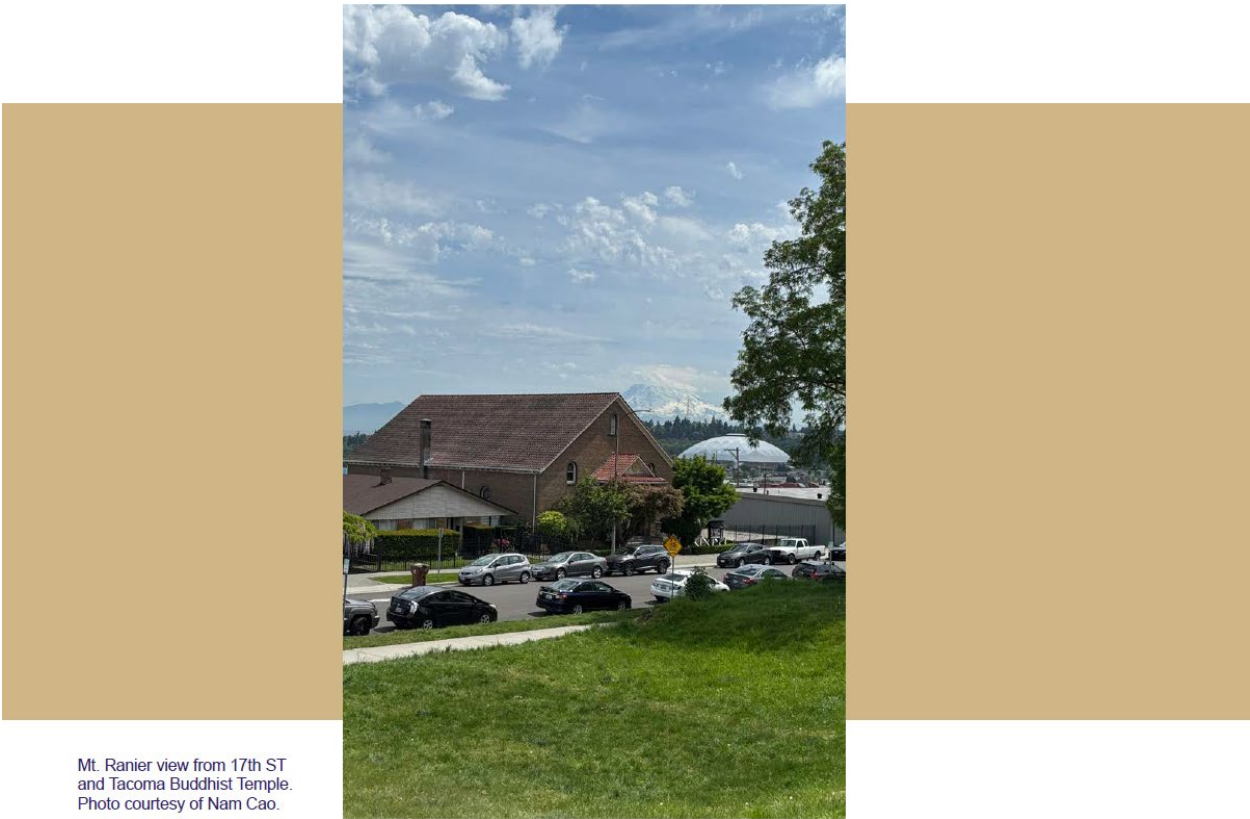


CAPSTONE REPORT

URBAN DESIGN

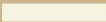
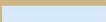
NAM PHUONG CAO
School of Urban Studies
June 2026



Mt. Rainier view from 17th ST
and Tacoma Buddhist Temple.
Photo courtesy of Nam Cao.



CONTENTS

	INTRODUCTION - COLLABORATIVE WORKS
	SITE ANALYSIS
	EXISTING DRAWINGS
	COMMUNITY ENGAGEMENT
	URBAN FORM ANALYSIS
	URBAN DESIGN FRAMEWORK & CASE STUDIES
	INTERDISCIPLINARY & AUTOCAD COLLAB PROPOSAL
	INDIVIDUAL DESIGN PROPOSAL

OFFICIAL MASTER PLANNING PROCESS

Official Master Planning Process

Engagement Timeline



Phase 1: Analysis and Engagement

- Define needs and goals through interviews and stakeholder sessions
- Analyze existing conditions, challenges, and opportunities
- Identify key uses, adjacent, and campus systems
- Produce a feedback report

Phase 2: Framework Development

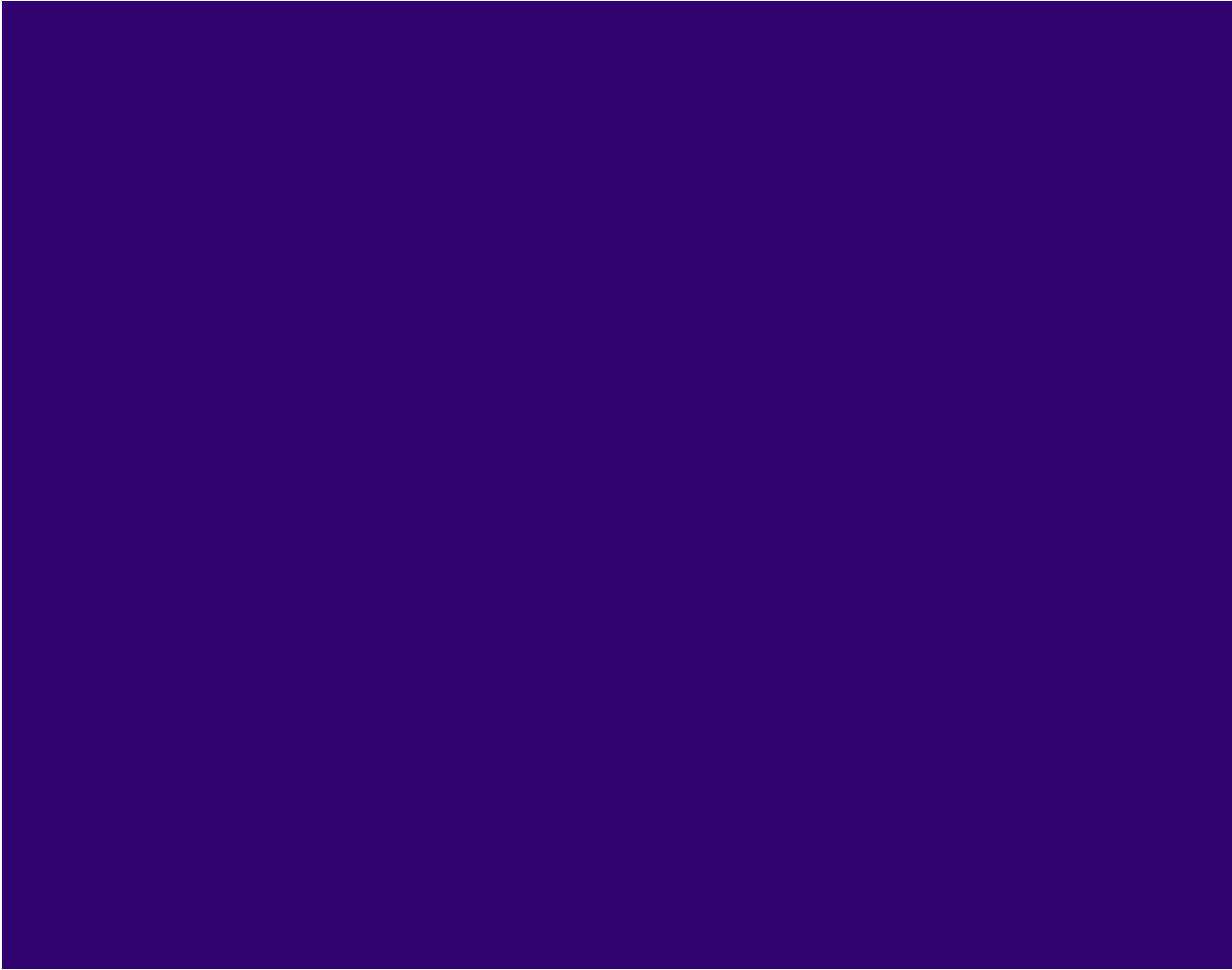
- Develop key planning strategies and a planning framework
- Present concepts to stakeholders and gather feedback
- Build consensus around a shared vision
- Produce a draft framework plan

Phase 3: Plan Refinement and Final Delivery

- Refine the framework based on feedback
- Finalize recommendations and campus visions
- Produce the final campus master plan



Photo courtesy of University of Washington Tacoma Campus Master Plan

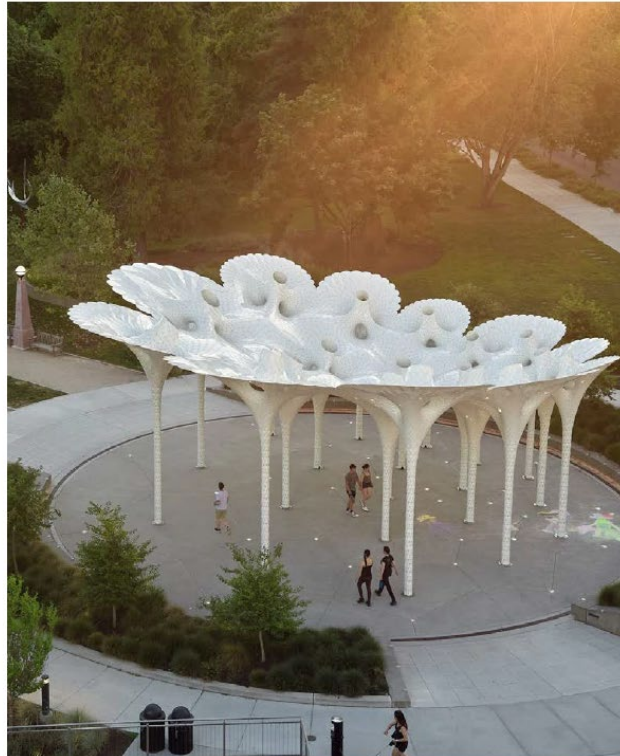


In this year-long project, our cohort selected four main topics of interest while analyzing and critiquing the University of Washington Tacoma Master Plan. The four key issues we decided to focus on are:

- Public Spaces and Tacoma Rain Problem
- Hill Accessibility Problem
- Car & Parking Problem
- Stormwater Pollution Problem

Luke Keser and I chose to work on the Public Spaces and Tacoma's Rain Problem topic because of our interest in using public space design to provide shelter for students and community members during Tacoma's rainy seasons. We also wanted to address the master plan's depiction of year-round sunny weather, as presented by B.I.G., which does not accurately reflect Tacoma's climate.

As future development based on the master plan moves forward, many of the mature trees surrounding the UW Tacoma campus may be removed. The plan currently provides little information regarding the preservation of existing trees or efforts to protect them. Therefore, my focus within this group will be on maintaining natural canopy coverage and exploring ways to preserve these mature trees while still achieving one of the master plan's primary goals: creating a green corridor that frames and enhances views of Mount Rainier. By balancing environmental preservation with campus development, the project can better support sustainability, biodiversity, and the overall quality of public spaces on campus.



Piloti Installation by MARC FORNES / THEVERYMANY in Bellevue, Washington.
Photo courtesy of MARC FORNES / THEVERYMANY.

ANALYSIS FINDINGS

To produce the maps for my topic of interest, Public Spaces and Tacoma Rain Problem, I went outside and collected real-time data on the coniferous and broad-leaf trees present on campus. Below is my analysis of the impacts of removing all mature trees if the proposed plan does not prioritize preservation:

- The original Mountain View proposal requires the removal of nearly all mature trees within the view corridor. It prioritizes view access but significantly reduces existing tree cover, which is valuable for shading, stormwater management, and overall environmental health.
- In contrast, finding an alternative approach to the view zone preserves most mature broadleaf and conifer trees, offering a more environmentally responsible strategy while still maintaining opportunities for mountain views. This approach suggests exploring design solutions that balance view access with the preservation of existing trees, rather than relying on extensive tree removal.



Proposed New Campus Gateway Perspective.
Photo courtesy of Nam Cao, taken in October, 2025.



B.I.G Proposed Site Plan.
Photo courtesy of University of Washington Tacoma
Campus Master Plan.



This map highlights the tension between tree preservation initiatives and the proposed Mt. Rainier view corridor on campus planning.

ANALYSIS FINDINGS

Due to Tacoma's industrial history, many areas of the city have been affected by contaminants such as arsenic and lead across more than 1,000 square miles. Downtown Tacoma has also experienced soil and groundwater contamination from petroleum hydrocarbons, solvents, and other industrial chemicals. As a result, selecting appropriate tree species is crucial.

- Broadleaf trees such as poplars and ginkgo are preferred due to their resilience and their ability to support phytoremediation by absorbing and accumulating heavy metals in their tissues.
- Given the site's historical connection to Japan and Japanese heritage, the use of ginkgo trees can also help reinforce the site's environmental and historical connection.
- More details on the proposed tree species will be presented on the next page, focusing on their ability to phytoremediate underground contaminants and store them in their tissues, leaves, bark, and roots.



Douglas Fir
Pseudotsuga menziesii



Allee Elm
Ulmus parvifolia 'Emer II'



Eastern Cottonwood
Populus deltoides



Ginkgo Biloba
Ginkgo



Poplar
Populus sp.



Bigleaf Maple
Acer macrophyllum



Green Ash
Fraxinus pennsylvanica



Pacific Willow
Salix lucida

Existing Campus Vegetation.
Photo courtesy of University of Washington Tacoma Campus Master Plan.

Potential Campus Vegetation Planting.
Photo courtesy of University of Washington Tacoma Campus Master Plan.



The main soil contaminants in Tacoma are arsenic and lead from the former ASARCO copper smelter, and petroleum hydrocarbons, solvents, and volatile organic compounds from historical industrial activities.

TREE RESEARCH FINDINGS

My research on tree species focuses on identifying those capable of phytoextracting and accumulating heavy metals. The species identified below have been shown to absorb and store heavy metals in their tissues, including leaves, bark, and roots. Poplar is often considered a strong candidate for planting in contaminated sites due to its effectiveness in phytoremediation. However, according to the City of Tacoma Urban Forest Manual, poplar and willow are listed as prohibited tree species due to their aggressive root systems and weak wood structure. As a result, this page focuses on pre-approved species that still provide strong environmental benefits.

More tree species: <https://bit.ly/3SxsTaE>

-  Native to PNW
-  Deciduous
-  Evergreen
-  Fall Color
-  Fragrant
-  Phytoextraction



Bald cypress



Ginkgo biloba



Silver linden



Small-leaved linden



Smooth cypress



Vanderwolf's pyramid



Standing ovation serviceberry



Baker cypress



TREE RESEARCH FINDINGS

- The use of fragrant tree species is also considered as a wayfinding strategy for visually impaired individuals. In addition, the incorporation of native plant species is prioritized to support local ecology and biodiversity.
- Additional findings highlight several native plant species that are also capable of phytoextraction, including Indian mustard, Indian grass (*Sorghastrum nutans*), and sunflower (*Helianthus annuus*).



Indian mustard (*Brassica juncea* L.)



Indian grass (*Sorghastrum nutans*)



Sunflower (*Helianthus annuus*)



Alpine Pennycress (*Thlaspi caerulescens*)



Native Medicinal Garden Reference



Western red cedar: leaves



Oregon Grape: roots



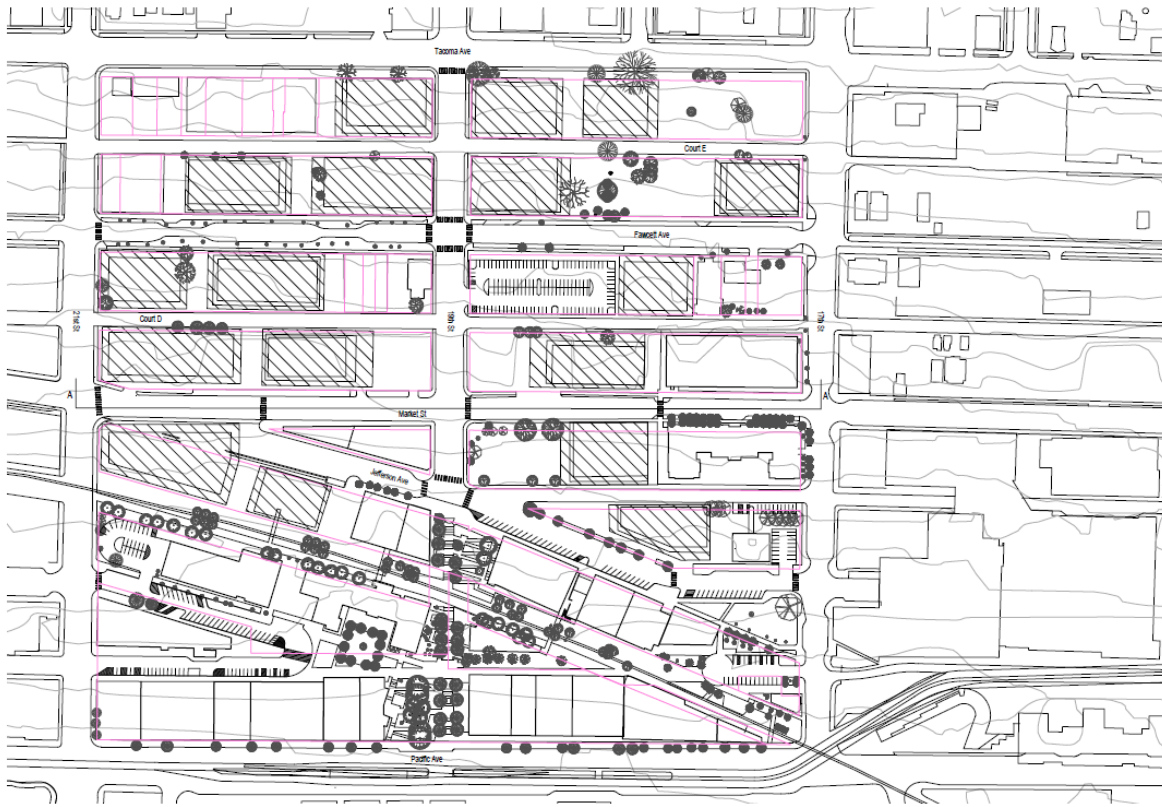
Oregon Grape: berries and inner bark



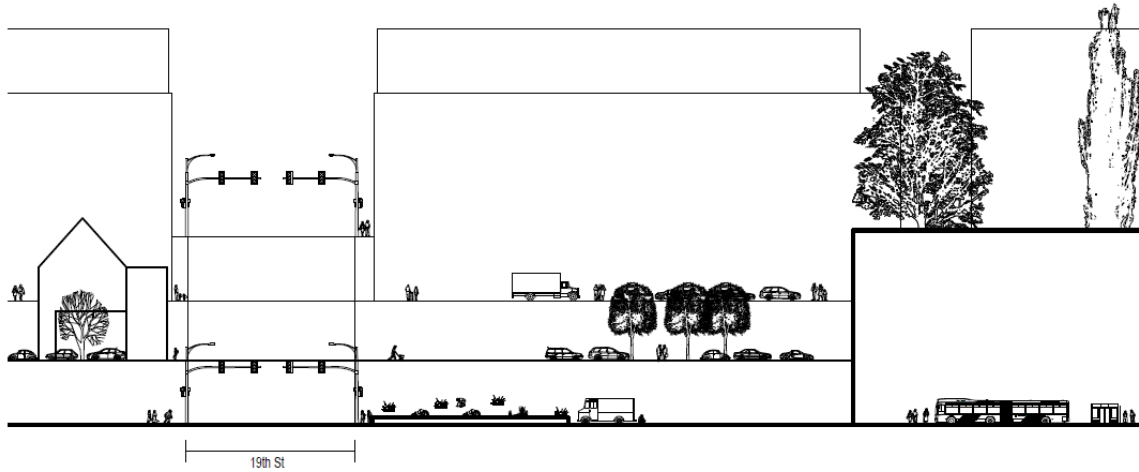
Elder: elderberry



EXISTING DRAWINGS



UW Tacoma Site Plan Showing Buildings from the Master Plan and Existing Trees



Section AA: View from Market Street Looking Toward 19th Street





A View of Jefferson Avenue and Swiss Building
Photo courtesy of Nam Cao, taken in May 2026.

COMMUNITY ENGAGEMENT

Community Engagement Preparation

UWT: COLLEGE OR PARKING GARAGE?!

Hello! We are Urban Design Seniors looking to understand your commuting habitat!

We are currently critiquing the 2025 UWT Master Plan for our Capstone project. We want to give you the opportunity to make your voice heard in shaping the next campus master plan and to ensure that student perspectives are included in future improvements.

Our project explores cleaner alternatives, like bike-share systems and other sustainable mobility options.

We want to hear from you about your commute to campus to rethink the parking strategy and design a quieter and pedestrian-friendly campus.

If you fill out the survey you'll have a chance to win one of two \$25 gift cards. The survey will close on **January 31st, 2025**. Responses are anonymous.

Stop by our design focus group in **Husky Commons** on **January 22nd, 2025** from **11:00 AM-6:00 PM** to share what you want to see on campus.

If you have any questions about this class project, please contact our professor, Sara Safaweh at ssafaweh@uw.edu

Join at www.menti.com | use code: 4738.6202

UWT: STUDENT TRANSPORTATION SURVEY

Go to
www.menti.com

Enter the code
4738 6202



Or use QR code



Google Forms and Mentimeter surveys, designed by Nam Cao

1	Professor	Class	When	Dates	Time	Week	Notes	Classroom
2	Jennifer Han	ENOC 265	TH	12.34.16	11:00-12:00	Second week	need to confirm if we (28th)	
3	Arnell Venema	Cred	TH	10	340-420	Second week	on fri	TPS 301
4	Ronald San	Alonso	T TH	9.8.13.15	20.22	340-540		Jay 305
5	Heating						willing to give qr code to students	send survey
6	McGowan						has good students - on Saturdays	send survey
7	mei luo	So					first class the 24th - will send qr code	
8	Taillon	TURB 345 & TCMP 572	T	13	340pm	Second week	willing to give students online survey to complete - can create intro video for them to watch to get background.	DCU 306 & TPS
9	Lund	OE 312A, 311A, 312D	MTW	5.6.7	6:35 - 445	first week		301
10	McIntyre	ENR 395	T TH	13.15	3610-1210	Second week	needs to tell me when she teaches	whitney building
11	Mauw		W	7	500-1000	first week		Doc 300
12	Ernie Hase	User centered design	T Th	3610 & 130				
13	Pigano	Engineering ethics (2 sections)						
14	Overingner						doesn't know dates yet - send reminder jan 2 if email scheduled	
15	Osato		T Th	3610				
16	Hesterman	TURB 301	T Th	136-330				
17	Orsler	graduate	TH	330	second week	first	can come any session but the first	
18	Neta							
19	Rubin							
20	Su	TPSCH 209	TH	9	3610 - 1210	Second or third week		send survey and video
21	Forman	TCORE 114B & TPOL 230						
22	Cass	ENR 395 & 211	T	1:30 - 330	340 - 540			eng 309
23	Morgan Heather	hazid	TH	140				eng 110
24	Ericson	ENR 345	W	21st	2:45 - 6:15			put something on their campus site.
25	Ford	ENR 345	W	140				40 mechanical engineers

Rapid in-class survey schedule, organized by Sam Eilert

Community engagement flyers, designed by Ariana Perez

For our community engagement planning, the cohort decided to focus on parking and public transit problem, selecting this topic from the four areas of interest identified at the beginning of the quarter. During our critique of the master plan, we observed that it proposes 11 parking structures while also depicting shared streets in its illustrations. We found this approach contradictory, as the increased traffic generated by the parking structures could undermine the functionality and pedestrian-friendly nature of the shared streets. As a result, we chose to explore alternative solutions to resolve the parking problem.

Our classmate, Ariana, estimated that the proposed 11 parking structures would require approximately \$101.8 million in investment. This prompted us to consider whether those resources could be directed toward more sustainable transportation options. As part of this exploration, we investigated strategies such as improving public transit services and proposing an e-bike lending library to reduce parking demand and encourage alternative modes of transportation.

Community Engagement in Progress



Photos courtesy of Bara Safarova

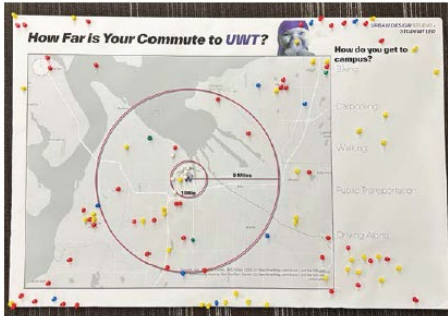


During the first three weeks of the Winter Quarter, our project manager, Sam, tasked us with visiting classes across different majors to present our Mentimeter survey, collect real-time feedback, and promote our main community engagement event at Husky Commons on January 22, 2026. We also set up an outreach table near the YMCA entrance, where we spoke with UW students, distributed flyers for our online survey, and encouraged participation in the upcoming event.

As part of our engagement goals, each team member was expected to conduct and record interviews with at least ten individuals. However, we found that this approach was not effective in practice. Instead, we shifted to taking detailed notes during conversations with participants at our focus group event at Husky Commons. This method allowed us to capture valuable feedback while creating a more comfortable and natural environment for discussion.

COMMUNITY ENGAGEMENT FINDINGS

Community Engagement Results



After finalizing the data, we found that 169 students responded to the online survey and 320 students participated in the in-class rapid survey. The results were expected, as more than 72% of students live outside a 5-mile radius. When asked why they choose to drive alone, 30% answered living too far away, while 25% answered convenience as the primary reason.

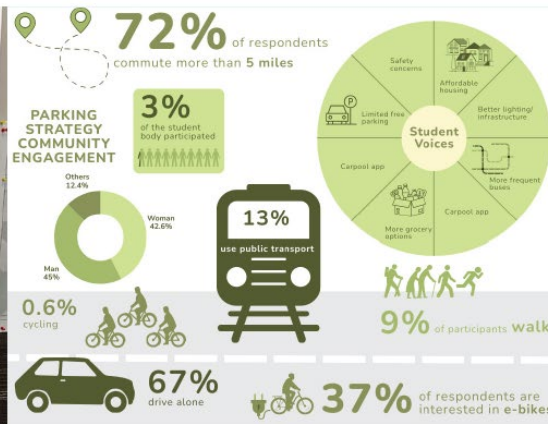
One unexpected finding was that students who live farther from campus appeared to be more open to alternative modes of transportation than

Zachariah, who was responsible for analyzing the online survey data, categorized the student population into three primary archetypes:

- Drive Alone: Open to Transit
- Drive Alone: Open to Biking
- Drive Alone: Not Open to Options



Results captured by Nam Cao



Visual communication made by Nam Cao



Word Cloud data from Mentimeter

Community Engagement Results

Another idea that emerged during the planning process was the creation of an e-bike library, inspired by the e-bike lending program at Portland State University. To gauge student interest, we asked UW Tacoma students whether they would be interested in accessing an e-bike library. In the online survey, 67 out of 169 respondents indicated that they are interested. In the in-class rapid survey, 32 out of 320 students responded "yes," while 57 out of 320 responded "maybe."

These results were somewhat unexpected and suggest that there may be demand for an e-bike lending program on campus. This finding could provide a foundation for future cohorts to launch a pilot program and evaluate its potential to influence commuting behavior and reduce reliance on single-occupancy vehicles.

Community Engagement: Main Archetypes & Common Issues Raised

Drive Alone: Open to Transit

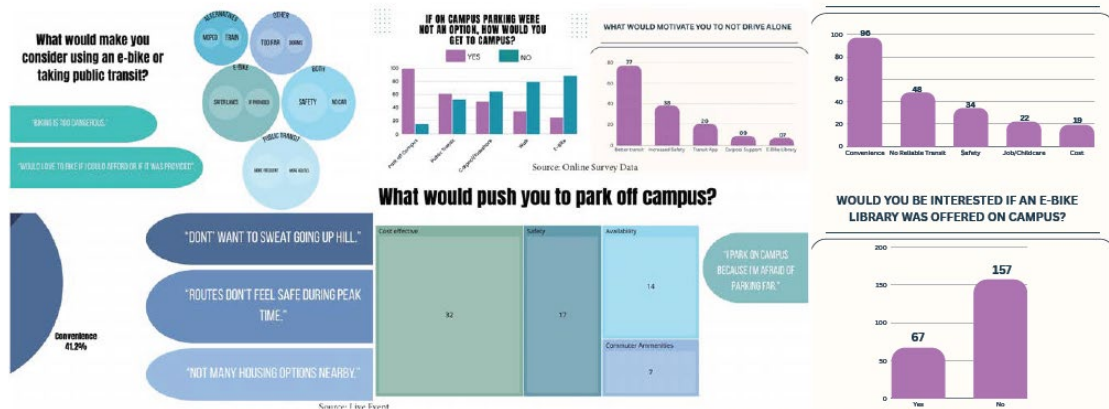
- Poor & unreliable transit options
- Poor safety perception of public transit
- Lack of public transit knowledge

Drive Alone: Open to Biking

- Tacoma has low safety perception
- Unsafe biking infrastructure
- Lacking safe bike storage

Drive Alone: Not Open to Options

- Safety Concerns
- Other responsibilities requiring flexibility





URBAN FORM ANALYSIS

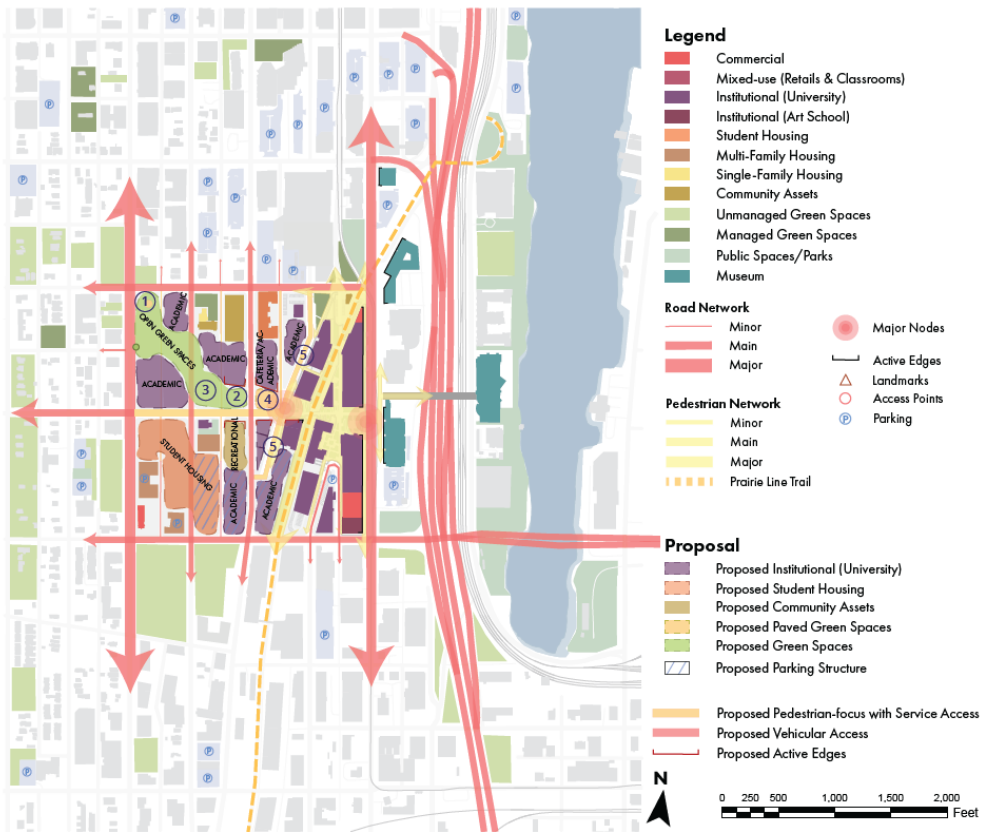


Legend

Commercial	Major Nodes	Road Network
Mixed-use	Active Edges	Minor
Institutional (University)	Landmarks	Main
Institutional (Art School)	Access Points	Major
Student Housing	Parking	
Multi-Family Housing		Pedestrian Network
Single-Family Housing		Minor
Community Assets		Major
Unmanaged Green Spaces		Prairie Line Trail
Managed Green Spaces		
Public Spaces/Parks		
Giving Garden		
Museum		
Inaccurate Site of Japanese Language School		
Historic Site of Japanese Language School		

In this analysis, I'm focused on green spaces around the UW Tacoma campus. I noticed that there are a lot of unmanaged public spaces that need attention and care. Per the campus master plan, in order to make Tacoma Avenue an entrance to the new campus, safety and welcomeness are priorities. During the site visit, the proposed entrance didn't feel welcoming as a pedestrian.

URBAN DESIGN FRAMEWORK & CASE STUDIES



1. Pilot Installation - Bellevue, WA



2. 550 Madison Ave Garden - New York, NY



3. Piazza Matteotti Public Gardens - Castiglione Fiorentino, Italy



4. Karen Blixens Plads Public Square - Copenhagen, Denmark



5. A street in Buenos Aires, Argentina

This Urban Framework serves as a guiding structure for my capstone journey, helping to shape and inform my design decisions. It provides a foundation for achieving my project goals by organizing key strategies, priorities, and site responses throughout the design process.

Case Studies



- Provides shade and protection from both sun and rain.
- Features collaborative art installations by local artists.
- Functions as both a gathering space and a rainwater catchment system, with underground storage infrastructure.



- Provides shelter and protection from rain.
- Potential collaboration with artists from the Museum of Glass in Tacoma.
- Functions as a public gathering space.



- Green public space
- Potential to increase tree planting to reduce urban heat island effects



- Paved public space
- Provides bike shelter during the rainy season
- Potential to increase tree planting to reduce urban heat island effects



- A vision for a pedestrianized Jefferson Ave
- Tree planting using Silva Cell systems
- Improve pedestrian safety

INTERDISCIPLINARY & AUTOCAD COLLAB PROPOSAL



Jefferson Avenue Urban Design & Civil Engineering Team
Photo courtesy of Bara Safarova



19th Street Urban Design & Civil Engineering Team
Photo courtesy of Bara Safarova

Interdisciplinary Collaboration

After finalizing our community engagement process, our next step was selecting a project area that interested us most: Jefferson Avenue and GSI Maximization, or 19th Street and ADA Accessibility Uphill. Both project areas related to the four main issues we identified while critiquing the master plan.

Our cohort then presented our individual designs and was introduced to the Civil Engineering students, who would be collaborating with us during the next quarter.

Team 1: Jefferson Avenue and GSI Maximization

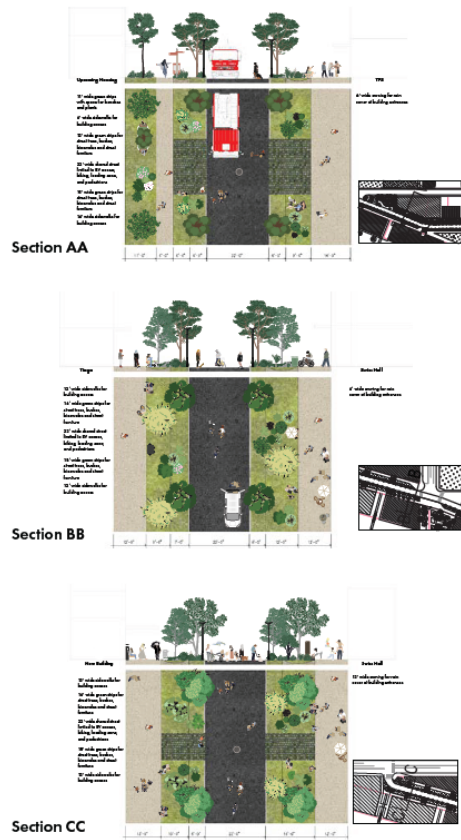
Urban Designers: Sam Eilert, Luke Keser, and Nam Cao
Civil Engineers: Hunter Antanavage, Luci Tolic, and Justin Ray

Team 2: 19th Street and ADA Accessibility Uphill

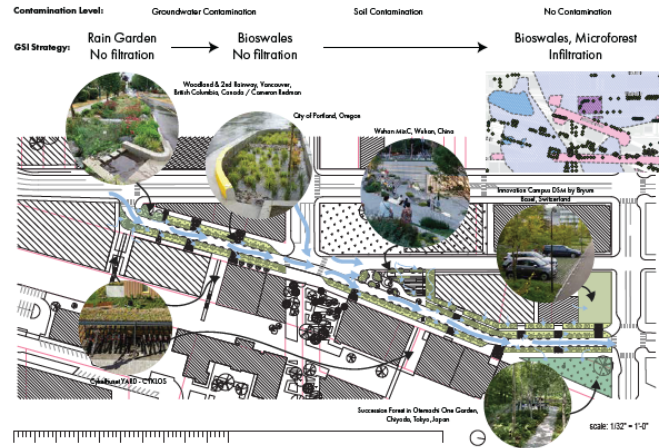
Urban Designers: Laurence Applen, Bryden Punsalan, Ariana Orcozo Perez, and Zachariah Manalese
Civil Engineers: Dennis Quiocho, Benjamin Butler, and Isaiah Beidalah

Because each team developed different proposals for their assigned street, the urban designers worked together to create a cohesive design. To streamline the process, we divided the street into sections and assigned each member a specific area to develop.

Initial Drawing



Jefferson Avenue Street Plan



This was my initial individual design for Jefferson Avenue. The proposal focused on stormwater management by using a terraced system to slow surface runoff and direct water into a series of rain gardens along the corridor. These rain gardens were intended to capture and infiltrate stormwater, allowing it to gradually seep into the ground. The design aimed to reduce stormwater overflow while improving the overall effectiveness of green stormwater infrastructure (GSI).

Hand-Over Drawings

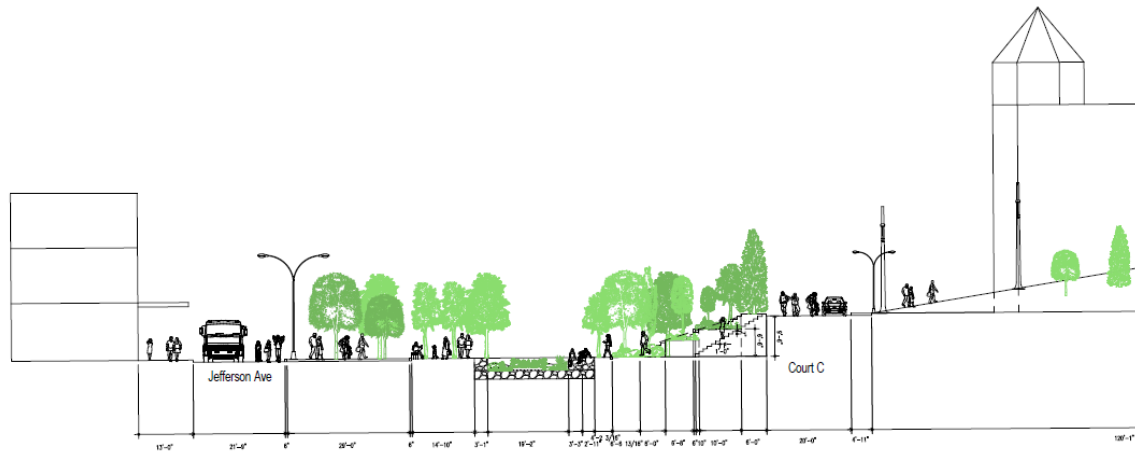


Jefferson Street Designed by Sam Eilert, Nam Cao, and Luke Keser
Site Plan Rendered by Nam Cao

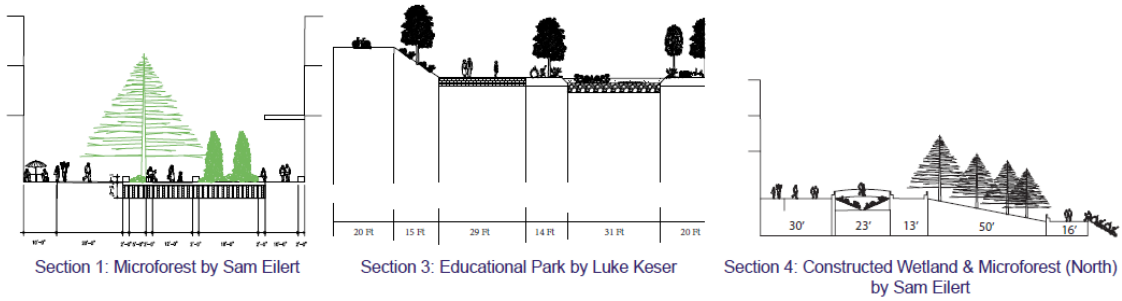
The Civil Engineering team provided valuable support through their initial findings and calculations, helping us determine whether our design ideas were feasible. For example, our Jefferson Avenue team agreed on a minimum street width of 20 feet to ensure emergency vehicle access. In my initial Jefferson Avenue team design, I proposed a GSI spiral pond/garden that would filter and infiltrate stormwater. However, calculations revealed that the site's slope would make this design difficult to implement. As a result, I revised the concept to a pond designed primarily for stormwater capture and storage.

To maximize the number of trees we could propose, the Civil Engineering team introduced the Silva Cell/StrataVault system into our design. These underground structural soil systems can manage stormwater while supporting heavy traffic loads, allowing trees to be planted near streets, utilities, and underground infrastructure without causing damage. This approach increased planting opportunities while improving both stormwater management and urban canopy coverage.

Detailed Street Design



Section 2: Decorative Pond by Nam Cao



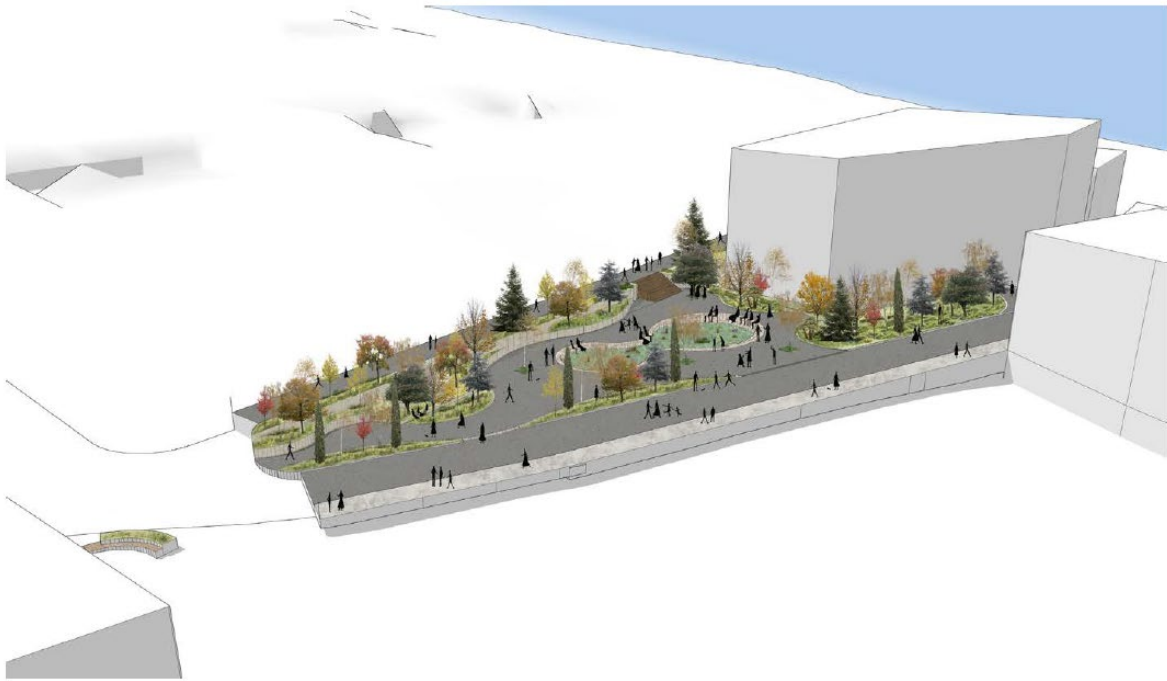


3d Rendering Of Planting, Trees, And Public-Realm Comfort During Spring And Fall Season

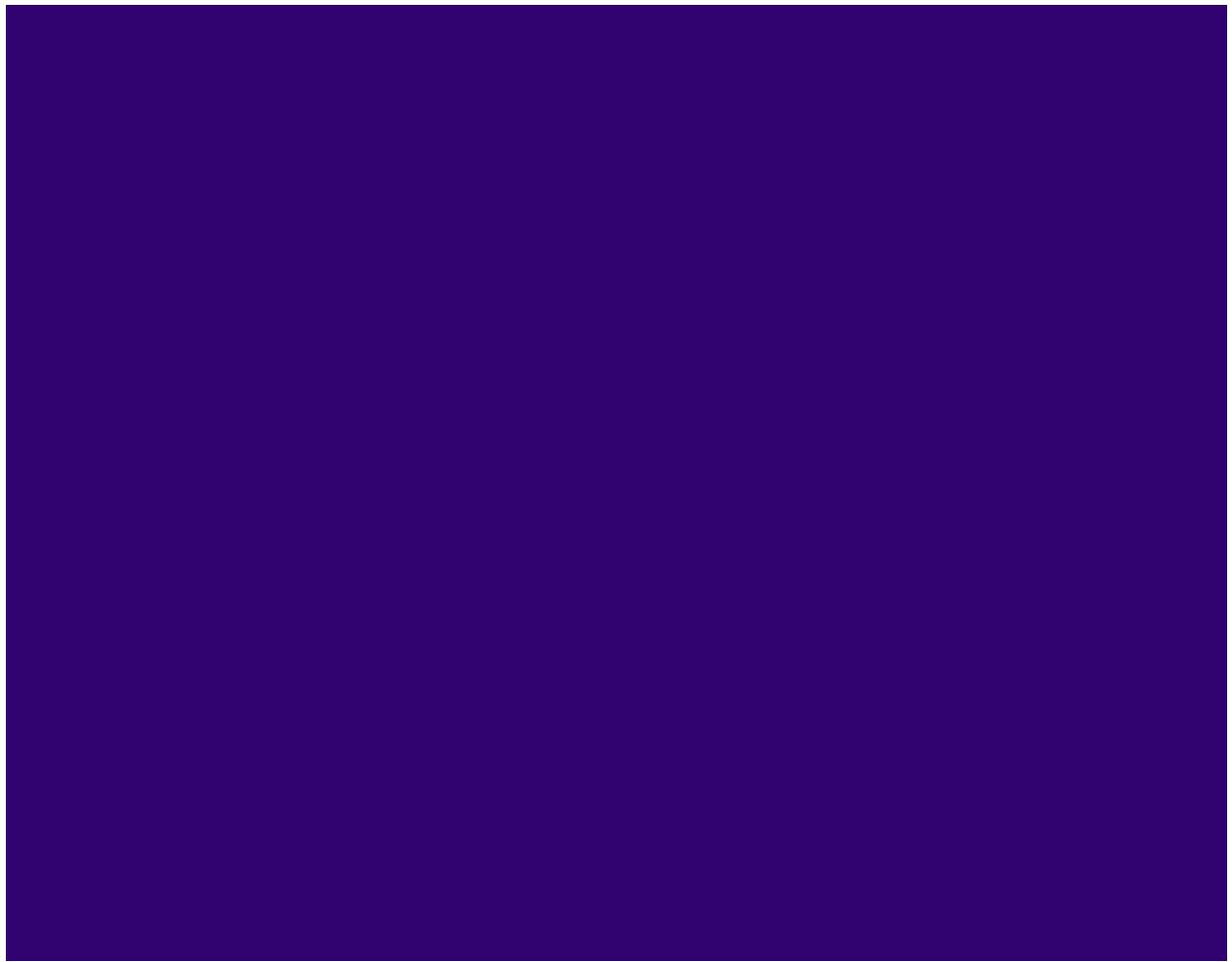


Spring Rendering





Fall Rendering





2026 Urban Design Cohort (5 of 7 students captured)
Photo courtesy of Bara Safarova



NAM PHUONG CAO

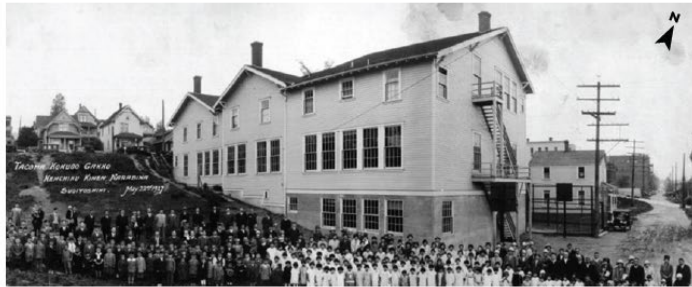
Urban Design Approach

Restoring Memory and Place

The Japanese Language School, also known as Nihongo Gakko, was a thriving community center and cultural and educational institution in Tacoma from 1911 to 1942.

The school taught the Japanese language and culture to Nisei, the second generation of Japanese Americans. During World War II, the school was forced to close in 1942 following Executive Order 9066. The building was subsequently repurposed as a registration center for Japanese Americans before they were sent to incarceration camps. After remaining vacant for more than 40 years, the structure fell into severe disrepair. Despite efforts to preserve the historic building, demolition was ultimately recommended. In 2004, the University of Washington Tacoma demolished the building, leaving only its foundation and a long-standing ginkgo tree as remnants of the site.

I chose this site to acknowledge the long-forgotten history of Japanese Americans and the significance of the Tacoma Japanese Language School. My design centers on the remaining elements of the site, including a portion of the original foundation and a resilient ginkgo tree that continues to stand today.



Original image: University of Washington Libraries, Special Collections, PPC116. Accessed via a story map shared by Mohamed Yusuf



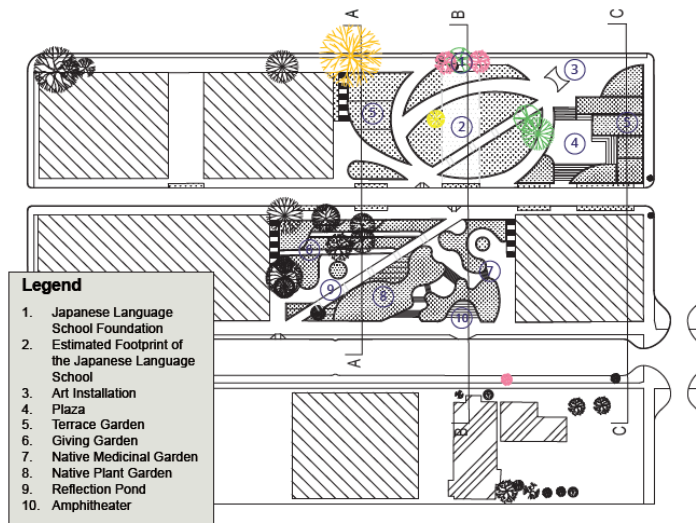
Statmets, John. "Japanese Language School." Photographs. Tacoma, Washington, 1944. From Library of Congress: Historic American Buildings Survey



Ginkgo tree and JLS foundation wall. Captured in May 2026 by Nam Cao

PROJECT PROPOSAL

If the foundation remains structurally sound, I propose engraving the site's history directly onto it. Alternatively, the historical narrative could be commemorated through carved stone markers placed throughout the site. The design also incorporates distinct paving materials to differentiate the everyday circulation path from the original footprint of the Japanese Language School, as illustrated in the 2D rendering. To encourage public engagement, wayfinding elements could be added near the existing Maru sculpture along the Prairie Line Trail, guiding visitors to the site and creating opportunities for reflection and learning. Additional interpretive artwork or sculptures could further strengthen the site's educational and commemorative value. The surrounding landscape would feature native trees and plantings to honor the Indigenous peoples of the region and acknowledge the land's cultural and ecological heritage.



Portland Japanese Garden - Portland, Oregon
The JLS site can incorporate specialized fine sand or decorative gravel, along with natural rocks, to create a serene memorial garden and distinguish it from the surrounding pathways.

Image Source: Google Images (original source unknown)



9-Story Waterfall at the Hoang Thi Loan Memorial - Nam Dan, Vietnam
A pond where passersby can pause, reflect, and learn about the surrounding environment.

Image Source: Google Images (original source unknown)



King Kong Monument by Atelier Scale
Another monument or art installation can serve as a wayfinding element, guiding visitors to the JLS site while educating them about its history.

Image Source: Google Images (original source unknown)



Giving Garden - Tacoma, Washington
Future development may displace a space that once provided food and gathering opportunities for students and the broader community. Incorporating this element into the design helps preserve that legacy and ensures that the needs of existing users are not overlooked.

Image Courtesy of University of Washington Tacoma - Giving Garden

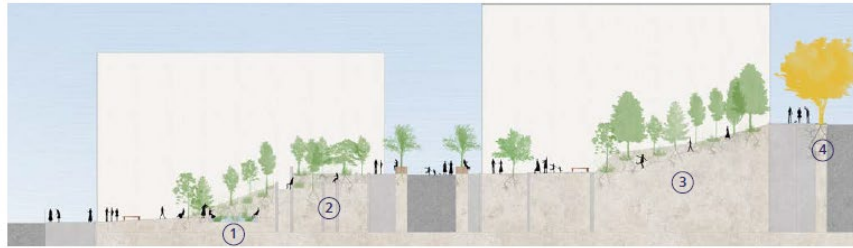


NAM PHUONG CAO

Street Sections

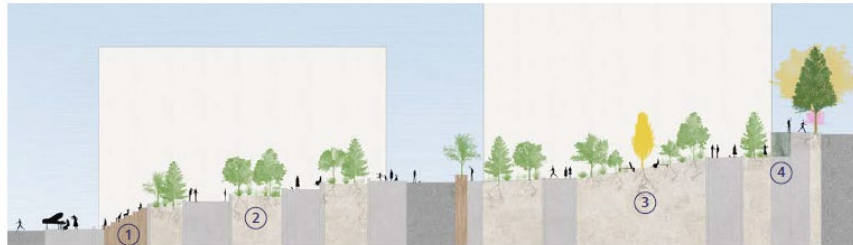
Section AA:

1. Reflection Pond
2. Giving Garden
3. Terrace Garden
4. Mature Elm Tree



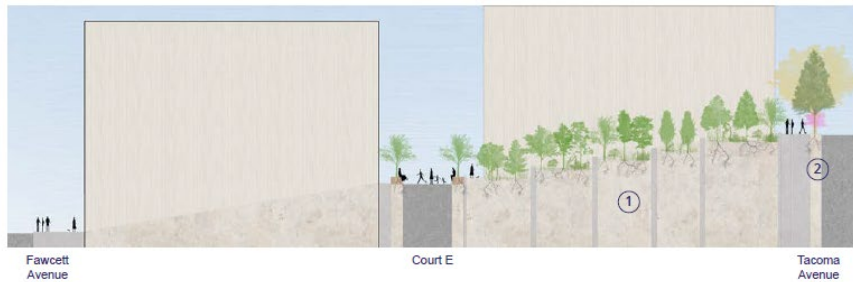
Section BB:

1. Amphitheater
2. Native Medicinal Garden
3. Ginkgo Tree
4. Memorial Stone

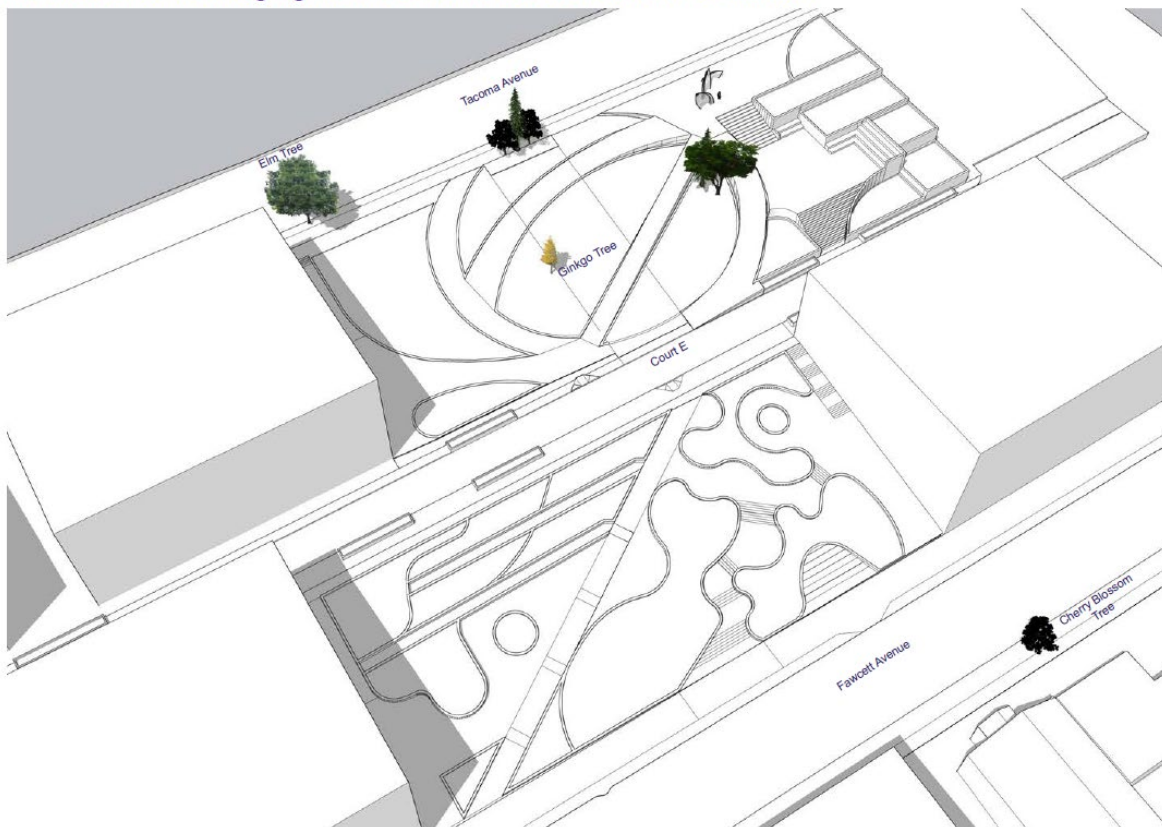


Section CC:

1. Terrace Garden
2. Elm Tree, Fir Tree, Cherry Blossom Tree



3D Model of Reimaging JLS Memorial Garden & Native Garden



2D Rendering of Japanese Language School Heritage Site



2D Rendering of the Native Botanical Healing Garden

