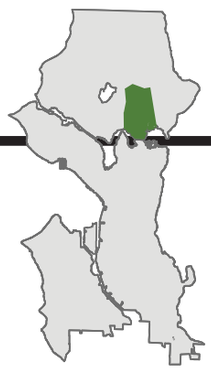
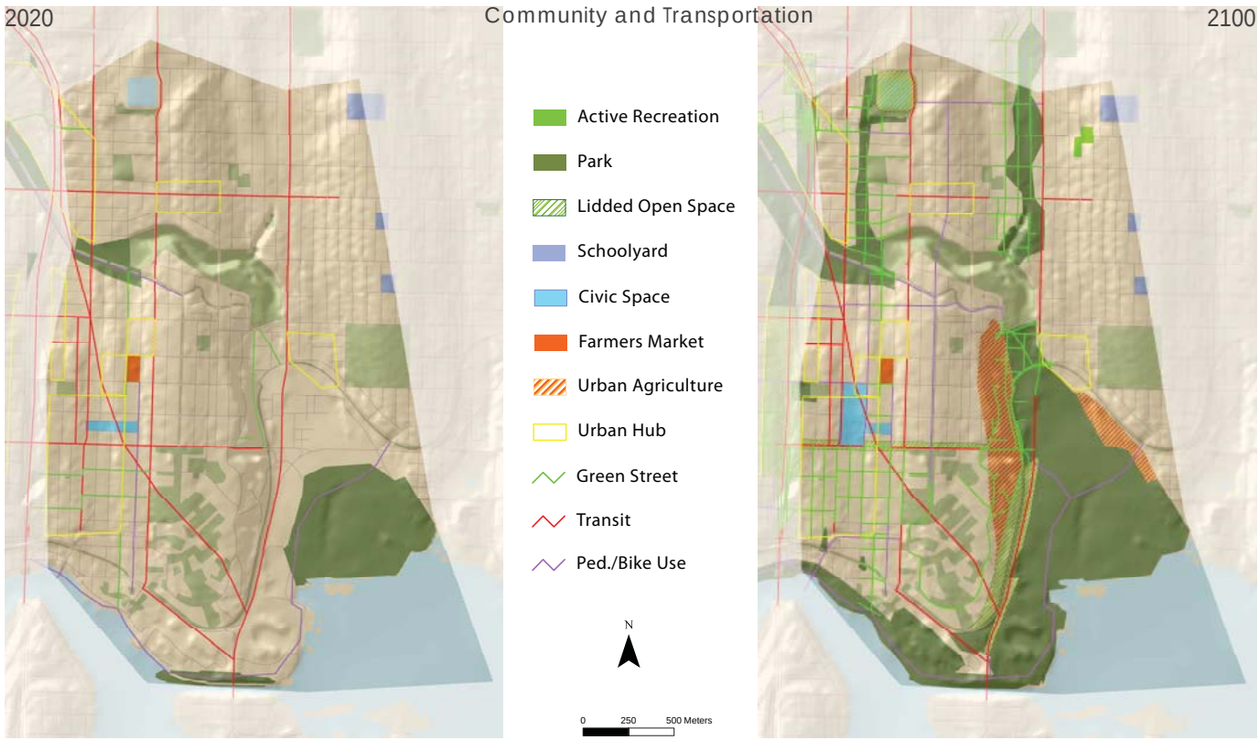
UNIVERSITY DISTRICT

Green - U



Team Leaders: Erika Matthias, Dave Rogers
Student Team Leader: Betsy Severtsen
Team Members: Jennifer Belk, Celeste Gilman, Lauren Hauck, Mary Hausladen, Caitlin McKee, Carley McNeice, Sean Tevlin, Dennis Trees, Roger Wagoner

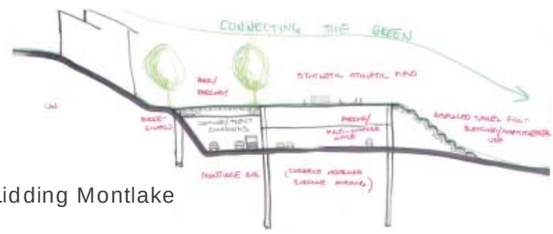
100 YEARS -- 100% GREEN FOOTPRINT



From 2000 feet above, charrette team members wanted to see the University District as an interconnected patchwork of pervious surfaces through increased traditional open spaces, green roofs, green walls, and green streets. The overall goal of the team's actions was to make the neighborhood a sustainable model for the world. With its ties to the University of Washington, this watershed is particularly suited towards experimentation with spaces and technologies that can help achieve such a goal.

An accessible waterfront

The main products of the charrette focused on planning and design interventions for open space and infrastructure. The "big moves" for our district fall under the categories of increasing open space patches, creating a transportation network that is safe for people and the environment and using spaces and technologies to promote a self sustaining community.



Lidding Montlake

Open space would be increased by:

- Day-lighting the historic Ravenna Stream and creating vegetated open spaces through this riparian corridor from Green Lake to Union Bay.
- Allowing public access along the entire waterfront
- Creating public and public/private spaces in close proximity to all residents

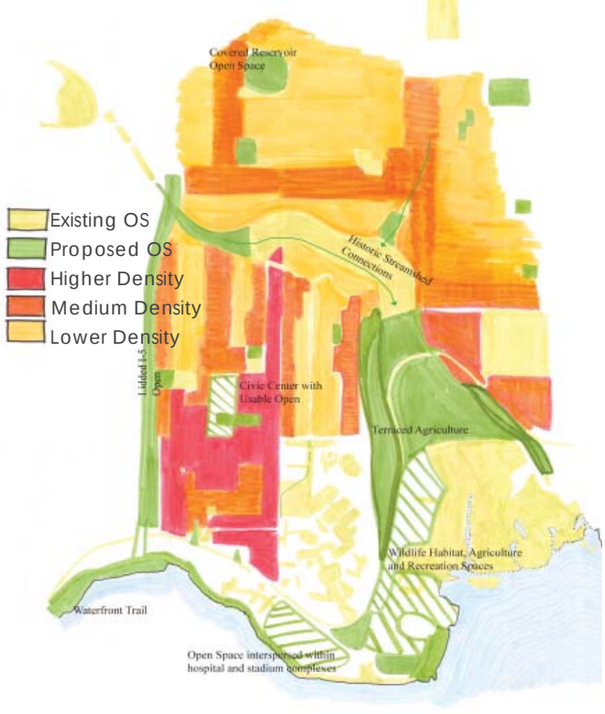
Integrating Open Space with Density

The transportation network would:

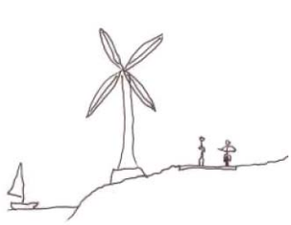
- Separate cross-town traffic (cars/buses/transit) from pedestrians (I-5, 45th Street, Montlake Avenue)
- Be made up of green streets whenever possible

A sustainable community through:

- Urban agriculture, with large scale applications terraced into the steep eastern slopes of campus to Union Bay and smaller gardens near residents through P-patches, common gardens and roof gardens.
- Energy harvesting with solar, wind and micro-hydro applications



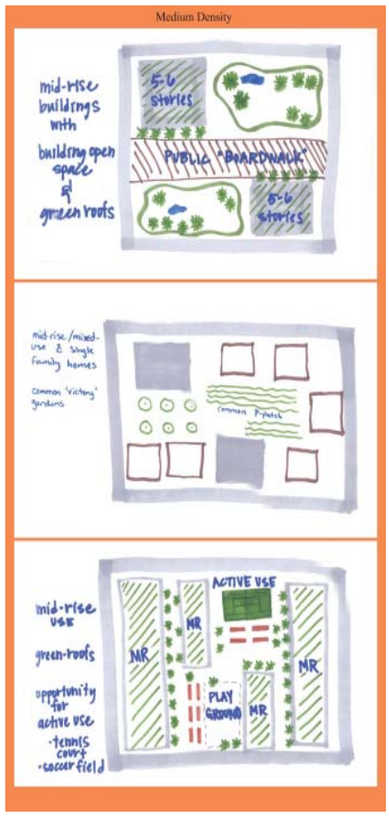
Providing public and public/private open space within two blocks of higher density residential areas of the U-district was a priority for the charrette team.

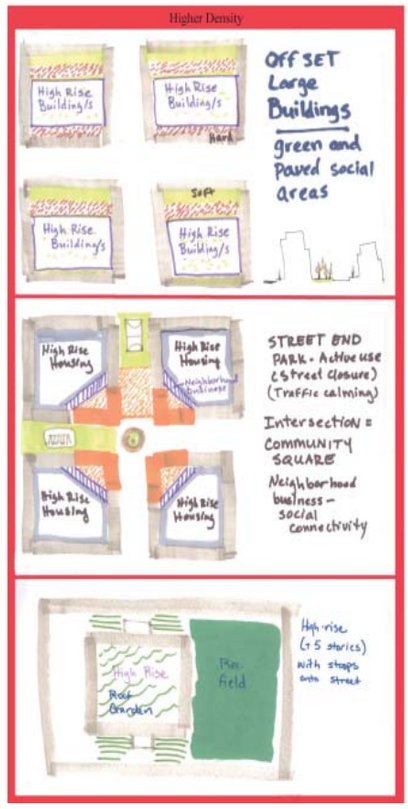


Sustainable energy harvesting

SMALL-SCALE INTERVENTIONS:

Increasing Open Space

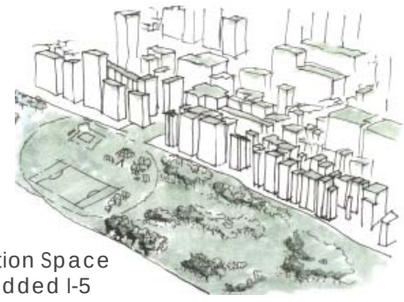




Members came up with a typologies for smaller open space that could be used for the different densities that would be found within the entire neighborhood

SMALL-SCALE INTERVENTIONS:

Green Transportation Network



Recreation Space over a lidded I-5

Transit Streets

The charrette team was interested in providing a transportation network that was both safe to users and environmentally sustainable.

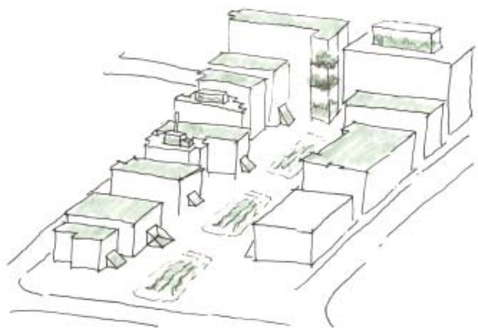
Green Streets

Pedestrian Streets

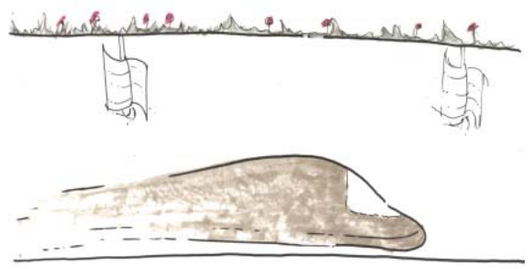
The streetscape topologies pay special attention to the pedestrian user and use swales and vegetation to treat stormwater run-off.

SMALL-SCALE INTERVENTIONS:
Urban agriculture and energy harvesting

The features of a self-sustaining community that the charrette team focused on were urban agriculture and alternative energy harvesting applications. Typologies of these features include large and small-scale agriculture and energy opportunities within the neighborhood.



Opened blocks to the south allow sun in to community and individual gardens

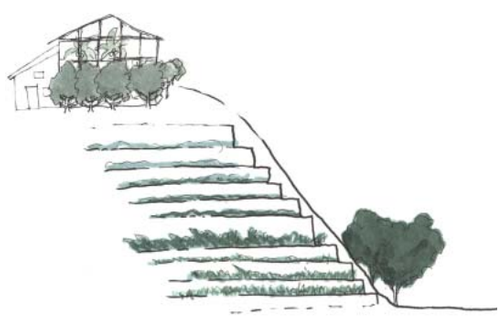


Turbines incorporated into lidded transit corridors, to capture wind from Mag-lev transit and other vehicles

Charismatic mega-fauna providing food, medicine and energy

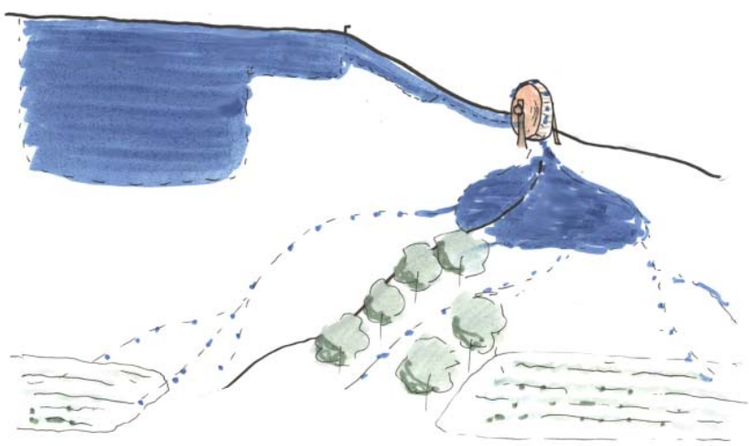
Structures embedded to fully capture added wind energy through hill speed-up effect

University District



Terraced agriculture with caretaker residences on campus

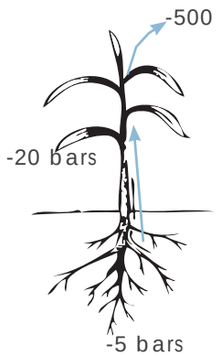
Roofs provide more opportunities for agriculture and energy harvesting through photovoltaic applications



Micro-hydro energy harvesting combined with irrigation to large-scale urban agriculture

LARGE-SCALE MICRO-HYDRO ENERGY COMBINED WITH URBAN AGRICULTURE APPLICATION

Water Potential (ψ):
Measure of the free energy of water, water flows from areas of high ψ to areas of low ψ.



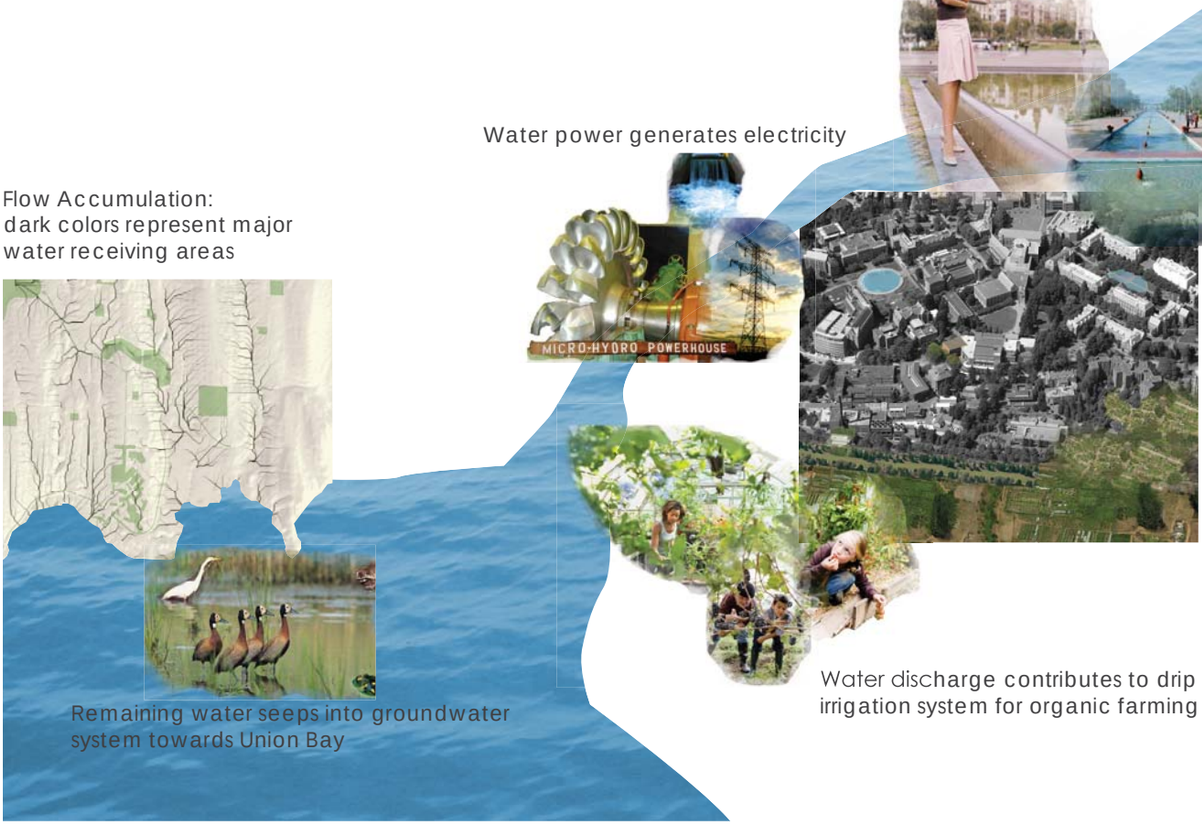
Global warming may induce warmer temperatures and more precipitation in the winter but less snowpack and thus less water in the summer. The future is rainwater storage and the multi-functional use of this resource.

Areas of the U-district can be used to experiment with micro-hydro energy harvesting combined with large scale irrigation. Large-scale demonstrations of such technologies could influence the use of small-scale applications around the city.

Ponds accumulate stormwater run-off

Water power generates electricity

Flow Accumulation:
dark colors represent major water receiving areas



Remaining water seeps into groundwater system towards Union Bay

Water discharge contributes to drip irrigation system for organic farming

University District

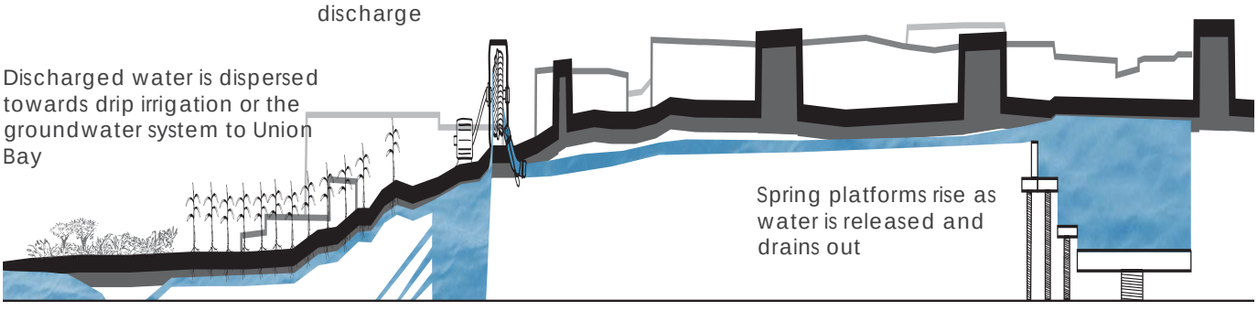
Conceptual Section

Water strikes Turgo turbine at an angle and runs through to other side, this minimizes slow down through water discharge

Water picks up speed as it is compressed through pipes

Retention ponds hold accumulated rainwater until it is needed

Discharged water is dispersed towards drip irrigation or the groundwater system to Union Bay



Spring platforms rise as water is released and drains out