

CAPSTONE REPORT

URBAN DESIGN

Samantha Ellert
School of Urban Studies
June 2026



STUDENTS' VISION FOR THE UWT CAMPUS

URBAN DESIGN CAPSTONE

Introduction

In 2025, the University of Washington Tacoma (UWT) with Bjarke Ingles Group (B.I.G.) released their 30 year Campus Master Plan. As seen to the right, the Master Plan's main focus is to create a viewshed of Mt. Tahoma from the Northwest corner to the Southeast corner of campus. Additionally, another focus of the master plan is to have two front doors to campus instead of a front door and back door of campus. As part of our 2026 Urban Design Capstone, we are to pick apart this master plan and propose our own visions for the future of UWT.

Project Brief

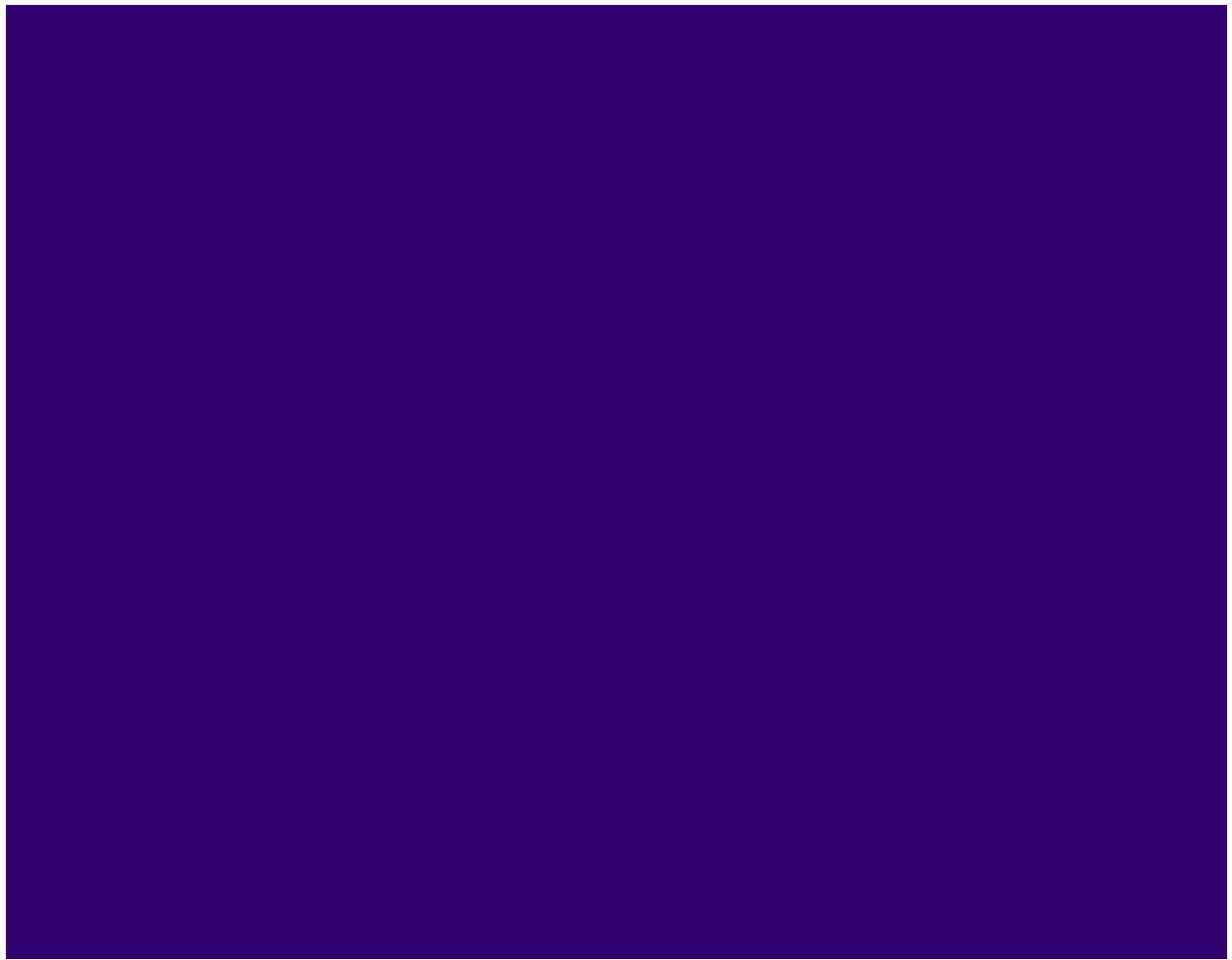
For our 2026 Urban Design Capstone, we were tasked to reimagine the future UWT Campus. To start, we critiqued the 2025 UWT Master Plan created by the globally recognized firm, B.I.G. Then, conducted a Community Engagement Campaign around student commuting habits to campus to better understand the true parking needs and motivations of students. Next, we collaborated with the 2026 Civil Engineering Cohort to redesign both 19th Street and Jefferson Avenue with technical focuses. Finally, each of us came up with our own designs reimagining different elements of the campus.



UWT Site Plan Courtesy of UWT Master Plan



Urban Design 2024 - 2026 Cohort
Photo courtesy of Professor G Laster in 2025



UWT Stormwater Strategy The Issues Found

In the UW Tacoma Master Plan, the Stormwater Strategy focuses on building drainage systems that drain into water detention areas or open space catchment areas. From the water detention areas or open space catchment areas, the runoff will flow right into the City of Tacoma's grey water infrastructure which will flow directly into the Foss Waterway unfiltered.

With the stormwater strategy primarily focused on building drainage, the water that is being managed is fairly unpolluted. As such, going directly into the Sound is not a huge issue.

However, a large majority of stormwater runoff and runoff pollution, is coming from the streets and sidewalks not from building drainage. Without a comprehensive stormwater strategy for streets and sidewalks, UWT is missing an opportunity to have an impact on what flows into the Foss Waterway which is directly downhill of the campus.

Finally, there is no overall strategy to slow the flowing water down the steep incline and is relying heavily on existing infrastructure instead of considering Green Stormwater Infrastructure options.

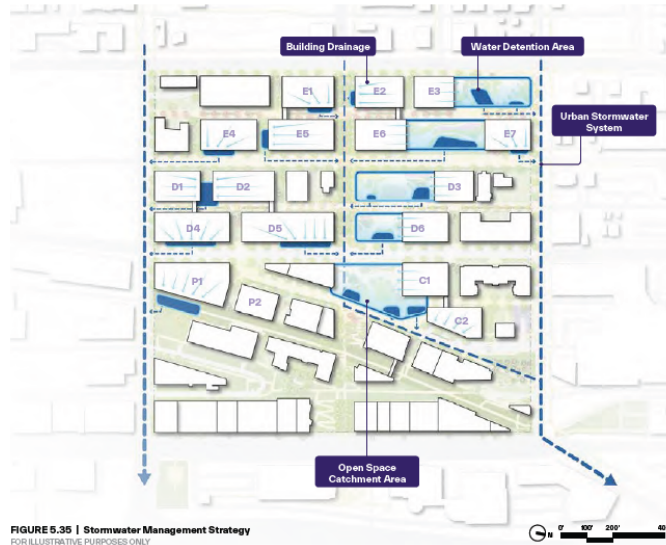


FIGURE 5.35 | Stormwater Management Strategy
FOR ILLUSTRATIVE PURPOSES ONLY

SOURCE: UWT 2025 Master Plan (<https://www.tacoma.uw.edu/chancellor/campus-master-plan/>)

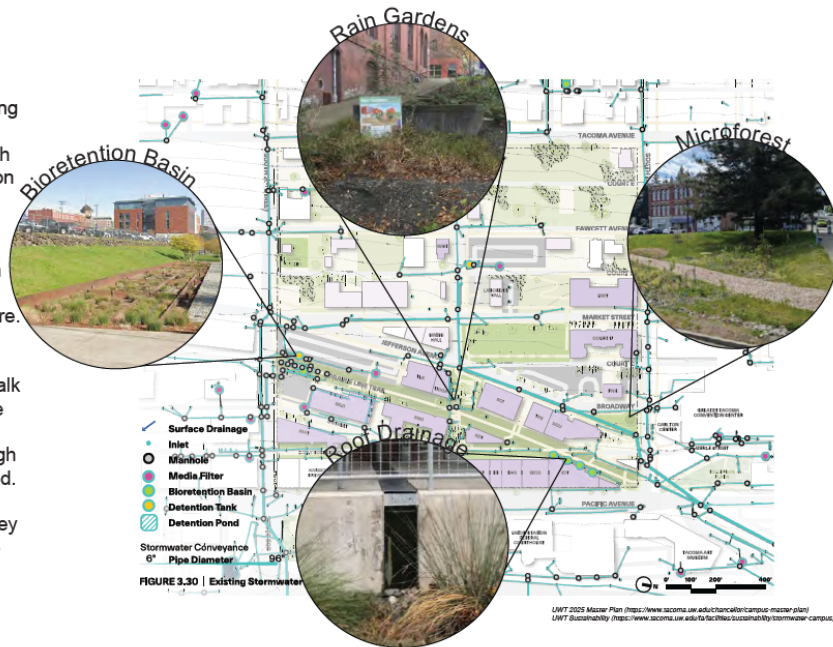


Stormdrain PSA
Photo courtesy of Sam Eilert

UWT Stormwater Strategy

Current Utilities & Green Stormwater Infrastructure

The UWT Master Plan is looking to heavily rely on the city's stormwater infrastructure which currently includes a bioretention basin on the Prairie Line Trail. This basin collects and filters 40 acres of stormwater runoff. The bioswale & microforest on Broadway acts as an overflow for the stormwater infrastructure. However, during heavy rain, we did not observe any water running off the street or sidewalk to get captured in the bioswale on Broadway. Instead, the stormwater was rushing through pipe system towards the Sound. While there are rain gardens throughout the old campus, they primarily service roof drainage and does not target the most polluted water running off the streets.



UWT Stormwater Strategy

Street Runoff Calculations

15,222 gal/min

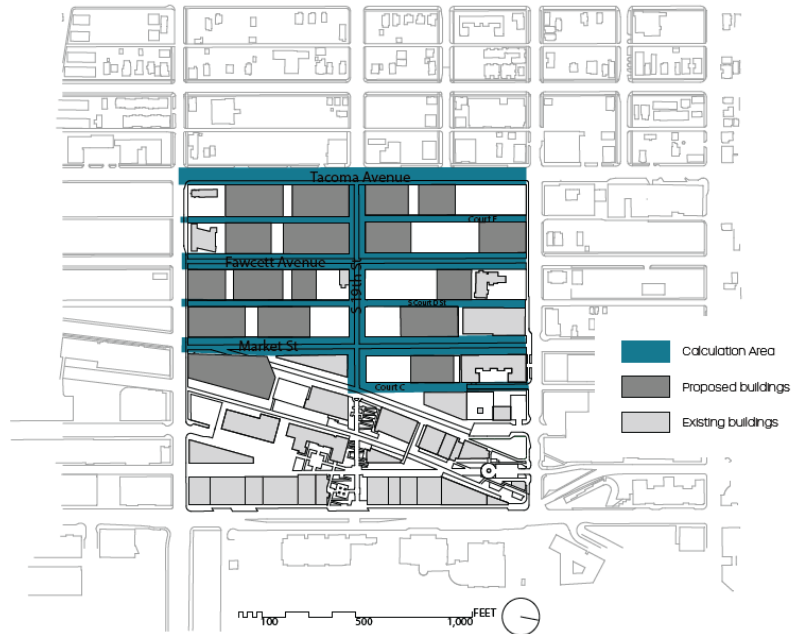
304 bathtubs/min

1.4 Olympic Pools/hr

Straight into the Sound

These calculations were done using the Rational method. The measurements for the streets and expected materials were pulled from the street sections being proposed on the UW Tacoma Master Plan.

During heavy rains, we can expect to have 1.4 Olympic Pools/hr flowing from the streets straight into the Sound and more specifically the Foss Waterway. This amount of water will be bringing all of the pollution that cars are leaving in the streets as they interact with this space. Additionally, while my calculations are of the campus specifically, the campus is located at the bottom of a steep hill. A comprehensive stormwater strategy could also catch and filter runoff from West of campus.



UWT Stormwater Strategy

Why Does this Matter?

Downhill of the campus is the Foss Waterway which will be getting everything we let pass by. Seen all over the city (next to stormwater drains) is the phrase "If it hits the Ground, it hits the Sound". So, we can expect all of the tire dust and oil from cars are flushing straight into the Foss Waterway during heavy rains.

This leads to another issue - the Foss Waterway is getting increasingly activated. We are expecting Maritime 235 to open soon. Within the Maritime 235 design plans, they are planning to include a "human powered watercraft launch" which will lead to an increase of people interacting with the water. Already, there are two public docks - one being near a large stormwater drain. Additionally, if you walk along the Western side of the foss, you will find small trails where people are walking and interacting with the water today.



TCF Architecture (<https://www.tcfarchitecture.com/project/maritime-center/>)

UWT Stormwater Strategy

Contaminated Groundwater & Soil

All of this is complicated by the fact that there is groundwater and soil contamination within the site. This area has a history of industrial activity which has left the area highly polluted and UWT is under an "Agreed Order" issued by the WA State Department of Ecology. With the contamination, we do need to worry about how we tackle our GSI strategies. If done incorrectly, we may create a cycle where the infrastructure meant to manage stormwater pollution becomes a point of contamination. The GSI solutions chosen will likely need to be solutions that can be done above a capped area or act as bioremediation for the contamination.

As we consider the GSI strategies, we will also want to be intentional with the plants chosen as they can serve as bioremediation in the areas that will not be capped.

AFFECTED MEDIA & CONTAMINANTS		MEDIA					
Contaminant		Soil	Groundwater	Surface Water	Sediment	Air	Bedrock
Base/Neutral Acid Organics		C	C				
Halogenated Organics		C	C				
Petroleum Products-Unspecified		C	C				

Key:

B - Below Cleanup Level

S - Suspected

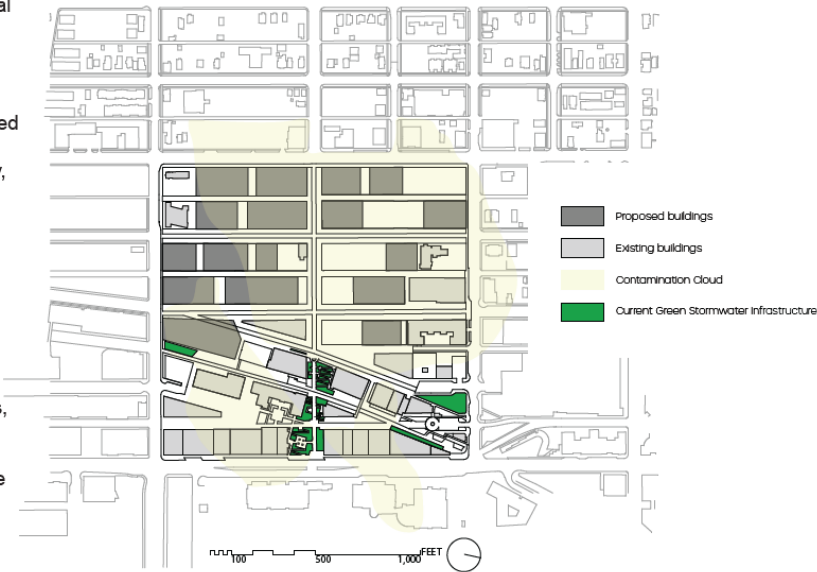
C - Confirmed Above Cleanup Level

R - Remediated

RA - Remediated-Above

RB - Remediated-Below

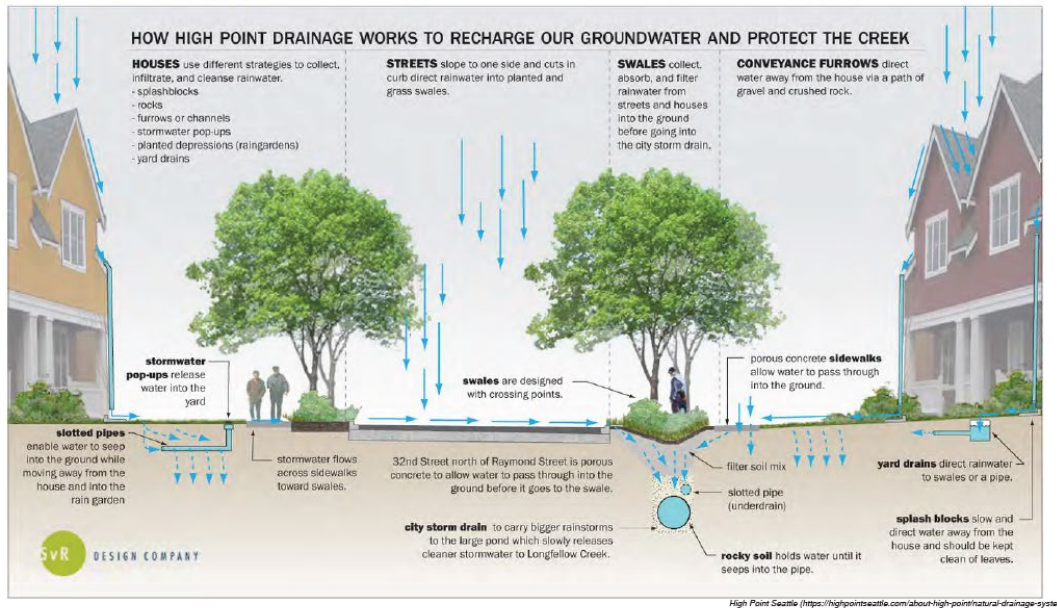
WA Dept. of Ecology (<https://apps.ecology.wa.gov/cleanupsearch/site/141>)



ANALYSIS FINDINGS

UWT Stormwater Strategy

Can UWT have an Impact?



We are uniquely situated by being at the bottom of a hill that we can impact the stormwater runoff of the area and more specifically, impact the quality of water that is flowing into the Foss Waterway. There is a precedent up in Seattle taking a concept of a natural drainage system, the High Point Natural Drainage System. High Point is a final stop for stormwater drainage before the Longfellow Creek which is an endangered salmon run. Much like High Point, UWT will be redeveloping most of it's campus and has the opportunity to partner with Tacoma Public Utilities to design a drainage system that treats stormwater in an ecologically sensitive way.

UWT Stormwater Strategy Design Framework

As an anchor institution and an Urban-Serving University, UWT has the opportunity to set the stormwater standard for the City of Tacoma. With this Design Framework, we will be looking to slow the flow of water from uphill. We will look to prioritize the use of Green Stormwater Infrastructure (such as bioswales, pervious surfaces, and bioremediation) and creative ways to slow water before it enters the City's stormwater infrastructure. Ideally, this will allow the university to become an innovator for Stormwater Management, Green Stormwater Infrastructure, and soil remediation.

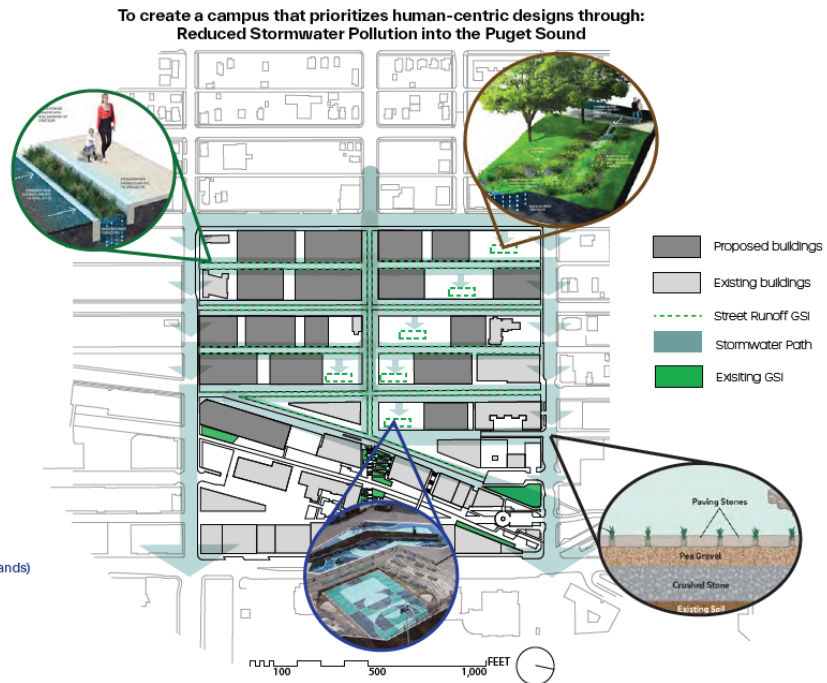
Potential Stormwater Management Options:

WaterSquare (Benthoemplein in Rotterdam, Netherlands)
(<https://landscapes.com/water-square-benthoemplein-by-de-urbanisten/>)

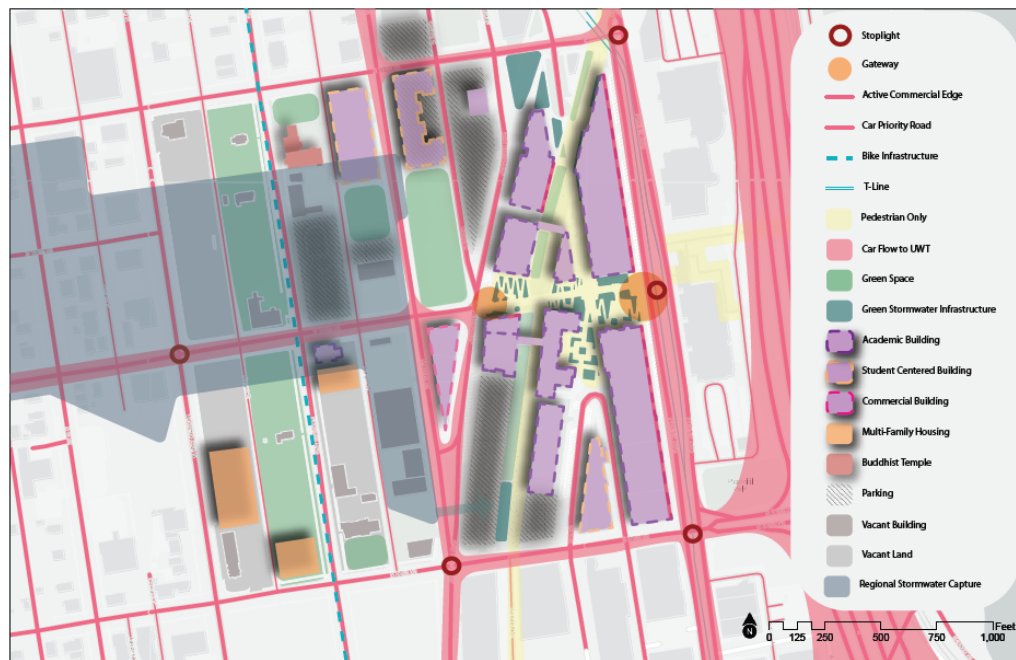
Green Gutters (<https://water.phila.gov/gsi/tools/green-gutters/>)

Permeable Paving (<https://water.phila.gov/gsi/tools/permeable-paving/>)

Bioswales (<https://water.phila.gov/gsi/tools/bioswale/>)



Urban Form Analysis



Currently the UWT campus is pedestrianized and developed on it's western side. The car flow to campus reflects this as well with stop light locations directing traffic to 19th street which is cutting directly through the center of the overall campus footprint. There is the start of a student core being developed with student buildings being on either side of Market Street which is the center line of the overall campus footprint. The regional stormwater facility on the Prairie Line trail does treat 40 acres up the hill which is a good start as we look to develop a stormwater strategy for the future development of the campus.



UW Tacoma: A Campus of Trees & Glass





Samantha Eilert

Campus Urban Design Approach

University of Washington Tacoma: A Campus of Trees & Glass

With my design approach, I am looking to lean into the character and personality of Tacoma. Tacoma has an old growth forest within it's city limits (*Point Defiance*) and is well known for it's thriving glass artisty being the hometown of Dale Chihuly. As such, I am looking to abandon the viewshed that the UWT Master Plan is proposing and instead looking to create courtyards with relatively dense greenery throughout the campus to mirror the already started microforest. To lean into the glass art, I am looking to add glass overhangs to buildings and have a glass-covered public space allowing people to enjoy the outdoors despite incimate weather. Finally, I am looking to play with the topography of the site by utilizing creative architecture to move up the hill in an ADA friendly way.



Final Proposed Site Plan



1. 22 Bishopgate
London, UK
Colorful Glass Canopies

Image Courtesy of www.sedak.com



2. Old Stove Brewing
Pike Place, Seattle Wa
Rooftop Plaza

Image Courtesy of www.oldstove.com



3. Paddington Central
London, UK
Green Amphitheatre

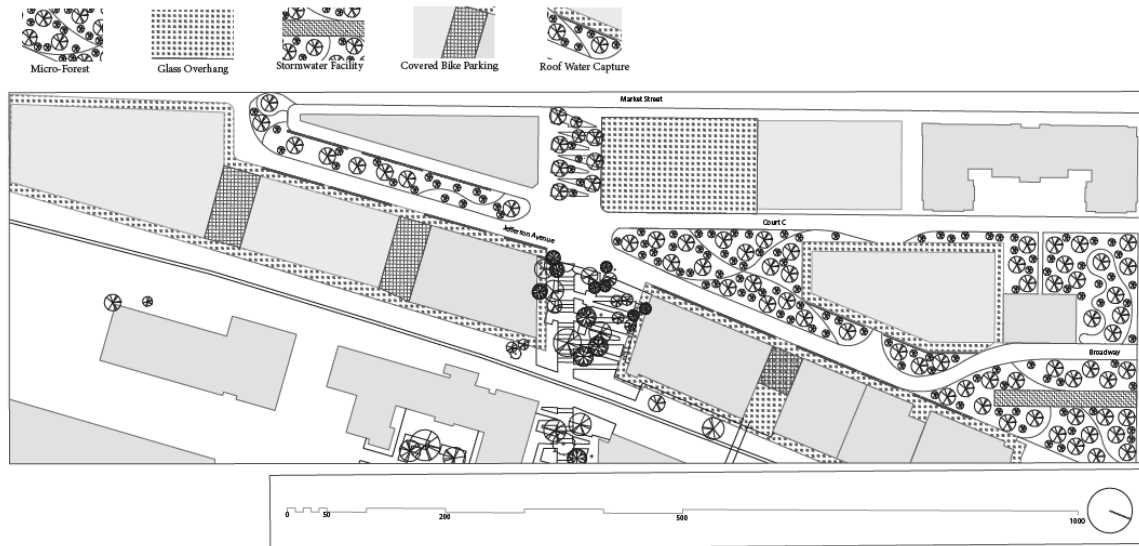
Image Courtesy of www.gillespies.co.uk



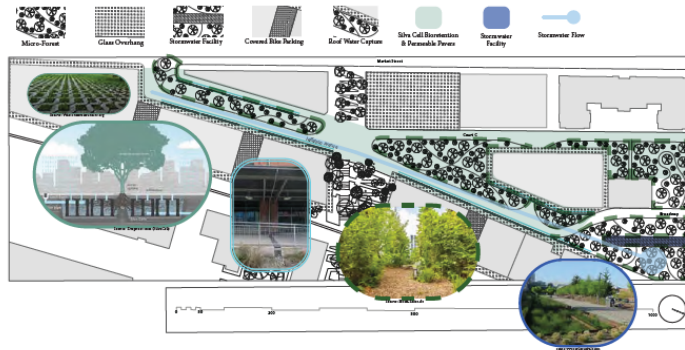
Samantha Eilert

Jefferson Urban Design Approach

First Iteration of Jefferson Design (*Pre-interdisciplinary work*) :
Maximizing Green Stormwater Infrastructure with Microforests

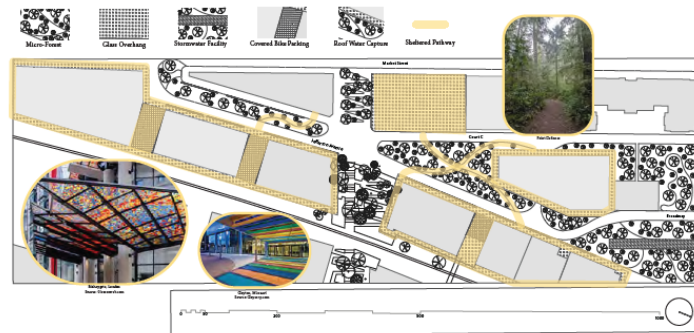


Jefferson: GSI Strategy & Rain Movement

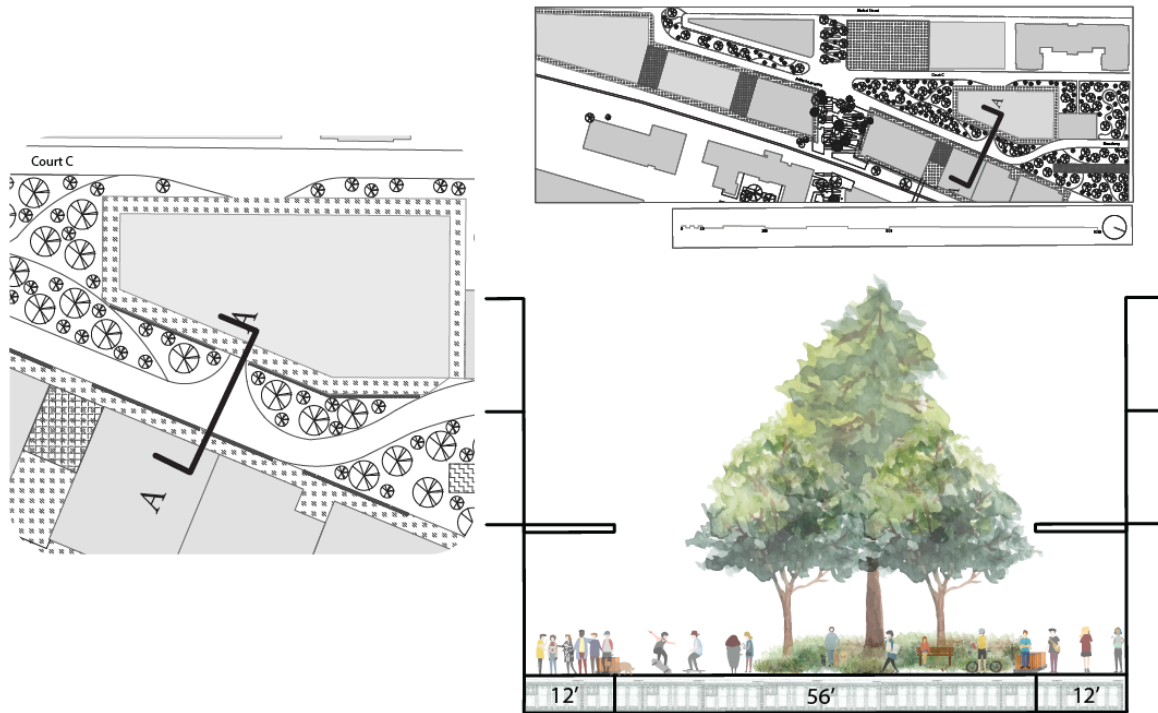


For this project, we were tasked to create a design before getting feedback from our Civil Engineering counterparts. The only constraints on the design were that it maximized GSI while maintaining ADA accessibility and emergency vehicle access.

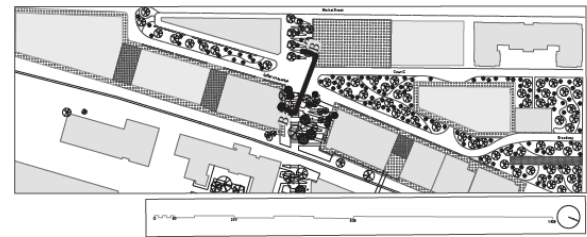
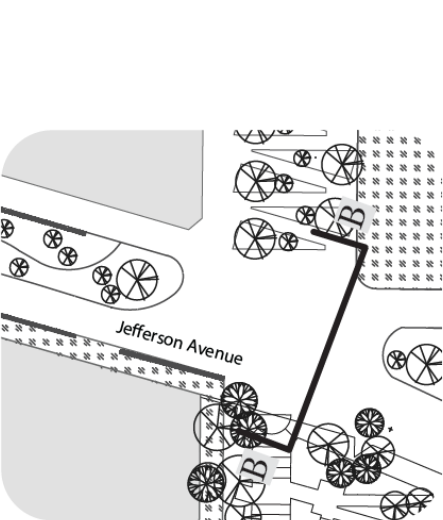
My design leaned heavily on extending the microforest currently implemented on the Northern end of Jefferson throughout the entirety of the site. I found a new technology called SilvaCells by Deeproot that allows tree plantings above underground pipe infrastructure



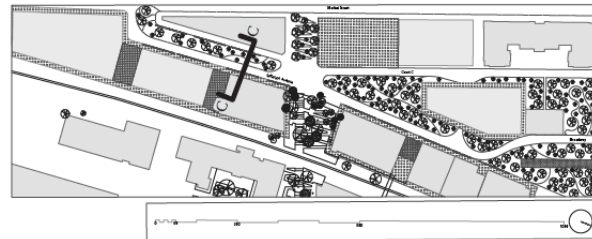
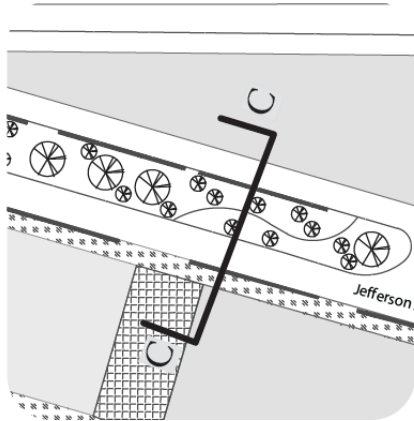
Jefferson Section AA



Jefferson Section BB



Jefferson Section CC

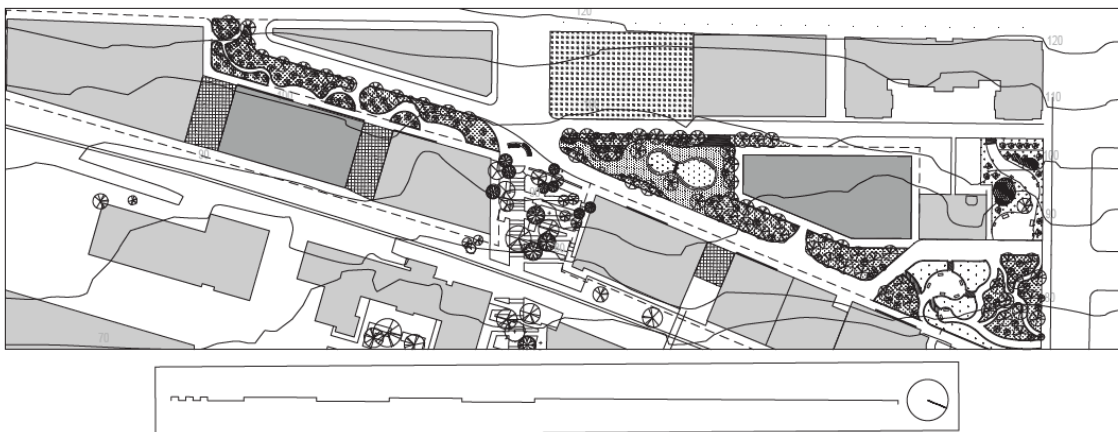




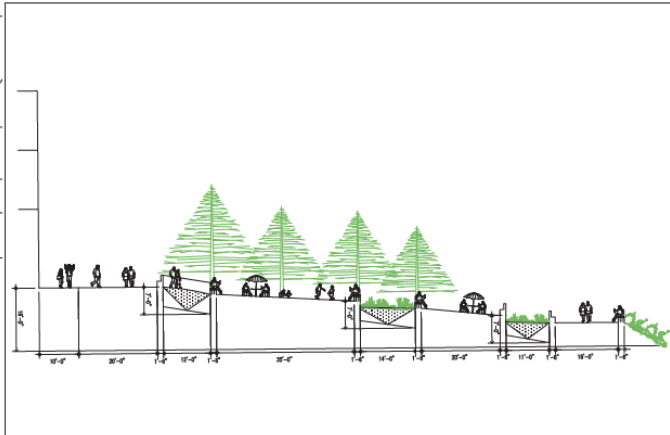
Samantha Eilert

Jefferson Urban Design Approach

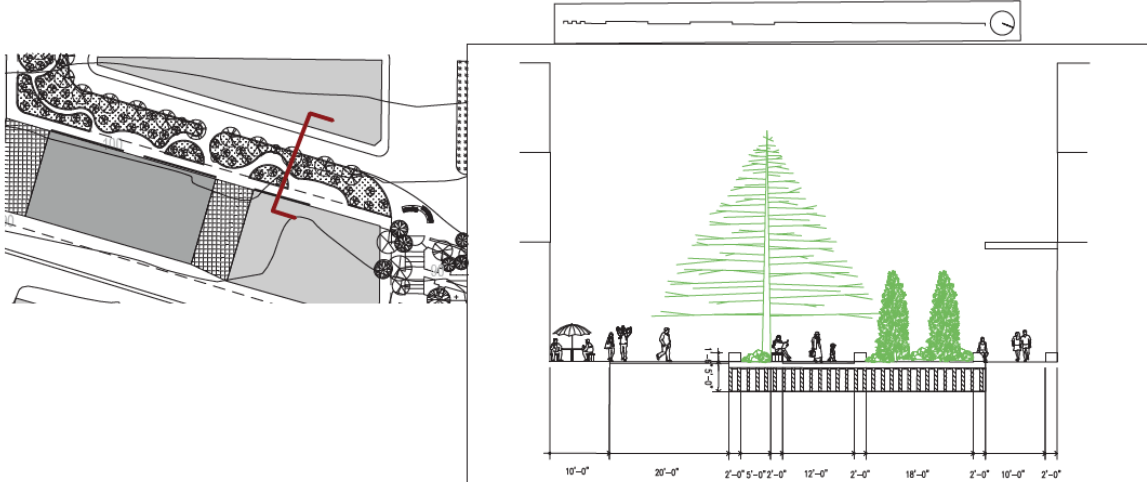
Second Iteration of Jefferson (*Working with the Civil Engineers*):
Maximizing Green Stormwater Infrastructure with Microforests & a Constructed
Wetland



As we worked with the Civil Engineers, the idea of creating a constructed wetland was formed as an option to both capture stormwater but also capture excess water flowing out of the hill from the shallow water table in the hillside.



Additionally, as we worked with the Civil Engineers, we found that the microforest strip on the Southern end of Jefferson would be better suited on the Western side of the road as that is where the stormwater currently collects.





Samantha Eilert

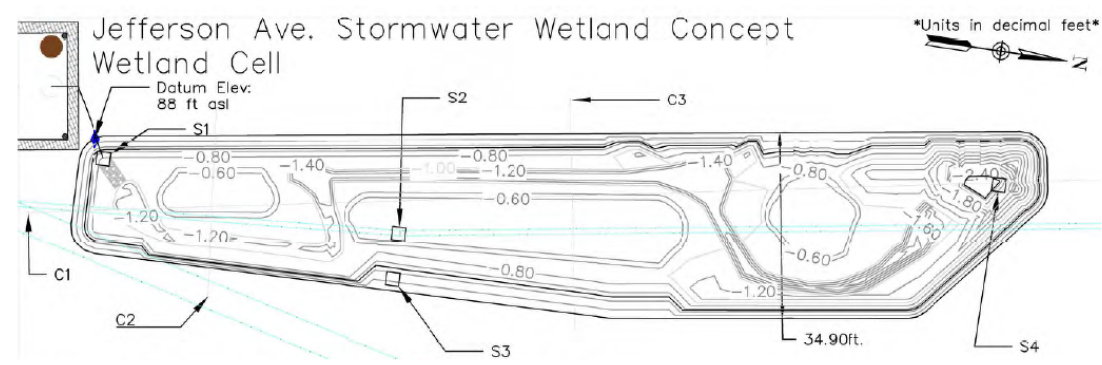
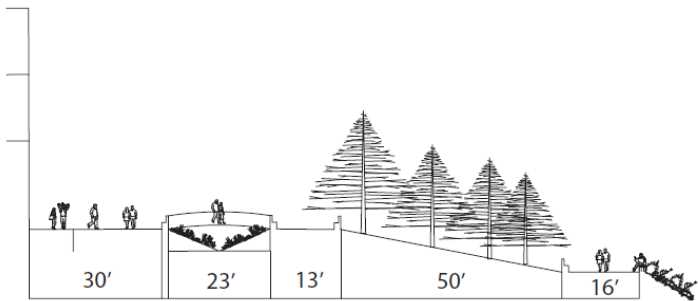
Jefferson Urban Design Approach

Final Iteration of Jefferson (*Working with the Civil Engineers*):
Maximizing Green Stormwater Infrastructure with Microforests & a Constructed
Wetland



Rendered Site Plan Courtesy of Nam Cao

As Justin Ray, my civil engineering counterpart, went to design the technical details of the constructed wetland, he found that the initial shape we designed could not work with the grading required for the wetland to function properly. As such, we changed the design to fit functional parameters.



Wetland Design courtesy of Justin Ray



Samantha Eilert

Campus Urban Design Approach

University of Washington Tacoma: A Campus of Trees & Glass

As I developed my Urban Design Framework into a more detailed site plan, I expanded the focus on Green Stormwater Infrastructure from the Interdisciplinary work done on Jefferson and played with the topography to provide various ways for a pedestrian to move up the hill.



Final Proposed Site Plan



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London, UK
Colorful Glass Canopies

Image Courtesy of www.sedak.com



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Pike Place, Seattle Wa
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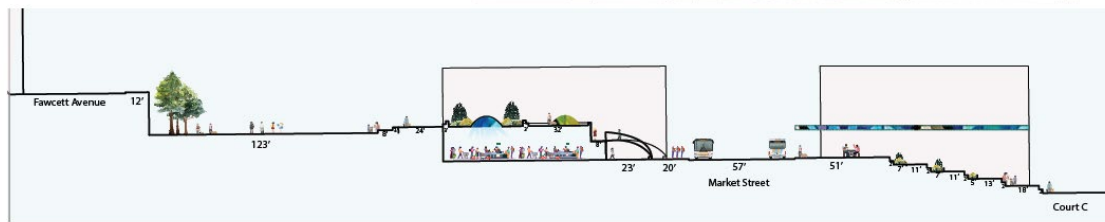
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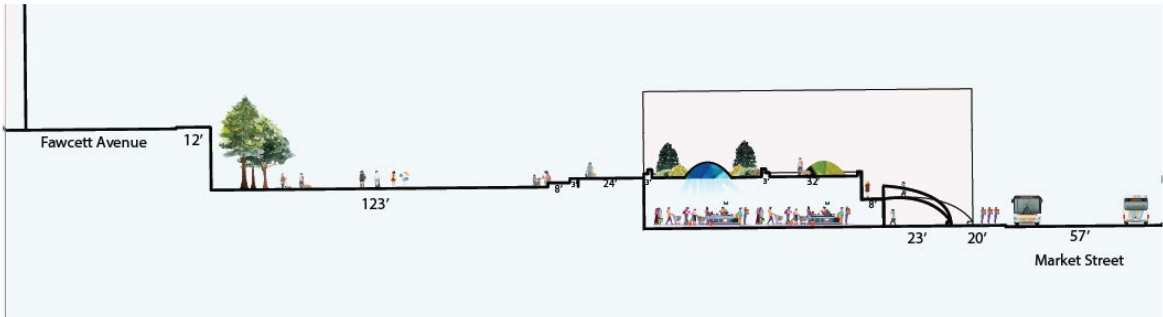
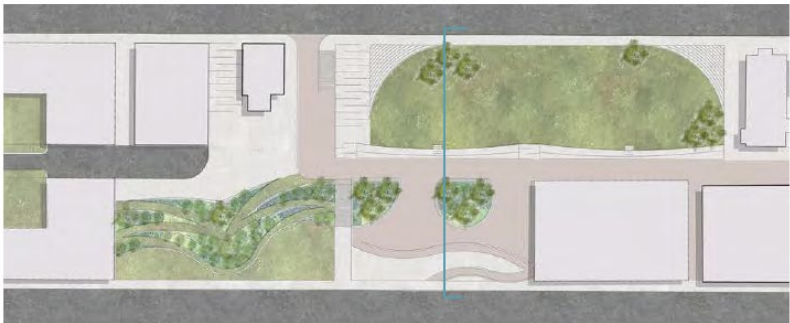
Field, Market, & Terrace Section Cut

As I was looking to utilize the hillside creatively, I chose to elevate a lower level of campus (between Market St. & Court D) by creating a rooftop plaza above a one-story building which I'm proposing to be a grocery store. This will be the heart of the community core of campus. As this area of Tacoma is a food desert, this will provide a much needed service to both students and the lower income residents of the area. The field next to Fawcett will be sunken 3' so the area can act as a cloudburst strategy. East of Market St. will be the student core of campus as this is where student housing and dining will be located. I created a green terrace with a glass overhang jutting out of the student housing building. This will provide students an area to gather and enjoy the outdoors despite incimate weather.

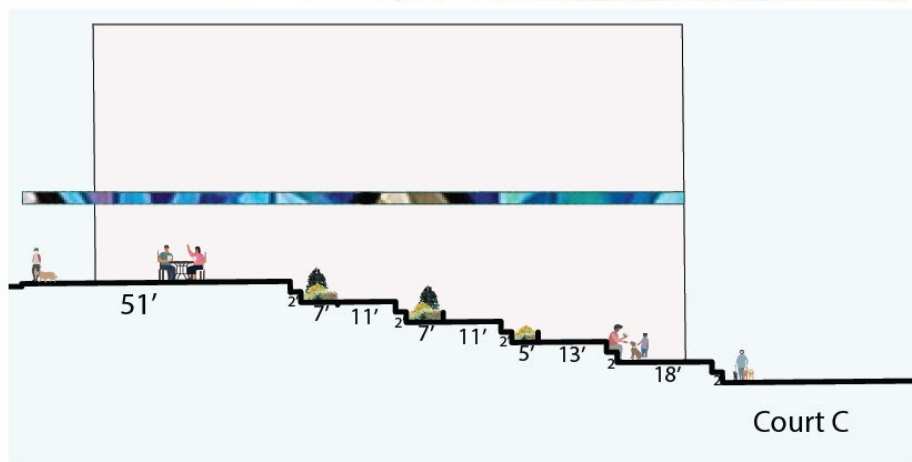
Stormwater Runoff



Community Core Section Cut: Cloudburst Field & Market



Student Core Section Cut: Green Terrace



Student Core Section Cut: Green Terrace & Plaza

