White Stone Pocket Park Design

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LAR 5280

May 2021

Site analysis

Opportunities

Aerial views of the site indicate a well-loved bakery next door and popular lunch spot across the street. Plenty of parking in a parking lot behind the restaurant leads directly to a crosswalk next to the park entrance. A gift shop is also next to the site, and foot traffic along the sidewalk is an opportunity to attract more people to the area. Increasing foot traffic like park visitors will also be an opportunity for surrounding businesses to attract customers. Since many of the residents of the town are elderly, they may be attracted to a garden where they can sit and enjoy birdwatching or other kinds of wildlife like butterflies. Providing outdoor, shaded areas for gathering can also help build connection between elderly people and encourage walking exercise for their health. Stimulation like birdwatching is also helpful to maintain mental acuity.

Introduction to Problem and Proposed Solutions

Problems

The site has a high water table and past septic system failures have led to overall wet and unsanitary conditions. The entrance from the street is unmarked by any special features and leads directly to the focal point, but there is no seating available and nothing to do but walk around the tree and walk out again. The side paths do not lead to any special activities or focal points and are dead ends. There is also insufficient space for large gatherings as the central entrance path bisects the grass lawn. Christmas events or other gatherings around the tree would be difficult for people to attend if they cannot stand for long, and people who pick up lunch at the surrounding shops are also unable to sit and enjoy the space. Lack of planting variation and strategic focal points with seasonal color change or attraction of pollinators contribute to lack of interest.

Solutions

Due to the high water table and sewage pollution, we included plants that tolerate moist soil conditions, salt, and nutrient-rich soil. The park also requires a clearer entrance experience to direct people from the sidewalk and create curiosity and interest about the space. Clear spaces for passing through and focal points should create a sense of rhythm and movement throughout the park. Different kinds of seating are necessary along the outside edges of the path and public space to give visitors a sense of security with their backs to shrubs and not other visitors. A variety of seating areas can also help people choose privacy or community depending on their activities. Multiple paths, framed focus points, and hidden views will also help create choice and movement through the site. An open lawn in front of the Christmas tree focal point will create more deliberate space for events, and in the off-season, many textured plants with seasonal color change will attract individuals.

Potential Programs

- 1. Public and private areas to sit and eat lunch or birdwatch
- 2. A connection with the historic building
- 3. Space for performances and a gathering area
- 4. Low-maintenance native and adapted vegetation suitable for wet areas
- 5. Connection from bakery parking lot to park
- 6. Obvious entrances from Rappahannock Drive and access from Chesapeake Drive intersection
- 7. Paths for people to walk their dogs or get lunchtime exercise
- 8. Seasonal color changes to increase park usage at different times of year

To achieve the goals above for multiple programs happening at the park, a path network and complex planting arrangement are necessary. Figure 1 shows the proposed site plan drawing with colored plants and proposed materials of path. The curvy path is inspired by Monk's Garden by MVVA (Figure 5), which reveals the landscape as an act of imagination and exploration. The width hierarchy of the path indicates the features of the ends such as the gathering intersection, the route to the historical building, and different entrances.

The planting design puts emphasis on both the functions and dynamic experience for the users. First, these selected native plant species fit low maintenance needs since they are highly adaptable to different areas of the park under various conditions. They were chosen carefully based on the amount of sun exposure, high water table conditions, distance from the main road, and the size of the space. Second, the plant arrangement follows the proposed programs on site to create suitable environments for different activities. The different areas of openness and enclosure through the park provide options to the users to take a rest or stroll in different needs. Figure 2 is the complete plan view of planting strategies, and Figure 6 shows the detailed information of selected plant species including their growth conditions, features, and the rough price to buy from a nursery. However, these prices are retail prices for mature plants and do not reflect wholesale bulk deals on purchasing younger plants.



Figure 1. Site Plan



Figure 2. Planting Plan

PROGRAMS



Figure 3. Proposed Programs



Figure 4. Rendering

Figure 5. Precedent: Monk's Garden by MVVA

Technologies/Standards

Health and Economic Benefits

There are two strengths to build pocket parks with multiple vegetations in the community according to the existing case studies at Riverside Country, California. First, a great amount of vegetation cover rate increased property prices by about 7 percent in residential areas and 18 percent for building lots. Quality landscapes with healthy and adaptive trees can increase retail spending from 9 to 12 percent. Second, more time spent in parks and green spaces can help individuals fight against mental health issues like depression, anxiety and stress. Furthermore, physician-diagnosed depression was 33 percent higher in the residential areas with the fewest green spaces, compared to the neighborhoods with the most based on the research by National Recreation and Park Association (NRPA). To ensure the quality of pocket parks, it is significant that all people have access to parks and outdoor programming to increase these positive effects on health and quality of life for the community.

Environmental Benefits

The choice of gravel for paving materials is intended to maintain the maximum amount of permeable surface in the park and prevent pooled water from building up along paths. A thick layer of soil amendments and mulch will increase the absorption ability of the soil and also help reduce standing water. Organic materials like compost are advised as a soil amendment for increasing porosity and friability.

The plant selection was designed for flood plain species and hardy plants tolerant of wet soil. Tree selection kept in mind urban pollution and salt tolerance as well. The many trees and large shrubs in the planting will absorb a lot of excess water on site, and special attention was paid to the plant selection for low-lying areas through the center of the park. Although the park contains no rain garden depressions because collected water next to building foundations can be dangerous, the addition of so many plants as well as soil amendments will help reduce standing water considerably. However, the direction of roof drainage and downspout locations will need to be addressed through onsite evaluation. Additions of French drains may be necessary.

Not only will the plants chosen help manage standing water on site, they will also attract many pollinators and birds to the area. Nearly all the selected shrubs will flower in the spring and fall, and many of them also produce berries and habitat for birds.

Materials and Cost

The cost of bulk materials varies depending on color, location, delivery, and labor cost variables we cannot estimate well here. However, these are the area and cubic yard calculations necessary to get cost comparisons from your vendor of choice. Labor costs for installation should also be considered in the budgeting process.

Hardscape + Soil Amendments



Gravel or crusher run path Area: 3409 sq ft 2" thick layer: 21 cu yd



Compost amendment Area: 10,707 sq ft 2" thick layer: 66 cu yd



Pine bark mulch (undyed) Area: 10,707 sq ft 3" thick layer: 99 cu yd



Landscape edging for path Perimeter: 1542'-6"

Groundcover Perennials

These are also listed in the table for Image 6. Consider contacting a wholesale nursery for better pricing options and purchase plugs rather than mature plants.



Hairy Alumroot Heuchera 'Forever Purple' Coverage area: 1,292 sq ft Center-to-center spacing in triangle pattern: 18" Quantity needed: 663

Oak Sedge Carex pennsylvania Coverage area: 2,740 sq ft Center-to-center spacing in triangle pattern: 20" Quantity needed: 1,139



Daylily *Hemerocalis 'Stella d'Oro'* Coverage area: 684 sq ft Center-to-center spacing in triangle pattern: 14" Quantity needed: 580

Trees, Shrubs, and Perennials

	Black Gum	Ginkgo	Little-leaf Linden	Eastern Redbud	Arrowwood Viburnum	Red Twig Dogwood	Bottle-brush Buckeye	Center Glow Ninebark
LATIN NAME	Nyssa sylvatica	Ginkgo biloba	Tilia cordata	Cercis canadensis	Viburnum dentatum	Cornus sericea	Aesculus parviflora	Physocarpus opulifolius
HEIGHT	30-50 ft	50-80 ft	50-70 ft	20-30 ft	6-10 ft	6-9 ft	8-12ft	6-8 ft
SPREAD	20-30 ft	20-40 ft	35-50 ft	25-35 ft	6-10 ft	8-12 ft	8-15ft	6-8 ft
SUN	Full sun to part shade	Full sun	Part shade to full shade	Part shade to full shade	Part shade to full shade	Part shade to full shade	Part shade to full shade	Part shade to full shade
WATER	Medium to wet	Medium	Medium	Medium	Medium	Medium to Wet	Medium	Dry to Medium
MAINT-ENENCE	Low	Low	Low	Low	Low	Medium	Low	Medium
NUMBER	3	4	3	4	6	32	3	13
PRICE*	\$100*3=\$ 300	\$120*4=\$ 480	\$105*3=\$ 315	\$50*4=\$ 200	\$30*6= \$ 180	\$15*32=\$ 480	\$30*3=\$ 90	\$20*13=\$ 260
FEATURE	Suggested Use: Street Tree, Rain Garden	Tolerate: Deer, Clay Soil, Air Pollution	Suggested Use: Shade Tree, Flowering Tree	Suggested Use: Flowering Tree, Naturalize	Suggested Use: Hedge	Suggested Use: Hedge, Rain Garden	Suggested Use: Naturalize, Rain Garden	Suggested Use: Hedge Tolerate: Erosion
ТҮРЕ	Tree	Tree	Tree	Tree	Shrub	Shrub	Shrub	Shrub

	Velvet Boxwood	Serviceberry	Spice Bush	Japanese Camellia	Blue Star	Oak Sedge	Daylily	Hairy Alumroot
LATIN NAME	Buxus 'Green Velvet'	Amelanchier Canadensis	Lindera benzoin	Camellia japonica	Amsonia hubrichtii	Carex pensylvanica	Hemerocallis X.	Heuchera villosa
HEIGHT	3-4 ft	15-25 ft	6-12 ft	7-12 ft	2-3 ft	0.5-1 ft	1-1.5 ft	1.5-3 ft
WIDTH	3-4 ft	15-25 ft	6-12 ft	5-10 ft	2-3 ft	0.5-1 ft	1-1.5 ft	1.5-2 ft
SUN	Part shade to full shade	Part shade to full shade	Part shade to full shade	Part shade	Part shade to full shade	Part shade to full shade	Part shade to full shade	Part shade to full shade
WATER	Medium	Medium	Medium	Medium	Medium	Dry to Medium	Medium	Medium
MAINT-ENENCE	Medium	Low	Low	Medium	Low	Low	Low	Low
NUMBER	18	4	12	11	222	27	7	17
PRICE*	\$30*18= \$ 540	\$50*4= \$ 200	\$30*12= \$ 360	\$30*11=\$ 330	\$16*222=\$ 3,552	\$14*1139=\$ 15,94 6	\$15*580=\$ 8,700	\$18*663=\$ 11,934
FEATURE	Hedge/ Tolerate: Rabbit, Deer	Flowering Tree/ Tolerate: Clay Soil	Tolerate: Drought, Heavy Shade, Clay Soil, Wet Soil	Bloom Time: Seasonal bloomer	Suggested Use: Rain Garden	Tolerate: Heavy Shade, Wet Soil	Tolerate: Erosion, Air Pollution	Flower: Showy/ Tolerate: Shade
ТҮРЕ	Shrub	Tree /Shrub	Shrub	Flower / Shrub	Herbaceous	Ground Cover	Flower / Shrub	Ground Cover

Figure 6. Selected Plant Species List

References

"Benefits of Rain Garden for 2021." raingardennetwork.com. Ecotone Services, Inc., January 17, 2021. https://www.raingardennetwork.com/benefits-of-planting-rain-gardens/.

BrightView. (2021). Big Trees Make Your Property Value Grow. Available at: https://www.brightview.com/resources/article/big-trees-make-your-property-value-gr ow

Missouri Botanical Garden. (2021). Plant Finder. Available at: http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderSearch.aspx

Michael Van Valkenburgh. (2019). Designing a Garden: Monk's Garden at the Isabella Stewart Gardner Museum. The Monacelli Press. P 39-50

National Recreation and Park Association. (2018). Parks and Improved Mental Health and Quality of Life. Available at:

https://www.nrpa.org/our-work/Three-Pillars/health-wellness/ParksandHealth/fact-sheets/parks-improved-mental-health-quality-life/