

KUHNERT LANDSCAPE ARBORETUM

CONCEPTUAL MASTER PLAN

ABERDEEN, SOUTH DAKOTA

Prepared for:

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- Sponsorship Opportunities
- Site Plan

CONCEPTUAL MASTER PLAN

INTRODUCTION

In 1999, Wyss Associates, Inc. was hired by the Aberdeen Park & Recreation Board to develop a long-range master plan for the Kuhnert Arboretum on the south side of Aberdeen. The intent of this newly completed master plan is to guide future development of this site in the next several years.

Currently, the site is home to a collection of plant material which, for the most part, is reaching a maturation point and has become overgrown in several instances. The current organization of the plant material is random with little or no perceived pattern or order.

The purpose of this exercise was to derive an overall, comprehensive layout for the site which creates an opportunity for learning about plant material as well as creating a pleasant park-like experience for the citizens of Aberdeen. There are several opportunities for education within the settings of the arboretum, such as outdoor field trips for local and regional students and educating Aberdonians about what plants they might use in their landscapes. There is opportunities to study ecological systems of wetlands, prairies, and riverian ecosystems.

Arboretum: n. a plot of land on which trees or shrubs are grown for study or display.

EXISTING SITE CONDITIONS

GENERAL

The existing Kuhnert Arboretum is located on the south side of Aberdeen at the corner of Melgaard Road and Dakota Street South. The site is bounded by the Moccasin Creek on the west and the City's tree nursery on the south. The site is very level sloping very gently toward Moccasin Creek. The community gardens are located directly across the creek to the west.

The Arboretum site is the home of the disc golf course and this would have to be relocated to a new site upon the development of new arboretum layout. This should be a rather easy transition providing there is an alternate location which would accommodate the needs of disc golf.

VEGETATION

There are several types of vegetation on site including deciduous trees, coniferous trees, ornamental trees, and large shrubs. Even though there is a good variety of plant species represented, there aren't any extremely unique plants which warrant special consideration in the new layout of the arboretum. It is our suggestion that all of the plant material be removed to incorporate the new design. Some of the coniferous plants may be good candidates for relocation. This should be evaluated on a case-by-case basis during design development and development of the construction documents of the project.

ARBORETUM LAYOUT

GENERAL

The arboretum layout is designed in a combination of formal and informal styles. The walking paths follow generally a radial pattern. There are areas for creek interpretation, natural ecosystem interpretation, tree and shrub displays, areas for classroom activities, and areas for formal gatherings.

The site east of Moccasin Creek contains the more typical arboretum setting with shade trees, ornamental trees, coniferous trees, deciduous shrubs, coniferous shrubs, and other plantings. Parking is located toward the south of the site along Dakota Street South. An Interpretive Center is located directly west of the Parking Area. To the west of the Interpretive Center a formal planting of ornamental and shade trees surround a Sculpture Garden. The Great Meadow is located to the south of the Interpretive Center. Along the creek winds the Riparian Exploration Trail that along its course contains two Lookout Areas with overhead arbors, benches, and seatwalls. An amphitheater is centered on the site and includes a gazebo, paving comprised of special pavers, a terraced seating area and a backdrop of shade trees. Located at the north side of the site is a reflection pond and fountain. Surrounding the pond are plantings and the Far East Garden. A small bridge crosses the center of the pond and a larger pedestrian bridge crosses the Moccasin Creek at this point. Across the creek to the west, several representative ecosystems replace the community gardens. A curvilinear path winds its way through the several different plant communities. Earth mounding provides visual relief in the level landscape.

Several other amenities such as signage, benches, and interpretive signage are also included throughout the arboretum.

ENTRANCE SIGNAGE

At the corner of Melgaard Road and Dakota Street South the main entrance sign is located between the pathway and the creek. The sign has a backdrop of coniferous trees, deciduous trees, and ornamental trees and shrubs. Another smaller sign is located at the entrance to the parking area along Dakota Street South.

Some possible materials for the signage could be a painted wooden panel type sign atop a masonry base such as brick veneer or native stone veneer. These are only suggestions and should be developed further during the design development and construction document phases. Both signs shall be illuminated with exterior illumination.

BERMING/SCREENING

Earth berms ranging in height from three to five feet have been placed along the east edge of the site between the walkway and Dakota Street. These berms, in addition to providing topographic relief, screen and buffer the site from the road. Ornamental trees have been placed on the berms to create a pleasing arrangement visually. The berms also act as a deterrent for unwanted vehicular traffic.

PARKING

The parking area is located toward the south of the site and is accessed at two points along Dakota Street. The first phase of parking accommodates 50 vehicles with four of those being ADA accessible spaces. The area shaded and labeled as future parking will accommodate an additional 48 vehicles. The parking area also has two areas for bus parking and a drop-off zone in front of the Interpretive Center. The two parking areas are divided by a large planting island containing shade and ornamental deciduous trees. To the east of the parking area there is plantings of coniferous trees and ornamental trees to provide screening of the parking area from the street.

The walkway to the west of the parking area is widened to accommodate potential vendors which could set up during special events at the arboretum. This widened walkway could also have interpretive elements located along it explaining the different areas of the arboretum.

To begin with, the parking areas could be gravel surfaced but should be upgraded to an asphalt surface with concrete curb and gutter as the arboretum develops. The parking area can be expanded into the “future” area as the level of use indicates.



Figure 1.1 – Park structure which would be similar to that proposed for the Interpretive Center. ▲

INTERPRETIVE CENTER

The Interpretive Center is the anchor for the southern portion of the site. The Center would include restrooms and possibly a small concessions booth. The remaining area of the structure would be an open-air patio with interpretive displays and room for covered picnicking. Figure 1.1 shows what the building may look like in elevation. This structure is the GOX-36 as manufactured by Polygon Park Architecture.

We would recommend using the Structural Insulated Panels for the ceiling of the structure and a standing seam roof. There are several colors to choose from for the roof and several finish options for the frame members. These can be selected during the design development phase of the project.

STATUE GARDEN

The statue garden is located directly to the west of the Interpretive Center and would contain large statues of plant seeds and nuts such as samaras, pine cones, acorns, buckeye seeds, etc. This would be a fun way to display the different types of seeds found on plant material. The statues

would be approximately four to five feet in height and be arranged in circular pattern. Surrounding the statue garden would be two rows of trees. The inside row of trees would be flowering crabapples with the outside row being formal looking shade trees.

GREAT MEADOW

The Great Meadow is located to the south of the Interpretive Center and Sculpture Garden. The meadow is surrounded by a circular crushed stone path and collections of shade trees and coniferous trees. The Great Meadow allows visitors to view the specimen trees at close range as well as at a distance. This area could be home to some of the larger species of trees which can grow in the Aberdeen area.

The crushed stone path which surrounds the meadow would be crushed fines with a stabilizer material to bind the stones together. The edges of the path would have a steel edger to define the path's edge and act as a solid form.

RIPARIAN EXPLORATION TRAIL

The Riparian Exploration Trail winds its way along the edge of Moccasin Creek allowing the visitor to experience the wetland ecology of the creek. An overlook area is located at the southwestern corner of the site and west of the Amphitheater at the creek's edge. The portion of the trail between the overlooks is comprised of stabilized crushed stone and has riverian type plantings located adjacent to it. The overlooks themselves have enlarged paving areas, sitting benches, overhead arbors, and seatwalls.

The trail will allow visitors to view the wetlands along the creek as well as the wetland wildlife, such as the many songbirds around Aberdeen. At the northern part of the trail, it begins to tie into the symmetry of the radial paths.

The materials of the various elements will need to be explored in further detail during the design development phases of the project. Some possibilities for the seatwalls could be brick veneer or stone veneer with a precast concrete cap. The arbors could be made of redwood or western red cedar lumber with vines planted on either side so they grow up onto the arbor. The benches could be concrete bases with wood seating surfaces. All of these options can be explored at a later date.

AMPHITHEATER

Located in a straight line to the north of the Interpretive Center is the Amphitheater. A gazebo is centered in the plaza at the amphitheater. Surrounding the gazebo is a paver patio which ties into the surrounding walkways. The amphitheater itself is mounded to the southeast with seats built into the mound. Each seating wall is separated by a lawn area. Behind the amphitheater, a row of shade trees are arranged to follow the amphitheater's form.

The gazebo would be approximately 24 feet across of the same style as that shown in Figure 1.1. This could be used for several types of events held at the arboretum such as weddings, small concerts, and educational activities.

The amphitheater seats might be comprised of concrete with stone veneer topped by a concrete cap. The height of the seating walls would be approximately eighteen inches. The isles, as stated earlier, would be maintained lawn.

THE POND

A water feature is located toward the northern edge of the site and would include what appears to be two small ponds traversed by a small bridge. A fountain is located in the northern portion of the pond. This would help keep the water from becoming stagnant. The pond would be lined and at time during low water levels could be supplemented with city water.

A widened paver path leads the visitor to the pond bridge. The bridge would have a Far East design influence as it leads you into the Far East Garden. Plantings surround the pond with strategic openings left for views from different points on the site. A view to the pond and fountain was maintained from Melgaard Road. This would allow vehicles traveling on Melgaard Road to have a glimpse into the arboretum and see the water feature.

THE BRIDGE

The path across the pond leads you to the bridge crossing Moccasin Creek. This bridge connects the formal areas of the arboretum with the nature gardens. This bridge would most likely be a clear span steel structure with a wood decking, similar to others in the area. There are several design options available and these should be evaluated at a later date. The bridge along with the water features becomes a large focal point for the arboretum from the north.

THE NATURE GARDENS

The area west of the creek which is currently used as the community gardens would be transformed into areas where native plant communities could be displayed. The community gardens could be located into a new location in Aberdeen. Within the native plant displays, there are opportunities for wetland interpretation, riparian interpretation, as well as, prairie interpretation. The native plantings could serve as an educational tool for young and old alike. The native plant displays are arranged as follows: Riparian/Wetland Community, Marsh/Prairie Pothole Community, Mixed Floodplain Community, Wet/Tallgrass Prairie Community, Oak Savanna Community, Mixed/Mesic Prairie Community, Dry Prairie Community, and the Black Hills Forest Community.

All plant communities which exist in South Dakota could be represented here and would be able to educate the public about what plants exist in our region. A path, most likely stabilized crushed stone, would wind through the displays with a few benches placed intermittently along the trail.

THE COLLECTIONS

As indicated on the drawing, there are several types of collections planned for the area east of Moccasin Creek. The locations are shown on the drawings with a brief description of the plant materials which could be found in those locations. The plantings are arranged throughout the site in a way which would provide seasonal attraction at any place on the site during any point during the growing season. This arrangement would provide the most continuous visual interest for the arboretum.

Although specific species and cultivars of plants are not shown on this drawing, a list of possible species has been included at the end of this report. Although all of these species may not be used in the arboretum, it serves as a good starting point in developing some of the areas of the arboretum. During the design development phase, each area would be further developed into a final layout and design. There is an opportunity to work with South Dakota State University to determine the best plants for the Aberdeen area. The plantings may also contain plants which are test subjects to determine their adaptive capabilities to the region.

SUMMARY

The new Master Plan for the Kuhnert Arboretum would provide many new learning experiences for the residents of Aberdeen as well as school-aged children in Aberdeen. The arboretum when completely developed will include many areas for environmental education about the different species of trees and shrubs, native plant ecosystems, water systems, wetland communities and prairie community environments. Along with learning about the plants, residents would be able to visit the arboretum to view what different plants look like and what seasonal attributes each has. The arrangements of the plant materials could give the homeowner ideas on how to landscape their residence.

Overall, the Kuhnert Arboretum will act as an educational primer to its visitors, teaching them about plants, native plant ecosystems, wetlands and other environmental issues. When completed, it will be an excellent educational tool as well as a beautiful park for the residents of Aberdeen. ■