Green Paths - On the Space In-Between Buildings

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Introduction

This project focuses on the “leftovers” of our urban space after carving out what was required for buildings and transportation, and reintegrating them into a network that can be the habitat and paths for pollinators and small animals.

This network overlaps and interacts with our existing urban structures. Integrating it into our life will undermine the hierarchy of space and commodification of land intensified by the existing grid systems of the city, and introduce a different understanding of coexistence with nature.

Site Selection

In the area near the canal flowing through Providence, 30 sites were identified as the potential space for interventions. These sites consist of accessible or blocked walkways, less traversed driveways, and entrances to parking.

1.

Selection Criteria

- Between two different properties
- Not occipied by activities or traffic on a regular basis
- Can be inaccessible due to insufficient width or locked fences.

1. 1:2000 Site plan with all the sites that were selected as potential space of intervention

2. Combined front view of the sites identified in the previous map. Every photo was taking from the location highlighted by the pointer.

3. List of selected sites, represented in a "reversed" way where the in-between space was in solid black and the adjacent buildings an abstract indication of their scales and functions.

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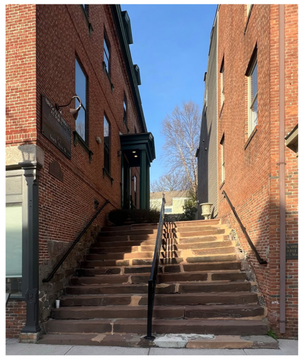

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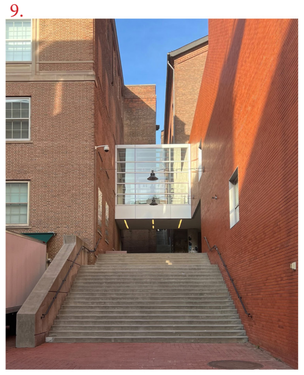

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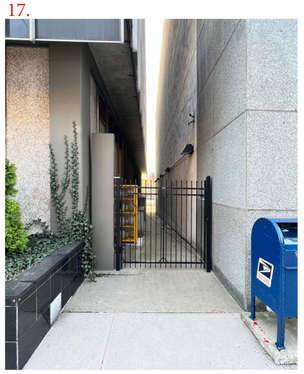

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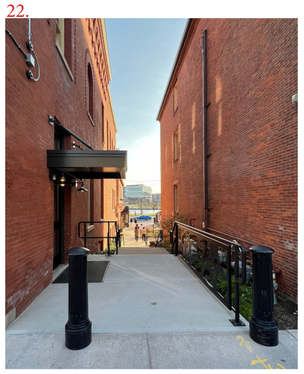

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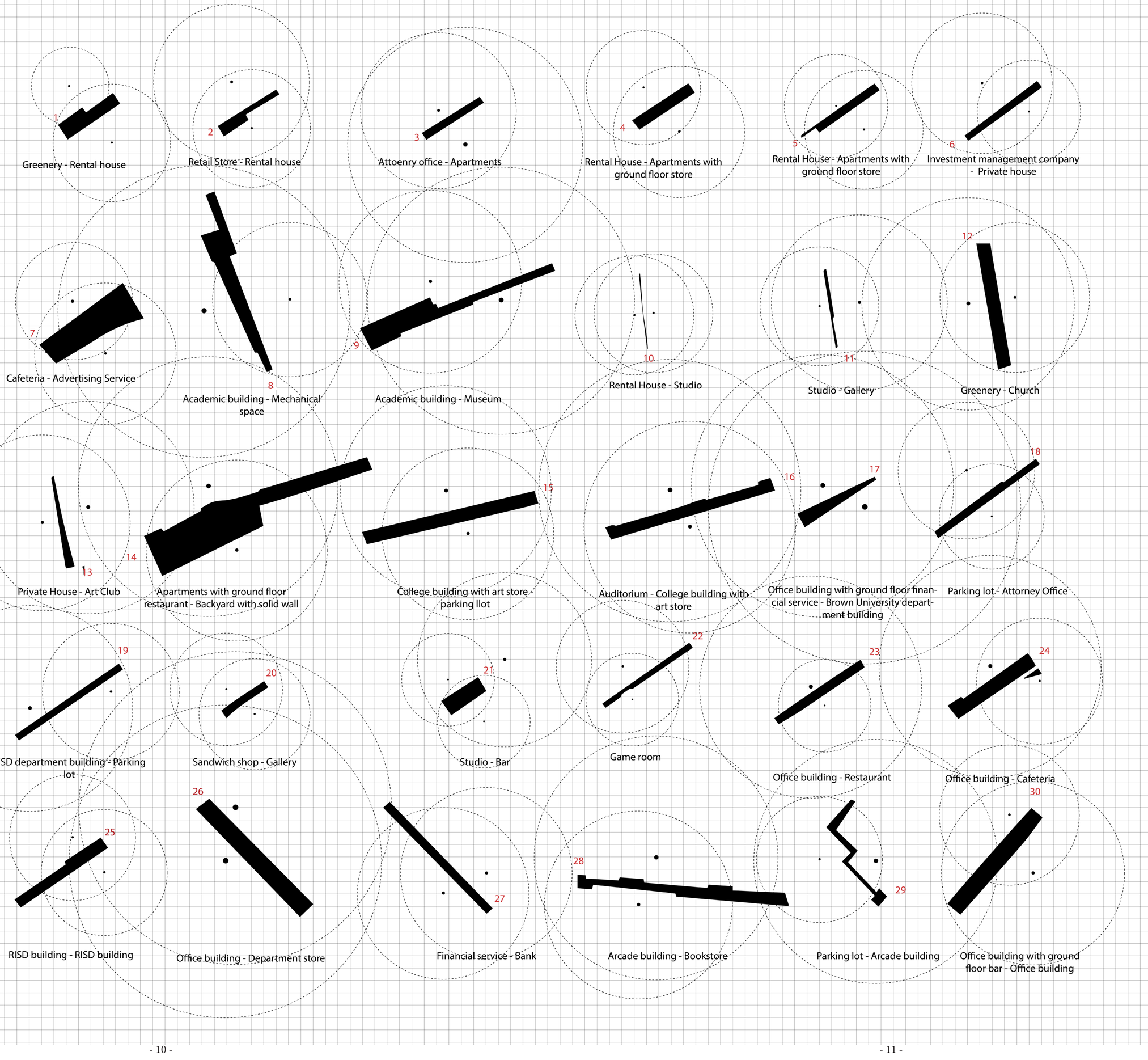

1
Greenery - Rental house
2
Retail Store - Rental house
3
Attoenry office - Apartments
4
Rental House - Apartments with ground floor store
5
Rental House - Apartments with ground floor store
6
Investment management company - Private house
7
Cafeteria - Advertising Service
8
Academic building - Mechanical space
9
Academic building - Museum
10
Rental House - Studio
11
Studio - Gallery
12
Greenery - Church
13
Private House - Art Club
14
Apartments with ground floor restaurant - Backyard with solid wall
15
College building with art store - parking llot
16
Auditorium - College building with art store
17
Office building with ground floor financial service - Brown University department building
18
Parking lot - Attorney Office
19
RISD department building - Parking lot
20
Sandwich shop - Gallery
21
Studio - Bar
22
Game room
23
Office building - Restaurant
24
Office building - Cafeteria
25
RISD building - RISD building
26
Office building - Department store
27
Financial service - Bank
28
Arcade building - Bookstore
29
Parking lot - Arcade building
30
Office building with ground floor bar - Office building

Thesis Development

- “De-gridding” the system -

- Sacred Space -

The idea of sanctuary, an area marked off so as to be separated from the space around it, usually by a wall. The Greek word for such a place, temenos, is instructive because it derives from the verb temno, meaning "I cut off." The Latin word templum, the root of the word "temple," also means "a part cut off" or "a space marked out." Once dedicated by the proper authorities, such a precinct was protected by all the sanctions of religious custom and local law.

A further development, however, was taking place in Europe in regard to sacred space, and that was the final step in desacralizing nature. Nationalism placed the claims of the State above those of the Church, effectively denying that even Church land was sacred space. And rising capitalism defined land as a commodity, subject to division and sale, no more sacred than any other economic resource. The Church perforce acquiesced in both of those developments. But the old sense of the inviolability of boundaries persisted; now they were boundaries of nations or of private land rather than religious sanctuaries, but the new order believed in them as firmly as the old. Trespass, the violation of boundaries, was still as heinous a sin.

How Much of the Earth Is Sacred Space?
J. Donald Hughes and Jim Swan
Environmental Review: ER , Winter, 1986, Vol. 10, No. 4 (Winter, 1986), pp. 247- 259

The Western conception of sacred space originated from the ideas of segregation and sanctification of land, which contradicts the indigenous belief that the earth is a sacred continuum. The inviolability of the sanctuary is preserved by protecting property boundaries after the desacralizing of religious sacred space and commodification of land.

The selected sites were isolated fragments of the "leftover" space after the grid system carved out the plots of land. This project aims to reintegrate them into the continuum at both an architectural and an urban scale: At the architectural scale, the boundaries that cut off these spaces should become permeable so that activities on both sides could reconnect them with the adjacent buildings without being wholly segregated. At the urban scale, these fragments should be connected with a different network that interacts and overlaps with the existing grids of driveways and walkways dedicated to vehicles and pedestrians.

The indigenous story of creation (the Skywoman Falling) is about receiving and giving gifts to the natural world, which indicates a positive interchange between human beings and the environment. This new network of connections that the project aims to construct should also be aware of its context that extends beyond the range of the urban space and the potential impacts on other flora and fauna species.

- Greenery -

McLean thus proposed to segregate the "white" and "native" people "so that zones may be arranged as far as possible to the requirements of the various sections of the population," and that "Europeans live in houses so arranged as to be exposed to the prevailing winds… surrounded by gardens or open spaces to permit the free circulation of air," even though "the natives can live comfortably in much more crowded circumstances."10 This premise about human difference and European comfort in a perceived tropical climate resulted not only in the racial segregation of populations in Omdurman and Khartoum town, but also in the latter's construction with wide streets on a grid-iron plan and large blocks that produced very low density.

In Khartoum Senior Trade School (today's South Campus of University of Sudan), Petermuller followed the British colonial planners' assumptions about the need for large open spaces in between buildings that would generate wind flows and ventilation, and thus considered a site plan composed of freestanding modernist blocks as a viable solution. … Previously, McLean had suggested racial segregation to contain epidemics, which was no longer a viable theory, but the tropical architecture know-how nonetheless persisted.

Decolonize or Redistribute? Abdel Moneim Mustafa and Mid-Century Modernism in Sudan
-Esra Akcan examines architecture through the lens of healing from colonization
Source: https://www.cca.qc.ca/en/articles/85227/decolonize-or-redistribute-abdel-moneim-mustafa-and-mid-century-modernism-in-sudan

Petermuller, Senior Trade School, Khartoum (today's University of Sudan). © Esra Akcan

Abdel Moneim Mustafa, Double House, Omdurman. © Esra Akcan

The colonialist segregation of land created a hierarchy of space, which we could identify in the planning of Sudan as the exposed open spaces in-between buildings providing them with air circulation. However, the layout rendered the open space susceptible to direct sunlight and sandstorms.

In buildings designed by Abdel Moneim Mustafa, we could recognize the intentions behind the use of greenery. Given the example of Double House, The trees planted on the sidewalk outside the exterior wall provided a shaded public space outside the courtyard and added to the view for the occupants to see through the openings on the wall. Simultaneously, it prevented the wall from being directly exposed to sunlight, therefore reducing the urban heat island effect.

The greenery in an urban scenario should provide for the occupants and pedestrians, as well as benefit the building's performance and urban environment.

- Water -

The colonizer lives on a “river”

- A horizontal phenomenon
- An entrance to a country
- A highway by which to plunder and extract
- A spine of civilization and a drain of the land

ON THE BANKS OF A RIVER: settlement on the banks of a flowing/flooding river of water

IN AN OCEAN OF RAIN: settlement on mounds in a rising/falling ocean of rain

The colonized lives in an “ocean of wetness”

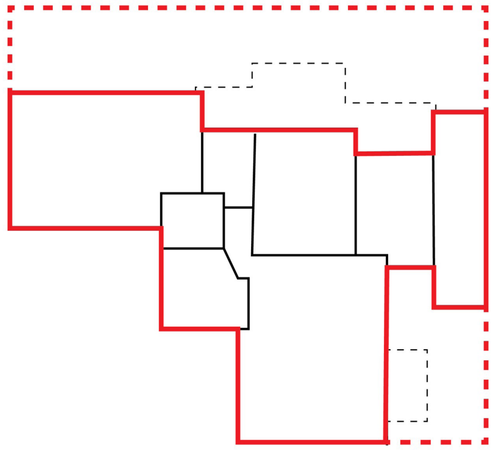
- A vertical phenomenon
- A home
- A wetness to inhabit
- A critical zone between clouds and aquifers

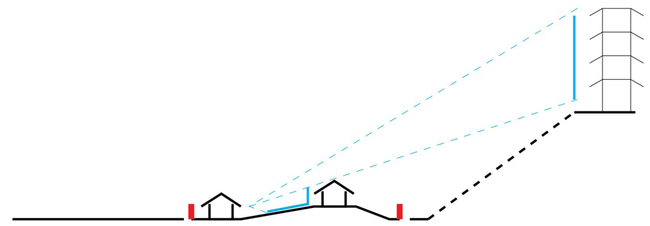
The Invention of Rivers
Dilip da Cunha
2019, pp.217

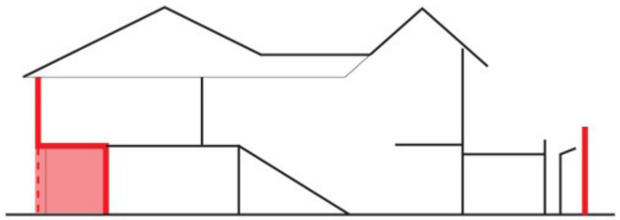
We could identify a similar contradiction between the Western and indigenous conceptions of water. In his lecture Where does decolonizing begin? in May 2023, da Cunha pointed out the opposite views of the river as a linear phenomenon that's separated from the land and forest, and as an entity unevenly distributed between the clouds and the aquifers.

The canal that flows through Providence has lost its initially assigned purpose of transporting goods and providing entrance. However, it still functions as the drain of the land, which collects rainwater and dust during the rainy season. It also provides a habitat for various aquatic birds and a route for sightseeing by boat. Reintegrating the canal into the city could be considered an extension of the waterfront.

- Boundary -

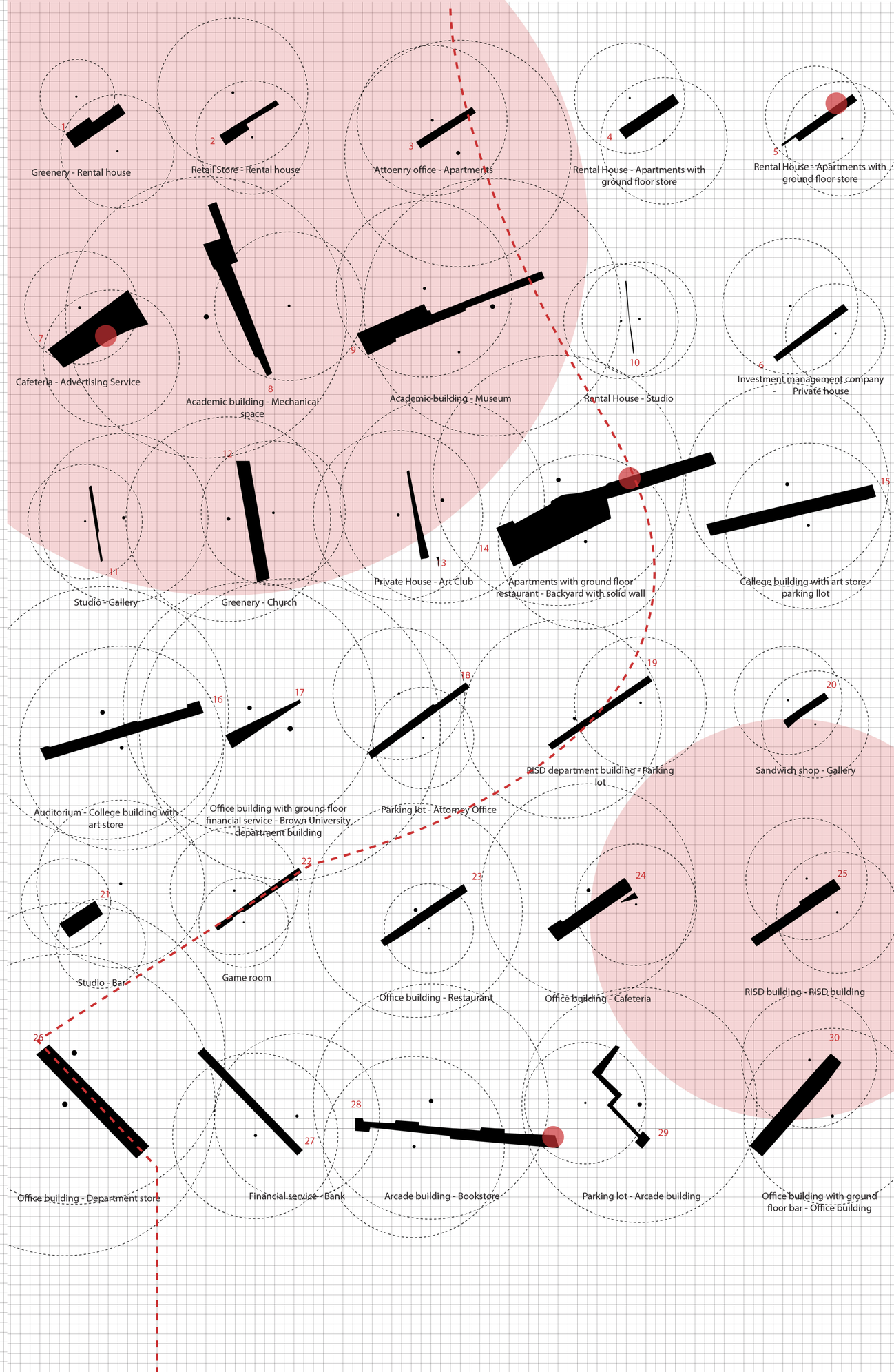




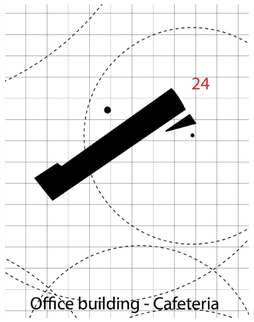


Instead of a solid line of separation, there are precedents worldwide which interpret the architectural boundary differently. For instance, traditional Chinese gardens would borrow the view in the distance to break the physical restrictions of the wall. Another example is the "five-foot-way," which is commonly seen in Southeast Asia. It extended and merged the public walkway and the function of the building in a space covered by the overhanging upper floor of the building.

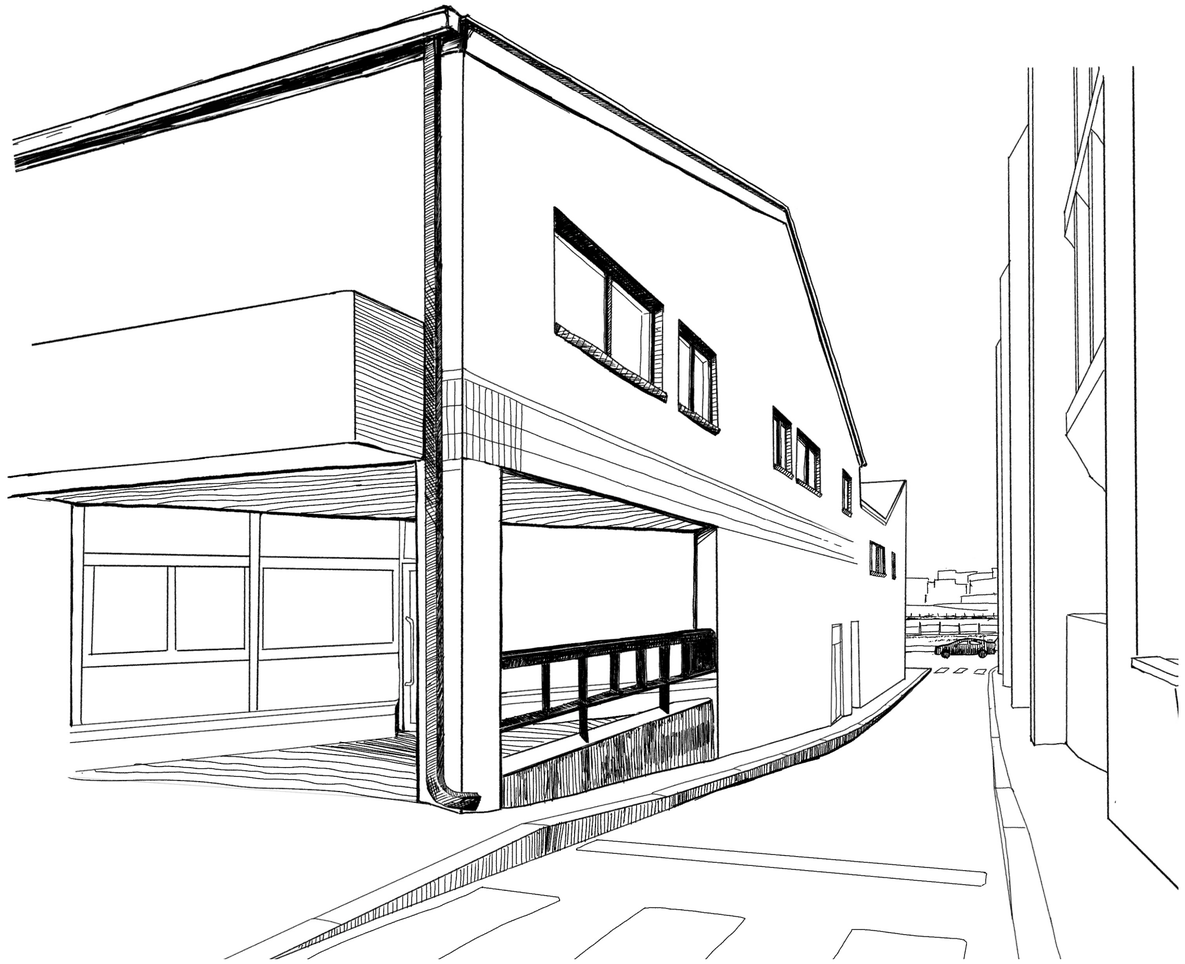
This project will transform the in-between spaces into an extension of the characteristics of the adjacent buildings. However, rather than separate small-scale programs, they should simultaneously be a part of an interconnecting system that overlaps with the existing grid, traversed by pollinators and other small animals in the urban space.

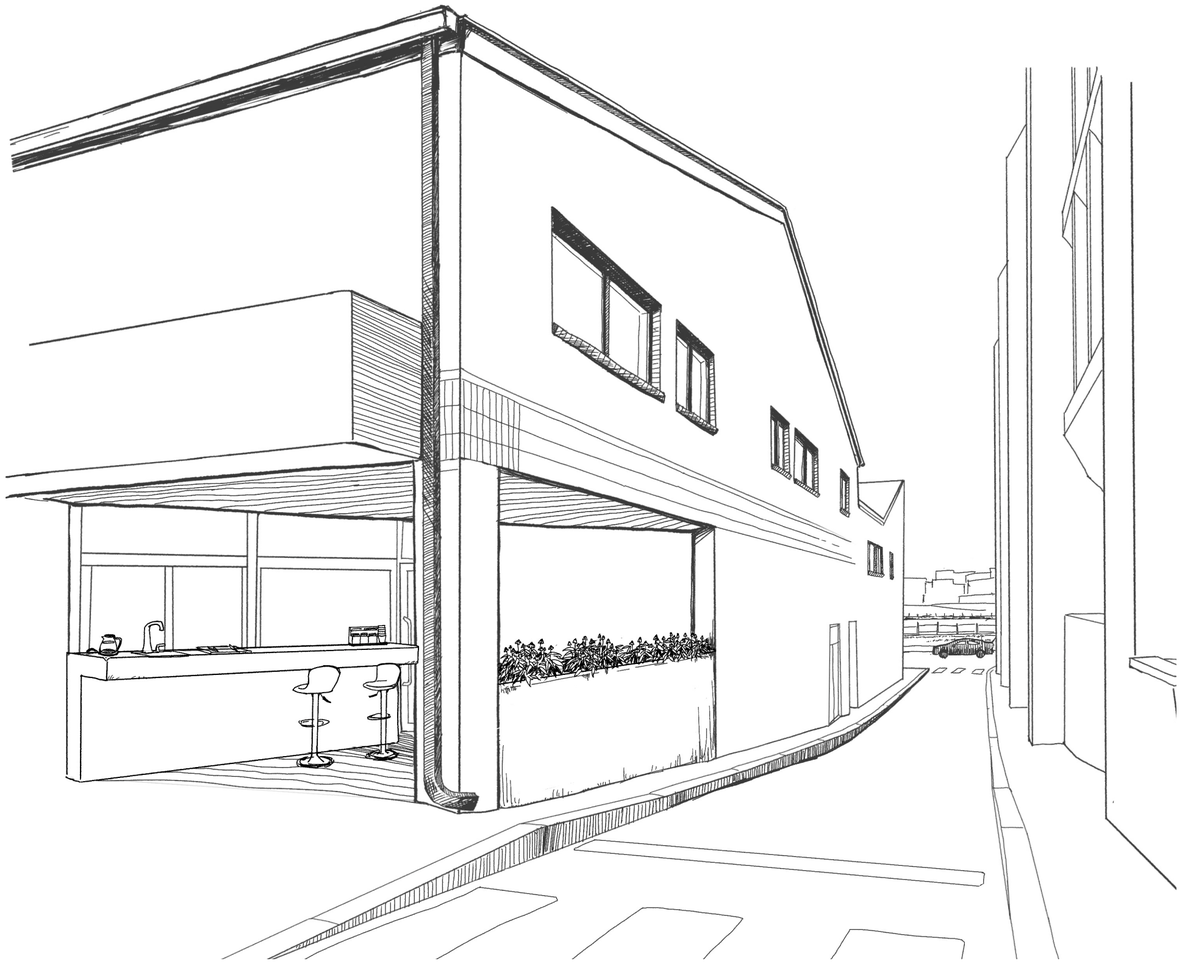


Transforming Through Time



In this section, I will use site 24, a driveway and entrance space between Dave's Coffee and the adjacent office building, as an example of how the transformation could take place over time.





- Stage 1 -

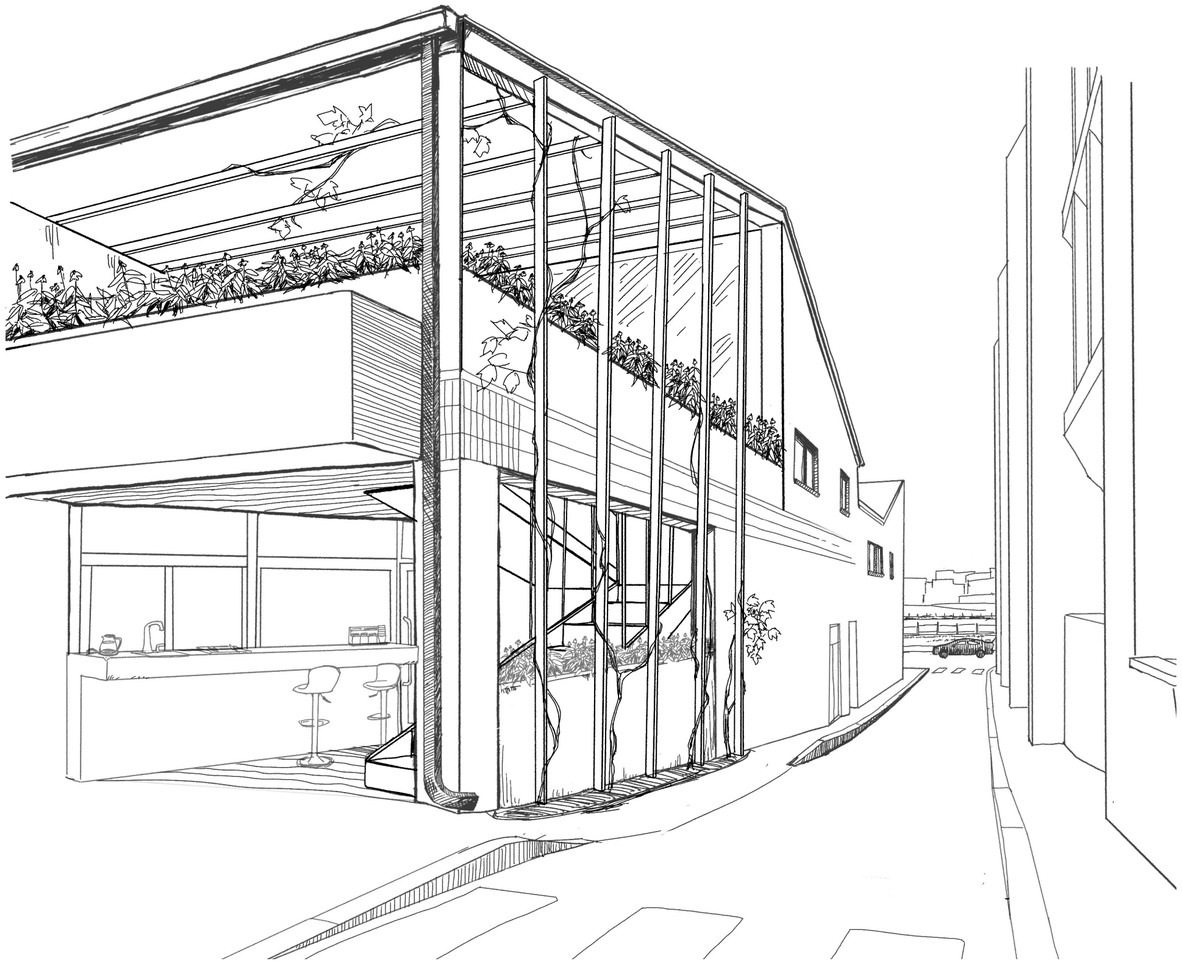
Intervention:
Planting fragrant herbs and herbal tea ingredients that can be harvested and processed within the vicinity;
Adding seats, counter with sink, boiler, and simple tools required for tea-making with harvested ingredients.

Purpose:
Introducing activities into the public space;
Adding plants that the occupants of the space can interact with.

Possible Species:

Purple Coneflower | *Echinacea purpurea*
Type: Herbaceous perennial
Family: Asteraceae
Native Range: Eastern and central North America
Sun: Full sun to part shade
Water: Dry to medium
Maintenance: Low
Wildlife: Echinacea spp. attract butterflies and hummingbirds. Special Value to Native Bees

All the species listed in this section were selected from a list of native plants, which requires less maintenance to thrive in local environment.



- Stage 2 -

Intervention:

Opening the upper floor above the cafe and connect it to the public space underneath;

Increase the number of plant species and enable them to grow directly into the ground soil;

Growing vines that could provide a natural shade with their leaves in summer, which fall and provide better sunlight exposure in winter;

Purpose:

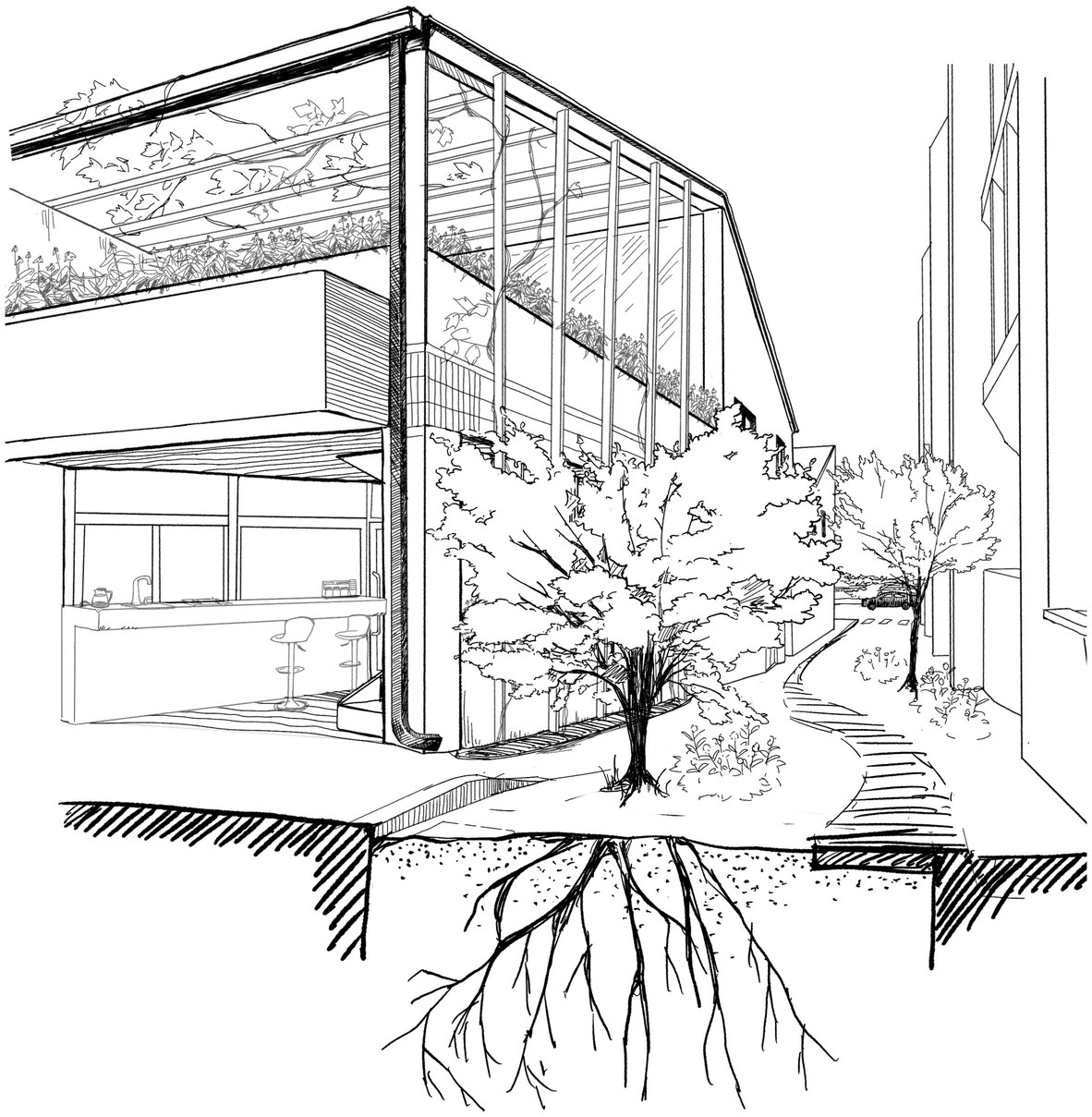
Enriching the outdoor activities by introducing more plant species that could be made into food or natural dyes;

Using plants as part of the passive, seasonal strategies (providing shades and mitigating heat island effect);

Allowing the plants to grow directly from the soil will detoxify it of heavy metal elements;

Possible Species:

Fox Grape | *Vitis labrusca*
Type: Climber, Fruit, Shrubs, Perennial
Family: Vitaceae
Native Range: Eastern and North America
Sun: Sun , Part Shade , Shade
Water: Average
Maintenance: Low, average



- Stage 3 -

Intervention:
Converting the driveway into plantable soil;
Adding more species of trees and shrubs that could thrive in fully shaded environment caused by the adjacent office building;

Purpose:
The site is located on a slope, the root systems of the plants will help retain rainwater and soil;
The selection of native species that thrive in shade to partial shade condition reduce the amount of required maintenance;
The plants will attract and provide food or nesting materials for bees, butterflies, and birds.

Possible Species:

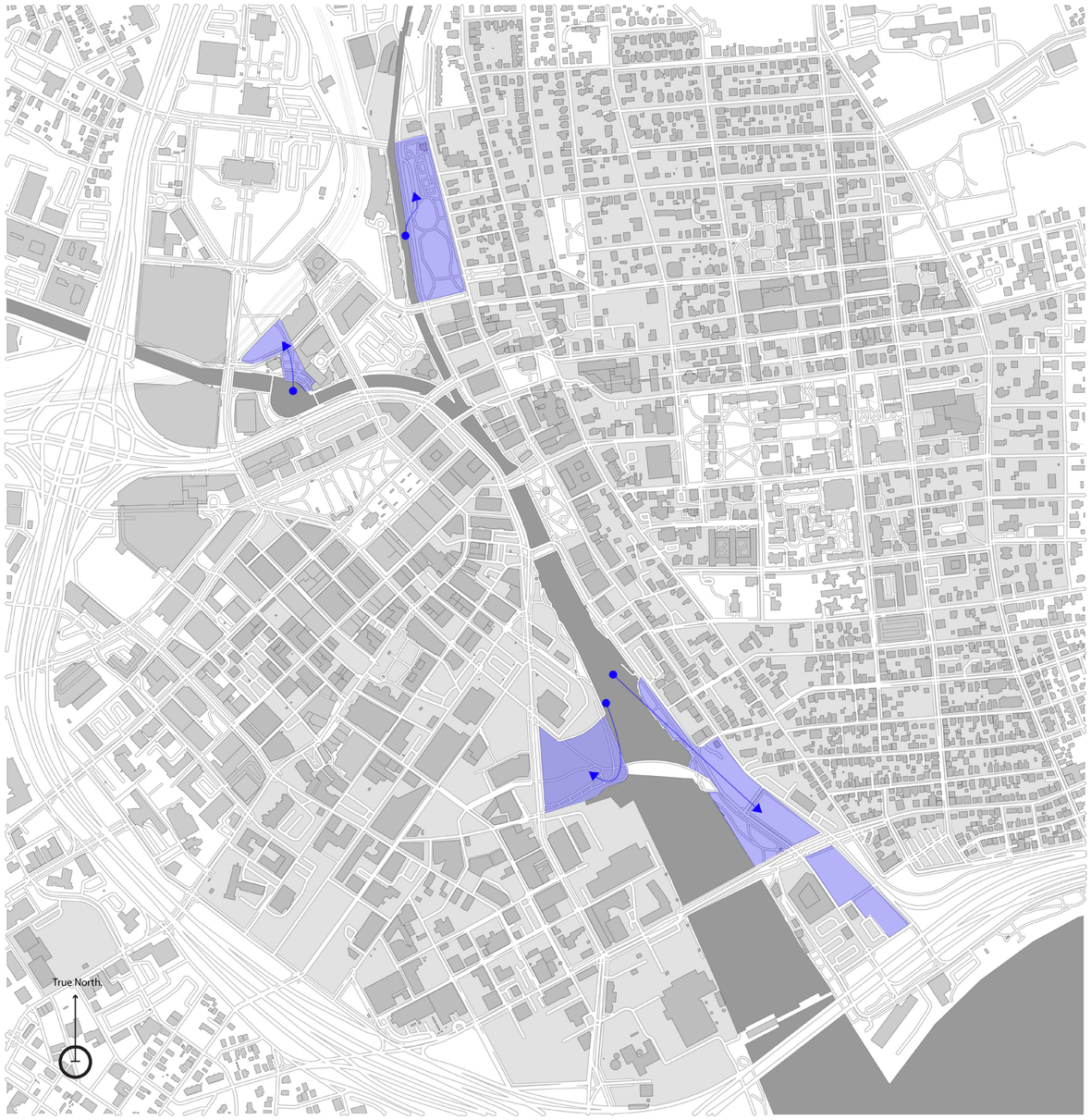
Allegheny Serviceberry | *Amelanchier laevis*
Type: Perennial, Tree
Family: Rosaceae
Native Range: Nf. to s. Ont., s. to DE, KY & IA; also mts. to GA & TN
Sun: Sun , Part Shade , Shade
Water: Medium
Wildlife: A food plant for birds and small mammals. Special Value to Native Bees
Conditions Comments: Very easy to grow and provides year-round interest. Berries are edible and juicier than those of the similar A. arborea. Sensitive to drought. Serviceberries are subject to many disease and insect problems, but damage from these problems is usually cosmetic rather than life threatening.

Common Buttonbush | *Cephalanthus occidentalis*
Type: Perennial, Shrub
Family: Rubiaceae
Native Range: N.B. & Que. to upper Mississippi R. Valley, e. NE & e. KS, s. to FL & TX
Sun: Part Shade , Shade
Water: High
Wildlife: Nectar-butterflies, Nectar-bees, Nectar-insects, Fruit-birds.pecial Value to Native Bees, Bumble Bees, Honey Bees.
Conditions Comments: Common buttonbush is a spreading, multi-branched shrub or sometimes small tree with many branches (often crooked and leaning), irregular crown, balls of white flowers resembling pincushions, and buttonlike balls of fruit. Buttonbush is a handsome ornamental suited to wet soils and is also a honey plant. Ducks and other water birds and shorebirds consume the seeds.

Urban-Scale Intervention

In this section, 3 diagramatic plans were made, representing the potential interventions that could happen at an urban-scale that would benefit the aquatic birds, bees, and humming birds in urban space.

By overlaying these diagrams, we could interpret how their networks of activities overlay with the existing traffic lines at different heights and identify certain points of intersection.



-The Waterfront Gradient-

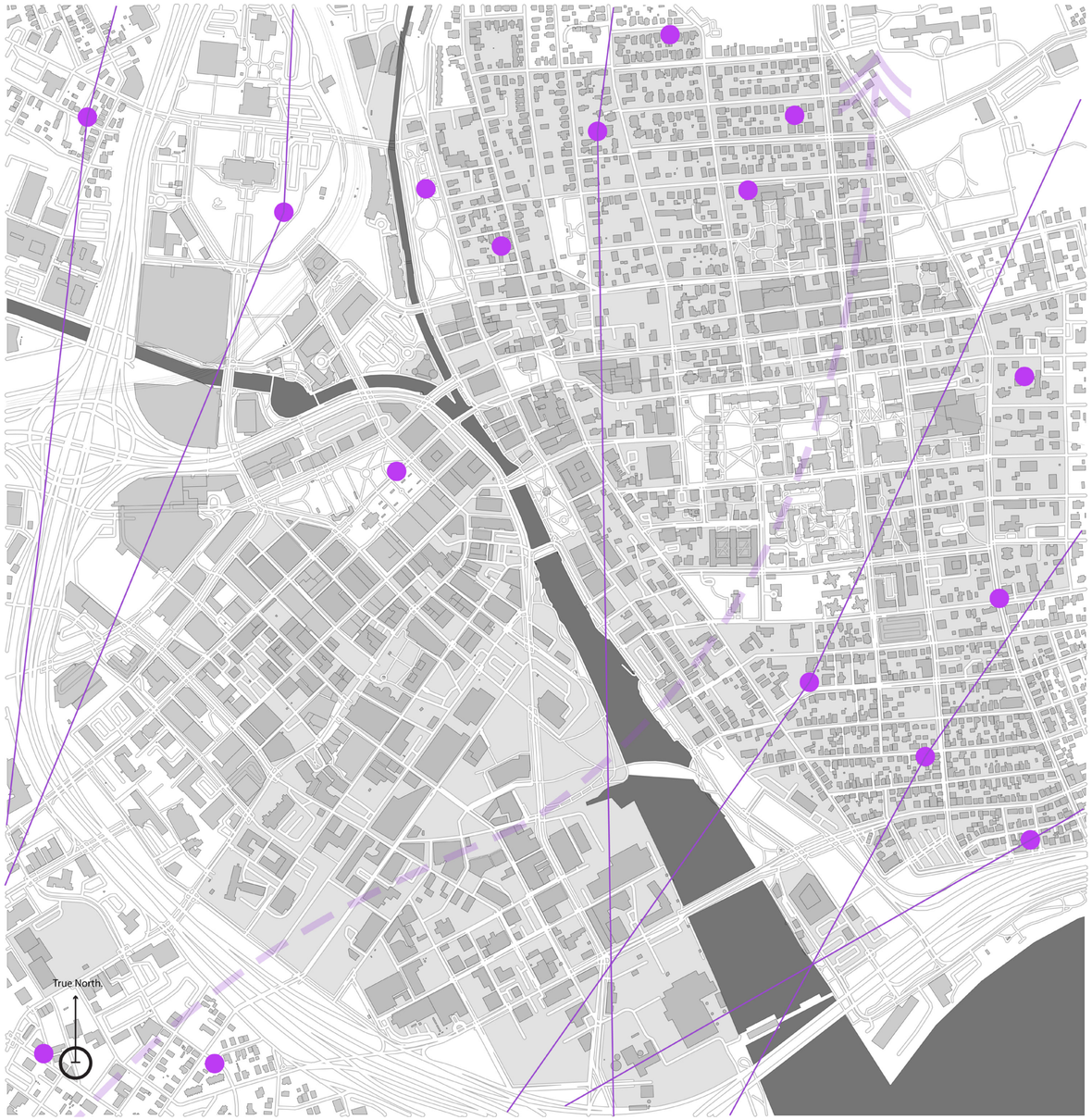
Instead of a continuous canal bank that separates the water completely from the land, allowing some sloped areas directly connecting to the water will expand the areas that provide habitat for aquatic birds.

Moreover, according to the indiginous people, some plant species, for example, American plum (*Prunus americana*), that once commonly grew in shore areas, had become rarely seen due to the construction or privatization of these areas. By interpreting the canal as an extention of the waterfront, the gradients provide the environments that certain plants species required to grow.

-The Pollinators-

Most types of honey bees are ground nesting or living in cavities in tree trunks, which can be provided by installing artificial caved-in nest structures in the sites less accessible for pedestrians.

Most of the bee colonies have a fixed foraging range, which is around 1 mile from the nest. Making sure plants with different blooming seasons are available within their foraging range will ensure the survival of the bees in urban space. Fallen leaves from annual plants will provide them with hibernating environment in winter.

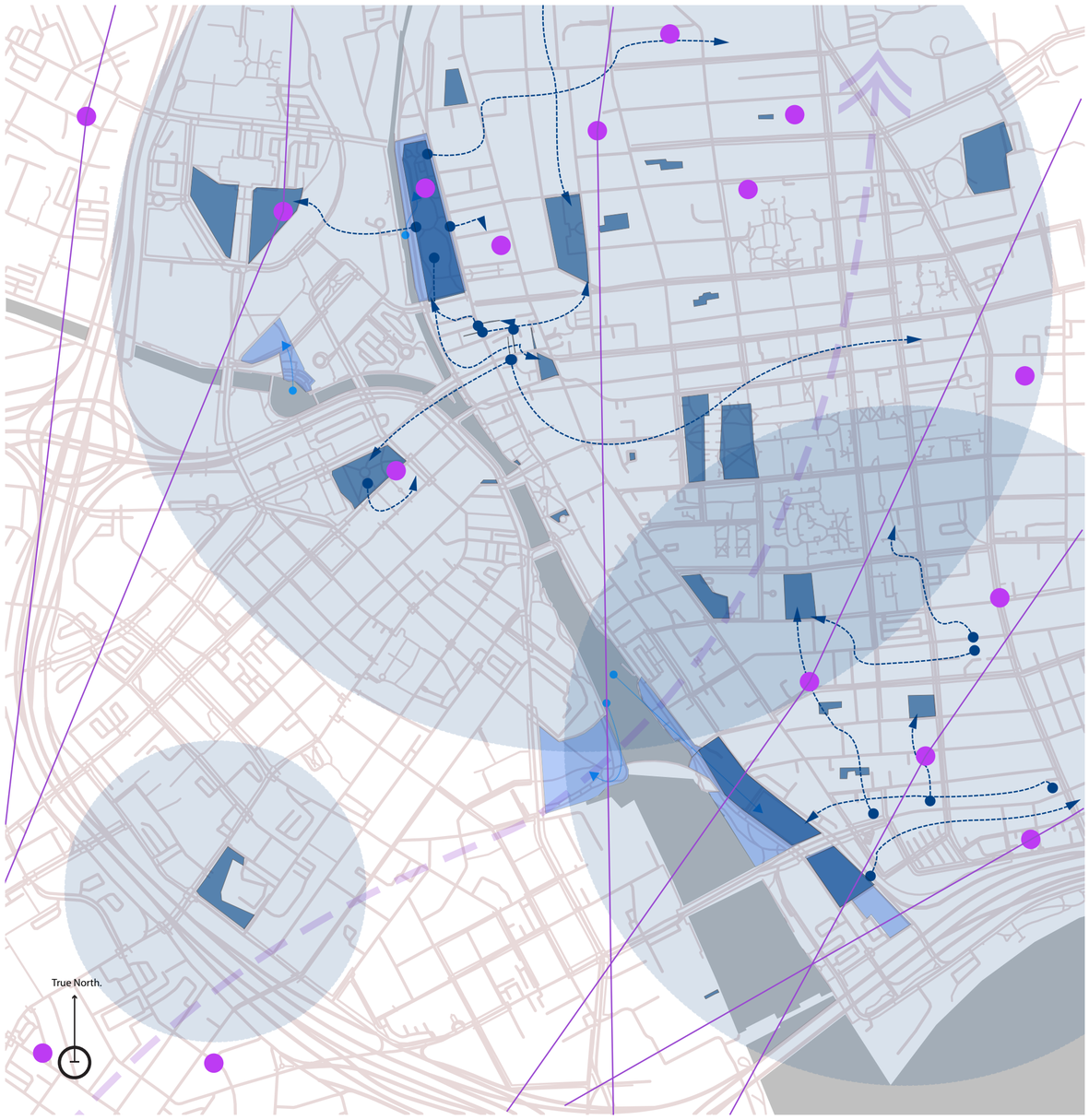


-The Path Above-

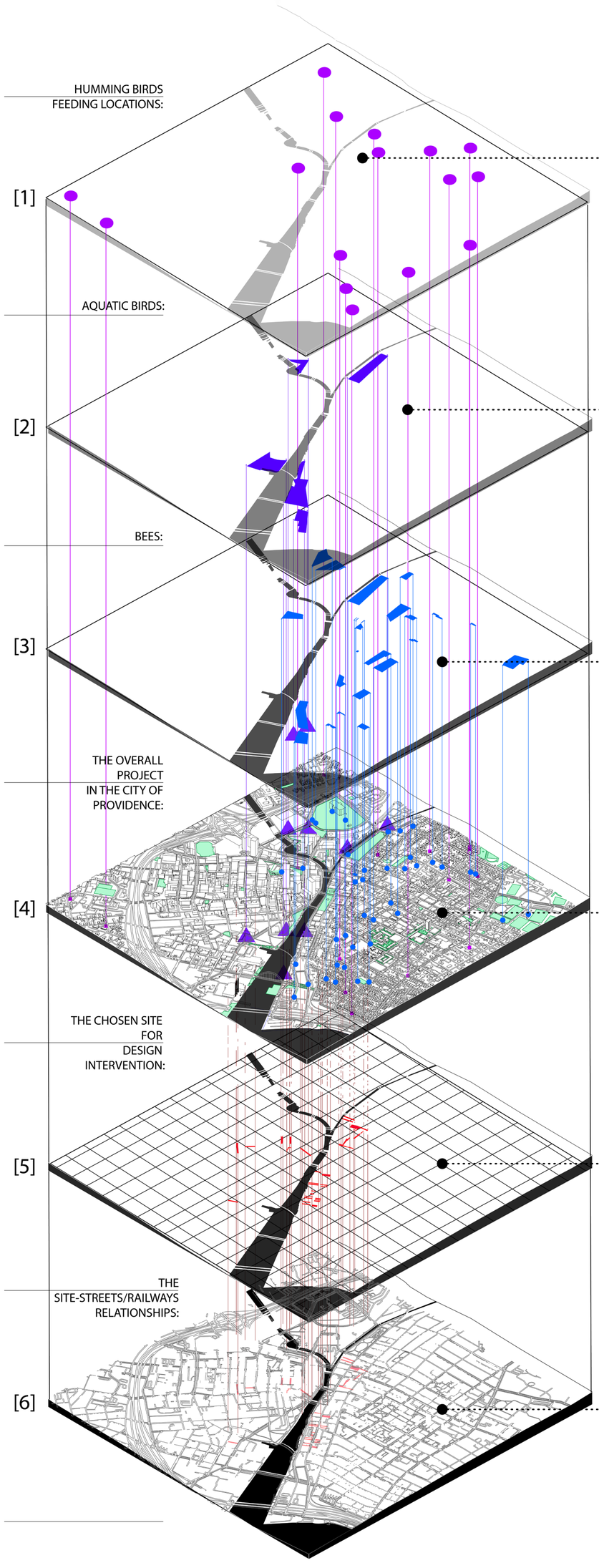
Providence is located in the migration path of ruby-throated hummingbird, which travelled from south to north from March to early May every year. Most sightings in Providence were recorded in April and early May. Therefore, introducing native species which bloom in these months to roof gardens and open greeneries would benefit the migrating hummingbirds and other pollinators.

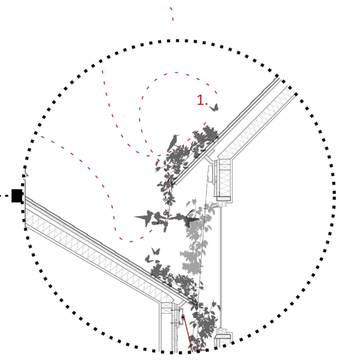
Common Yarrow | *Achillea millefolium*
Type: Perennial, Herb
Family: Asteraceae
Bloom Color: White , Pink
Bloom Time: Apr , May , Jun , Jul , Aug , Sep
Light Requirement: Sun , Part Shade

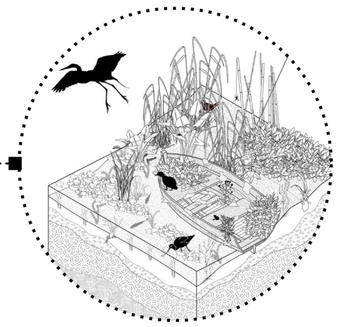
Woolly blue violet | *Viola sororia*
Type: Annual, Herb
Family: Violaceae
Bloom Color: White , Pink , Blue , Purple
Bloom Time: Mar , Apr , May
Light Requirement: Sun , Part Shade

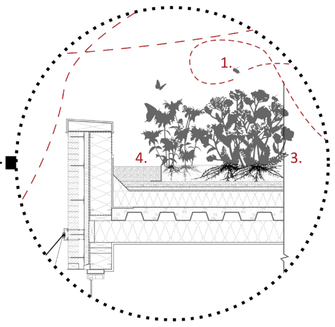


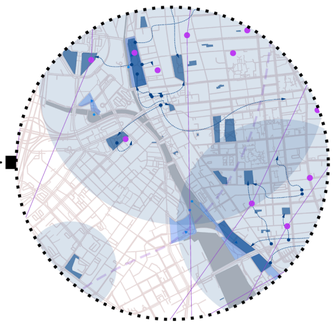
When overlaying all the diagrams with the existing lines of traffic, we could see how the paths of bees, aquatic birds, and hummingbirds disobey the systemic grids. As shown in the exploded axonometric dawings on pp. 39, although the paths of activities mainly occured on different verticle levels, some points of intersection could still be identified.

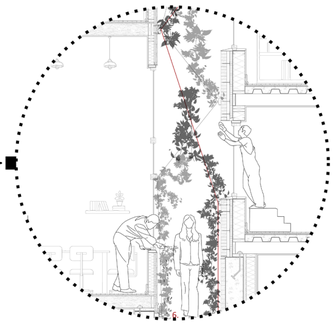


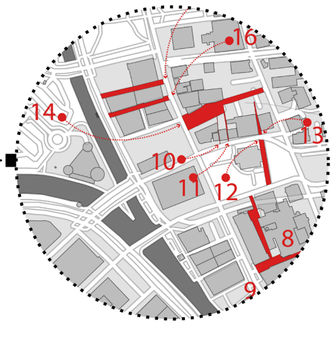








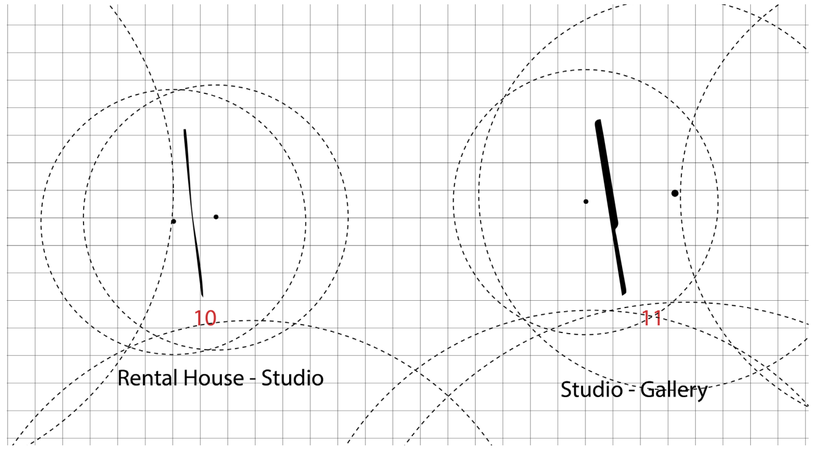




Points of Intersection

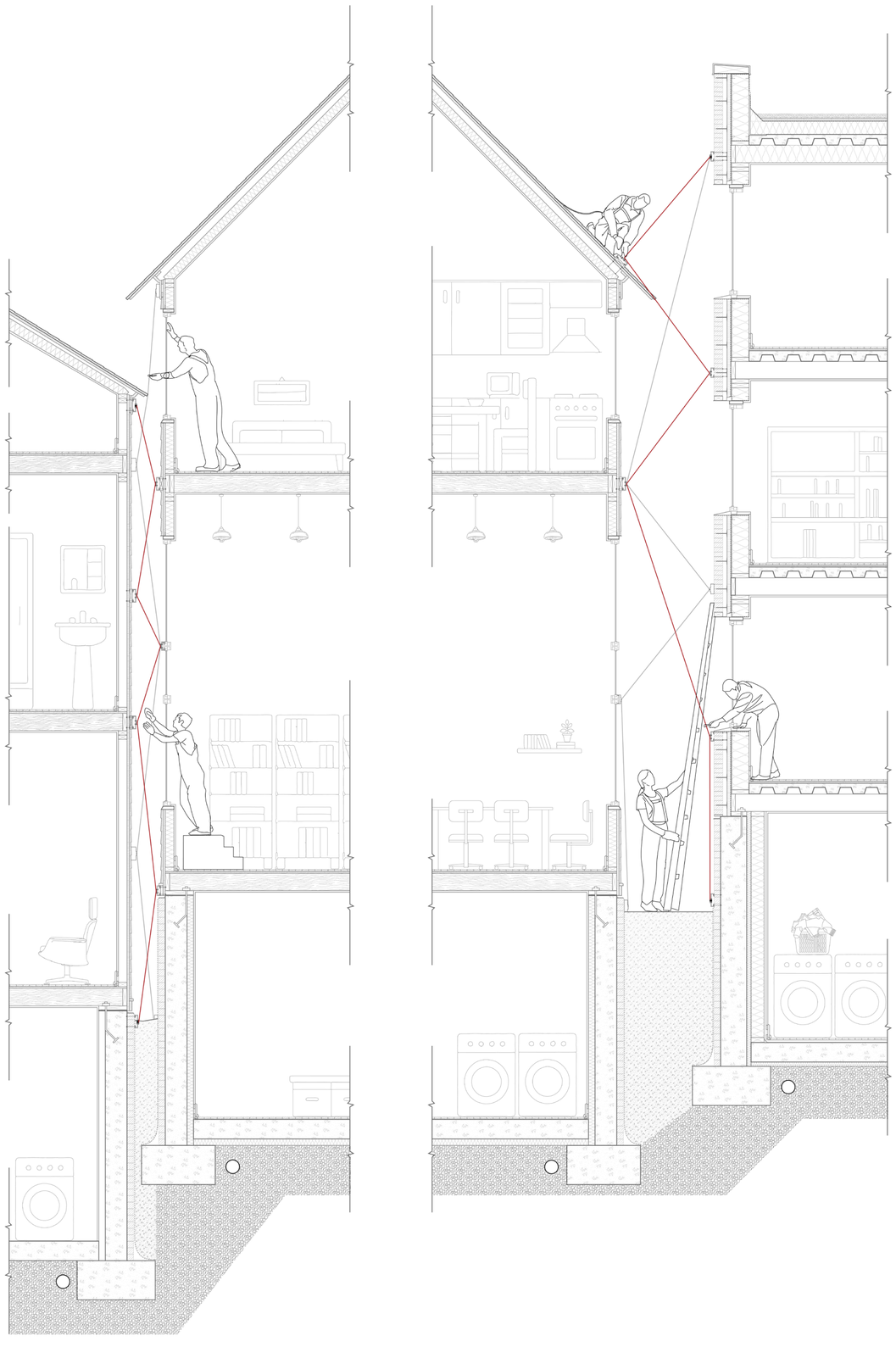
As indicated in the previous section, the sites 10 and 11, which were adjact to Fleur-de-lys Studio, were one of the identified "points of intersections".

While site 11 is a walkway connected to parking area behind the building, site 10 was inaccessible for pedestrians due to limited width.



The wired structure attached to the existing building provide the frame required by climber vines. They can be installed and maintained from the inside of the building for those space that are too narrow to access. The occupants could also fertilize the plants and cut flowers from inside the house after installation.

The building to the right was modified into a brick building in the drawing to better represent the common type of construction material in the area.

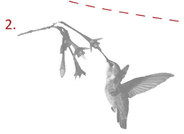


1.

Foraging Pollinators

The variaty of plants will provide food and nesting materials for pollinators, including bees, butterflies and hummingbirds, in different months.

2.



Ruby-throated Hummingbird

The migrating hummingbirds (mainly ruby-throated hummingbirds) are sighted in Providence from April to early May during their annual migration. The less disturbed roof greenery and upper part of the vines that bloom in these months will provide food for the migrating birds.

3.

Common Yarrow | *Achillea millefolium*

Duration: Perennial
Habit: Herb
Size Notes: Up to about 3 feet tall.
Bloom Color: White , Pink
Bloom Time: Apr , May , Jun , Jul , Aug , Sep
Bloom Notes: Flowering late Apr to early Jul (South), mid Jul to mid Sep (North).

Special Value to Native Bees (Recognized by pollination ecologists as attracting large numbers of native bees.)
Supports Conservation Biological Control (A plant that attracts predatory or parasitoid insects that prey upon pest insect.)

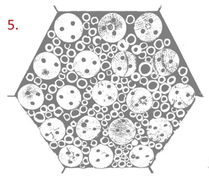
4.

Bee Balm | *Monarda fistulosa*

Duration: Perennial
Habit: Herb
Size Notes: Up to about 5 feet tall.
Bloom Color: White , Pink
Bloom Time: May , Jun , Jul , Aug , Sep, Oct
Use Wildlife: Birds, Hummingbirds, Butterflies
Use Food: Leaves boiled for tea, used for seasoning, chewed raw or dried; flowers edible.

Special Value to Native Bees
Special Value to Bumble Bees

5.



Nesting & Hiberbation

The site was too narrow to be accessible for pedestrian, but could provide nesting space for ground nesting bee, or cavity nesting bees that can reside in artificial nest.

The fallen leaves from the vine will cover the ground and provide the required environment for hibernation.

6.

Trumpet Vine | *Campsis radicans*

Duration: Perennial
Habit: Vine
Bloom Color: Red , Orange , Yellow
Bloom Time: Jun , Jul , Aug , Sep

Use Wildlife: Pollinated by hummingbirds and long tongued bees.

Thank you.

Thank you for reading through my thesis book.

To co-exist with nature in urban space is not only a process of healing and decolonizing, but also an exploration of finding a way forward.

I appreciate everyone who helped me during this process.

Green Paths
- On the Space In-Between Buildings

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