

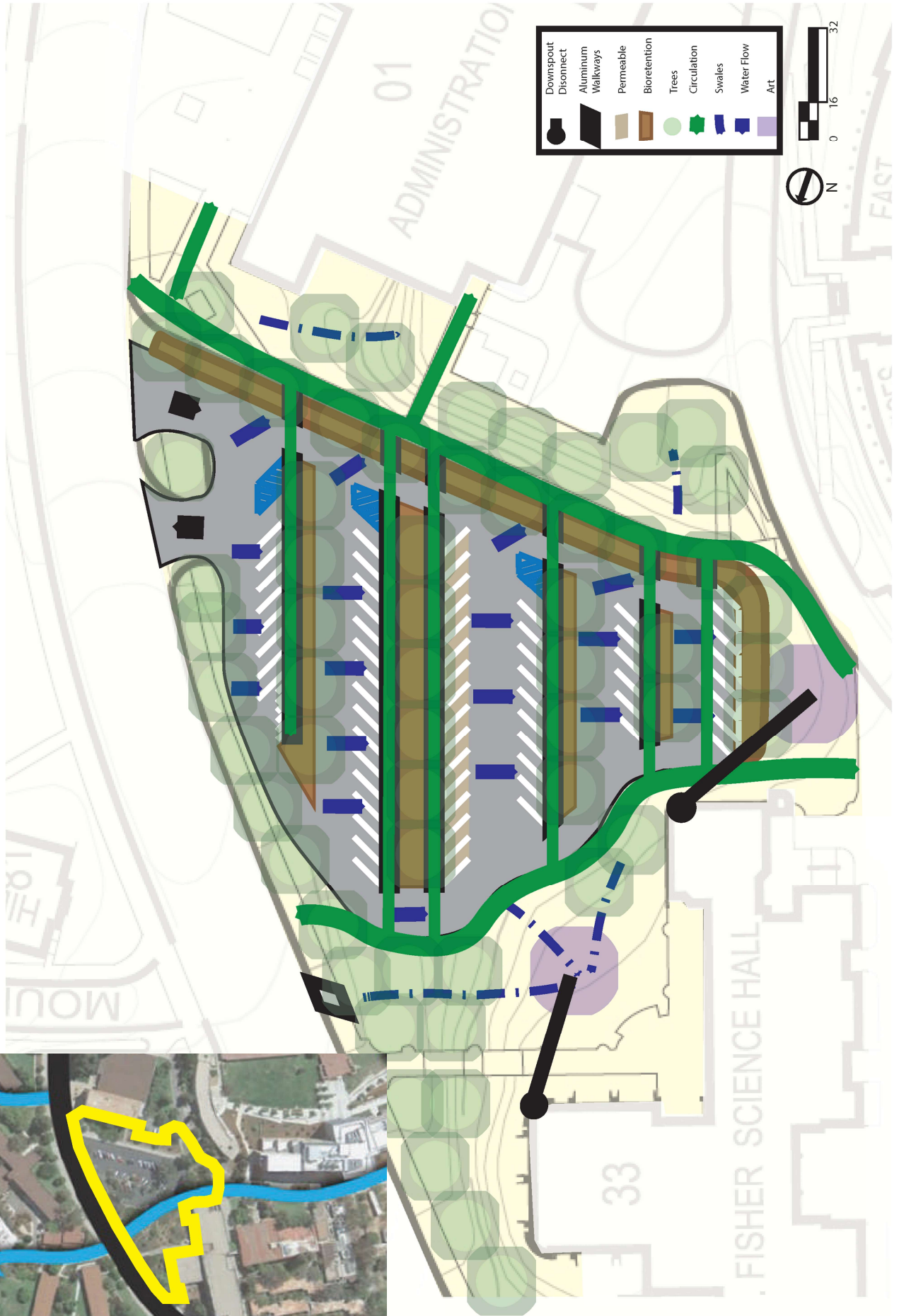
Green over Gray: An Exploration of Landscape Performance

Cal Poly Parking Lot Reimagining Student Project

Site Location: Parking Lot #A1 on Cal Poly's campus (Between Administration & Clyde P. Fisher Science buildings)



CASE STUDY 1



CASE STUDY 1

	Storm Water	Trees	Parking	Pedestrian	Cultural
Existing	Storm drains capture 100% of parking lot runoff	Carbon sequestered: 4,567 pounds	Heat Island Effect: Cars park N/S direction	Worn, created pedestrian pathway in ground cover on north side	Two benches for seating
	Storm drains capture runoff from planted areas that do not infiltrate	storm water intercepted: 35,696 gallons	Heat Island Effect: Small trees in lot do not cast shade onto asphalt	Pedestrians must walk through lot or cross planted areas to exit vehicles	Lacks visual appeal in plantings as well as cultural value
Proposed	Infiltrate 100% of site storm water	Carbon sequestered: 19,470 pounds	Heat Island Effect: Cars park E/W direction	One new pedestrian route for north side	Five benches for seating
	Additional runoff captured from road and downspout disconnects: 129,878 gallons	Storm water intercepted: 95,757 gallons	Heat Island Effect: Mature trees cast shade onto asphalt, west in morning & east in evening	Five new pedestrian routes over infiltration basins for safety & aesthetics	Two art pieces & cohesive native plant palette, provides cultural, aesthetic, and biodiversity value

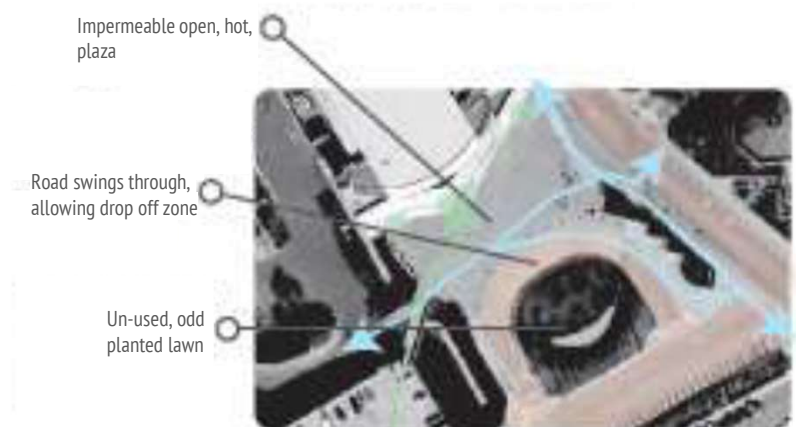
METRICS	Existing	Proposed
	54% Permeable area, 0 ft ² infiltration basin	55% Permeable area, 10,863 ft ² infiltration basin
	0 gallons storm water captured from offsite	129,878 gallons storm water captured from offsite
	66 parking spaces: 4 handicap 4 motorcycle 9 staff loading 49 metered	68 parking spaces: 3 handicap 7 motorcycle 7 staff loading 51 metered

SOURCE: <https://www.landscapeperformance.org/sites/default/files/2024-09/Ragsdale-2016-student-work-2.pdf>

CASE STUDY 2

Landscape Performance: Cal Poly Performing Arts Center Plaza Student Project Redesign

In the re-design of the Cal Poly Performing Arts Center Plaza, there were many improvements socially and ecologically. Using data to analyze improvements showcases the reasoning behind design choices and the ecosystem services a landscape can provide.



Seating over permeable decomposed granite surface. In ground and canopy lighting.

Permeable pavers and open outdoor staging space for entering and exiting shows at the PAC, lighting along dark edge.

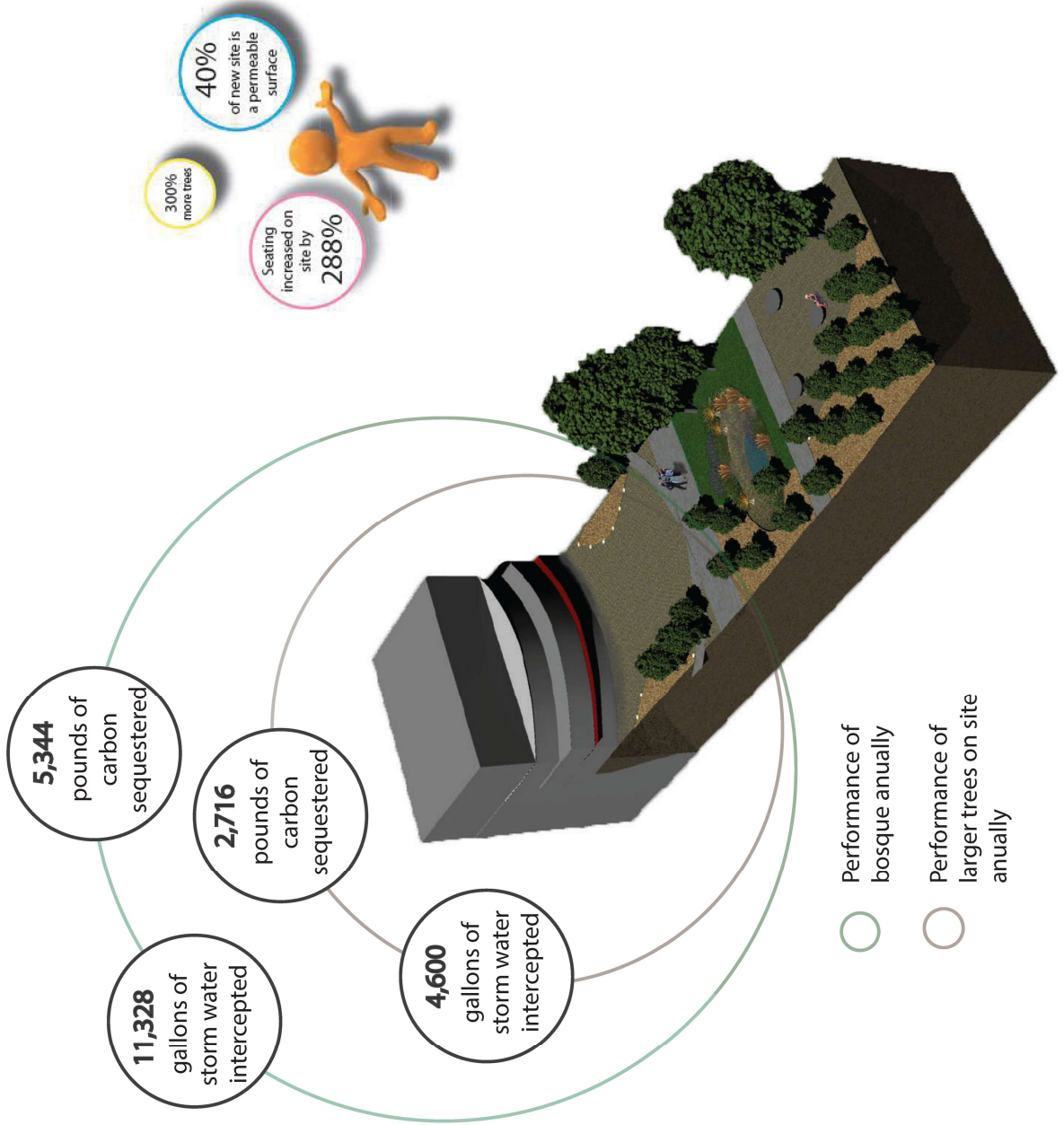
Central Rain Garden. When enough water is present in any given bioorientation swale, an artistic or subtle fountain will delay, drawing attention to the water and showcasing ecological performance.

Landscape Performance Bosque. Will intercept 11,328 gallons of storm water annually. Offers shaded seating on benches with water rills beneath bench showcasing ecological performance.

Pedestrian walkways follow desire lines of users. This one is brought into the site to engage and invite in and separate vehicular and human traffic. The drive through road is kept to offer student user's food trucks, campus fairs, presentations, events, etc.

CASE STUDY 2

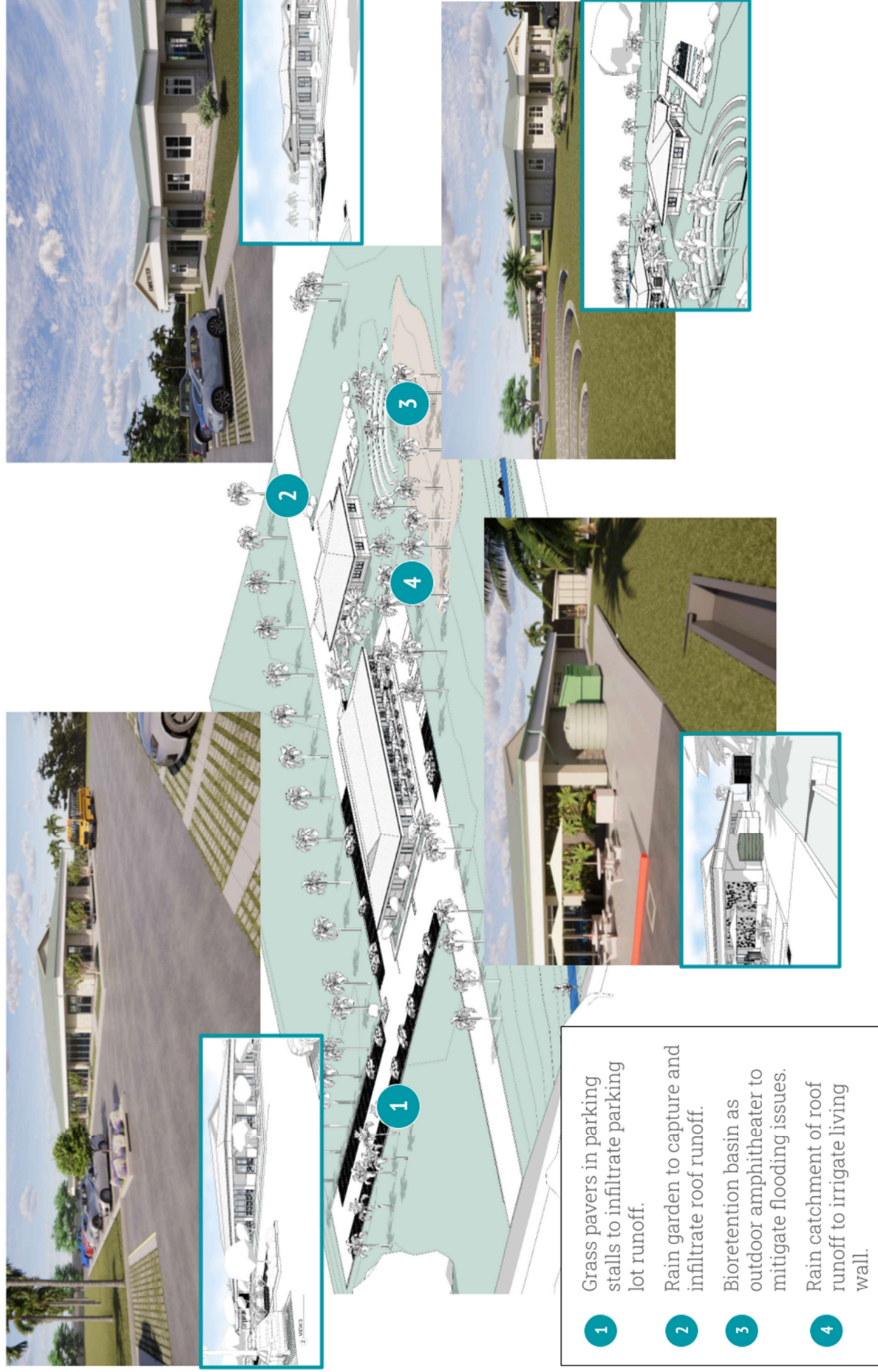
Proposed Site

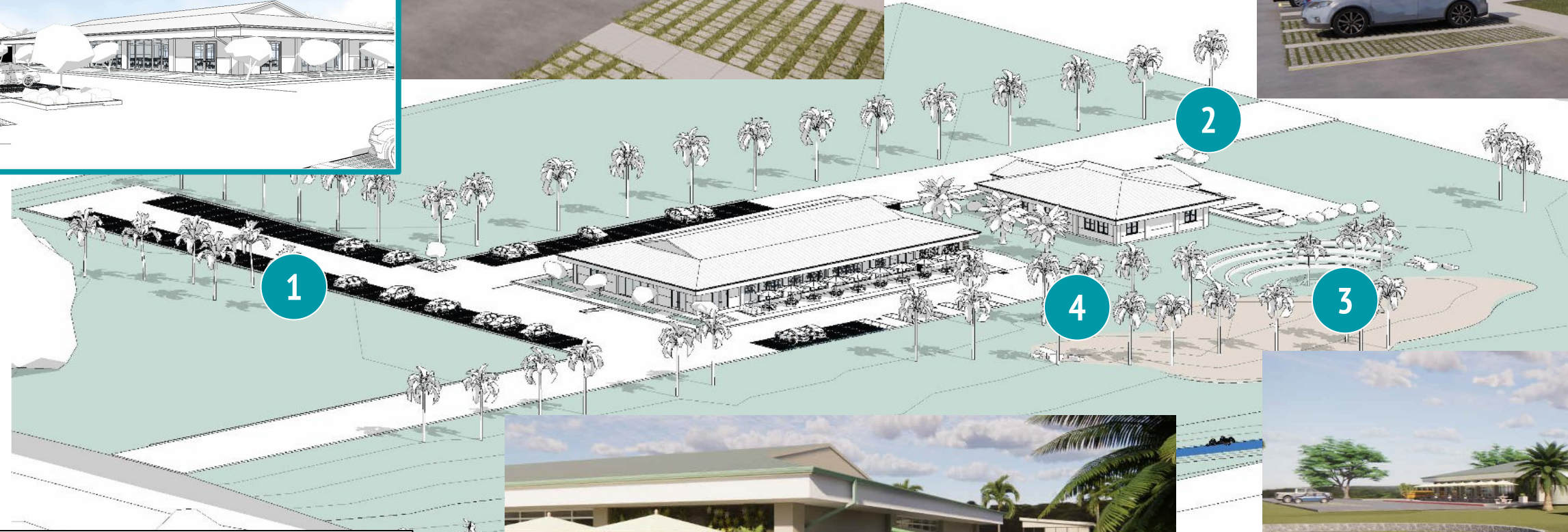
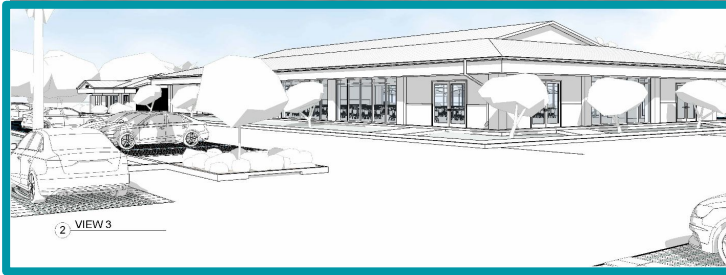


Exisiting Site

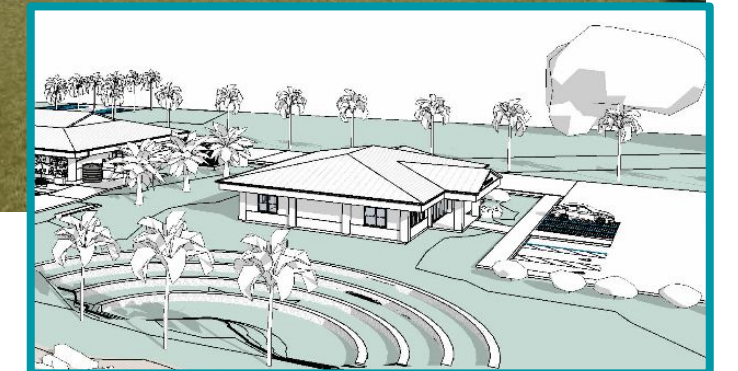
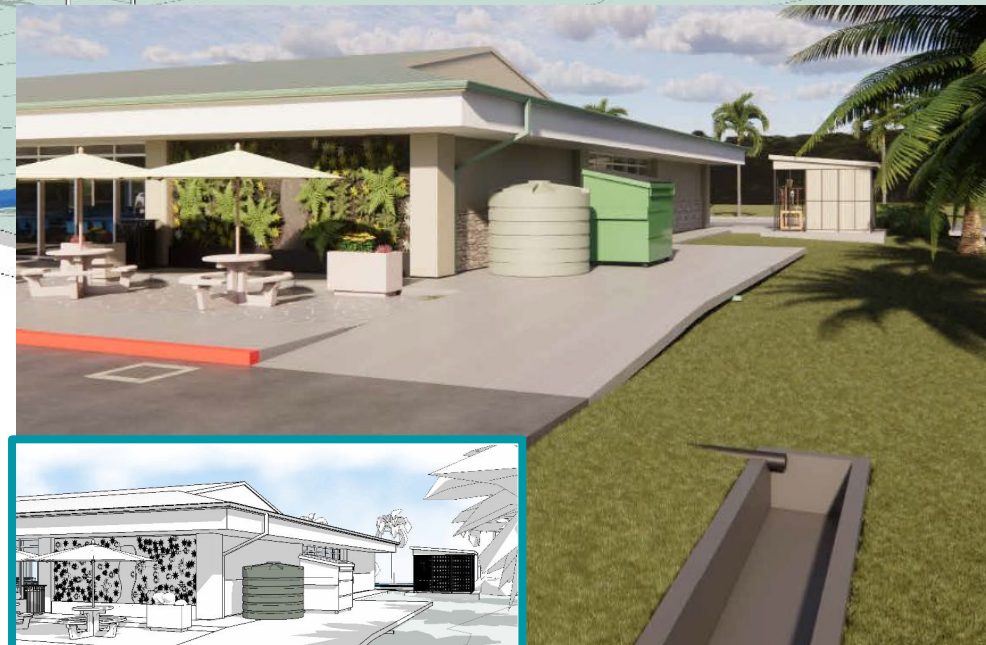


Mock Site GSI Design





- 1 Grass pavers in parking stalls to infiltrate parking lot runoff.
- 2 Rain garden to capture and infiltrate roof runoff.
- 3 Bioretention basin as outdoor amphitheater to mitigate flooding issues.
- 4 Rain catchment of roof runoff to irrigate living wall.





1



Permeable pavement

Present Value: \$1,295,000

Average annual benefit: \$43,000

Benefit per unit: \$523/sq ft



2



Raingardens

Present Value: \$32,000

Average annual benefit: \$1,000

Benefit per unit: \$2,000/sq ft



4



Bioretention

Present Value: \$457,000

Average annual benefit: \$15,000

Benefit per unit: \$2,000/sq ft



3



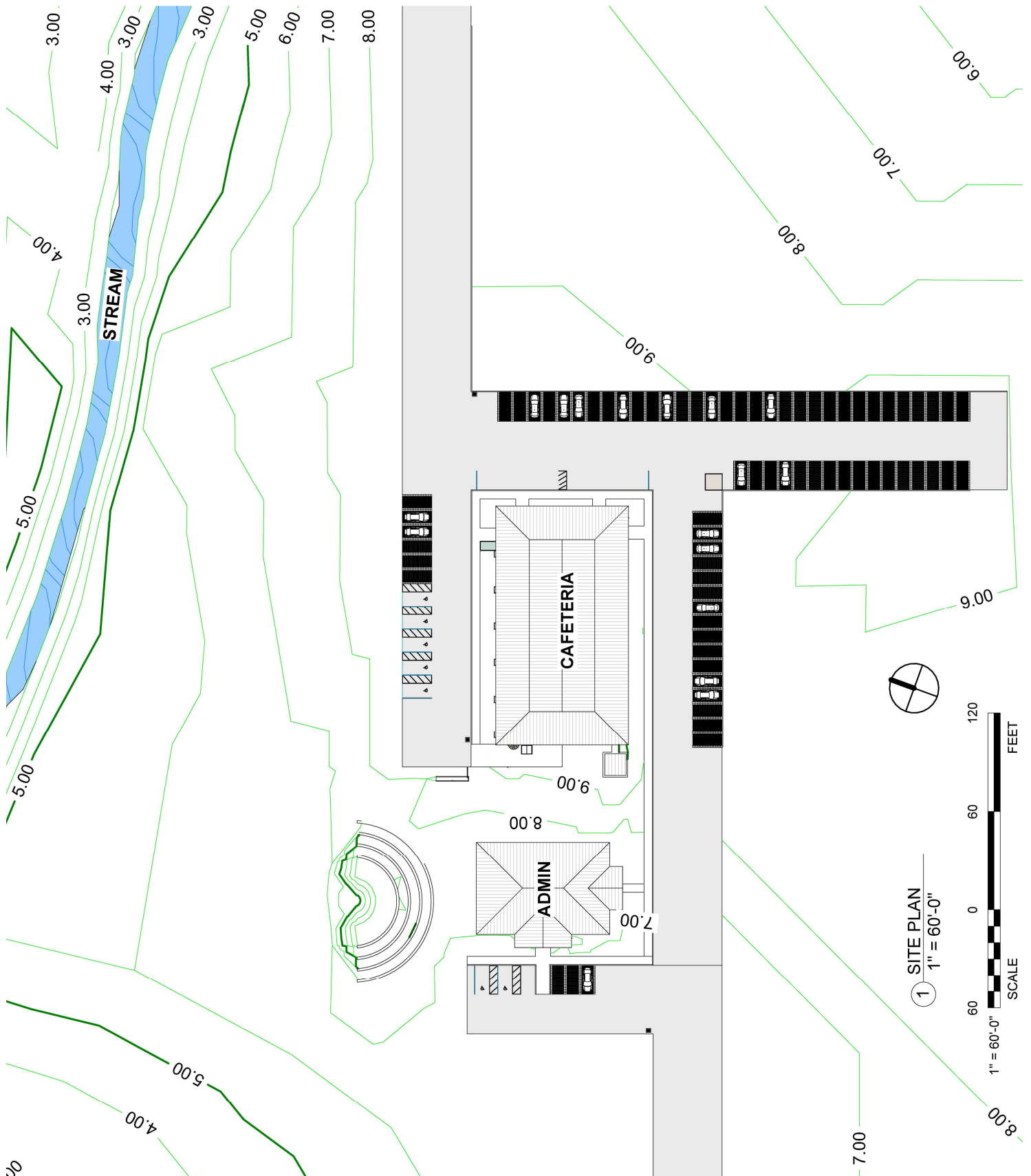
Cisterns

Present Value: \$6,000

Average annual benefit: \$193

Benefit per unit: \$578,000 each

Mock Site GSI Design - Topographic Map



Additionally, reference the "Mock Site GSI Map" from Lesson 9