five-hundred species. Many other requirements become more demanding as an arboretum proceeds through various levels. This project is to create, maintain, and enhance a Level One arboretum.

Anderson Township and Green Space Introduction

One type of limited self-government in Ohio is the township. A township is an unincorporated portion of a county that has more decision-making authority than a portion of a county that is not a township, but less authority than an incorporated city. At about 45,000 residents, Anderson Township, located in the southeastern corner of Hamilton County, Ohio, is one of the most heavily populated townships in the State of Ohio. Founded in 1793, Anderson Township remained fairly undeveloped until the suburbanization that followed World War II. Anderson Township is dominated by rolling, wooded topography that creates scenic vistas of the beautiful natural environment. Anderson Township preserves these features while witnessing significant growth.

Anderson Township has taken the lead in Ohio in acquiring and protecting Greenspace through the implementation of a Greenspace levy. As Ohio's first Greenspace Township, the community has protected nearly seven-hundred acres of property that by law will remain in a natural state.

The portion of land where the Heritage Center Arboretum is taking shape is just under five acres, of which approximately half is protected green space. There is a building on site that was built around 1820 with room additions in the 1860s. The site includes a gazebo, patio, drives, and parking lots. Some of the ground is lawn while the remainder is tree-covered.

Vision for Heritage Center Arboretum

Courtesy of Timothy J. Kloppenborg

The hope is to promote native species of trees, enhance the beauty of the area, increase the value and desirability of the Heritage Center, increase rental prices and days, and educate citizens regarding more tree species.

Related Links:

http://www.arbnet.org

https://www.mortonarb.org

https://www.bgci.org

https://www.publicgardens.org

The township staff person who is responsible for renting out the Heritage Center looked around and realized there are quite a few types of trees on the grounds. She asked the question, “could this be considered for an arboretum?” If the grounds were to be certified as an arboretum, the building and grounds could perhaps be advertised more widely and rented both more often and for a higher daily rate.

If a decision was made to pursue arboretum certification, there would be some challenges. For example, about half of the property is protected green space, so any work on that portion of the property is subject to green space policy. Another challenge is that most of the work would need to be accomplished by volunteers. A related challenge is to create a budget for this. What department would the budget come from and how much could be allocated? Who would make the decision first to create the application and then to approve the application before submission? Finally, would the end goal be to merely qualify for

arboretum certification, or would there be additional work to capitalize upon that certification and/or make additional improvements to make the land more appealing? Would brainstorming of possible future improvements dissuade decision makers from approving the basic application or motivate them further with the excitement of possibilities?

One of the questions was answered. The staff person brought the concept to the volunteer Tree Committee of the township. They considered the idea, several members walked the site with an eye toward identifying existing trees, and the committee decided to pursue certification. The Township Administrator and the Board of Trustees then agreed to assign a staff member to work with the Tree Committee to develop an application and, after reviewing the application, agreed to submit it.

Related Link:

https://www.andersontownship.org

The decision made was to apply for Level One Arboretum Status. This was tentatively approved subject to signs being created for, and placed in front of, each of the tree species identified. Forty-eight aluminum signs were placed. Each sign contains the Latin name and common name for each tree, an Anderson Township logo, a Heritage Center Arboretum logo, a QR code people can click on to read more information regarding that tree species, and a number so people can look up on the map where each tree is located.

One of the tree committee members also created a high-resolution map of the site showing exactly where each tree is, the buildings, drives, parking, and patio, and the elevation changes. This map will be available on-line, posted at the arboretum, and in a hallway of the government center.

Given the information in the first two chapters and here, it is time to create a charter for the project going forward.

When this project was envisioned, it was possible to state a vision for the outcomes, but way too premature to try to describe specific outputs. Therefore, it made sense to use an agile approach. Success from this project is defined as helping the customer achieve their desired outcomes. These outcomes include securing arboreta status so the center could be rented more frequently and for a higher rate along with educating citizens, especially on native plants.

An Agile approach allowed for increased visibility for stakeholders to see the plan implemented a bit at a time and to make adjustments. When certain early plans did not materialize, it allowed for adaptations. An example of this was when the garden tour date was announced for the first year of the arboretum, that date had already been rented out, so the arboretum could not be on the garden tour. Since an educational event is an essential component of arboreta status, plans shifted quickly to hosting local science teachers to encourage them to engage their students and with the state forester to bring in tree commissioners from other jurisdictions to show them how to create an arboretum.

Anderson Township's organizational structure has three elected Trustees with various departments and volunteer advisory committees. The departments impacted by this project include:

- planning and zoning (for the overall planning and how this fits in the community),
- operations (for maintenance),
- events (for site rental), and
- public works (for protecting greenspace).

The committees offer advice. Each has one Trustee and at least one staff member who works with them. The citizen volunteers on each committee are appointed one year at a time, expected to attend bi-monthly meetings, encouraged to help further, and may reapply for future years. The committees impacted include:

- Tree (to promote appropriate tree planting and maintenance),
- Greenspace (to perpetually retain designated greenspace in its natural state), and
- WeTHRIVE! Anderson (to promote beauty, clean-up, and health).

The Agile life cycle of this project started with the equivalent of a charter by the Trustees giving permission to apply for arboretum status. Arboretum status was granted based upon agreement to develop plans, maintain the facility, and use it for educational purposes. While the master plan was being developed, enthusiastic volunteers opportunistically planted some trees. It was determined that future plantings would only be accepted if they fit with the master plan. The master plan includes a vision statement, site conditions, design concept, both current and planned site maps, and recommendations specifically identified for the first year and generally identified for some time in the next four years. This master plan was iteratively developed by a few members of the Tree Committee with as much input as was possible to acquire from staff and other committees. It was presented to the Tree Committee, then the Trustees, then at the Trustees annual planning meeting with all managers from Township staff. This development and presenting of the master plan effectively shared the vision, helping to transition from initiation to planning and implantation. This master plan serves as a general roadmap for the next four or five years and specific plans for short-term development will be developed from it.

Other Agile concepts are being used on this project. One is to demonstrate a proven approach. The site map and concept included a "buffer zone" to transition from lawn into woods. Even though all stakeholders saw that, it was not until flags were placed to show exact planting spots for trees and shrubs that some stakeholders envisioned exactly what was planned and then objected. The sites for the plantings were moved and the number of plantings were reduced in response. Further, some stakeholders have said to possibly wait a year for more planting to see how this looks and how maintenance is impacted. This is an example of operating in an experiment-based manner. Progress and plans are reported every two months to the Tree Committee and every year to the Trustees.

One key question is how roles should be defined and who should fill each role. As the project started, the Greenspace Inspector took the active role from the Township side, acting as product owner. This person, however, did not have the full authority to also act as sponsor. Some of the other impacted staff functions provided active input and others did

not. One Tree Committee member acted as scrum master. However, due to the pandemic and cold winter weather, meeting in person was very difficult. Since many people involved are volunteers, scheduling virtual meetings and even securing timely feedback was sometimes difficult. All projects meet challenges, and rather than use them as excuses, methods needed to be developed to overcome them. On this project, there were more informal meetings and calls and texts between two or three people rather than larger teams.

Leading and Managing a Project Teams While Creating an Arboretum During a Pandemic

Our team is a sub-committee of our township's Tree Committee. We started with anyone who volunteered during a Tree Committee meeting and discovered some individuals were more willing to work hard and promptly. We also discovered that trying to get a large team to even meet during the pandemic when we were not allowed to meet indoors and the weather was cold and rainy was difficult. So as we regrouped and formalized our team, it became a small team. Ease of meeting and making decisions are advantages of this small team as is team member knowledge of our product. Each team member can speak knowledgably about many aspects of our project.

We sought generalized specialists. Each member had experience with plants and an expertise such as being an arborist, landscape designer, self-taught native plant expert, or planner. Members also graduated from Tree Commission Academy, which is a two-year program taught by the state urban forester. This program includes not only general knowledge of plants and their care but also workings of local governments, budgets, planning, and related knowledge to help run a tree program.

Team members were involved in planning all along. This started with walking the site and assessing current plants. It continued with providing input and review of the arboretum application. Once our arboretum status was granted, team members and other stakeholders engaged in rounds of input and discussion as we created our master plan that will provide general guidance for several years. As we looked at shorter time periods, team members met and recommended species to plant.

The team utilized several Agile principles. Simplicity was employed in keeping the design as clean and easy to maintain as possible while still adding to the number of species. The team changed in response to feedback, although this was a work in progress as some feedback was negative about team members' favorite design elements. We continued to consider our vision of native plants, beauty, and education as we selected plants so that we could add as much value as possible, and we strived to plant quickly in the more visible places to create quick value. We found that despite our early efforts for feedback, some feedback did not come quickly and was disruptive when it did come. Therefore, we had our product owner work intensively with key stakeholders to secure early and detailed feedback that was actionable.

Team member responsibilities include attending both our sub-committee meetings and those of our parent committee; collectively and actively participating in making decisions; performing between meeting work individually and in partnership with other team members and with other volunteers; and actively sharing ownership of the project.

Stakeholder Analysis and Communication Planning While Creating an Arboretum During a Pandemic

We identified stakeholders by first reviewing our vision statement and then asking who might be interested in or have some influence over the arboretum. Our vision states that we want to showcase native plants, educate citizens, and increase value. With that in mind, we identified citizens, teachers, greenspace inspector, events coordinator, and maintenance supervisor as stakeholders.

In an effort to understand their perspectives and offer value, we started by providing design ideas that became more refined with feedback. To build relationships, we continue to share the vision and seek to understand their concerns. We prioritize work that adds the most value from their perspectives and include interested stakeholders in our planning.

We work closely with our product owner, maintain transparency, and educate stakeholders on their roles.

As with any project, we need to tailor our approach to the organization, the project, and the participants. Meetings have been a challenge. We have had just one large meeting with multiple stakeholders in attendance, outside at the arboretum with all participants wearing masks and viewing copies of a high-resolution map of the arboretum.

More often the best we could do is to have some small meetings of two or three team members and then follow that up with electronic communication and phone calls with members who could not attend. Backlog refining meetings are first between the product owner and scrum master, and then the scrum master works with the rest of the team, meeting together when possible and in smaller groups or individually when needed. Some of those meetings (which could also can be considered sprint planning as backlog refinement) have led directly into the choice of what to do in each sprint. Both backlog refinement and sprint planning are conducted on-site when possible. Our demonstration meetings are every two months at the end of sprints as we report progress to the Tree Committee who we report to. We are still challenged to have daily scrums (even weekly as all team members have other work and this is an outside service project). We also need to perform retrospectives as we meet a bit more often.

The Heritage Center Arboretum Vision Statement is: The Heritage Center and Arboretum is a living museum including large and small trees and woody bushes with many species of historical significance to our area. This arboretum will showcase native plants, educate citizens on native plants and ecosystems, and increase value by offering shade and beauty. We will continue to improve by creating partnerships with other arboreta and by learning from ArbNet resources and other experts.

The project scope is derived based upon this vision. At the point of this book being written, some of the scope has been completed; some parts are in progress; and other parts are in the product backlog as potential work that may be undertaken at some point in the future depending on the decisions of the product owner.

As the team defines scope, they use personas and user stories to help understand how various stakeholders may use the arboretum. For example, a persona could be Sharifa who is 28 years old and just bought her first home. Her user story could be as a new homeowner—I want to see and read information about native tree species that I might then choose to plant so I can add value, beauty, and plant diversity to my home.

Work completed includes securing acceptance for level one arboretum status. Also, a master site plan with a map of current species has been completed by the arboretum sub-committee and approved. The site map shows the building, parking, patio, woods, lawn, and the 50 identified species. Approximately 20 additional species of trees have been planted with proper mulching and deer protection. We have conducted meetings with teachers to encourage their students to use the arboretum in school projects and assignments. We partnered with the state forester to bring in representatives from more established arboreta and from communities that are considering development of an arboreta to share ideas. We created a website with information on the arboretum: https://storymaps.arcgis.com/stories/e2436fb5e29b4f4f8f971426d1c140f1

Work approved, but not yet completed, includes planting of three more tree species and three species of woody bushes.

The product scope can be envisioned in three parts: physical facility, partnerships, and on-line presence. While there is limited space for extensive future plantings, the project team will continue to strategically identify additional species to plant and select their locations carefully. There is room for considerable work on partnerships, both with the teachers and other communities already started, but also with other groups in the community such as churches, scout organizations, local businesses, and others. There are also meaningful additions that can be included in the online presence by sharing considerably more information and potentially in different ways.

There are a few boundaries to consider when determining scope for this project. First, part of the site is designated greenspace. The greenspace ordinance states that invasive plants may be removed, but no other plants may be added, and no development may be performed on the greenspace. Second, the center is used for many events, so enough space needs to be free for chairs near the gazebo, for tents up to 20 feet on each side of the patio, and for taking pictures on the front porch of the building. There is also a request to only create plans that will be easy to maintain.

As of writing this book, four releases of six months each have been accomplished, and a fifth six-month release is in progress. By agreement with various stakeholders, future

releases will be every twelve months, with new planting only during autumn. A substantial amount of progress has been made as can be seen by the Kanban board in Exhibit 8.28.

Exhibit 8.28

Arboretum Project Kanban Board

To Do	In Progress	Done
Create communication plan	Remove invasives along woods edge	32 original species identified
Identify potential species to add	Transplant 5 species from other site	22 additional species planted
Select additional species	Plant trees along drive	Deer protection installed
Determine sites for more planting	Identify new species along woods edge	Signs with QR codes placed
Conduct garden tour	Assess size and condition of trees	ArbNet certification achieved
Record video tour	Update site map	High-res site map created
Take additional photos	Print and post large high-res map	Master plan created
Add more info to website		Tree conclave conducted with state forester
Remove more invasives		Buffer zone planting started
Conduct routine maintenance		Invasives removed
Create more partnerships		Hazardous trees cut
Plan and conduct programming		Science teacher meeting conducted
Update master plan		Website with map, pictures, and descriptions created
		Trustees plant two trees
		Announcements made in local media

The team planning and managing the arboretum development project is composed mostly of volunteers but includes some township staff. Several volunteers have related professional experience and credentials such as certified arborist, master gardener, and landscape architect. Almost all of the volunteers have been through a two-year series of classes and assignments conducted by the state forester. Some of the staff have also studied under the state forester and each has experience in some aspect of the needed work.

Questions

1. List types of decisions that will need to be made and suggest which ones should be made by the Product Owner, individual Team Member, Team collectively, or Scrum Master and tell why that person or group should make the decision.
2. How can the Product Owner, Scrum Master, and Team Members be more effective using the Agile concepts of simplicity, value, feedback, and change on this project?
3. What communication challenges is this virtual, volunteer team experiencing and how do you suggest overcoming them?
4. Create personas for other stakeholders to show what they want from this project and why.
5. Create a backlog of all of the things you may wish to propose for this arboretum. Include artifacts for all three aspects of scope: physical facility, partnerships, and online presence.
6. Using two releases per year (fall and spring are both great planting times), suggest the relatively few items you think should be accomplished in each of the next two releases. Use MoSCoW technique to justify how you prioritize.
7. In what order would you suggest completing the in-progress activities? Why?
8. If your product owner limits you to three stories from your to-do list for the next iteration, which would you choose and why? If the limit is five stories, which would you choose and why?
9. How do you think the team members should estimate the amount of work they can accomplish during each iteration?