Grounds Overview

The grounds at Barton Springs are characterized by extensive lawns with little plant diversity or understory vegetation.

The Barton Springs Pool area is an extensively modified landscape. Concrete sidewalks raise us several feet above the water level; evenly graded dirt slopes obliterated the original rocky irregular terrain; and irrigated, mowed lawns cover what would once have been a tangle of native creekside vegetation. Those changes were done long ago to accommodate the crowds of people that come to springs, and they may have been unavoidable. The rocky South Bluff with its rough path reminds us both of what was lost and what was gained in the modifications that have been made to the springs landscape.

There has been a tendency, when modifying the Pool landscape, to lean toward the style of a stereotypical suburban yard, with extensive lawns, visible fences at property lines, and random planting with little diversity or understory vegetation. This plan aims to direct the springs area landscape away from that suburban aesthetic, in two alternative directions. The first is to restore a more easily sustained landscape of native plants in those areas

TREE CONDITION

1. *GREAT CONDITION*
   Long life expected.

2. *GOOD CONDITION*
   Of a variety that may not have a long life, or may tend to become hazardous.

3. *COMPROMISING FACTORS APPARENT*
   That can be expected to affect longevity or tendency to become hazardous.

4. *SHOULD BE ASSESSED*
   To minimize the potential for hazards.

5. *COMPROMISING DAMAGE APPARENT*

where that works for people visiting the Pool. The second is to recognize that parts of the Pool landscape – the Tree Court in particular – are some of the most heavily used pedestrian areas in Austin. Maintaining and, especially, keeping plants alive in such a landscape requires careful design and comparatively intense maintenance. A goal of this master plan is to keep the springs area landscape green, healthy, and sustainable, while accommodating the ever increasing crowds of visitors.

TREES

Most of the trees around Barton Springs are pecans. Pecans are a majestic native tree that occurs naturally around springs in the Hill Country. Naturally, however, one would expect pecans to occur in a diverse forest with many other kinds of trees. With about 75% of the trees around Barton Springs being pecans, the Barton Springs area is close to a forest monoculture. The problem with a monoculture is that the weaknesses of the dominant species are magnified. In the case of Barton Springs, the weaknesses of pecans are their large, heavy branches, and their tendency to develop often hidden areas of decay within branches and trunks, causing them to drop branches or break without warning. This makes pecans difficult to manage in heavily used pedestrian areas, like Barton Springs. The other prevalent tree around Barton Springs is the cottonwood, which according to the Texas Native Plant Database at Texas A&M has limited use "as a street or landscape tree (because of their) shallow root system, weak wood, and the fact that they are relatively short lived (30-60 years)". The large cottonwoods around Barton Springs are nearing the end of that range. Management of large old pecans and cottonwoods is an issue wherever they occur. The City of San Antonio removed the largest cottonwoods from the Riverwalk in 1978, as a safety precaution after one of them dropped a large limb. The City of San Marcos has been assessing the park canopy, removing problematic pecans as necessary.

Recognizing the importance of the trees to the ambiance of Barton Springs, the planning team undertook a visual evaluation process in an effort to better understand their condition. The process took the simple approach of assigning a grade from 1 to 5 for each tree. The purpose was never to use these findings as a final word. Instead, it was to gain a general understanding of the general condition of the collection, so that recommendations for further action could be better targeted. The evaluation was performed by the team's landscape architect and a licensed arborist. They then consulted with the Parks Department's staff arborist to compare notes.

Recommendations

Tree Assessment

Of the more than 125 trees evaluated, about one-third of them suggests that a more thor-

The landscape at Eliza Spring before the influence of the suburban aesthetic.
PICA 00972, Austin History Center, Austin Public Library.

Proposed Trees

- *A. Cedar Elm, Texas Red Oak, River Walnut, Texas Ash.*
- *B. Live Oaks.*
- *C. River Walnut, Cedar Elm and Bald Cypress.*
- *D. Big Tooth Maple, Texas Red Oak, Cedar Elm.*
- *E. Cedar Elm, Chinquapin Oak, Texas Ash.*
- *F. Bald Cypress.*
- *G. Cedar Elm, Big Tooth Maple, Texas Red Oak*
- *H. Chinquapin Oak, Bur Oak,*
- *I. Rusty Blackhaw Virburnum, Eve's Necklace, Escarpment Black Cherry.*
- *J. Bald Cypress.*
- *K. Bur Oaks and Chinquapin Oak.*
- *L. Cedar Elm, Monterrey Oak, Texas Ash.*
- *M. Chinquapin Oak.*
- *N. Bald Cypress.*
- *O. Bald Cypress.*
- *P. Mexican Sycamore, Cedar Elm, Western Soapberry, Texas Ash. Mexican Plum, Texas Redbud, Yaupon Holly, Eve's Necklace.*
- *Q. Mexican Sycamore, Bald Cypress, Cedar Elm, Western Soapberry, Texas Ash. Mexican Plum, Texas Redbud and Eve's Necklace.*

75% of the trees in the Barton Springs area are pecans, and that makes the flaws of this beautiful native tree potentially devastating for the tree canopy around Barton Springs. (Left) Photo: Forest and Kim Starr

Damaged and deteriorating pecans around the Sunken Garden. Note the broken and missing limbs, the cavities and the generally poor form. (Right)

ough evaluation is in order before arriving at final recommendations for either accelerated tree care or tree removal and replacement for reasons of public safety. This work should be performed by a tree scientist working in conjunction with a licensed arborist, and should use state-of-the-art evaluation techniques. Tree replacement and tree treatment should be included in this effort.

Plant New Trees

An important goal of this plan is to diversify the tree canopy in the Barton Springs area, by planting a wider variety of native trees. All trees planted should be well adapted, long lived native trees, that would naturally be found in similar environments in the Texas Hill Country. It's important that native trees be planted in the springs area both because they are best adapted to survive in our climate and conditions through the years, and also because they are reminders of the unique beauty of our Hill Country springs. It's important that the native trees selected be long lived, because the expense, both financial and emotional, of coping with the decline of large trees in public places should be avoided where

Lawn and Groundcover

- *A. Native and Naturalized Shrubs, Grasses and Perennials.*
- *B. Boulder Garden.*
- *C. Lush waterside "riparian" plantings, such as river ferns, horsetail, columbine and inland sea oats.*
- *D. Native bank stabilizing vegetation.*

possible. Around San Pedro Springs in San Antonio, bald cypress were planted at much the same time that pecans were planted around Barton Springs. Bald cypress typically age more gracefully than pecans, and as a result, the bald cypress around San Pedro Springs are at their majestic peak, while our pecans are deteriorating and being removed. Throughout this plan, particular species of trees will be identified as particularly suitable for specific locations. In every case, our goal is to plant trees in response to our understanding of particular environments. These trees should become part of the unique ecology of an area, and be - as much as possible - self-sustaining.

Increase tree maintenance

Pecans, the dominant tree in the springs area, require constant maintenance as they age. PARD has undertaken a program to assess the condition of the existing tree canopy, and to do the maintenance that is indicated by that assessment. Adequate maintenance of the tree canopy in a heavily used park like Barton Springs is a matter of public safety and cannot be deferred.

PLANTING BEDS

Planting beds require more specialized maintenance than lawns, and cost more to establish. That said, what begins as a planting bed of, for example, inland sea oats, dwarf yaupon or cenizo, can become, when established, an area requiring only occasional watering and maintenance. Some lawn areas around Barton Springs are difficult to maintain because they are steep or inaccessible. There have been instances of riding lawn mowers tipping over onto the sidewalk next to the Pool (spilling gasoline at that) when trying to mow some of these lawns. These same steep and inaccessible lawns tend not to be used much, either, for sitting or playing. Replacing lawn that will always require mowing and is too steep to use, with a naturalizing planting bed could reduce maintenance in the long run, while adding beauty.

Recommendation

Replace lawn with planting beds, where possible

Replace areas of lawn that are difficult to maintain and are not used with naturalizing planting beds. With the exception of the "Boulder Garden", which is a longer-term recommendation, all of the proposed naturalizing planting beds should be considered a short-term recommendation. Their design and installation should be coordinated with the design and installation of the new irrigation system.

Boulder Garden

This plan recommends a 'Boulder Garden' for the steep slope between the front of the

An area of difficult-to-mow St. Augustine grass. Replace with attractive, low-water-use native Texas plantings.

Native plantings can give a more natural appearance to the landscape, while reducing maintenance and water use requirements.

St. Augustine is a non-native turf grass that thrives in shade and requires irrigation to survive. In the sun, it requires substantial irrigation: in the shade, less so. All the St. Augustine slopes around the Pool have functioning, effective irrigation systems. If the irrigation systems were turned off and the St. Augustine not watered, it would weaken and eventually die, even in the shade. In spite of its water use, it is the only lawn that will thrive in shade in Austin.

Bathhouse and the Pool, as its most ambitious replacement of turf with naturalizing, low maintenance plantings. By terracing the slope with local limestone boulders, and planting native and naturalizing perennials and shrubs among them, a nondescript, difficult to maintain lawn area could be replaced with a beautiful garden that refers to the slopes and plants that would have existed in this location before the extensive modification of the Pool environment. This idea is discussed in more detail in the 'North Grounds: North Lawn" part of this document.

TURF

One of the principles of xeriscape is the appropriate use of turf. Within the Pool fence and around the Hillside theater, the slopes are covered with common St. Augustine grass. St. Augustine is a non-native turf grass that thrives in shade and requires irrigation to survive. In the sun, it requires substantial irrigation: in the shade, less so. All the St. Augustine slopes around the Pool have functioning, effective irrigation systems. If the irrigation systems were turned off and the St. Augustine not watered, it would weaken and eventually die, even in the shade. In spite of its water use, St. Augustine is the only lawn grass that will thrive in shade in Austin.

Because the lawns around Barton Springs are well-used and enjoyed, they are a good use of landscape water, and this plan considers them an appropriate use of turf. In other sections, lawn areas have been identified that are not well-used, recommending their replacement with either gravel or naturalizing planting beds..

Outside the Pool fence and the hillside theater, there is very little irrigated turf. Much of the unirrigated dry lawns is a mixture of Bermuda grass, horseherb, and other low growing weedy plants. This provides an adequate if dusty turf for playing. Extension of irrigation to these dry lawns requires more construction, maintenance and ongoing expense than is practical or sustainable at this time.

Recommendations

Increase maintenance

Many traditional lawn maintenance techniques are not possible for the lawns in the springs area, because of the danger of polluting the springs. Both the dry and the irrigated lawns around Barton Springs are subject to heavy use, and it shows. A program of periodic lawn maintenance should be undertaken, to help maintain both the dry and the irrigated lawns. This program cannot include the regular use of any chemicals or organic additives to the lawns, because of the possibility of runoff into the Pool. The City of Austin Grow Green program can provide direction and consultation for this effort. That maintenance program

should include:

- Test the soil for nutrient levels and levels of organic matter
- Aerate the lawn twice a year with a hollow tined aerator.
- Driving over leaves with a mulching lawnmower so that the leaves can contribute organic matter to the soil.
- If soil tests indicate that the soil is deficient in some way, consult with COA Grow Green program representative for current best management practices.
- Control weeds by mowing and hand removal. As particular weed problems appear, consult with COA Grow Green program representative for current best management practices.

Replace lawn where too worn

Where the dry lawns thin and become worn from overuse, in spite of aeration, the plan recommends they be replaced. Periodic resodding of worn areas is one option. Another is replacing hard to maintain lawn areas with compacted, limestone edged decomposed granite. This provides an adequate, less dusty play surface.

IRRIGATION

Irrigation is a requirement for planting in Austin. It can be someone holding a hose or an automatic irrigation system, but plants here only occasionally survive planting without supplemental water. In the Barton Springs area, with its heavy use and attendant soil compaction, few seedlings of existing vegetation become established. Most vegetation that becomes established without irrigation in the Barton Springs area is not desirable: ragweed, hackberries, nandina, ligustrum, and poison ivy.

Watering newly planted vegetation by hand can take a long time, and often does not provide the deep soaking required. Using water tank trucks is an alternative for areas fairly close to pavement. In general, however, for extensive lawns like those at Barton Springs, and extensive planting, automatic irrigation is required. For native and naturalizing plants, irrigation is generally considered required for the two years it takes for plants to become established. In general, drought tolerant plantings are appropriate in the Barton Springs area, and throughout Austin. However, there are few plants that do not benefit from occasional watering during dry periods, particularly plants that grow in the generally compacted soil of heavily used parkland.

Automatic irrigation systems, however, are not maintenance free. Heads can be dam-

The unirrigated, largely Bermuda grass lawn outside the South Entry. It is comparatively lush in wet years (like the year when this picture was taken), but will be brown in drier summers. It will not, however, tolerate shade.

The recently opened Town Lake Park draws all of its irrigation water from Lady Bird Lake, saving an estimated $75,000 annually.

Source: Robert Holland, Project Manager, Planning and Engineering Department, City of Austin.

aged by the heavy trucks that bring scenery to the Hillside theater, or by vandalism, or in a thousand other ways. The number of licensed irrigators maintaining PARD irrigation systems has been dropping steadily over the years, and there are now two licensed irrigators responsible for all irrigation in PARD facilities. This trend is not expected to change in the foreseeable future.

Automatic irrigation systems have been installed over the years throughout the Barton Springs area. Irrigation has been installed and apparently abandoned throughout the South Fields, in the Sandbox Grove and around Zilker Playscape. There are recently functioning irrigation systems within the Pool fence and on the slope around the Hillside Theater. Those irrigation systems were installed between fifteen and thirty years ago. Only the irrigation system within the Pool fence is still used on a regular basis.

The planning team has not found construction documents of the irrigation system within the Pool fence. There are construction documents for the Hillside Theater area and the Zilker playscape area, but in the playscape area, enough construction was done after the irrigation system was installed to make the drawings obsolete. Because there is no documentation, it is impossible to say with certainty how the irrigation systems are laid out. It appears, however, that all these irrigation systems on the north side of the Pool are served by a water meter in the South Fields, through a pipe strapped to the downstream dam.

There is the possibility that the same water lines are providing irrigation water and potable water to park restrooms and drinking fountains. Park facilities like restrooms and drinking fountains require potable – drinkable – water. A water line that provides water for irrigation cannot also provide potable water because of the risk of contamination. With an old, complex system that has been expanded and modified, and is not documented, the risk of cross-connections must be addressed so that the City is not exposed to any public health liability.

Recommendations

Redesign irrigation system

Because irrigation technology and efficiency has improved greatly in the last fifteen years, and because there is limited information about the construction of the existing system, a total irrigation system replacement is recommended. This is a short-term recommendation, and should be coordinated with the design of new planting beds and the location of new trees.

One goal of this master plan is to minimize permanent irrigation, while providing sufficient temporary irrigation to establish naturalizing plants and trees, and to replace potable

water in irrigation with alternative water sources, where possible. Irrigation systems should support the landscape goals for the springs area: lawns only where they are used, diversified native/naturalized plantings in other areas, and a diversified tree canopy throughout. Lawns where people sit, that are shaded or are planned to be shaded, should have permanent rotor or spray sprinkler head automatic irrigation. Shrub and perennial beds should have spray or drip irrigation for at least the first two years, and a hose bib close enough to provide emergency supplemental water when needed. All newly planted trees should have temporary bubblers or drip irrigation, or be close enough to pavement to be watered for two years by a water truck, or be in an area with automatic turf irrigation.

Automatic irrigation within the Pool fence

The irrigation system within the Pool fence currently works, and appears to offer close to complete coverage of the lawns in the Pool area. It appears to be around fifteen years old, and there are no 'as-built' drawings. Because of that, it is difficult to resolve the cross-connection question. The system is also, because of its age and maintenance, likely to be inefficient. We recommend that, when an alternative source of landscape irrigation water is identified, the area within the Pool fence be provided with a newly designed efficient irrigation system using non-potable water.

Automatic irrigation at the Tree Court

Automatic irrigation for the new trees installed in the Tree Court should be part of the new Pool irrigation system. New large caliper trees should not be installed in the Tree Court without automatic irrigation; partly because it is impossible to water larger trees adequately without slow drip irrigation, and partly because the surrounding soil is so compacted that a high rate of runoff from higher volume water would be expected.

Emergency Irrigation for any new plantings

We recommend that, when an alternative source of landscape irrigation water is identified, quick couplers be installed throughout the park, within 100 feet of any areas that will have tree or other planting. This will allow plants to be watered on an emergency basis if required.

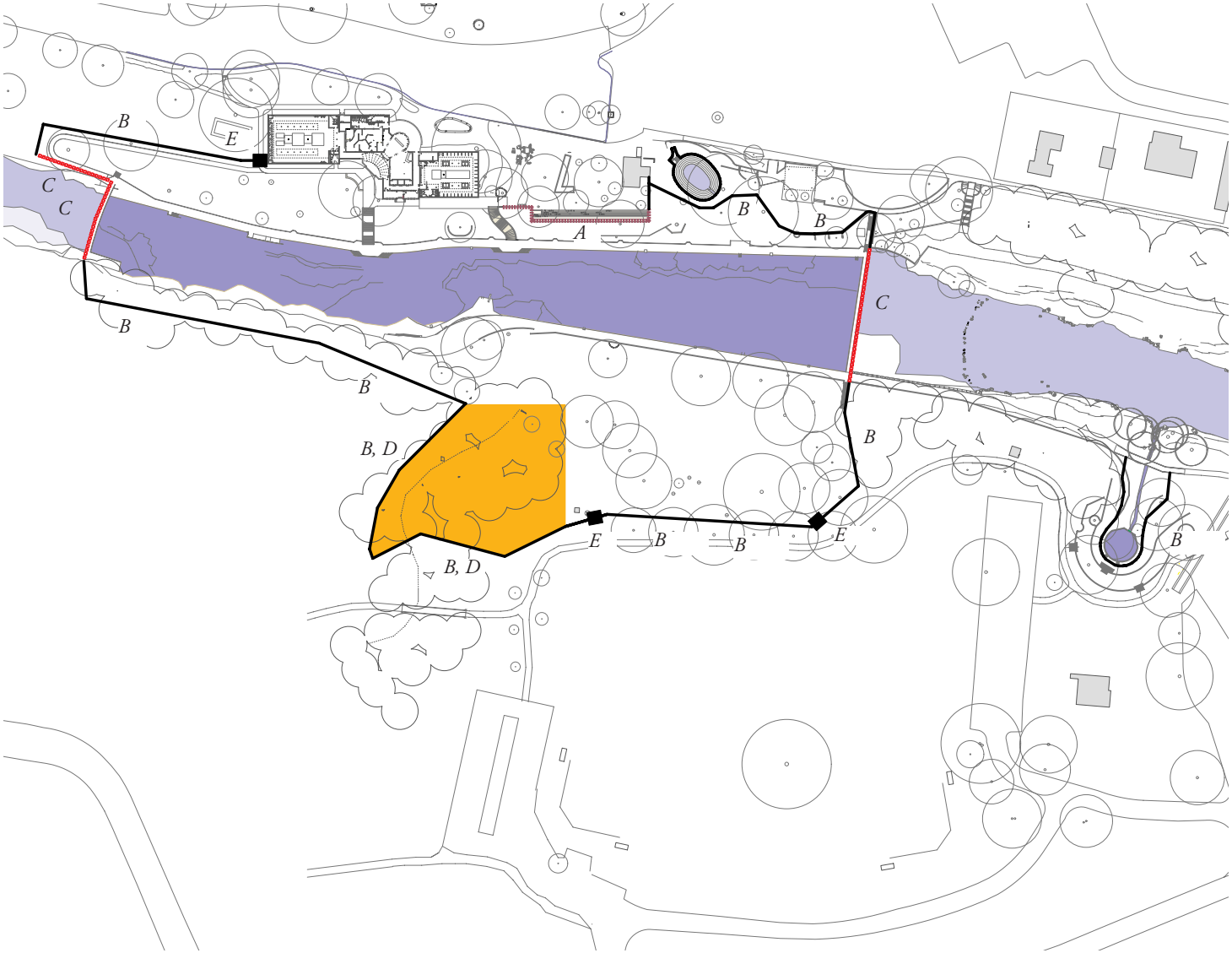
Notes on Alternative Water Sources

In this parkland celebrating springs, and bordered by a creek and a lake, all irrigation water is potable – drinking water – provided by the City of Austin. There are several possibilities for replacing all or part of the landscape irrigation in the Pool area with alternative water sources, in the Barton Springs area: lake water, creek water, graywater and rainwater. While limiting the use of City water and making the irrigation system more sustainable,

Newly planted trees benefit from separate irrigation from that provided by lawn sprinklers. New trees require irrigation for at least two years to become established.

Fences

- *A. "Art" Fence*
- *B. Decorative Wire Mesh Fence*
- *C. Powder-Coated Chain Link Fence*
- *D. Fence relocated at South Woods*
- *E. Accessible Turnstile*



none of these are considered potable water, and each would increase the hazard posed by possible cross-connections in the existing system. Therefore, before any alternative water sources are installed, the issue of possible cross-connections must be resolved.

Several sources of non-potable water are worth exploring as sources for irrigation water. One of these would be to use raw Town Lake water, from the existing pumping system that provides irrigation water to the Zilker soccer fields on the north side of Barton Springs Road and is currently being upgraded to improve its volume and pressure. This would require piping under Barton Springs Road, and extending a main irrigation line south to the Pool area. A second alternative source of landscape irrigation water would be to pump water directly from Barton Creek on either the upstream or downstream sides of the lower dam. A third alternative is to collect rainwater from the Bathhouse roof and store it in cisterns for irrigation use. A fourth alternative is to treat the water used in the Bathhouse showers and store it in cisterns for irrigation use.

The first, second and fourth alternatives – pumping water from Town Lake or from Barton Creek or using graywater – are potentially complex both in terms of regulation and in terms of engineering, and should be the subject of a separate study. The third alternative, harvesting rainwater, will not provide much irrigation water, because the roof area from which to collect is not large. It could, however, be a fairly simple system, with water collected from the Bathhouse roofs in small cisterns at the west end of the Bathhouse and used for drip irrigation in the Bathhouse perimeter planting beds. All of these alternatives have promise for reducing the use of potable water for irrigating the park grounds, and merit further study that is beyond the scope of this master plan.

Barbed wire on top of chainlink fence. Staff reports that fences are frequently cut, requiring an ongoing repair effort.

FENCING

Most of the existing fencing around Barton Springs is old chain link fencing. It varies in height: 3' tall in some sections and 6' in others. In some areas, even potential overlooks like the Sandbox Grove, there are three strands of barbed wire on top of the fence. In others, twisted chain link wires are exposed at the top of the fence, or the top rail of the fence is deformed or missing. The fencing is galvanized, with the galvanizing deteriorated or in some cases apparently covered with aluminum paint.

Besides the inconsistent and sometimes unkempt and unfriendly appearance, the chainlink fencing around the Pool is regularly vandalized. Not only does it have to be repaired, but it is not serving its primary purpose: to control access to the springs.

An example of an "Art Fence".

Decorative wire mesh fencing

The goal of the master plan for fencing is to create a hierarchy of different, complementary fence types, with all fences being less subject to vandalism and easily maintainable.

Recommendations

Art Fence at the Tree Court overlook

The first fence type is a fence custom designed and built by an artist, for the very visible overlook at the Tree Court. There are several beautiful iron fences in the Zilker Park / Lady Bird Lake area, designed and built by local metal artists. It is expected that this fence would run from the existing turnstile exit from the Pool to the reconfigured concession stand.

Wire mesh fence to replace chainlink

The second fence type, and by far the predominating fence type, is recommended to be a decorative wire mesh fencing. This type of fencing is panels of wire of specified thicknesses, welded together in a grid pattern, mounted on steel posts. This kind of fencing offers the transparency of chainlink, in a stronger, more attractive fence that is still affordable. The thickness of the wire for these fence panels is identified as the wire gauge: the smaller the gauge, the thicker and therefore stronger the wire. Either 4 or 6 gauge wire is appropriate for wire fence panels. This is equivalent to 5 or 4.5mm thickness. Chain link fence fabric is generally substantially thinner than that, and therefore easier to cut. With wire panels, it is important that the panels be set level, even on sloping ground, with the result that the fence appears to stair-step down the slope. Trying to slope the fence panels requires extensive cutting of the fence, compromises the galvanizing of the fence wire and appears awkward. It is therefore recommended that the bottom of the fence panels be buried as required to accommodate sloping ground. Matching steel posts are part of wire fence systems, with brackets that allow fences to installed in straight runs or turn varying degrees of corners. Matching pedestrian and vehicular gates are also part of wire panel systems. Wire panel fences are generally available galvanized, and often with powdercoated finishes. While powdercoating can be a durable finish, it is not as durable as an uncoated galvanized finish. A wire panel fence that meets these requirements is available from Deacero, Inc. (1 800 DEACERO).

Removable dam fencing

The final fence type is for the removable fence panels on the dam. Currently, these panels are galvanized pipe with chainlink. This combination meets the requirement for fairly light panels that can be removed quickly when needed, and are inexpensive to replace when they get damaged. While these panels serve their purpose, they are not very attractive and are in the line of one of the iconic views in Austin: from the Pool down the creek, toward down-

town, as well as upstream at the upper dam. Making these panels of black powdercoated chainlink fabric, rather than galvanized fabric, would make them less visible. While, as mentioned above, powdercoating does not last as long as unfinished chainlink, these panels are subject to flooding and hard use, and a powdercoated finish is therefore likely to last longer than the panels themselves.

MAINTENANCE

A goal of this plan is to increase the diversity of plantings in the springs area, by changing some areas that are presently lawn to naturalizing planting beds. These areas are intended to be very low maintenance, but will still require some attention. In addition, the 'natural' woods in the springs area is heavily impacted by compaction, erosion, the prevalence of weed seeds, and other factors that tend to degrade the quality of an environment. Accordingly, even 'natural' woods in this area require some attention.

Recommendations

Increase efforts to control noxious and invasive vegetation

"Native and Adapted Landscape Plants: An Earthwise Guide for Central Texas", produced by the City of Austin and the Texas Cooperative Extension Service, includes a list of the plants that are proving to be invasive in the Austin area. Parts of the Barton Creek Greenbelt and much of the Lady Bird Lake Trail are infested with these plants, and volunteer groups work valiantly to control them. An ongoing maintenance effort to identify and remove these plants from the Barton Springs area is important for reestablishing the health and diversity of the plant community around the springs. Ligustrum, nandina and chinaberry are the three most common invasives in the springs area.

The primary noxious vegetation in the springs area is poison ivy. Because of the proximity to the springs, no chemical treatment is appropriate; leaving constant manual removal in areas adjacent to trails as the only alternative.

Enhance Native Vegetation

Comparatively little reseeding of the desirable native vegetation is taking place in the Barton Springs area, likely because of soil compaction and the prevalence of invasive species. Regularly planting acorns, nuts, seeds and seedlings of desirable native vegetation to the existing woodlands, especially along the edges, would help diversify the forests and contribute to their long-term health.

LANDSCAPE LIGHTING

The lighting around the Pool now is mostly incandescent lights on wooden utility poles. The wiring on the Pool grounds is the result of numerous uncoordinated efforts to provide

The fencing at the dams must be easy to remove, durable, and inexpensive to replace when it gets damaged.

The tree overhanging the walk is a ligustrum, an exotic tree that crowds out native vegetation.

or upgrade services over the years. The result is an overhead tangle of wires that is inefficient and that degrades the ambiance of the place.

Recommendations

Include Tree court lighting in current Austin Energy project

Austin Energy is undertaking a project to upgrade the Pool lighting, in a process that includes public participation and review. We recommend that the Tree Court be included as part of this project.

Add landscape lighting in some areas

Landscape lighting is appropriate in some other areas for security or to make foot traffic at dusk safer. In those cases, 'moonlighting' using the large established trees may be appropriate. 'Moonlighting' refers to placing small spotlights in large trees, and aiming those spotlights at walks or stairs that require illumination. It can be a very beautiful and subtle way to light an area, like the Moonlight Towers on a smaller scale and without the structure. Because the lights are directed down, moonlighting does not contribute to light pollution of the night sky, like the uplighting of trees can. Areas that might be considered for moonlighting include the Sunken Garden, the Tree Court, the Zilker Ponds, and perhaps the accessible route from the South Entry.

Moonlighting requires that conduit be run from a transformer located on the ground, to the spotlight in the tree branches. The transformer is a metal box about 1 ft. square, and is located on metal supports 12" above the ground. The conduit can be black, so that it is not obtrusive against tree bark. The goal for this additional landscape lighting should be that it be invisible in the daytime and only the light visible at night. Since it involves attaching the lights to the large existing trees, it should be done in consultation with an arborist to ensure that the trees are not damaged.

Around the Pool itself, the lighting will most appropriately be pole mounted. Hinged poles should be used here for ease of maintenance. Choosing the style of pole should be part of the lighting design process. In general, this plan recommends a simple, neutral design in a neutral finish. A round pole would be preferred to a square pole. A natural galvanized finish would be a good choice. And like the tree lighting, this poolside lighting should be pointed downward to prevent light pollution of the night sky.

Remove all of the existing overhead wiring

Buried wiring should be the new standard. Power should be brought to the south side from Robert E. Lee to avoid the temptation to swag wires across the Pool in the future, and

to eliminate the need to attach conduit to the dams. Wired communications equipment is now obsolete. New equipment should be wireless.

The effort to remove all overhead wiring and replace it with new buried services should be coordinated with the Austin Energy commitment to design and install new site lighting, and another effort of this plan; to provide electrical service to the Pool side. The design of all of these efforts should be done by professional engineers.

PARK FURNITURE

There are a variety of different kinds of park furniture in the springs area now, including trash containers, picnic tables and benches. Trash is collected, around Barton Springs and in most other Austin parks, in ' trash coffins': open topped concrete boxes enclosing one, two or three 20 gallon standard galvanized steel trash cans. These 'coffins' are built according to City of Austin Standard Specification 461 "Trash and Litter Coffins". Within the Pool fence, 20 gallon galvanized trash cans hang on concrete poles, or are set in alcoves in the retaining wall. In the Tree Court, galvanized cans are enclosed in 2x4 wood slat enclosures, raised on short pedestals.

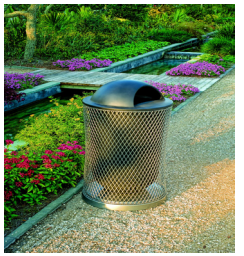
The advantage of the coffin system is that the concrete trash coffins are indestructible. Many have been in place for more than twenty years. Their exposed aggregate finish does not make a good surface for graffiti. The galvanized cans inside are durable, cheap and easy to replace. A disadvantage of the coffin system is that the top is open, and the lids for the galvanized cans are often missing,, with the result that the trash is contained but visible.

Another concern is whether the coffin system is flexible enough to add recycling containers. Recycling is increasingly being requested in parks throughout the country, with the failure of parks departments to adopt recycling in parks becoming a political issue in some areas, like Seattle.

One goal of this master plan is to explore ways to add recycling to the Barton Springs area waste collection; to minimize the disadvantages of the coffin system; and to identify areas where a different sort of trash/recycling container would be appropriate.

A satisfactory recycling container has to be easy to spot and distinguish from a regular trash can, and has to have a lid that restricts what kind of material can be added. It appears that a container with a fixed lid with a 4"-6" hole seems to be the most successful, since it allows people to add most cans, bottles, and rolled up newspapers, but not drink cups or fast food waste. Since in Austin and many other places, blue is the color of recycling, using blue lids and the universal recycling symbol should be enough to identify the recycling

The 'trash coffin' in use throughout the park system. Recycling containers could be added as one of the containers.



Landscape Forms 'Parc Vue' trash containers have options for different tops that can accommodate recycling.

An old stone picnic table that has been modified to be accessible.

containers. The City of Austin already accepts unsorted recyclable cans, bottles and paper, so there should be no need for multiple recycling containers for different materials.

There are also several kinds of picnic tables in the park. Permanent, fixed in place tables are mostly older concrete tables on concrete pads. Often these are grouped into a rental picnic area, and occasionally they are individually placed, like the lovely, if eroded, picnic setting above the Hillside Theater. In the Tree Court there are standard vinyl coated picnic tables and also wood tables installed by the concessionaire. While the Sandbox Grove is often used as a group picnic area, we do not recommend that a fixed array of picnic tables be installed there, so that the area can keep its variety of uses, and stay comfortable for individuals to use.

In general, people like to be able to move park furniture. Families pull picnic tables together for a large group; people pull tables into or out of the sun; people circle tables to enclose children or games. Fixed tables, while less subject to theft, do not allow this flexibility.

Recommendations

Add recycling containers

Because the trash coffins are easy to spot and are already identified as the place for waste, this plan recommends that, for general park use outside the Pool fence and the Tree Court, one of the cans in a two or three can coffin be replaced with a recycling container. Rubbermaid, the manufacturer of the standard blue COA curbside recycling bins, also makes a blue 20 gallon round recycling container, in the 'Brute' series that will fit in the trash coffins. This container is available with a lid with a cutout for cans, bottles and newspapers. Recycling decals can be attached.

Within the Pool fence, the current galvanized cans hang on concrete poles with hooks. Some of the hooks have fallen out of the years, but replacements could be welded into place, where needed. It appears that the same 20 gallon blue Rubbermaid container would hang on these hooks, but that would have to be confirmed in the field.

Use movable picnic tables

This plan recommends that all new picnic tables in the springs area be movable, rather than fixed in place. The vinyl coated picnic tables do not seem to have been vandalized, and are a flexible option. Using a greater variety of sizes and shapes – squares, ovals, and different lengths of rectangular tables – would add flexibility. All tables should be ADA accessible, and accessible tables are available in many configurations, not just the standard table with one side elongated.

Coordinate park furniture selections in Tree Court

In the Tree Court, a more coordinated approach for all the park furniture is appropriate, since this is the front door of the springs. A visible, but unobtrusive container that could serve for trash collection in the Tree Court is the Landscape Forms ''Parc Vue' powdercoated wire mesh trash container. A black wire mesh can could be used for trash collection and a blue can of the same design for recycling, with a universal recycling decal attached to the lid. These cans can be used with or without liners, and there are also two lid styles available. A further visual clue to the separation of trash and recycling could be given by using a dome lid for the trash can and the flat lid with a cutout for recycling.

We recommend that a more consistent and distinctive approach to picnic tables be adopted in the Tree Court, with tables coordinating with trash & recycling containers, as well as with benches. We also recommend that in the Tree Court there be even greater flexibility in seating arrangements, with movable tables and chairs. Galvanized perforated steel or steel mesh tables tops, which are not easily vandalized, in 36" and 42" round tables with stacking chairs would provide more flexibility and a dramatically lighter appearance than the wood structures now in the Tree Court. This kind of furniture would typically be chained up at night by the food concessionaire.

Add more benches

The Barton Springs area needs more benches. Both movable and permanently fixed benches are needed, with permanent benches located along walks on concrete pads. In gathering areas, like the Sandbox Grove and within the Pool grounds, movable benches are more appropriate to allow people to congregate as they choose. For fixed benches along walks and trails, a powdercoated wire mesh bench could be in keeping with the proposed fencing and the existing picnic tables. This would, for example, be appropriate along the trail in the South Fields.

NOTES ON HARDSCAPE

Throughout the report, this plan has described areas that might have additional paving or retaining walls (known in design terms as hardscape) added. As a general rule, additional retaining walls in the park, when required, should be built of weathered local limestone, in varying sizes. The use of ' chopped block' – unweathered rough cut limestone cut into large bricks – would be obtrusive and out of character with the rest of the stonework in the park.

Additional pavement, when required, should also be limestone. There are a variety of local limestones available, with very different appearances and uses. Most of the existing lime-

The range of park furniture now in the Tree Court. This visible location deserves a more coordinated, higher quality approach to park furniture.

Carefully built stonework, including natural boulders as accents, fits with both the historic and the natural landscapes of Barton Springs.

stone in the park is weathered limestone flags, with natural surface. When adding or joining existing limestone, the addition should match the original. Where new paving surfaces are introduced, a harder, smoother limestone flag like Dryden stone may be appropriate, and often more comfortable for people in wheelchairs or pushing strollers. Dryden stone, when mortared in place, will support heavy vehicular traffic. It is the stone used for the forecourt of the Alamo.

In some areas, gravel paving is more appropriate or practical than limestone. Gravel paving is much less expensive and much less formal in appearance. It does, however, require regular maintenance to keep it level and free of vegetation. In addition, gravel pavement is generally considered a permeable surface by the City of Austin when used only by pedestrians. This may make it more suitable for use in the vicinity of large trees. To make a usable, more easily maintained gravel surface, it is recommended that decomposed gravel according to City of Austin standard specification 1301S Granite Gravel Hike and Bike Trail be used.

Where gravel paving is being installed over compacted soil, like in the Sandbox Grove, it is recommended that enough gravel be added that when compacted, there is a 4" minimum thick layer of gravel. In general, gravel paving areas should be edged, with weathered limestone flags of varying sizes, laid flat.

Gravel is also appropriate for use as mulch in some cases, like the Tree Court planters. In those cases, larger gravel should used, with all gravel larger than 1/4". In gravel of that size, a variety of colors are available, with Texas Black gravel and Fairfield pink granite being two beautiful choices.

Edging for planting beds is another improvement that adds initial cost but saves maintenance time in the long run, if the edging is selected well. For the Barton Springs area, using weathered limestone flags of varying sizes, laid flat, and mortared in place would work with the existing landscape and be easier to maintain than either chopped block or steel edging.

The grounds of Barton Springs should include natural areas, waterside trails, and also lawns for sunning and playing. Additional planting should aim to increase plant diversity in the area, and to replace invasive exotics with native plants.