

For a full list of countries, visit [overshootday.org/country-overshoot-days](https://www.overshootday.org/country-overshoot-days).
 *French Overshoot Day based on nowcasted data. See [overshootday.org/france](https://www.overshootday.org/france).
 Source: National Footprint and Biocapacity Accounts, 2022 Edition
data.footprintnetwork.org

<https://www.overshootday.org/newsroom/country-overshoot-days/>

In 2022, the Earth Overshoot Day fell on July 28 - the mark when humanity's demand for biological resources exceeded what Earth regenerates in a year.

If all humans would lead a lifestyle comparable to ours in the USA, this date would be pushed to March 13.

Sponge City studios investigate architecture's potential to counteract the acceleration of this overshooting by taking the position of action researchers for alternative urban lifestyles inclusive of various strategies to hold rainwater in place and mitigate microclimates.



Sponged City aims to empower architecture students to develop a proactive stance on architecture's expressive capacity to describe essential change for urban framework conditions and for fundamental values in urbanism.

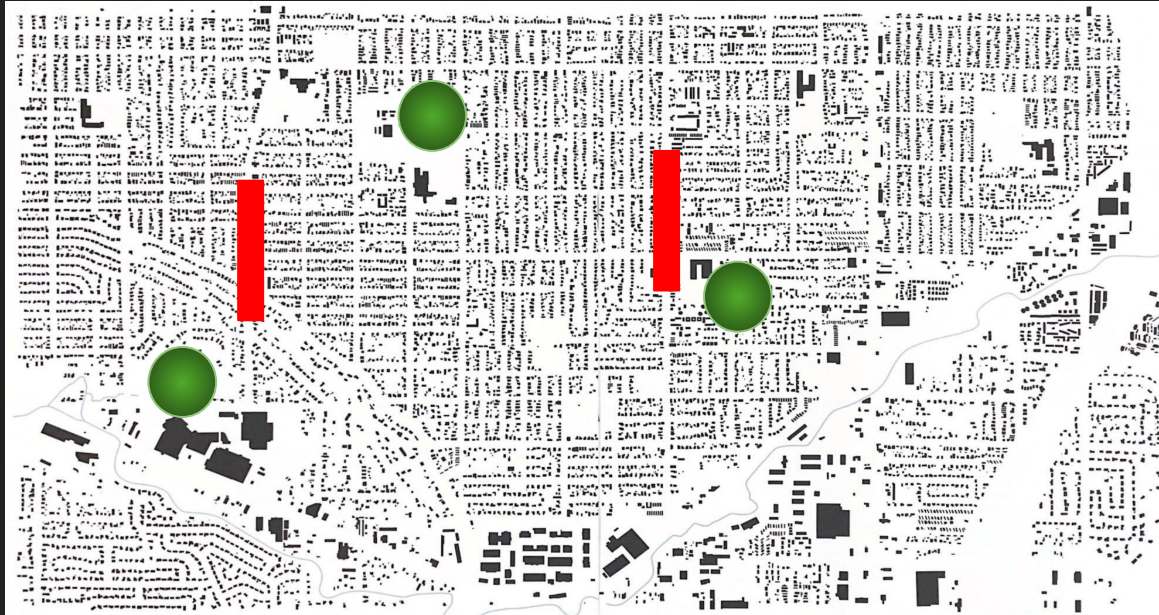
Initiating a deep urban soak, programming and sequencing urban spaces between and into buildings is understood as indispensable to environmental transformation and appropriate urban lifestyles in the midst of our global climate crisis.



Rainwater flooding MTA New York City, 2018 (johnvlahakis/Instagram)

Taking the symbolic power of rainwater, these studios combine urban and architectural strategies to explore rainwater as a guide for typological experiments. Rainwater in the urban environment became first and foremost a managerial task - polluted, collected, confined, drained, piped away.

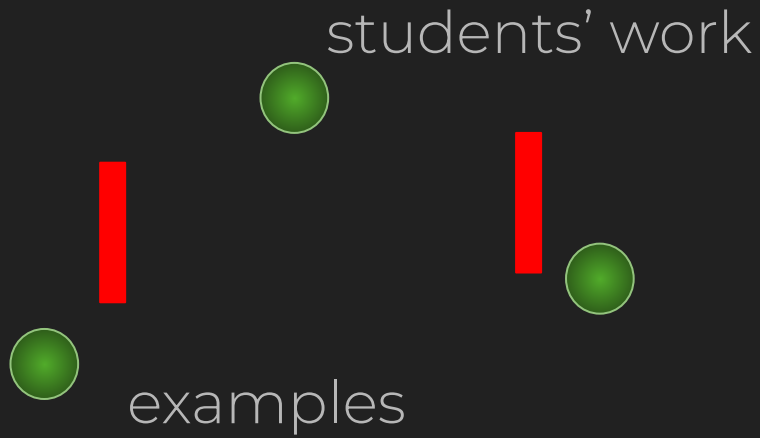
Making visible the interstices of urban life from microclimates, feeding plants and animals, filtering toxins and producing food, we explore the potentials of natural and architectural expressions to assist urban co-habitation, to mitigate the contaminating nature of our lifestyles, and to propose policies for our built environments.



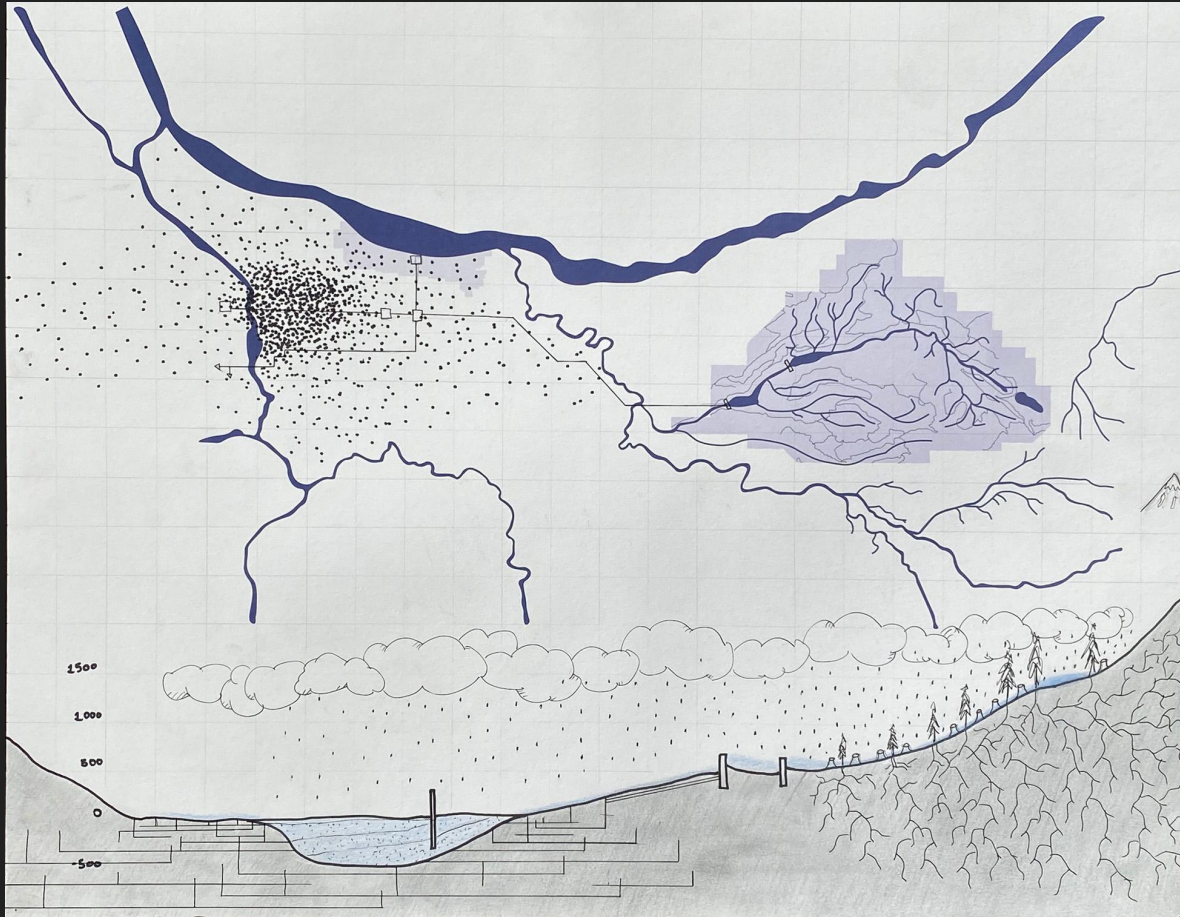
Foci: Flavel & 52nd / Flavel & 72nd /
Errol Heights Park / Brentwood Park & Learning Gardens & Black Futures Farm

Our field of action is a underserved neighborhood in SE Portland prone to disproportionate pressure of development and associated cultural and physical displacement: the “Lower SE Rising” project area.

The studio work begins with collaborative analyses of the urban conditions at the end of summer. Students are asked to produce cartographic imaginations by correlating personal rainwater experiences with mappings of networks relating habitation and infrastructure, charting parks, farms and playgrounds, tracing cultural, social and commercial amenities.



research
&
cartographic
imaginations
&
design proposals



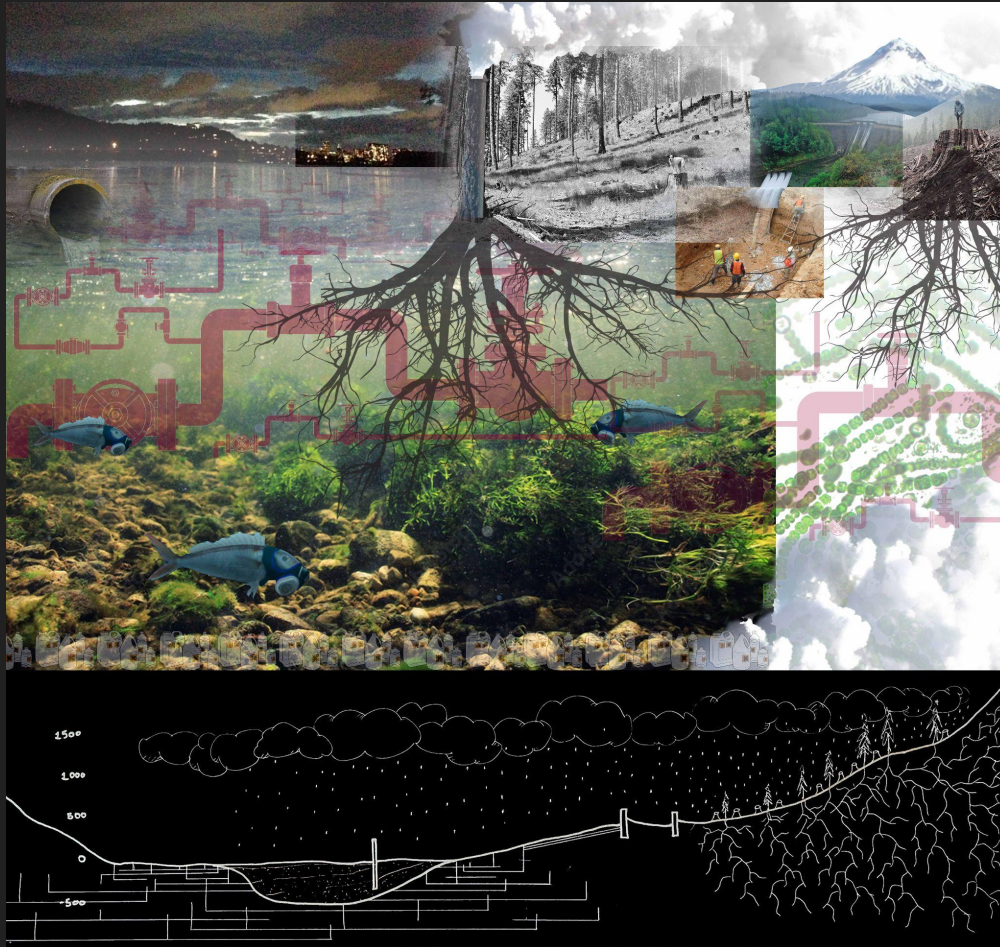
Rain, the Aquifer and our Food

Several students related the rainwater investigations to the geological scale of moving bodies of water like rivers, wetlands, the aquifer, sedimentation, and their infiltration into water reservoirs.

Observations about established urban water management from processing of drinking water to stormwater mediation, the impact of agricultural water runoff and sewer systems guided the development of conceptual design approaches outside the usual.

Rain, the Aquifer and our Food

Investigating the cohesive network between aquifer, rain, forestry, agriculture and sewer systems, this project lays bare the balancing act of water management under the pressure of our warming climate. Agriculturally introduced chemical substances, sedimentation and warmer temperatures lead to bacterial overgrowth in our water networks. Food industries and transportation lead to further pollution of soils and air. The Water Bureaus struggle with mediating these impacts; urban dwellers live with the consequences.

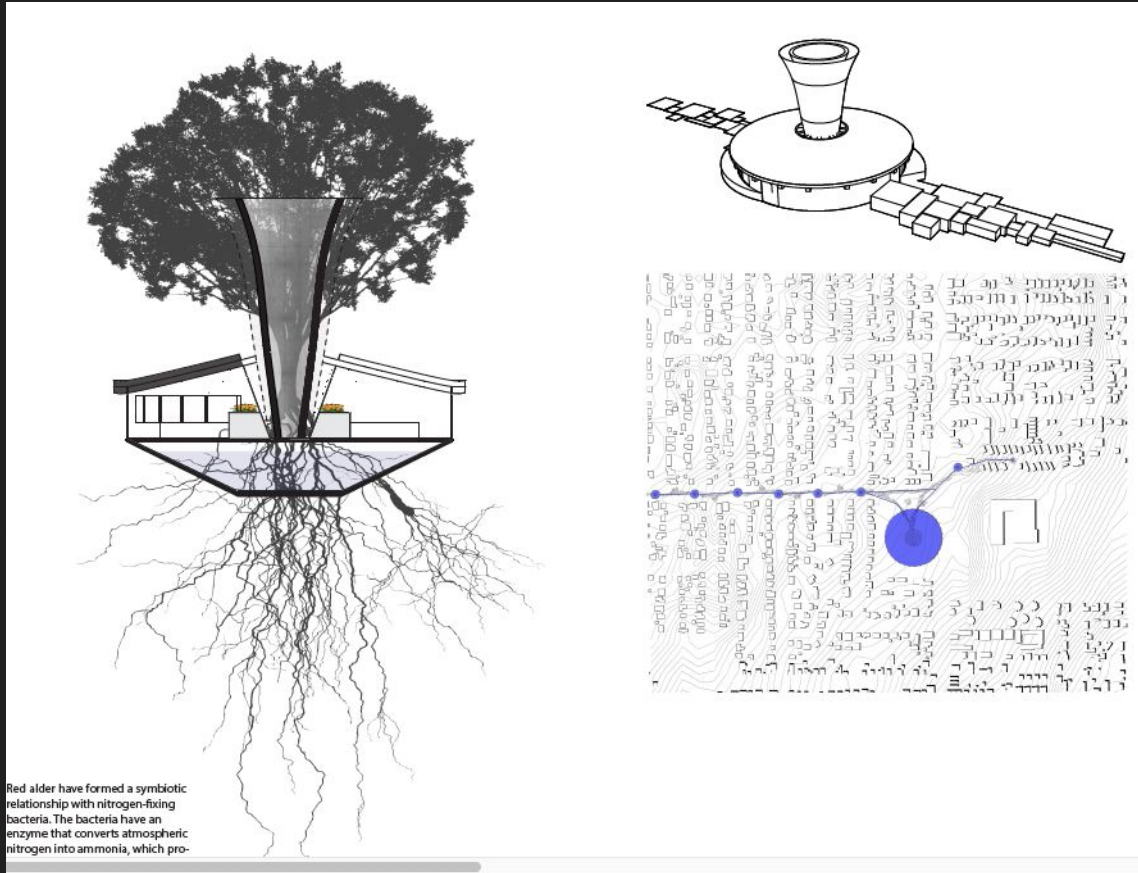


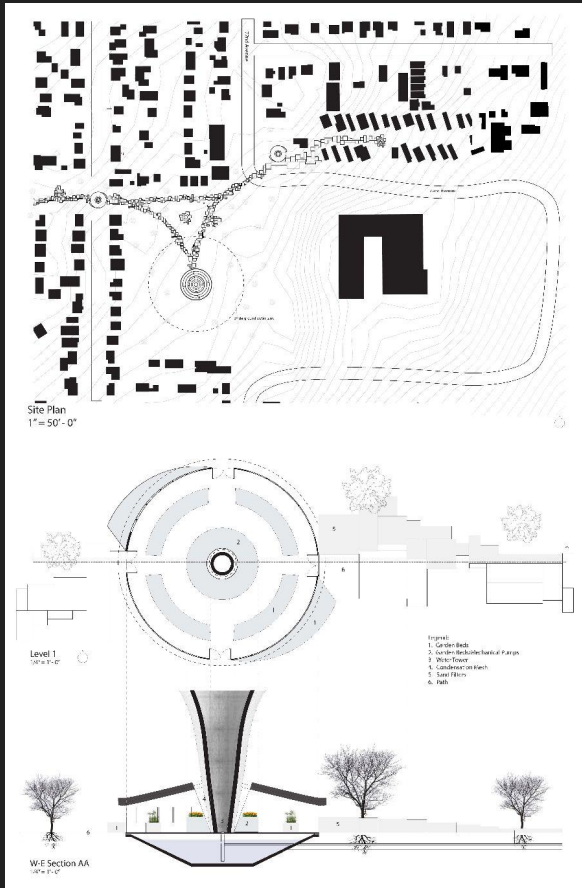
Cartographic imagination: Aaron Mayers

Rain, the Aquifer and our Food

Considering the capillary activity of plants as relevant in urban design, this project introduces phytoremediation, specifically the symbiosis between Red Alders and certain bacteria, as fundamental design guide for rainwater storage and neutralizing contaminants.

Red Alders are centered within specifically designed greenhouses, which serve for local food production using the trees' regenerative water process. A string of these greenhouses is placed along Flavel connecting the commercial centers at the intersections of 52nd and 72nd with a pedestrian centered rainwater collection path.





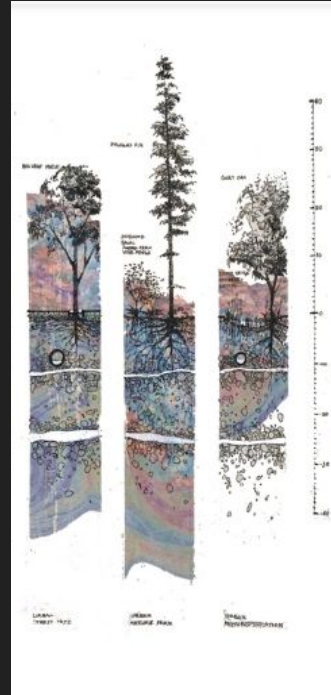
The pedestrian promenade elevates the existing urban food production, provides clean water beyond gardening and introduces a model for small business developments centered around local food production. All these design parts are grounded within community efforts and suggest a strategy against the dawning dislocation of current inhabitants.

Additionally, a new education and community center is located at a redesigned intersection of Flavel and 72nd connecting to the park with a large green and recreational area to counteract heat islands and to support the various schools and community efforts in the area.

Design project for Flavel / 72nd: Aaron Mayers



Cartographic imagination + research: Sean Silverstein



Interspersed Phytoremediation

Investigating the unremitting fluidity within geological networks of rainwater and rivers, this project addressed the contamination of urban surface water and current stormwater mediation.

The recognition that toxins accumulate in our urban soil and wash through the aquifer into every waterway translates here into a strategy of interspersed phytoremediation. Plant species are selected according to their ability to absorb and store toxins and microparticles occurring on street surfaces.



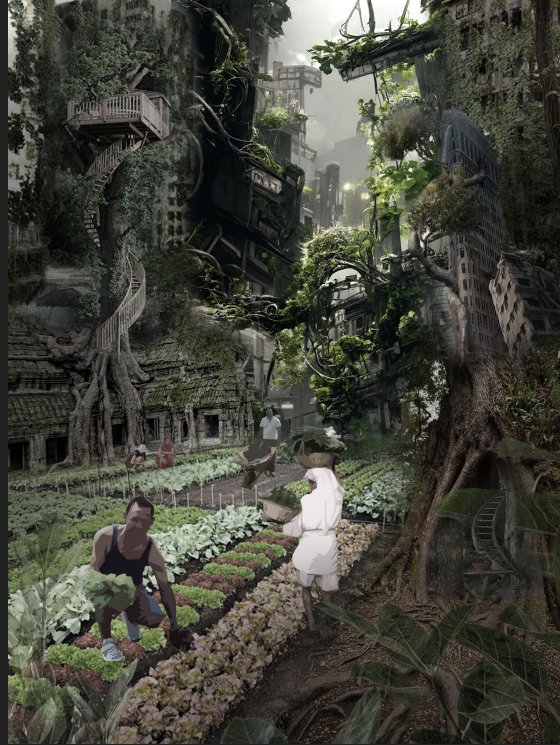
Design project: Sean Silverstein



Interspersed Phytoremediation

The intersection of 52nd and Flavel transforms into a traffic-calmed cultural and commercial center while incorporating building techniques for rainwater collection, rainwater storage and in situ surface water filtration utilizing phytoremediation.

The concurrent extension of garden and park areas towards Errol Heights park is combined with an educational rainwater center that provides filtered stormwater for the biosphere as well as pedestrian connectivity with ecological urban awareness.

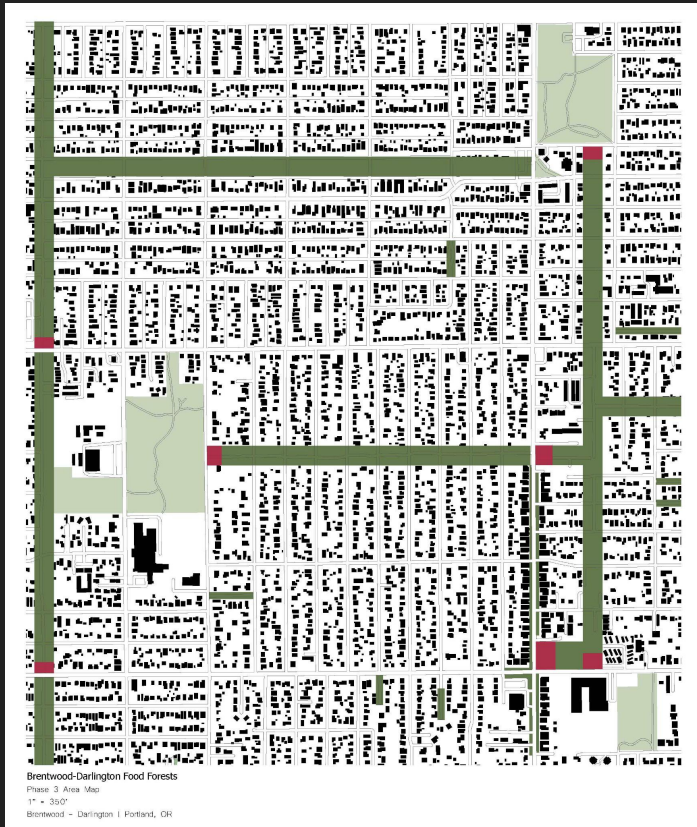


Cartographic imagination: Naomi Hess

Alteration of Apocalyptic Drama

Taking the interrupting qualities of urban rain experiences and combining those with an exaggerated visualization of our contaminating lifestyles and regulating infrastructures, this project modified the dramatic entertainment scenarios of apocalyptic urban infiltration by uncontainable species into a productive imagery:

Overabundant plant growth not only depicts excessive urban co-habitation but replaces traffic infrastructures with boundless food production lines.



The image of exuberant food infrastructure translated into a spreading network dedicated to the fertile landscape strategies of permaculture gardening. The street network turns into productive and attractive places providing food for humans, habitats for wildlife, playfulness and safety for pedestrians with all seasons in mind. Interspersed are hubs with amenities for gardening, food processing, food-culture exchange and education.

Supportive of the 20 minute neighborhood concept, streets with higher density of housing, everyday services and commercial amenities were added to the project.

Design project: Naomi Hess



Expanding on the concept of educational integration, the project suggests a learning garden, greenhouse and outdoor school room for the adjacent elementary school.



The permaculture landscape at the intersection of Flavel and 72nd provides small scale business entities for food processing, preparing and consuming.

The streetscapes are focused on pedestrian safety and well-being in order to ensure the sustenance of the permaculture network, which improves the urban microclimates through water storage in soil and vegetation.

Design project: Naomi Hess



Inviting Memories, Making Home

Cherishing the existing urban farming efforts at the Black Futures Farm, the Community and Learning Gardens adjacent to both the Brentwood Park and the middle school, this project proposes a network of extensive permaculture streetscapes. The network connects several existing greenscapes with a community and commercial center and provides seasonal experiences of plant and wildlife cycles while producing food, augmenting microclimates and improving pedestrian safety.

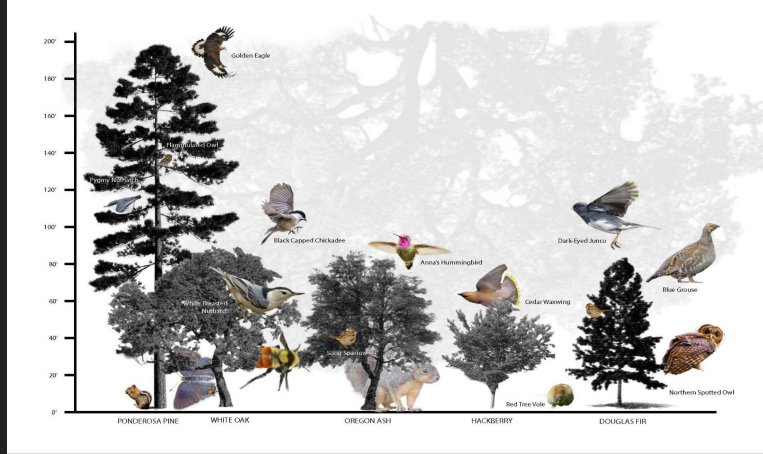
Design project: Tabassum Khandoker



The commercial and communal center suggested for 52nd along the intersections between Ogden and Flavel integrates rainwater storage with modular architecture for gardening, food courts, a seasonal market, a playground and a culture center.

Coverings and pedestrian bridges allow for continual activities throughout all seasons. Modular building blocks respond to seasonal needs such as extending buildings for cultural, commercial and communal services as needed.

Design project: Tabassum Khandoker

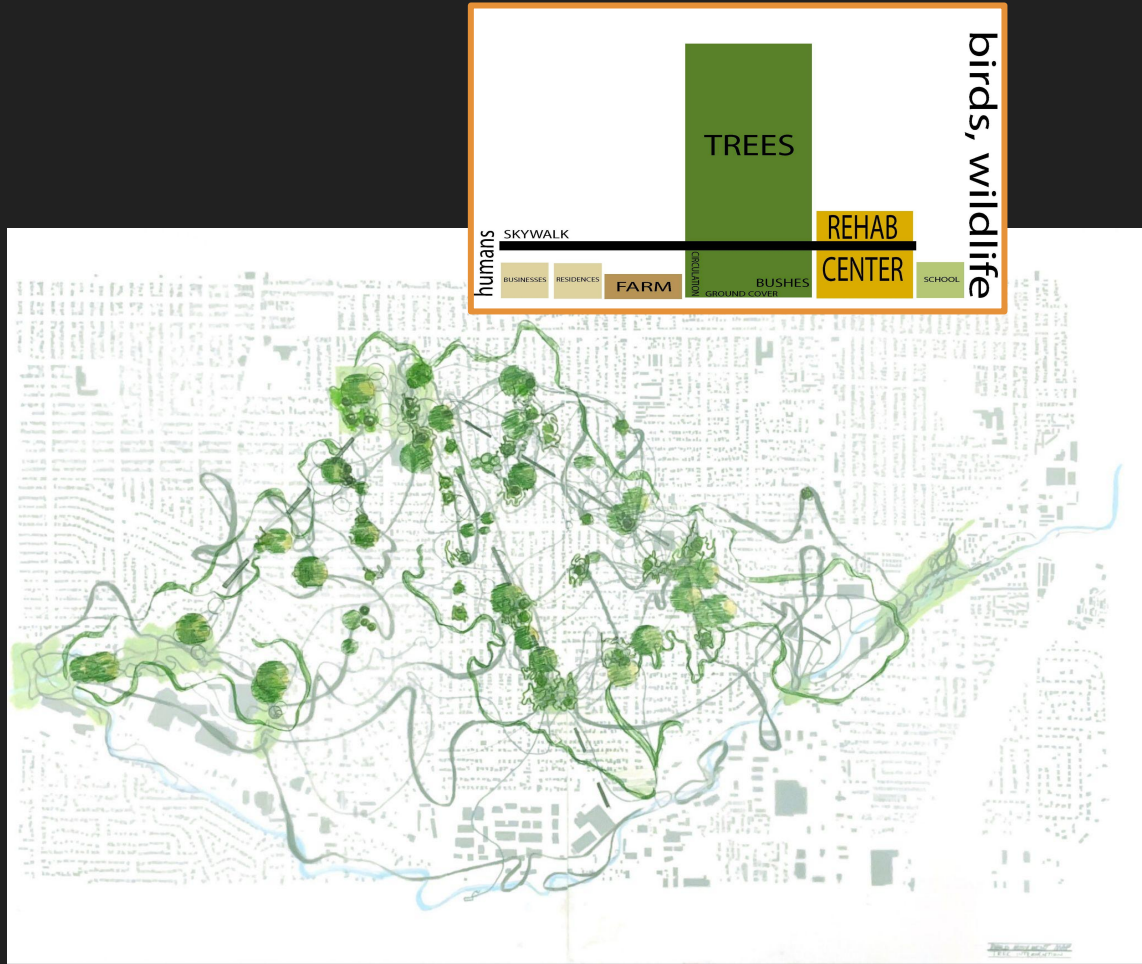


Cartographic imagination + research: Maddy Capizzi

Urban Wildlife Co-habitation

Building on the hostility that the urban built environment poses for wildlife, this project centers on the creation of shared living conditions for wildlife and humans in urban settings.

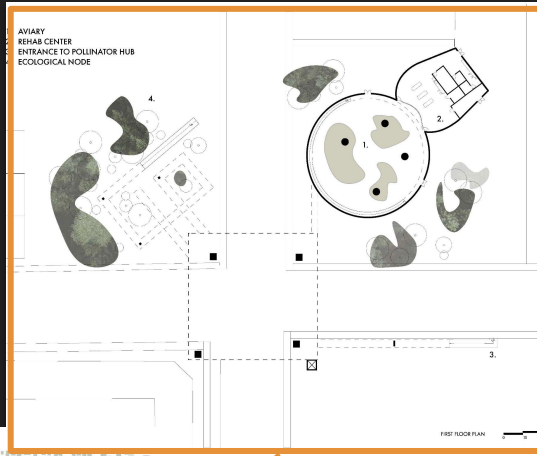
Currently, the differences in species' adaptation potentials within urban habitats evolves into various imbalances in biodiversity as well as precarious interactions of wildlife species with the existing urban built environment.



Urban Wildlife Co-habitation

The project suggests strategies for urban co-habitation focusing on design approaches inclusive of urban wildlife habitats, balancing biodiversity and improving microclimates considering the urban conditions of larger area relations.

Starting with the observation of various bird flight pattern and their conjunction with specific tree species, a layered design scenario with various pattern emerges. Superimposing the different height levels and travel patterns provides the foundation for strategic tree placement as guide for habitat development.



The project focused further on the small scale connectivity of existing large trees and parks adding a network of habitats and pedestrian focused green streets as an educational path.

A Bird Rehabilitation Center is placed as a new neighborhood focal point at the intersection of 72nd and Flavel. The Rehab Center is accompanied by a pedestrian bridge integrated into an Education Path that connects the adjacent elementary school with the existing Learning Gardens near Brentwood Park. The bridge includes specifically designed amenities for insects, bats and bird food production and provides insights into bird rehabilitation.

