



Fred D Thompson Federal Building & United States Courthouse

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Sustainable SITES Categories

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- **Plaza Design**
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- **Maintenance and Monitoring**

SITES Scorecard

Project Team

Project Details

- The site for the Nashville Federal Courthouse is in downtown Nashville.
- Site Area: 3.4 acres
- Building Area: 274,000 square feet, including parking spaces and the basement level
- Former Land Use: parking garage and surface parking
- Budget: \$40.1M
- The building is six floors plus a basement, Each floor is required to accommodate the federal courtrooms; the building's penthouse floor is greater than 75 feet above the lowest level of fire department access. Based on this, the building is considered a high-rise facility

Applicable codes and reference standards:

- 2015 International Building Codes
- Meet GSA's Sustainable Minimum Performance Criteria;
- Meet Executive Order 13693 requirements
- Meet Guiding Principles for Sustainable Federal Buildings and Associated Instructions (February, 2016)
- GSA current standards and criteria as appropriate;
- Achieve LEED Gold certification using v3 2009 standards
- Achieve Sustainable Sites Initiative (SSI) Silver certification level



Project Summary

The main entrance and plaza orient toward the corner of Church Street and 7th Avenue North to create a line of sight from an active intersection and strengthen the importance of the courthouse within the urban grid.

The design of the entry plaza is very symmetrical and classical, using the required security standoff zone to reinforce the Church Street streetscape.

Low retaining walls and terraces reinforce the formal design of the plaza, offer public seating and gathering areas, and act as the vehicular barrier requirement for the security of the site.

The linear public plaza along Church Street gathers pedestrian traffic at various points along its length. Nodes reinforce the classical form and provide places for people to sit and activate the space



Project Summary

A planting palette of mostly native hardy plants minimize irrigation and maintenance requirements. Native or adaptive shrub massing on the east side requires less water and stabilizes the steep slopes. On the west side of the building Hybrid Fescue will be planted as sod.

Parking and vehicular circulation are at the rear of the site off of Commerce Street. Vehicles enter through secured gates and the limited surface parking is screened by a precast concrete veneer privacy wall.



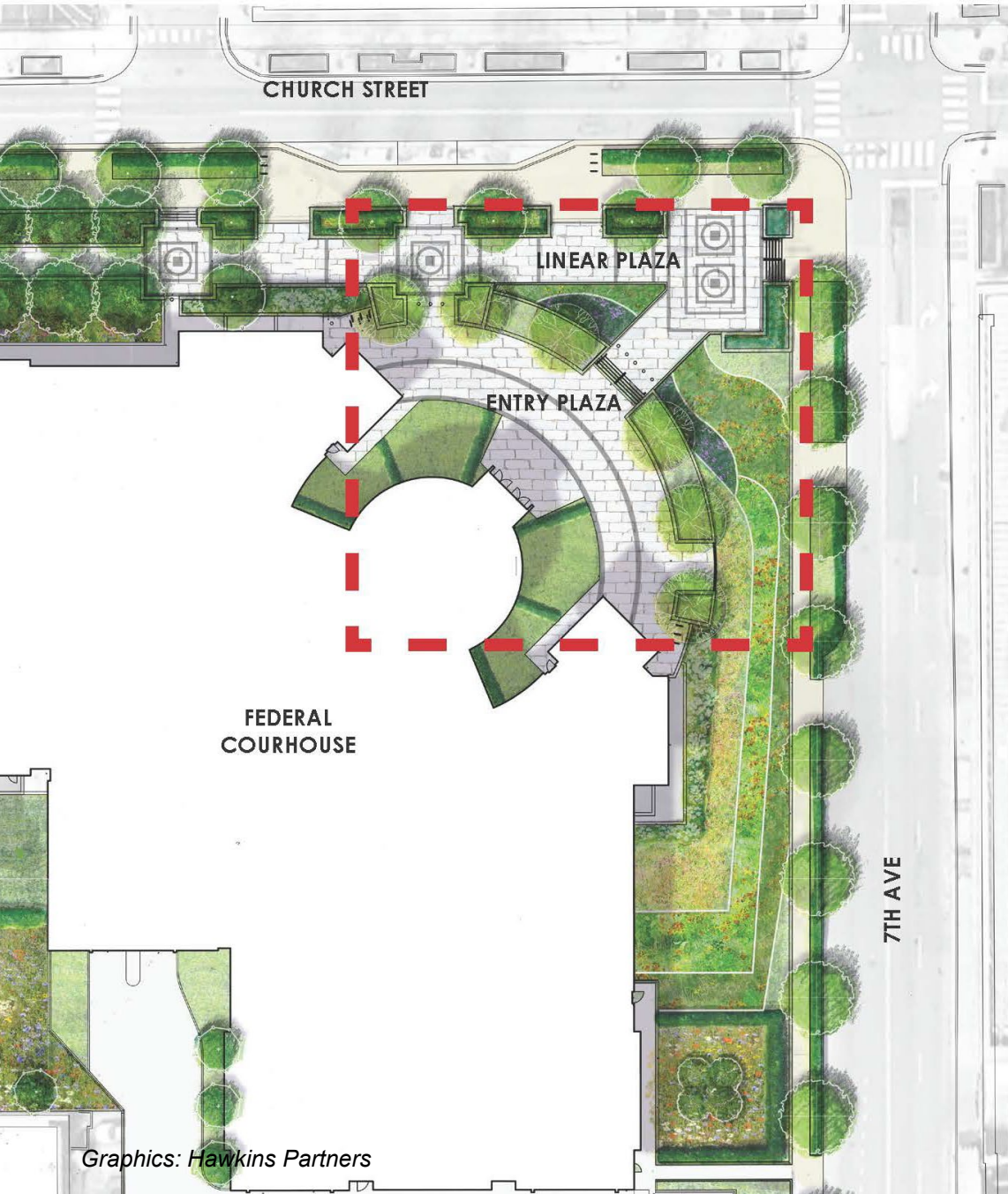


Photography: Ford Photography

Sustainable SITES Categories

1. Site Selection
2. Pre-design and Planning
3. Water – Precipitation and Irrigation
4. Soil and Vegetation
5. Material Selection
6. Human Health and Wellbeing
7. Construction
8. Operations and Maintenance
9. Education
10. Innovation

Project complied with the applicable performance thresholds found in all ten categories of sustainable features in the Sustainable SITES Initiative.



Sustainable Features - Plaza Design

This area features native planting around plazas that are designed to SITES guidelines C6.2, C6.3 and C6.6 respectively for accessibility, equitable site use, and social connection.



Photography: Fentress Architects

Sustainable Features - Plaza Design

SITES C6.2: Provide optimum site accessibility, safety and wayfinding

- ADA standards for accessibility
- Clear defined spaces
- Natural surveillance with adequate lighting levels
- Natural surveillance at entrances and walkways
- Clear visibility and good sight lines
- Viewpoints and sightlines
- Decision points and nodes
- Hierarchy of pedestrian and vehicular circulation
- Distinct areas and regions



Sustainable Features - Plaza Design

SITES C6.3: Promote equitable site use

- Engage users and stakeholders
- Provide free public site access to four specific, equitable site elements in the first three years of operation. Project sought feedback about and provided
 - Seating along Linear Plaza
 - Seating around Entry Plaza
 - Variety of shady and sunny area
 - Views of different kinds of planting groups
 - Information about sustainable aspects of landscape design



Sustainable Features - Plaza Design

C6.6: Support social connection

- Provide seating for minimum 10% of site users
- Include elements that address microclimate
- Provide opportunities for different types of activities, viz, respite, socializing, and formal and informal garden viewing.





Photography: Ford Photography

Sustainable Features - Plaza Design

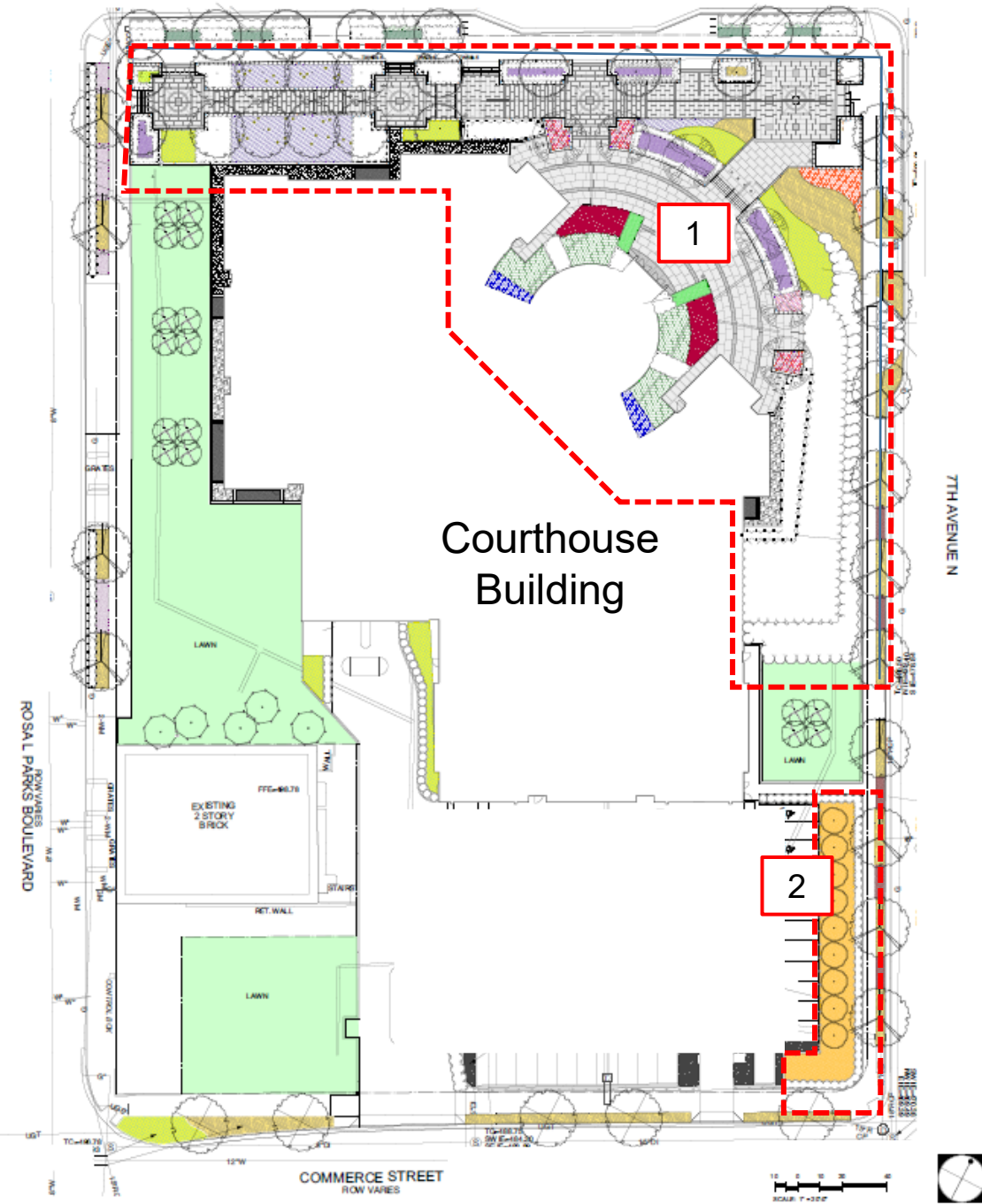
C4.9 Reduce Urban Heat Island Effect

Roofs and pavements make up about 60% of the surface area of a U.S. city.

Dark, nonreflective surfaces for parking, roofs, and pavements absorb at least 80% of sunlight. These materials are warmed up and emit heat back into the surroundings. This is called the “Heat Island Effect”.

Heat islands’ negative effects include:

- **Increased energy use.** Warmer temperatures in cities increase the need for air-conditioning to cool buildings.
- **Impaired air quality.** Warmer air accelerates smog formation from airborne pollutants.
- **Illness.** Higher air temperatures and lower air quality can aggravate heat-related and respiratory illnesses and reduce productivity.



Sustainable Features - Soil and Vegetation

- The landscape design of the Fred D. Thompson Courthouse includes different zones of planting and paved areas for public enjoyment.
- Plant selection meet SITES guideline P4.3 for appropriate plants that are either nursery-grown or legally harvested.
- The design achieves a 40% native plant community score under SITES guidelines C4.6.
- Landscape irrigation is reduced by at least 50% per SITES P3.2
- The total vegetated and restored soil area is >30% of the total site, resulting in a proposed Site Biomass Density Index of 1.07, under SITES guideline C4.8.

1 Native planting and plaza

2 Pollinator meadow

1. Sustainable Features - Native Planting

What are native plants?

Native plants are typically those that occurred in North America before European settlement. Those not native to an area are referred to as exotic plants. In Tennessee, exotics often come from Asia or Western Europe, regions with similar climate and environmental conditions to those in this state. Some exotic plants have been intentionally brought in as lawn or garden ornamentals or as plants to attract wildlife; others have been accidentally introduced. Many exotic species become naturalized, meaning they are able to survive, spread, and reproduce on their own. Not all exotic plants become invasive, and most can safely be planted as ornamentals.

Exotic plants become **invasive** when its natural competitors, diseases, and insects that normally control the plant's growth are non-existent in its non-native habitat. In a healthy eco-system natural checks and balances develop over thousands of years, which greatly reduce the chance that a single species will increase in number to completely dominate a plant community. Plants that are moved from their native landscape can find optimal growing conditions without these checks and balances and can become highly invasive posing the greatest risk to native plants and animals.

Why are native plants good for the local landscape?

Native plants require less maintenance and care. Native plants like the native soil and local conditions and use less water and fewer pesticides.

Benefits of native plants

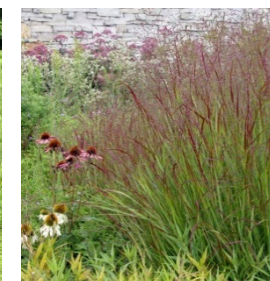
- Adapted to regional conditions and may require less maintenance and are cost-effective.
- Hardy, withstand extreme winter cold, do not suffer from die back.
- Environmentally friendly, require fewer pesticides and fertilizers because of natural adaptations.
- Promote biodiversity and stewardship.
- Provide food and shelter for native wildlife.
- Restore regional landscapes.
- Prevent future exotic introductions.



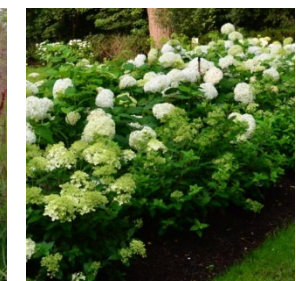
Amsonia



Prairie Dropseed



Switchgrass



Hydrangea

2. Pollinator Meadows

What is pollination?

Pollination is an ecosystem process that benefits both flowering plants and pollinators. Pollinators visit flowers for feeding, pollen collection, and warmth. When pollinators visit flowers, pollen rubs or drops onto their bodies. As the pollinator to the next location the pollen is then transferred to another flower or a different part of the same flower. This process is vital and necessary to start seed and fruit production in flowers, and for healthy, productive agricultural ecosystems as they ensure the production of full-bodied fruit and fertile seed sets in many crops.

Who are the pollinators?

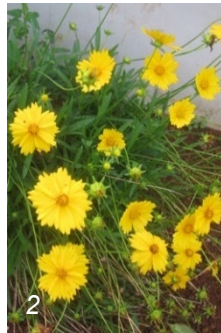
Pollinators are a diverse group of species, including birds, bees, butterflies, bats and beetles. They pollinate one-third of the food we eat. Their numbers are in steady decline due to loss of habitat, pests and pathogens, exposure to pesticides and other stressors. Pollinators you may see here are hummingbirds, bees and butterflies

How to attract and provide for pollinators

Gardens or meadows that contain a diversity of native wildflowers, trees and shrubs provide native pollinators with food (nectar, pollen, and/or larval host plants). Trees and dense shrubbery provide important shelter, nesting, and overwintering areas. Gardens, fruit-bearing trees and shrubs, thickets and hedgerows of flowering shrubs, and set-asides (areas that are not mowed) maximize food and shelter.

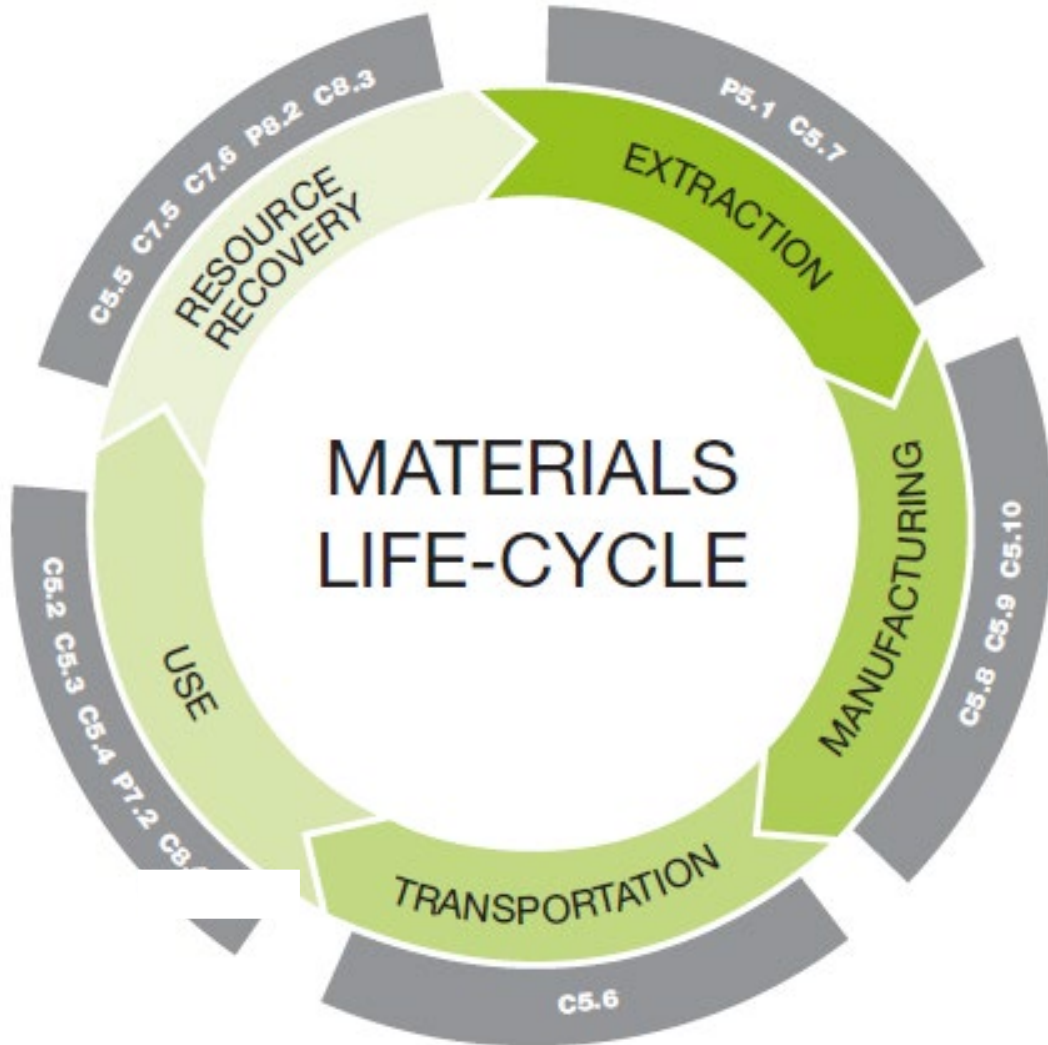
What these pollinators do for people

These hard-working animals help pollinate over 75% of our flowering plants, and about 75% of our crops. Hummingbirds, bats, bees, beetles, butterflies, and flies carry pollen from one plant to another as they collect nectar. Without them, wildlife would have fewer nutritious berries and seeds, and we would miss many fruits, vegetables, and nuts, including chocolate, coffee, and many spices...all of which depend on pollinators.



1. Palm Sedge
2. Coreopsis
3. Side Oats Gramma
4. Joe Pye Weed
5. Distylium

Sustainable Features – Material Selection



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Photography: Fentress Architects

Sustainable Features – Construction Practices

C7.5: Divert construction and demolition materials from disposal

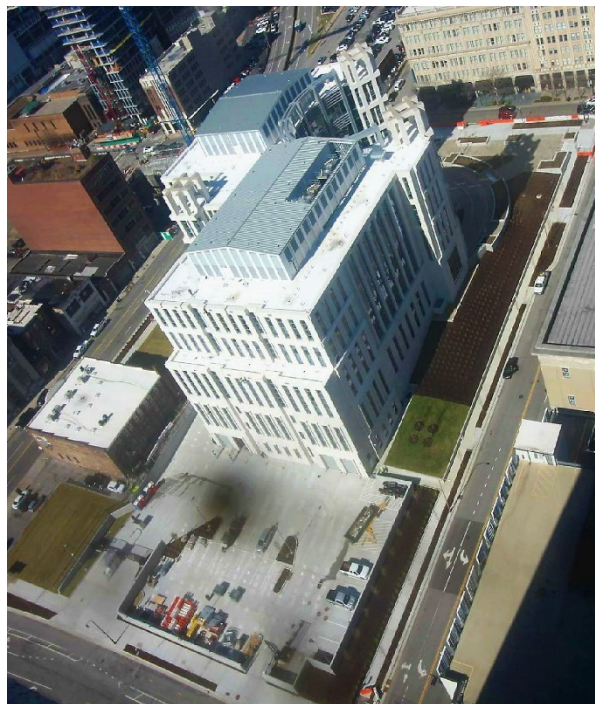
- 75% of all construction and demolition waste is diverted from landfill or recycled.



Photography: Fentress Architects

C7.7: Protect air quality during construction

- 50% of the total run-time hours of construction equipment are from Tier 3 or higher engines
- Ultra-low sulfur diesel fuel was used for all non-road diesel equipment
- .No Tier 0 engines were used



Sustainable Features – Maintenance & Monitoring

- GSA has an annual Building Operations and Maintenance and Janitorial Services contract that covers grounds maintenance.
- Requires monthly progress reports, performance evaluation and review
- Environmental reporting includes
 - Monthly recycling and waste reports, amounts of diverted material
 - Annual green purchase reports
 - Quarterly Integrated Pest Management reports.

SITES v2 Scorecard Summary

YES	?	NO			Possible Points:	
13	0	0	1: SITE CONTEXT		13	
Y			CONTEXT P1.1	Limit development on farmland		
Y			CONTEXT P1.2	Protect floodplain functions		
Y			CONTEXT P1.3	Conserve aquatic ecosystems		
Y			CONTEXT P1.4	Conserve habitats for threatened and endangered species		
6	0	0	CONTEXT C1.5	Redevelop degraded sites	3 to 6	
4	0	0	CONTEXT C1.6	Locate projects within existing developed areas	4	
3	0	0	CONTEXT C1.7	Connect to multi-modal transit networks	2 to 3	

YES	?	NO			Possible Points:	
3	0	0	2: PRE-DESIGN ASSESSMENT + PLANNING		3	
Y			PRE-DESIGN P2.1	Use an integrative design process		
Y			PRE-DESIGN P2.2	Conduct a pre-design site assessment		
Y			PRE-DESIGN P2.3	Designate and communicate VSPZs		
3	0	0	PRE-DESIGN C2.4	Engage users and stakeholders	3	

YES	?	NO			Possible Points:	
0	0	23	3: SITE DESIGN - WATER		23	
Y			WATER P3.1	Manage precipitation on site		
Y			WATER P3.2	Reduce water use for landscape irrigation		
0	0	6	WATER C3.3	Manage precipitation beyond baseline	4 to 6	
0	0	6	WATER C3.4	Reduce outdoor water use	4 to 6	
0	0	5	WATER C3.5	Design functional stormwater features as amenities	4 to 5	
0	0	6	WATER C3.6	Restore aquatic ecosystems	4 to 6	

YES	?	NO			Possible Points:	
10	0	29	4: SITE DESIGN - SOIL + VEGETATION		40	
Y			SOIL+VEG P4.1	Create and communicate a soil management plan		
Y			SOIL+VEG P4.2	Control and manage invasive plants		
Y			SOIL+VEG P4.3	Use appropriate plants		
0	0	6	SOIL+VEG C4.4	Conserve healthy soils and appropriate vegetation	4 to 6	
0	0	4	SOIL+VEG C4.5	Conserve special status vegetation	4	
3	0	2	SOIL+VEG C4.6	Conserve and use native plants	3 to 6	
0	0	6	SOIL+VEG C4.7	Conserve and restore native plant communities	4 to 6	
3	0	3	SOIL+VEG C4.8	Optimize biomass	1 to 6	
4	0	0	SOIL+VEG C4.9	Reduce urban heat island effects	4	
0	0	4	SOIL+VEG C4.10	Use vegetation to minimize building energy use	1 to 4	
0	0	4	SOIL+VEG C4.11	Reduce the risk of catastrophic wildfire	4	

YES	?	NO			Possible Points:	
0	0	4	MATERIALS C5.2		2 to 4	
0	0	4	MATERIALS C5.3		3 to 4	
0	0	4	MATERIALS C5.4		3 to 4	
3	0	1	MATERIALS C5.5		3 to 4	
4	0	1	MATERIALS C5.6		3 to 5	
1	0	4	MATERIALS C5.7		1 to 5	
1	0	4	MATERIALS C5.8		1 to 5	
1	0	4	MATERIALS C5.9		1 to 5	
1	0	4	MATERIALS C5.10		1 to 5	

YES	?	NO			Possible Points:	
18	0	12	6: SITE DESIGN - HUMAN HEALTH + WELL-BEING		30	
0	0	3	HHWB C6.1	Protect and maintain cultural and historic places	2 to 3	
2	0	0	HHWB C6.2	Provide optimum site accessibility, safety, and wayfinding	2	
2	0	0	HHWB C6.3	Promote equitable site use	2	
0	0	2	HHWB C6.4	Support mental restoration	2	
0	0	2	HHWB C6.5	Support physical activity	2	
2	0	0	HHWB C6.6	Support social connection	2	
0	0	4	HHWB C6.7	Provide on-site food production	3 to 4	
4	0	0	HHWB C6.8	Reduce light pollution	4	
4	0	0	HHWB C6.9	Encourage fuel efficient and multi-modal transportation	4	
1	0	1	HHWB C6.10	Minimize exposure to environmental tobacco smoke	1 to 2	
3	0	0	HHWB C6.11	Support local economy	3	

YES	?	NO			Possible Points:	
13	0	4	7: CONSTRUCTION		17	
Y			CONSTRUCTION P7.1	Communicate and verify sustainable construction practices		
Y			CONSTRUCTION P7.2	Control and retain construction pollutants		
Y			CONSTRUCTION P7.3	Restore soils disturbed during construction		
5	0	0	CONSTRUCTION C7.4	Restore soils disturbed by previous development	3 to 5	
4	0	0	CONSTRUCTION C7.5	Divert construction and demolition materials from disposal	3 to 4	
0	0	4	CONSTRUCTION C7.6	Divert reusable vegetation, rocks, and soil from disposal	3 to 4	
4	0	0	CONSTRUCTION C7.7	Protect air quality during construction	2 to 4	

YES	?	NO			Possible Points:	
14	0	7	8. OPERATIONS + MAINTENANCE		22	
Y			O+M P8.1	Plan for sustainable site maintenance		
Y			O+M P8.2	Provide for storage and collection of recyclables		
3	0	2	O+M C8.3	Recycle organic matter	3 to 5	
4	0	0	O+M C8.4	Minimize pesticide and fertilizer use	4 to 5	
3	0	1	O+M C8.5	Reduce outdoor energy consumption	2 to 4	
0	0	4	O+M C8.6	Use renewable sources for landscape electricity needs	3 to 4	
4	0	0	O+M C8.7	Protect air quality during landscape maintenance	2 to 4	

YES	?	NO			Possible Points:	
7	0	4	9. EDUCATION + PERFORMANCE MONITORING		11	
4	0	0	EDUCATION C9.1	Promote sustainability awareness and education	3 to 4	
3	0	0	EDUCATION C9.2	Develop and communicate a case study	3	
0	0	4	EDUCATION C9.3	Plan to monitor and report site performance	4	

YES	?	NO			Possible Points:	
3	0	9	INNOVATION C10.1		3 to 9	
<p>YES Project confident points are achievable</p> <p>? Project striving to achieve points, not 100% confident</p> <p>NO Project is unable to achieve these credit points</p>						

SITES Scorecard

■ PROJECT TEAM

Project Team	
Owner	General Services Administration (GSA)
Tenants	US District Courts
	US Marshals
	US Attorneys
Owner's Representative	Jacobs
Bridging Design Architects	Michael Graves/Thomas Miller Joint Venture
Design-Builder	Hensel Phelps
Architect	Fentress Architects
Landscape Architect	Hawkins Partners
Civil Engineer	Ragan Smith
	Ingram Civil Engineering Group
Geotechnical Engineer	Terracon
Electrical Design-Builder	MC Dean

