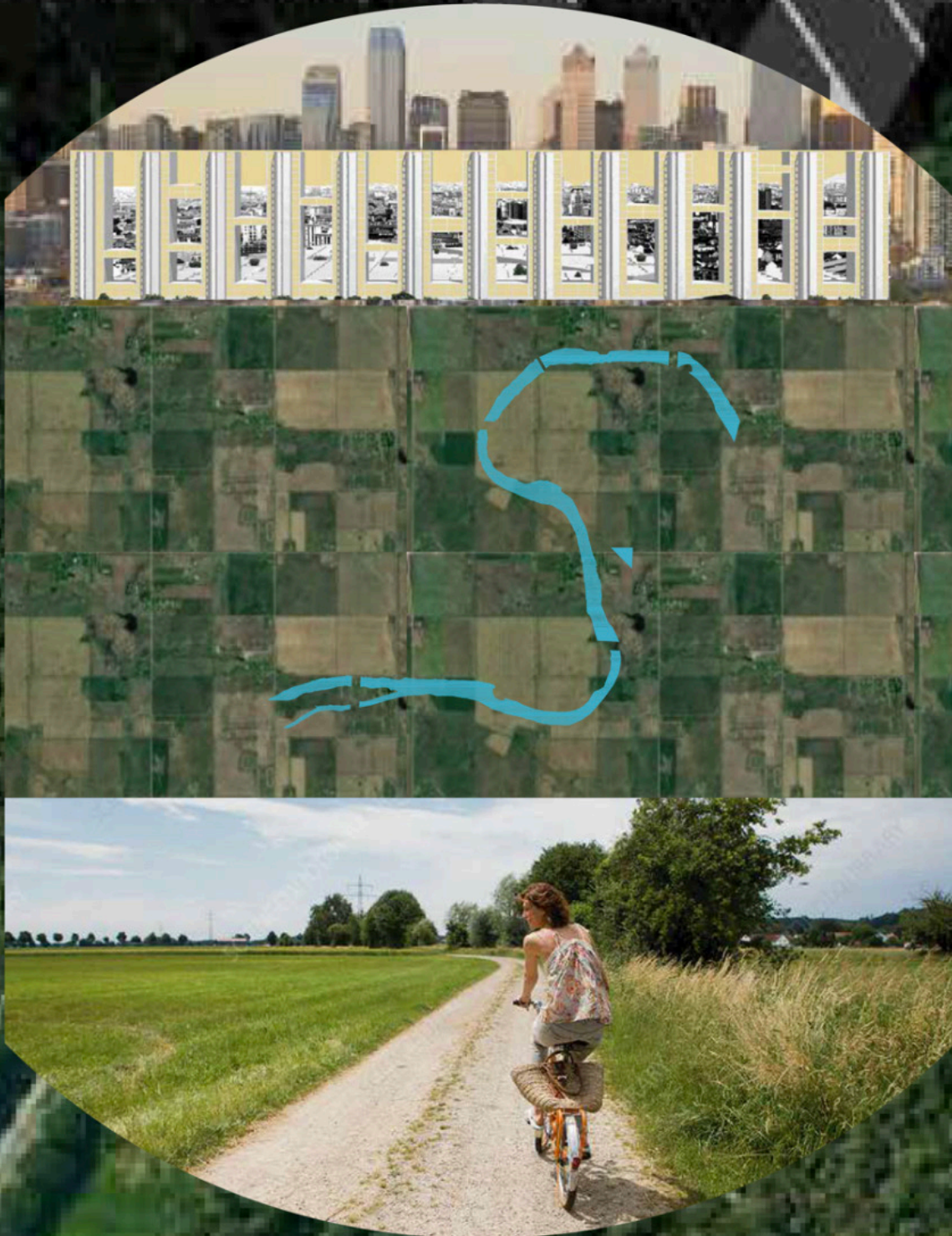


AGRICULTURE²

SQUARELY ROOTED IN SUSTAINABLE LIVING
FOR CLIFF BUNGALOW-MISSION



EXECUTIVE SUMMARY

Our design process began with two experimental exercises to reflect on the community as it is today: The Situation and Archipelago.


The Situation exercise started us off with a *dérive*, which encouraged us to walk around the community, following our sightlines to whatever we found piqued our interest. The idea to create a mental map based on how you experience the community on foot as a pedestrian, rather than an overarching view of the entire area. Perceived distances, important wayfinding structures, and relevant clusters of buildings or natural spaces.

Archipelago zoomed out to the bird's eye view and used spatial mapping to discover relationships based on the overlap of roads, greenspace, built form, historic buildings, and other relevant aerial mapping elements. These intersections resulted in discovering certain islands of form, whether built or natural, which led us to investigate similar forms in other contexts.

The next step was a community engagement session, where we connected directly with community members to understand their ideas for building a better place to live. Responses focused on continuing to foster the creative arts community and music scene as well as community events and activities. Some structural suggestions such as better connectivity across the Elbow River and through the community via bike lanes were also central concerns.

With all of this information in mind, we began considering additional contextual information and creating some initial design ideas. Agriculture2 is designed as a proposal based in a future with increased risk of extreme weather and flooding events as a result of climate change. In this scenario, Cliff Bungalow Mission experiences devastating flooding, which results in having to rebuild the community from the ground up. Only a few historical buildings survived and will be incorporated into the new design.

After the initial thoughts on the overall design, we wanted to test some of the foundations of the proposal – namely the need for more garden space in Cliff Bungalow-Mission. The most recent data in 2016 showed that 87% of residents in Cliff Bungalow and 97% of residents in Mission live in apartments. Overall, the community has 94 community garden plots, so with nearly 5,700 residents living in apartments, there is approximately 1 garden for every 60 people.




The GT (or Garden Train) Express was created to address this shortage of community gardens. The GT Express is a mobile community garden bed made up of 3 train cars: one for garden greens, one for herbs, and one for flowers. The herbs and flowers will be cared for by each host throughout the growing season, making them a cross-community collaboration. The garden greens are meant to be replanted by each new host from seedlings. The 3-week window will allow for the seedlings to mature enough for harvest by the time the train leaves the stop.

We found that there was overall a positive response from community members who attended the tactical urbanism event, so we continued with our plan for designing an agriculture-forward inner-city community.

Our design is centered on stacking density in the northern area of the community running along an east-west axis. This compliments the current conditions along 17th Avenue, thereby adding to the legibility of the design. Much of the southern area (62.7 hectares) is dedicated to agriculture because this area is vulnerable to flooding. The design allows for future flooding to occur while causing minimal disturbance to residents and businesses. Additionally, it creates the conditions for local food resilience and a closed-circle food system within the inner-city. Not only could this provide for the needs of the residents and businesses of Cliff Bungalow-Mission, but it could also service the larger Downtown community. Schools are maintained to ensure it continues to serve a diverse mix of family types and historical buildings are adaptively reused to increase functionality and vitality while conserving historically relevant features.

The design proposal also looks at greatly improving the flow for pedestrians and bicycles without excluding vehicles. Although priority is given to climate-friendly modes of transportation, we understand that vehicles are still part of our cities, so roadways and underground parking accommodate some level of vehicular use. The design is projected to house 10,000 people, exceeding the current population in the community while not excessively densifying. This proposal will be carried out over a period of 25 years to ensure financial sustainability and a gradual return to normal after the floods to build a greener tomorrow.



THE TEAM



ZEYNEL KIRSAN

Zeynel is an internationally educated, motivated, and passionate urban planner and data analyst. He has over five years of planning experience, which helped him gain technical and leadership skills to pursue his career. He is also interested in learning about new technologies with regards to data and its visualization, as well as machine learning. He enjoys reading science and planning/design-related books. He loves swimming, travelling, hiking, biking, walking and other outdoor activities in his spare time.



JOSH BATEMAN

Joshua Bateman is a lifelong Albertan with a B. Sc. in Nutrition and Food Sciences and minor in Food Policy. He has worked on farms for over three years in Alberta and Australia, held positions on national union boards, and worked in local community development. Josh is passionate about triple bottom line design where environmental, social, and economic equity and sustainability are essential to success.



SONIA KAMAL

Sonia has a passion for solving problems and enjoys the thrill of taking on new challenges, particularly when it involves improving people's daily lives through the process of planning and design. Her background includes expertise in urban design, land development, public engagement, project management and real estate finances, which she has gained from her former career as an Architect. Coming from an international background, Sonia brings more than 8 years of experience of designing complex urban development projects with being a key organizer for several public engagement events and managing several construction administrations.

TABLE OF CONTENTS

Part 1: The Foundations	Page 1
Situation 1	Page 2
Situation 2	Page 3
Situation 3	Page 4
Archipelago	Page 5-8
Community Engagement	Page 9
Scenario	Page 10
Part 2: The Experiment	Page 12
Tactical Intervention	Page 13-14
Part 3: Agri-Culture Squared	Page 15
Concept Map And Inspiration	Page 16-18
Agriculture Squared Masterplan	Page 19
Sections	Page 20
Pedestrian, Bike and Greenspace Network	Page 21
Road And Agricultural Network	Page 22
Seasonal Vegetable Growth	Page 23
Population Projection	Page 24
Part 4: Policy Proposal	Page 25-33
Appendix A: Policy Proposal Content Tables	Page 34

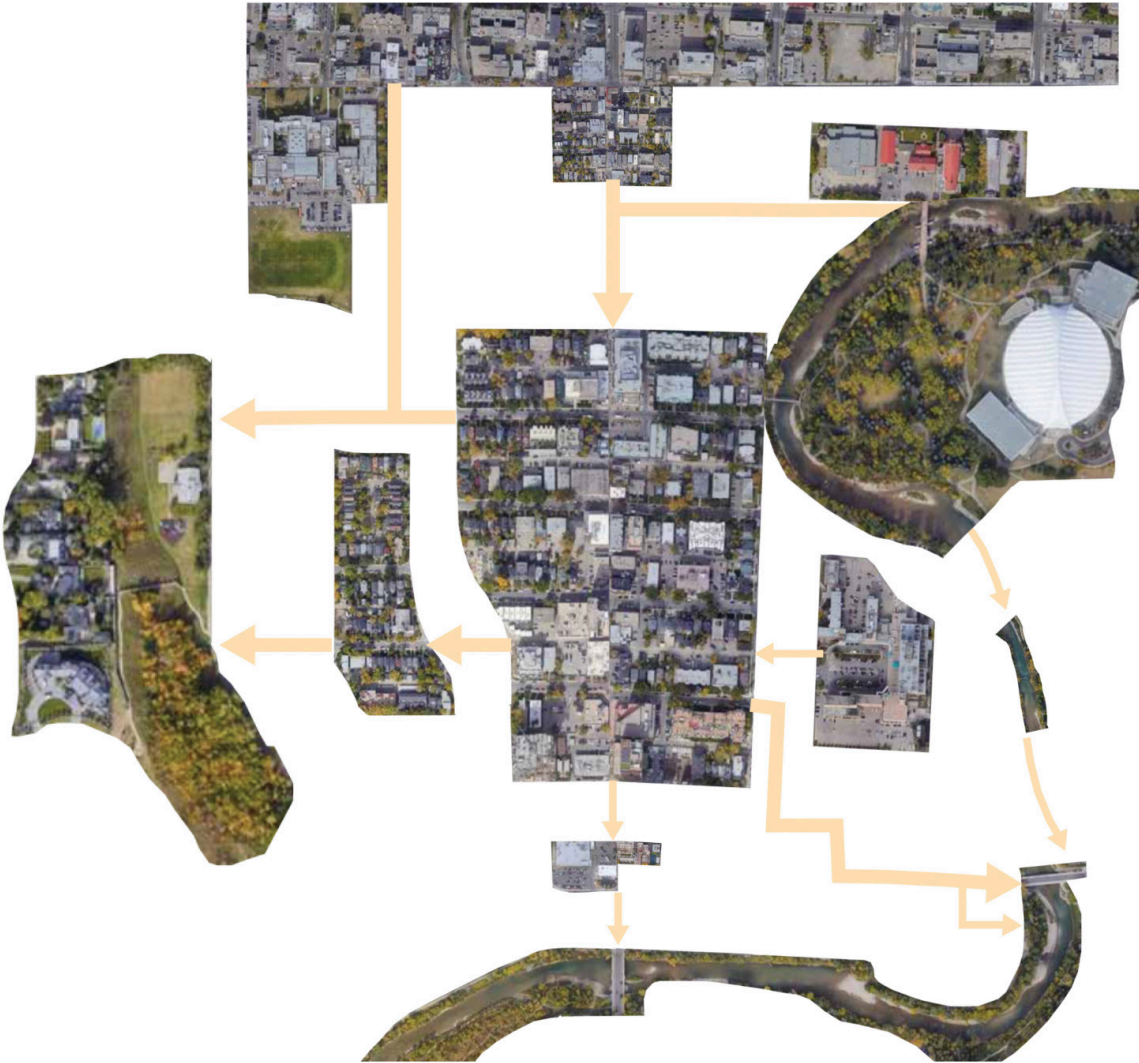
PART I

THE FOUNDATIONS

Part I was focused on four elements: the situation, archipelago, community engagement, and the scenario. The foundations for the project were set based on these four elements and they served as guiding activities for the tactical and design phases. We began with the highly personal *dérive* and from there expanded our process further to include more diverse opinions and deeper analysis.

SITUATION I

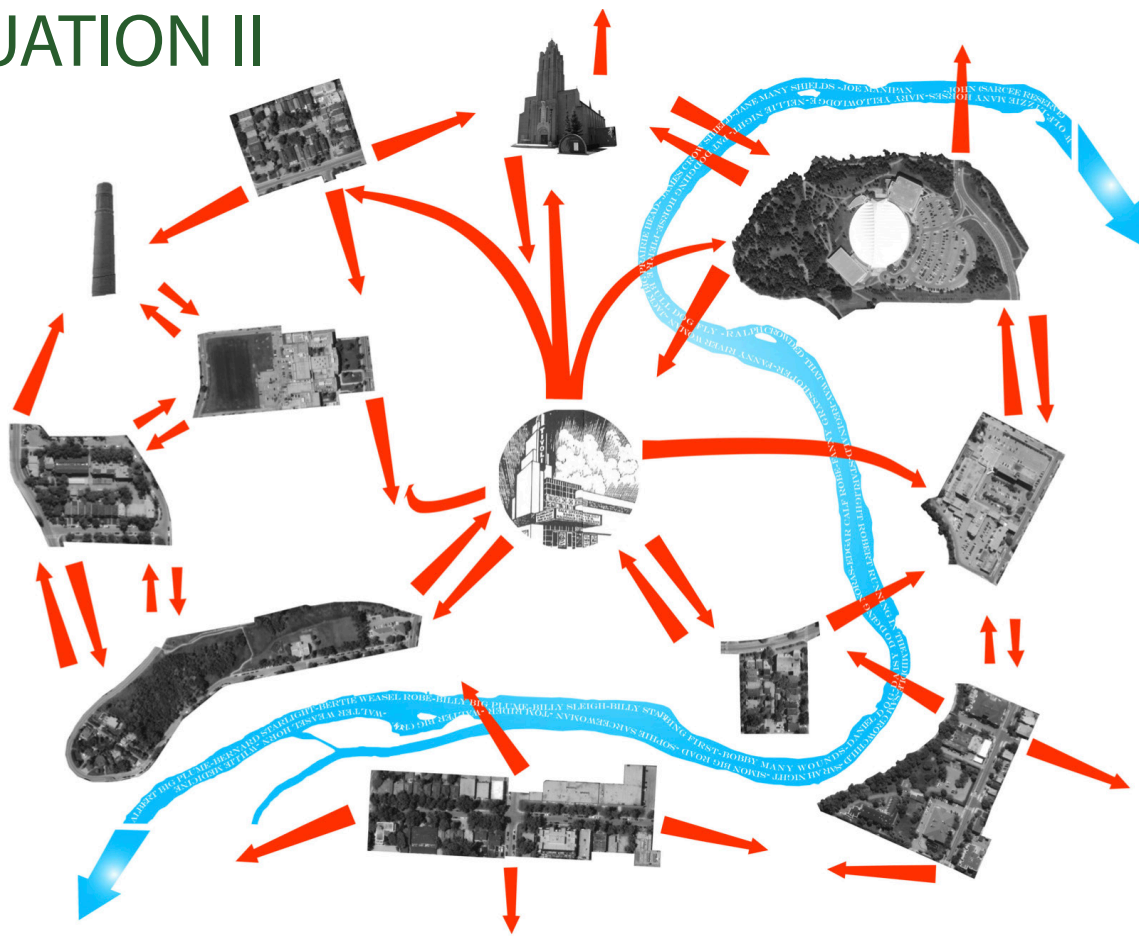
The first exercise was called situationist space and involved a *dérive*, a walk around the neighbourhood where your path is determined by your curiosity. These diagrams are a reflection of each of our *dérives* with salient areas emphasized, embodied distances between areas shown by arrows, and only significant sites retained.



In this *dérive* I found that there were 7 “unities of atmosphere” as thought of in situationist space. The first is 17th Avenue, which features bars, cafés, restaurants, shopping, and vibrant street life. Second is central 4th which has a slightly calmer feel, but still hosts charming cafés, restaurants, and low-rise housing. Third is Lindsay Park is a distinct natural feeling area that acts as a retreat from the city. Fourth is south 4th is an unattractive sea of parking and large scale grocery, which is unattractive as a destination. Fifth is the Cliff Bungalow single-detached heritage housing area near the park, where there is clear history and character. Sixth is Cliff Bungalow Park, with the community association, community gardens, and outdoor gathering space. Seventh and final is the hospital area, which is moody, isolated, and unwelcoming. Overall, the community is dominated by grid streets with large parks bordering the edges providing escapes from the action nearby.

-Josh Bateman

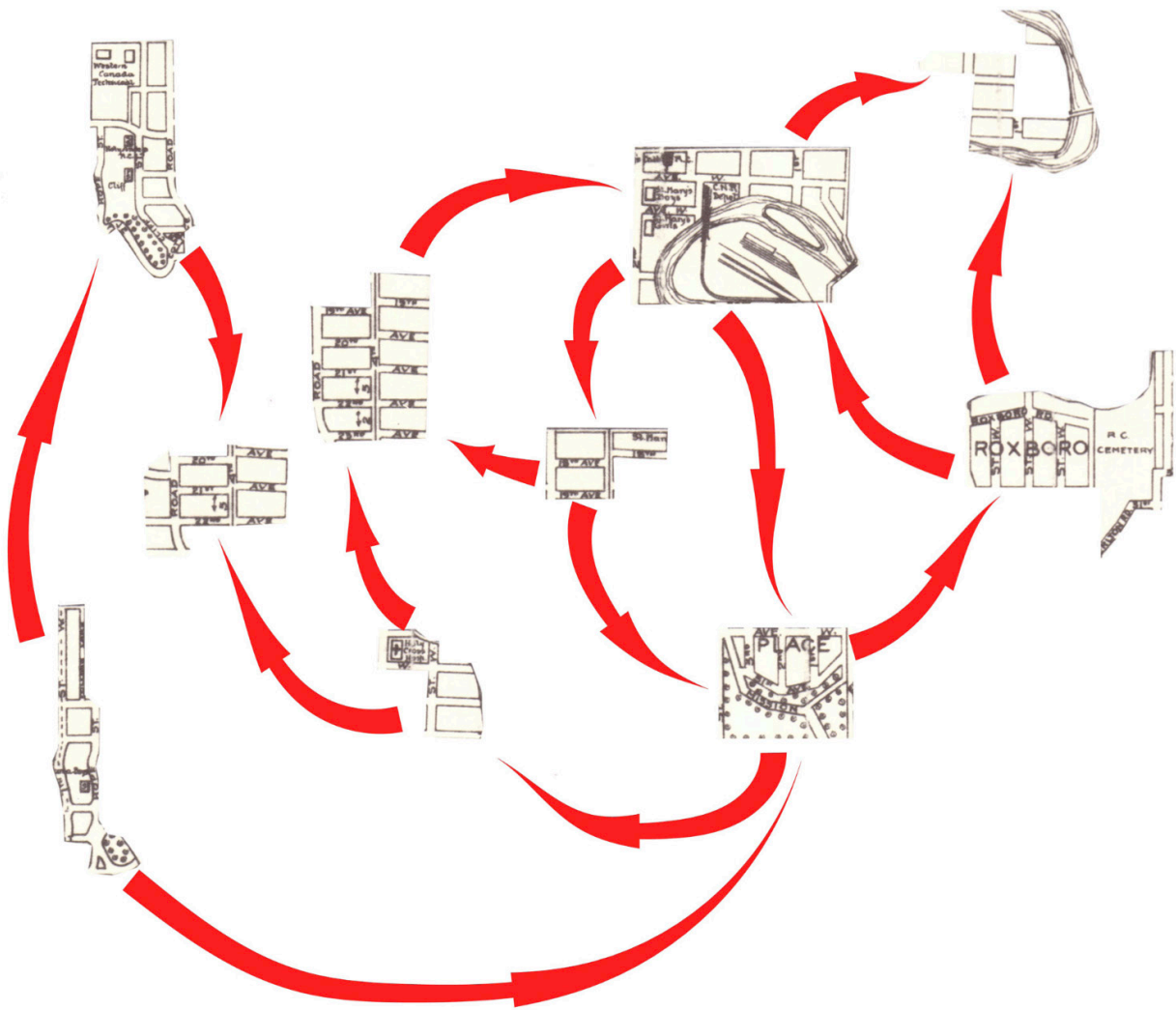
SITUATION II



My site visit to the area was inspired by the Situationist philosophy of Guy Debord, and my *dérive* [literally, “drifting,” a technique of rapid passage through varied ambiances] (Situationist International Online, 1958) was started from a magnificent bridge in the community. The bridge stands over the Elbow River and connects the Mission community to Lindsay Park. As I entered the park, I felt as though I had left the city and entered a forest. The greenery and natural surroundings were a stark contrast to the urban environment I had just left. As I made my way through the park, I came across another bridge that led me to a different urban fabric, consisting of many historical buildings and a beautiful cathedral as a landmark. This part of the neighbourhood felt like Paris, and the allure of the terrain and the encounters I found there drew me in (Situationist International Online, 1958).

Based on my inspiration and understanding of the site, I created a Situation that reflects the ideals of a walkable community design. The situation consists of elements from the Cliff Bungalow / Mission communities that were arranged in a circular pattern to provide walkability throughout the community. The design includes a school district, several historical landmarks, a core commercial and art centre (Tivoli Theatre), a historical hospital, residential spaces with a heritage tree boulevard, and two parks, one of which is a dog park and the other a community sport centre along the Elbow River. St. Mary Church, Lindsay Park, and Elbow River are held in their geographic places in the community. In addition, the artwork includes a list of indigenous people’s names who died in the Sarcee Junction (Tsuut’ina, AB, 1892-1921) (Sarcee (St. Barnabas) - NCTR, 2021) written on the Elbow River to commemorate them with the sky’s reflection. This serves as a powerful reminder of the loss of indigenous lives and the ongoing struggle for reconciliation and justice.

SITUATION III



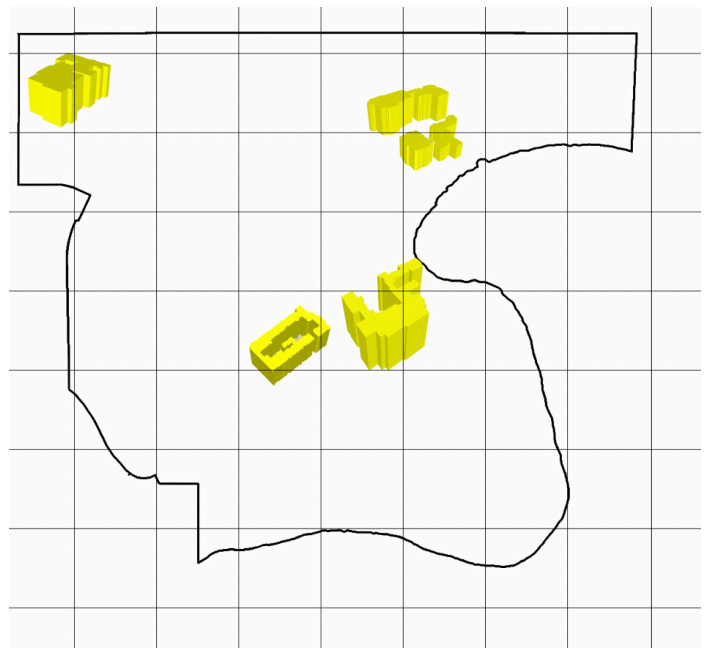
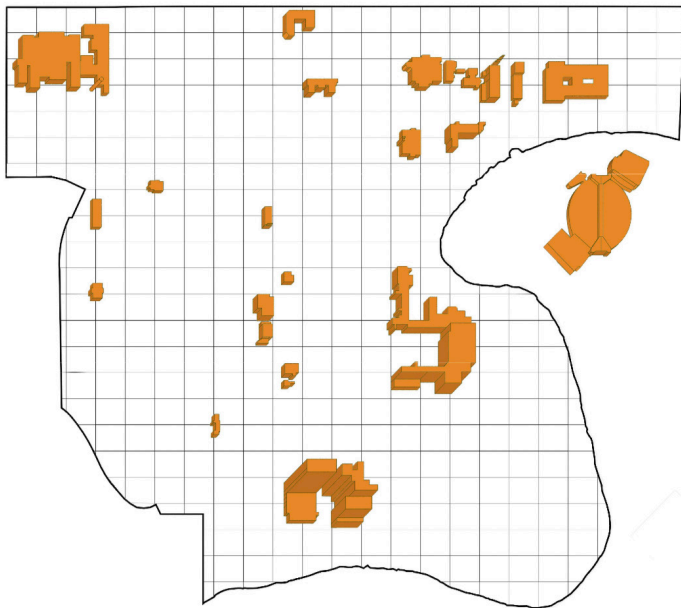
In Mission, there are two distinctive forces equally exists. One is the strong natural element: water, that creates the boundary and separates it from Roxboro and Erlton. Second one is structures with monumental scale and heritage quality. Somehow the entire mission area Signifies the heritage status keeping the mighty river unutilized considering the absolutely untreated cul-de -sacs all along the river edge.

Cliff-Bungalow acts as a buffer for that separates Mission from getting the crowd of 4th street. It appears as it was intentionally nestled this way so that the resident's of mission can have the best of both worlds. They want to avoid that noise and hustle of the active and vibrant commercial space yet having the proximity to it. Same with the riverside. However, Cliff Bungalow is more prominent for townhouses with a little more tendency to break the grid. This neighbourhood benefits from the heritage aspect of mission as well as from the proximity to 4th street. However, there aren't much invite in Cliff-Bungalow as well considering its existence near 4th and 17th Avenue. All the bus stops are also stationed surrounded by these two streets comes again to the same question? Is it intentional? Do this neighbourhood with so much heritage value is intentionally introvert? Is the location that is adjacent to downtown is the only reason for it's density? Or there is a demand for activation?

ARCHIPELAGO

The second exercise was called archipelago and challenged us to analyze the site using spatial maps to discover relationships between certain elements within the community. The final goal is to find specific elements within the community that act as islands of identity and create a shape that is recognizable and meaningful.

As part of the exercise, our team was asked to find a precedent that reflects this form and then to consider how that precedent could fit into the context of Cliff Bungalow-Mission.



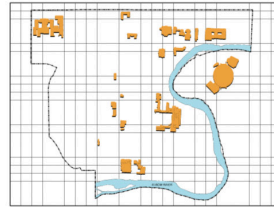
ARCHIPELAGO



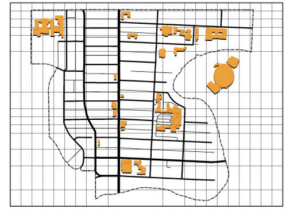
The figure-ground Map of CHIÉ Bangalore-Mission



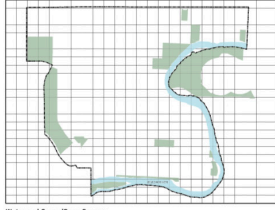
High-density Buildings



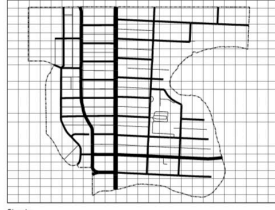
Objects and Water



Objects and Streets



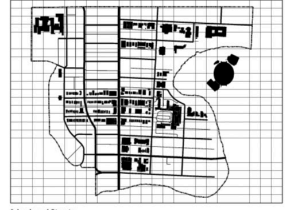
Water and Green/Open Spaces



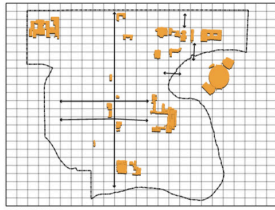
Streets



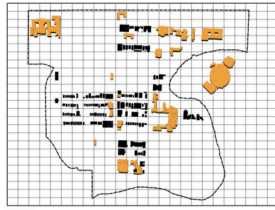
Islands and Water



Islands and Streets



Objects and Axis



Islands



Islands and Objects



Islands, Water-Green/Open, Objects and Streets



NW of the Site



Plan of the Site



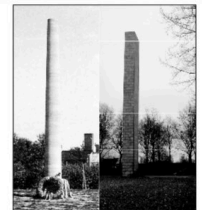
Building Structure



Historical Chimney as Landmark



Neuengamme Concentration Camp



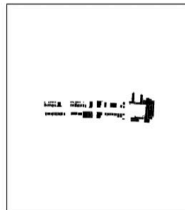
The previous and current memorial



From East to West of the Site



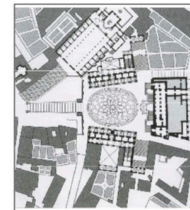
Plan of the Site



Building Structure



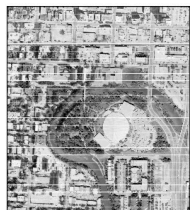
Holy Cross Hospital



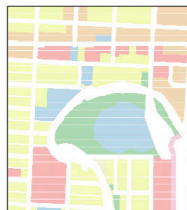
Campidoglio



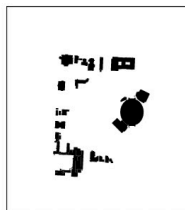
Current view of the Campidoglio



NE of the Site



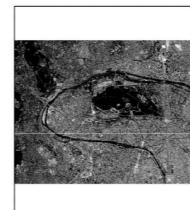
Plan of the Site



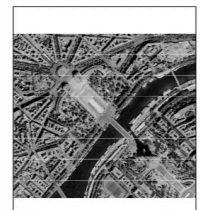
Building Structure



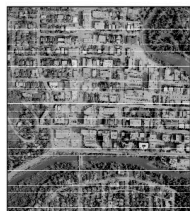
Historical Buildings as Landmark



Paris Aerial Photo



Eiffel Tower and Surrounding Area



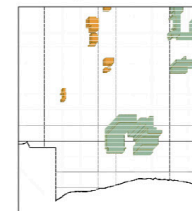
South of the Site



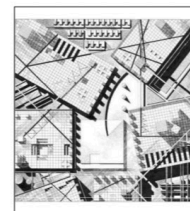
Plan of the Site



Building Structure



High-rise Buildings-Positive Space



Fantastic Plan by Franco Purini



Succentia Museum Public Space

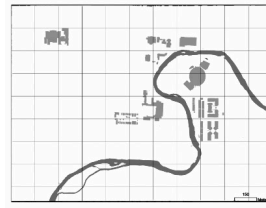
ARCHIPELAGO



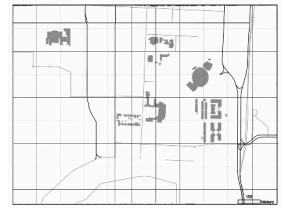
Mission-Cliff Bungalow Community



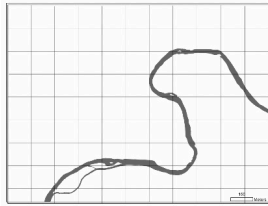
Built Structures



Objects and Water



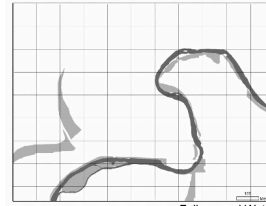
Objects and Streets



Water



Streets



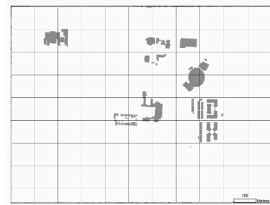
Foliage and Water



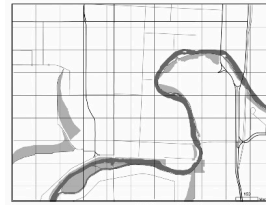
Built Structures and Streets



Foliage



Objects



Foliage, Water and Streets



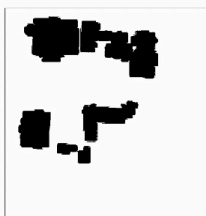
Foliage, Water, Streets and Object



Aerial Photo of Cathedral area



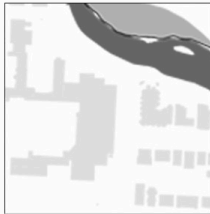
Plan



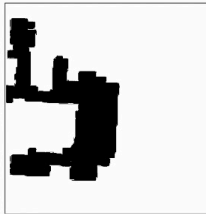
Structure



Aerial Photo of Hospital area



Plan



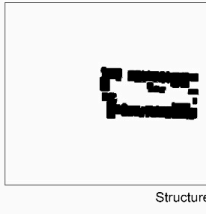
Structure



Aerial Photo, Cliff Bungalow Residential Area



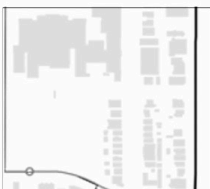
Plan



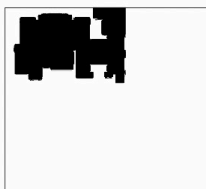
Structure



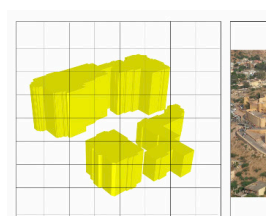
Aerial Photo



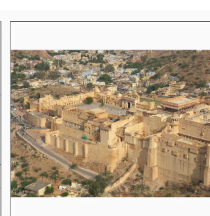
Plan



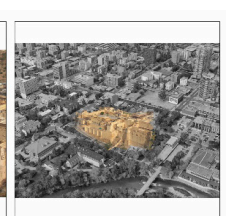
Structure



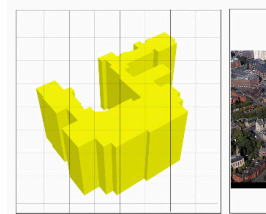
Structure



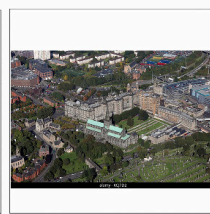
Amer Fort, Jaipur, India



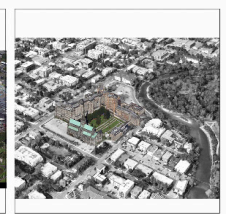
Vision



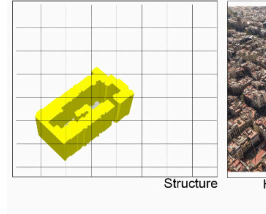
Structure



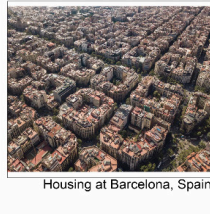
Glasgow Cathedral, Scotland



Vision



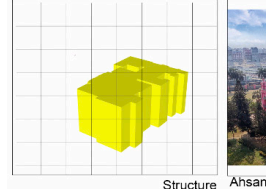
Structure



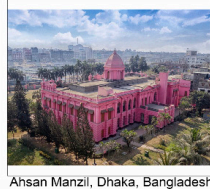
Housing at Barcelona, Spain



Vision



Structure



Ahsan Manzil, Dhaka, Bangladesh



Vision

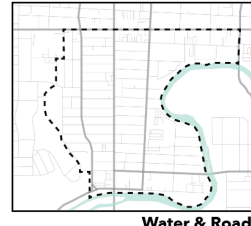
ARCHIPELAGO



Aerial Photo



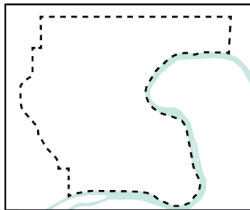
Road Network



Water & Roads



Greenspace & Roads



Waterways



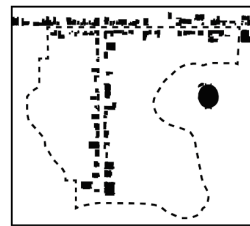
Greenspace



Water & Institutions



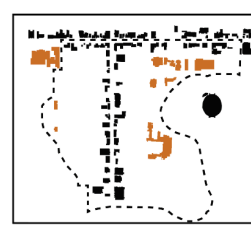
Water & Greenspace



Built Form on Main Streets



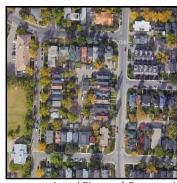
Institutional Buildings



Main Streets & Institutions



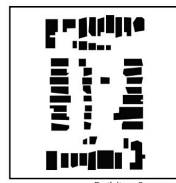
Main Streets & Greenspace



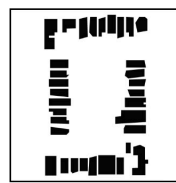
Aerial Photo of Courtyard



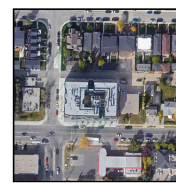
Plan View of Courtyard



Building Structure



Community Courtyard



Fuse 33 Courtyard
Calgary, AB



Fuse 33 Courtyard
Calgary, AB



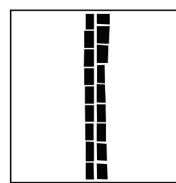
Aerial Photo of 4th



Plan View of 4th



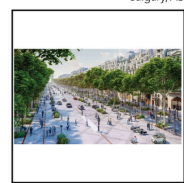
Building Structure



The Avenue



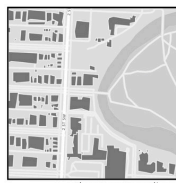
Champs d'Élysées
Paris, FR



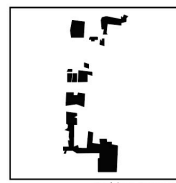
Champs d'Élysées?
Paris, FR



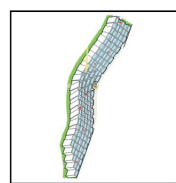
Aerial Photo near Elbow



Plan View near Elbow



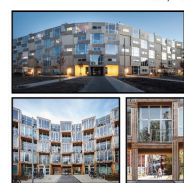
Building Structure



Flow with the Elbow



Dortheavej Residence
Copenhagen, DE



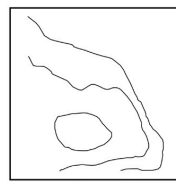
Dortheavej Residence
Copenhagen, DE



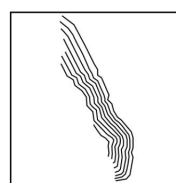
Aerial Photo near Cliffs



Plan Topography View near Cliffs



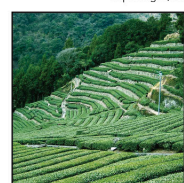
Topography Structure



Hillside Gardens



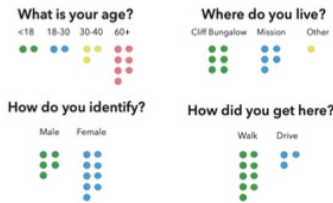
Shizuoka, Japan



Shizuoka Tea Terrace

COMMUNITY ENGAGEMENT

DEMOGRAPHICS & INTRODUCTION



ENGAGEMENT SUMMARY

WHERE

Issue	Count	Votes
Green space activation on 5th & 6th on the river where the pathway exists	1	1
5th Street & Lumber Park	1	1
Public space activation	1	1
Community Centre	1	1
5th Street Parking lot	1	1
Community Centre	1	1
5th Street & Lumber Park	1	1
5th Street	1	1



WHAT (TACTICAL)

Issue	Count	Votes
Beer garden (Beer Can in Winnipeg)	1	1
Restaurant garden (restaurant?)	1	1
Restaurant	1	1
Music	1	1
Southbound 5th St. @ 17th	1	1
Green space activation	1	1
5th Street @ 4th St	1	1
Community Garden Expansion	1	1

WHAT (STRUCTURAL)

Issue	Count	Votes
2nd Street Bike Lane	1	1
Bike lane redesign for winter	1	1
2nd Street	1	1
Redesign 4th/5th/6th/7th	1	1
21st and 24th Avenue	1	1
4th Street Bridge	1	1
5th Street and 6th Street	1	1
5th Street	1	1

ENGAGEMENT SUMMARY

AUDIENCE & ORGANIZERS



Audience	Votes
Young Adults	1
Artists	1
Musicians	1
People living in Cliff Bungalow	1
People visiting	1
Cliff Bungalow	1
Children	1
Seniors	1
Everyone	1
Partners	1
Organizers	Votes
Cliff Bungalow	1
Students from nearby schools	1
City of Calgary	1
Community Members	1
Walkers	1
Bikers	1

ENGAGEMENT PHOTOS



WHERE

- The southern border of the community is lacking vibrancy
- The northeast historic area is a sea of parking lots and dead space
- 4th Ave is disjointed and confusing for pedestrians and cars because of the skewed grid

WHAT

- Food and music in permanent or pop-up venues reflect community identity
- Better bike networks, especially along 5th would improve connectivity
- A sense of arrival at the southern edge of the community (art piece, mural, etc)
- Better connections to LRT stations

ORGANIZERS

- The Cliff Bungalow-Mission Community Association
- City of Calgary
- Individual households
- Students attending school in the community

AUDIENCE

- Young adults
- Musicians
- Local artists

Notes from the Session

Our community engagement session hosted a small number of community members, primarily located on the block adjacent to the community association building. The demographic was also skewed towards the 60 and over age range, which resulted in some sample bias.

With all this in mind, we engaged with community members through a sharpie and sticky note activity, where they were able to freely think of where, what, and who could contribute toward making Cliff Bungalow-Mission an even better place to live. The idea was to reflect on the current identity and culture and consider how to continue improving what it means to live in Cliff Bungalow-Mission.

Respondents focused their attention on public street activations such as music, patios, and food festivals. Additionally, improvements to bicycle infrastructure and some key areas of the community that are currently underactivated were important considerations. A diverse array of players were suggested for activating the community depending on the proposed action ranging from public to private partners.

These conversations guided our design process, with suggestions such as a sense of arrival at the southern entrance of the community, food and music, and improved bicycle infrastructure making their way into our final proposal.

SCENARIO

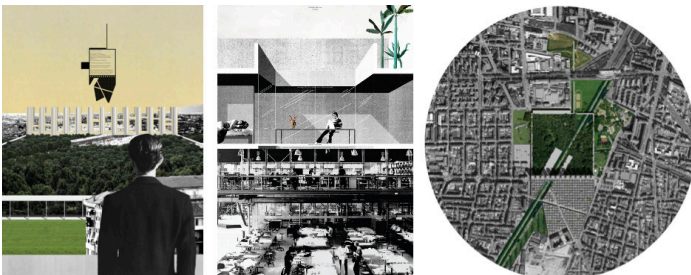
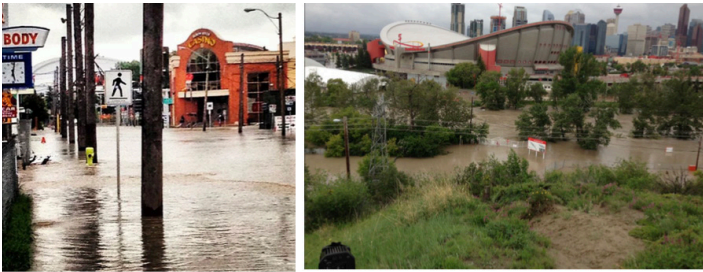


BEFORE THE FLOOD



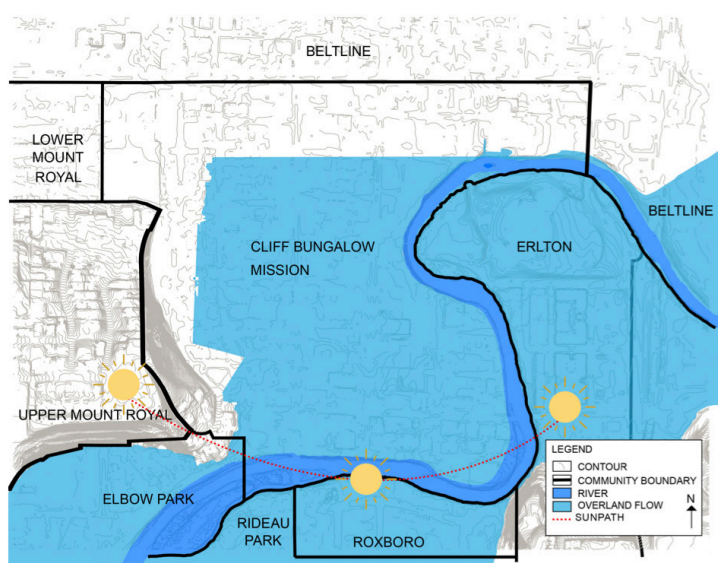
DURING THE FLOOD

Our scenario is based on a future flooding event in Cliff Bungalow-Mission, which devastates the community. This flooding occurs because of climate change causing rapid snowmelt paired with heavy spring rains. The Elbow River rushes over its banks into the well-known floodplain covering the community as seen in the image on the right. In this scenario, only a few of the historical buildings survive the floods and the remaining area in the community needs to be fully rebuilt.



2013 FLOODS AND LOCOMOTIVA 3

Images above show the level of devastation from the 2013 floods, while below the Locomotiva 3 project shows some inspiration for a denser and greener design.



FLOOD ZONE & SUN PATH

The flood zone and sun path were critical factors influencing the later design. These environmental conditions guided the team to create a more flood resilient future.



PART II

THE EXPERIMENT

Part II was focused on experimenting with tactical urbanism. After identifying some critical foundations for our project, we wanted to test whether our assumptions on community needs were accurate. The most playful way to test this out is through tactical urbanism, so we created a project to show the community how they could begin setting the foundations for a greener future today.

TACTICAL INTERVENTION

Stage 1: From Wagon to Garden: The GT Express

The first step of our process was finding childrens' wagons through Facebook Marketplace. For just \$50, we secured 3 wagons, which were the foundations for our innovative garden beds. We sanded them down and coated the wagons in a black spray paint for contrast with green growth. These were meant to serve as a cost-effective solution for mobile garden beds.



Stage 2a: Community Engagement

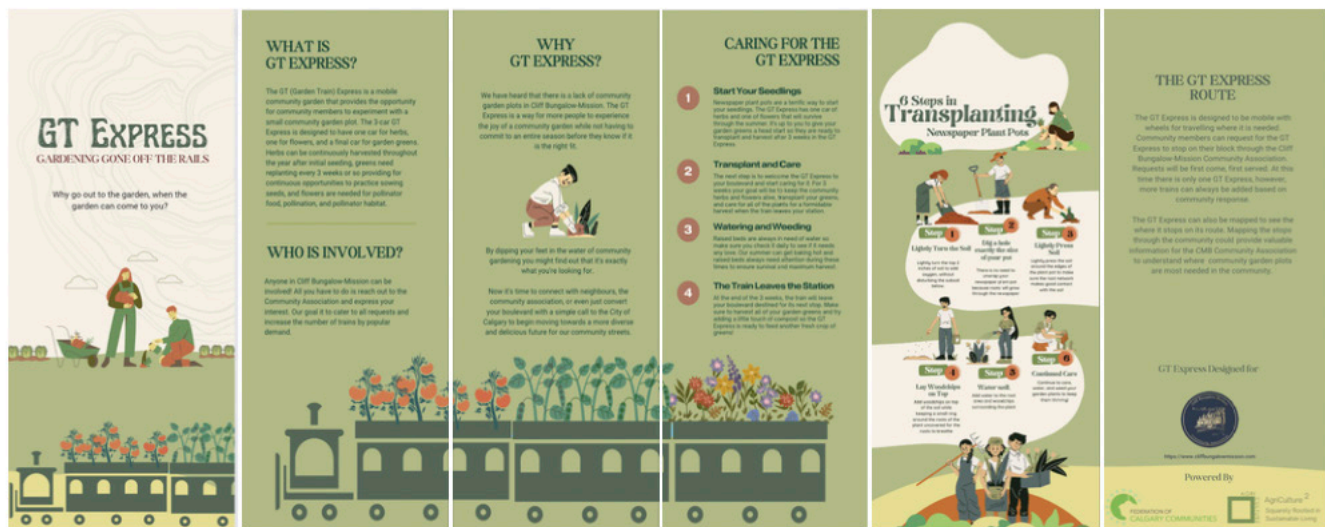
The community engagement session happened at the end of March, so weather did not permit the gardens to feature living plants. Instead, we used the wagons as surfaces for newspaper plant pots making, which added value as an experiential educational exercise and showed the versatility of the design.



TACTICAL INTERVENTION

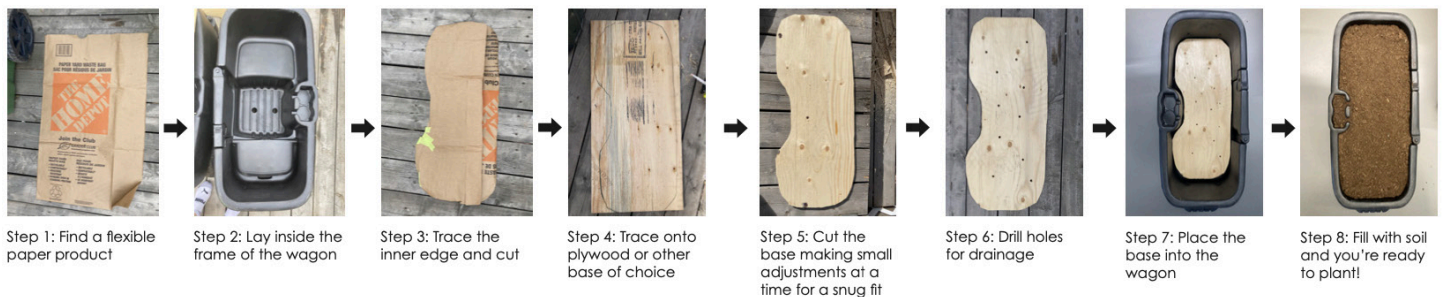
Stage 2b: Knowledge Transfer

Our brochure provided in-depth project information and accompanied instructions for how to build your own newspaper plant pot. The activity at the community engagement session provide hand-on skills and encouraged participants to get their hands dirty by trying their hand at gardening.



Stage 3: Final Transformation

The final stage transformed the wagons into garden boes and carried out the full vision. The plants were still young so it is just a small preview of the true potential.

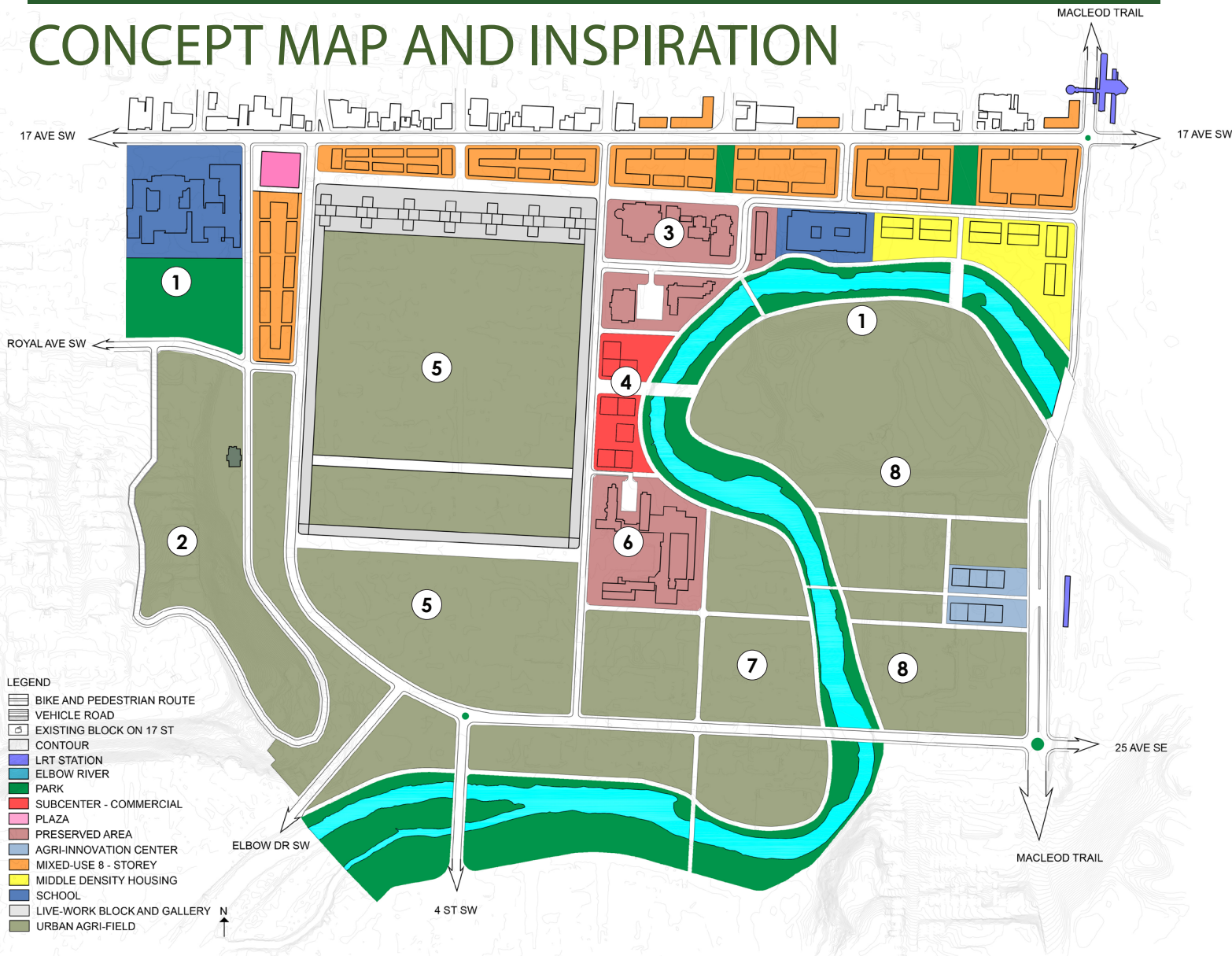


PART III

AGRI-CULTURE SQUARED

Part III highlights the potential impact of climate change on Cliff Bungalow-Mission, as well as our proposed solution for a more resilient future. AgriCulture² : “Squarely Rooted in Sustainable Living” aims to create a sustainable and agriculturally centered community that can withstand the effects of extreme weather events, especially flooding as it is a key vulnerability. It is important to recognize that as climate change continues to cause greater fluctuations, future floods are likely to be even more severe. With this in mind, we hope to introduce both built and agricultural forms and functions that provide resilience for Cliff Bungalow-Mission into the increasingly uncertain future.

CONCEPT MAP AND INSPIRATION



The proposed solution takes inspiration from the Locomotiva 3 proposal by Dogma in Turin, which aimed to transform a European mid-rise community into a more compact, sustainable form with access to an urban forest. Similarly, the envisioned Cliff Bungalow-Mission community is reimagined as an urban oasis of sustainable agriculture and local culture that promotes vibrant public spaces and provides housing for all. The project was developed based on community conversations, previous density levels, and the increased risk of extreme flooding. The proposal seeks to concentrate buildings along the northern boundary of the community, away from the flood zone. The remaining area would be used for various agricultural projects that would add color and vibrancy to the community. Additionally, this design ensures maximum solar exposure due to the limited shadows cast from the south.

The AgriCulture² project presents a promising solution for a more sustainable and resilient future for the Cliff Bungalow-Mission community. By focusing on sustainable agriculture and community building, this project has the potential to provide a model for other communities facing similar challenges due to climate change



EDIBLE SCHOOLYARD BERKELEY

The Edible Schoolyard takes teaching to a new level by integrating gardening and cooking into the classroom. Lessons align with State Curriculum and connect the lines between what you grow, eat, and the culture, traditions, and customs of the peoples who created the cuisine.

Photo Source: Edible Schoolyard Berkeley, <https://edibleschoolyard.org/berkeley>



EDMONTON RIVER VALLEY FOOD FOREST

The Food Forest in Edmonton is located on the River Valley and is an area for communal harvesting. The food forest adds plant diversity, nature-based programming, and edible berries for all.

Photo Source: <https://www.dustinbajer.com/edmonton-river-valley-food-forest/>



LA MAISON DE LA LITTÉRATURE, QUÉBEC

La maison de la littérature is an award-winning adaptive reuse of a former church in downtown Québec City. The exterior was preserved while modernizing the interior and adding a modern annex to improve accessibility and modernize functionality. It now serves as a library, artist residence, and performance space.

Photo Source: Canadian Architect, <https://www.canadianarchitect.com/vive-la-litterature-vive-la-liberte/>



BROOKLYN GRANGE NAVY YARD

The Brooklyn Grange Navy Yard grows over 80,000 pounds of produce on 1.5 acres. The rooftop gardens are well-suited for industrial buildings due to weight bearing capacity and large surfaces.

Photo Source: <https://www.greenroofs.com/2020/09/28/featured-project-brooklyn-grange-rooftop-farm-2-at-brooklyn-navy-yard-building-no-3/>



FERME DES QUATRE-TEMPS, QUÉBEC

The Central Gardens will be modeled off of small-scale market garden plots. Each row is standardized in length and width to optimize hand tools and walk-behind tractors to minimize emissions and maximize people power.

Photo Source: Ecomestible, https://ecomestible.com/portfolio_page/ferme-des-quatre-temps



WEST LOUISVILLE FOOD PORT

The West Louisville Food Port was a proposed project to go beyond the typical model of aggregation, storage, marketing, and distribution to include farming, processing, community kitchens, retailing, and recycling. The idea was to include the entire food web together in one place.

Photo Source: OMA, <https://www.archdaily.com/601730/oma-designs-food-port-for-west-louisville>



UBC INDIGENOUS HEALTH RESEARCH AND EDUCATION GARDEN (IHREG)

The Indigenous Gardens at the UBC Farm are a collaboration with three Indigenous Organizations that grow and program the space. This includes teaching from Elders and Knowledge-Keeper in the Medicine Collective, traditional plant knowledge, and food sovereignty.

Photo Source: UBC Indigenous Health Research and Education Garden, <https://ifs-iherg.sites.olt.ubc.ca/the-garden/>



UNIVERSITY OF ALBERTA FARMS

The University of Alberta Farms are located centrally in Edmonton and have served since 1920 as a place for agricultural innovation in a major metropolis. The area is 379 acres altogether with over 70% of it in agricultural production including crops and livestock. There is a mix of research and community garden plots to serve multiple communities.

Photo Source: <https://www.greengoldgarden.com/about/>

AGRICULTURE² MASTERPLAN



- | | | |
|----------------------|------------------------|--------------------------|
| ① Edible Schoolyard | ⑥ Permaculture Gardens | ⑪ Agri-Innovation Center |
| ② Food Port | ⑦ Indigenous Gardens | ⑫ Entertainment District |
| ③ Agricultural Lands | ⑧ University Farms | ⑬ Farm District/ Brewery |
| ④ Rotational Grazing | ⑨ Orchards | ⑭ Plaza |
| ⑤ Food Forest | ⑩ LRT Stations | ⑮ Historic Area |

The Master Plan is designed to provide many flavours of agriculture and built forms that connect with surrounding communities. 17th Avenue north is primarily commercial with older 2-3 Storey buildings. Our design gradually steps up with 6-Storey courtyard apartments on the block between 17th Avenue south and 18th Avenue north. These run along an east-west axis, thus repeating the dominant directional flow in Downtown Calgary. South of the courtyard apartments, we step up to a 15-Storey live-work unit apartment with a second storey dedicated to work spaces. The first storey is part of the wrap-around arcade gallery, which houses businesses, offices, and rental spaces. This gallery wrap around the Central Gardens with plots for both community gardens and small-scale market gardens.

Across the remainder of the community there is a diverse mix of agricultural landscape from orchards to food forests to purpose-build gardens (Indigenous Gardens, Permaculture Demonstration Gardens, University Gardens, Edible Schoolyards). These create a closed-circle food web where many of the community's food needs can be fulfilled within the community boundaries. Additionally, they provide educational and experiential learning opportunities where people can gain more skills to feel confident growing, processing, and storing their own food.

The sections below provide an idea of the scale of the buildings and transitions of building height throughout the site. The idea is to gradually scale up when needed while continuously providing a comfortable pedestrian experience.



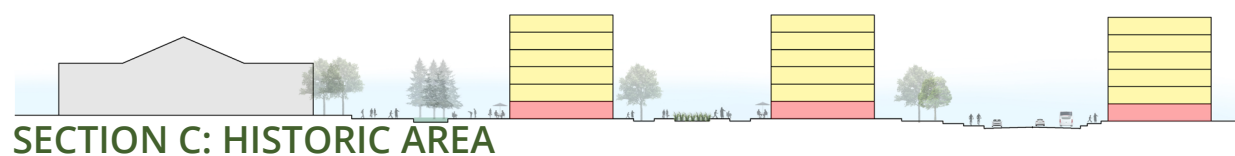
SECTION A: THE FARM DISTRICT

**“THINK CULTURALLY,
PLAN IMAGINATIVELY,
ACT ARTISTICALLY
[AGRICULTURALLY]”**

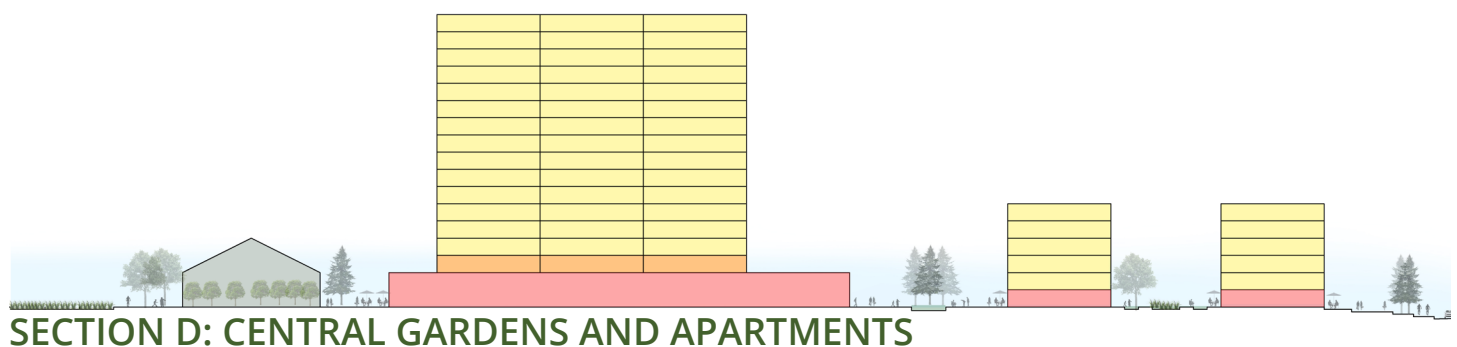
-CHARLES LANDRY



SECTION B: ENTRANCE PLAZA

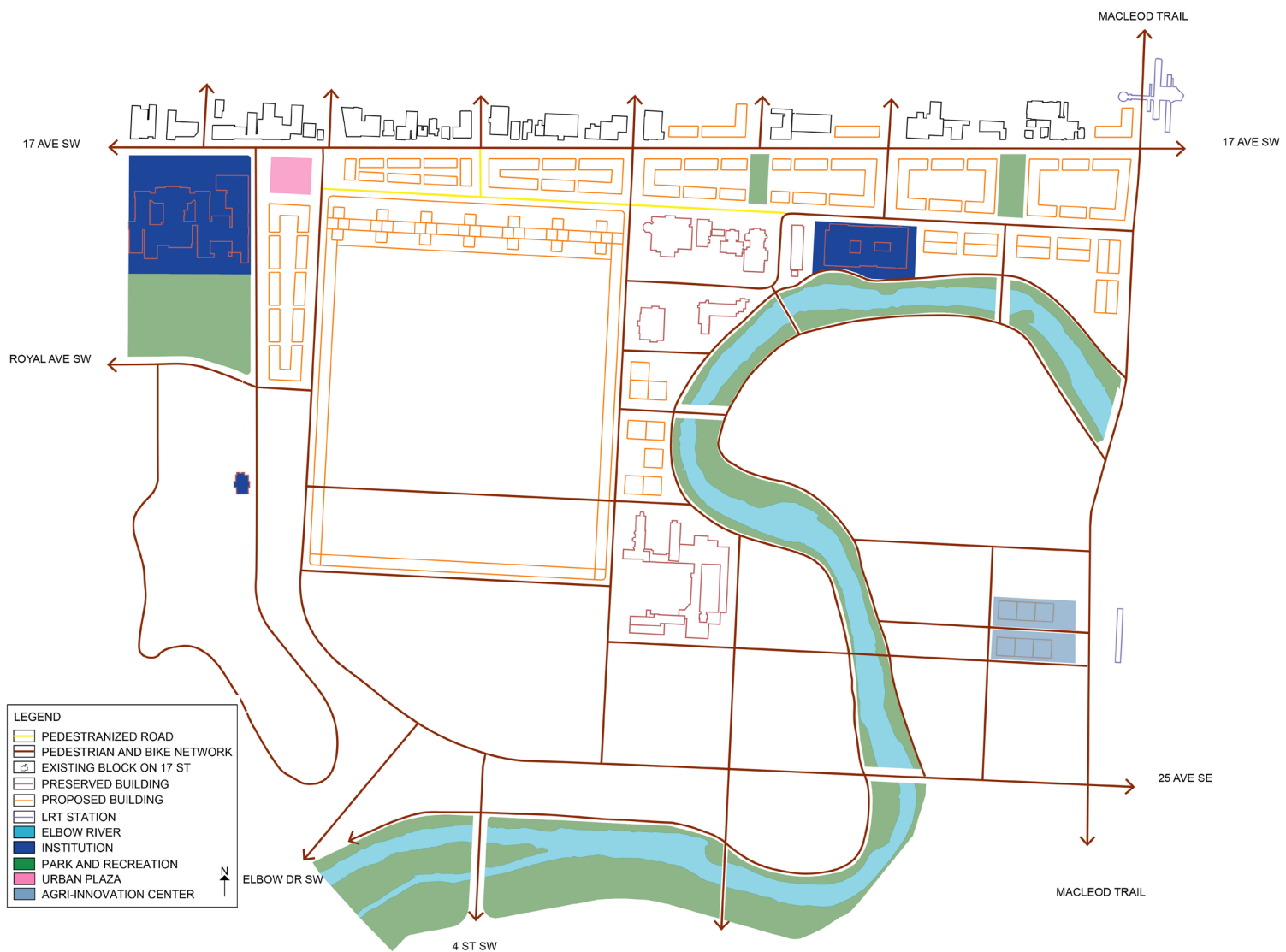


SECTION C: HISTORIC AREA



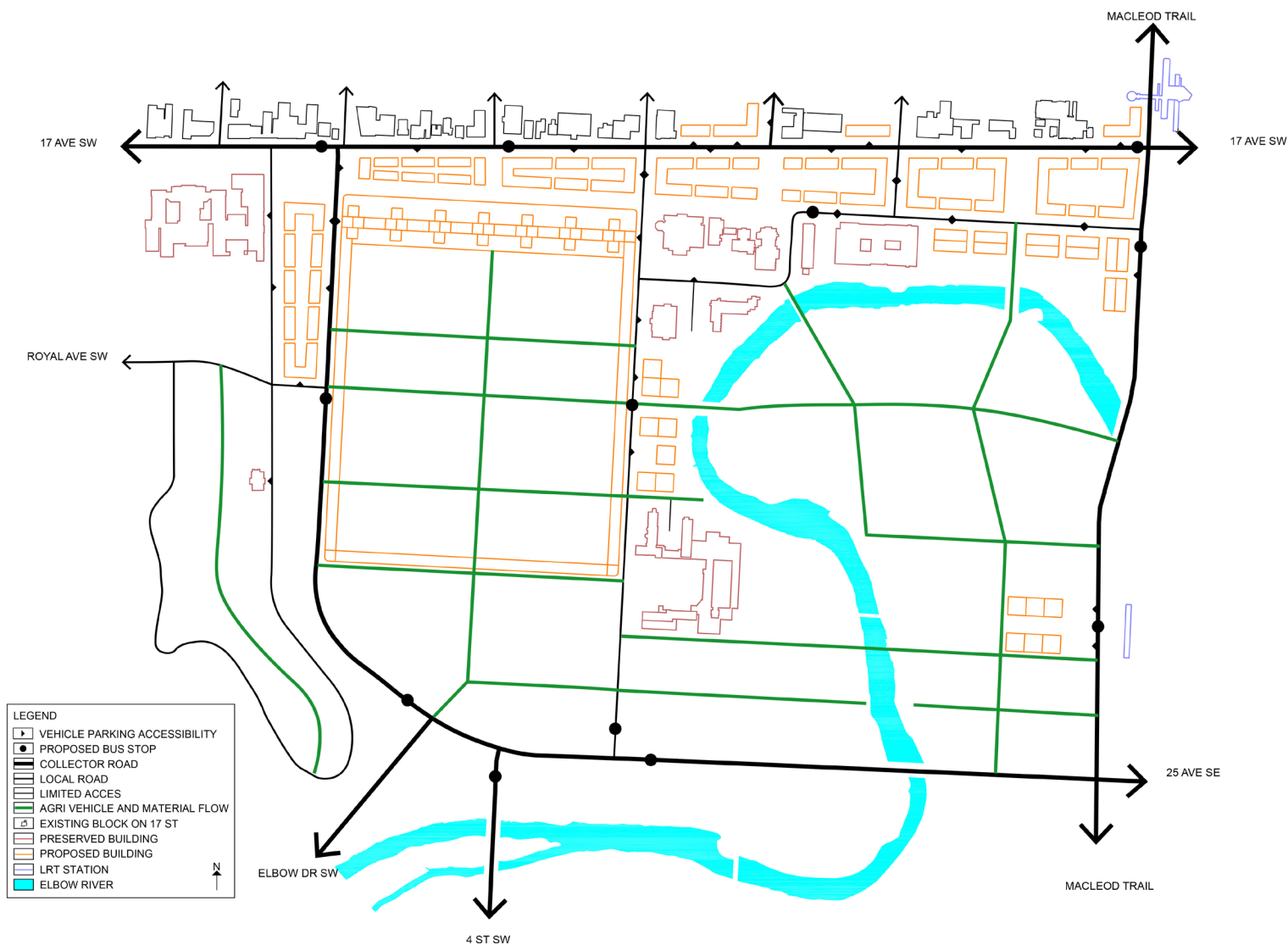
SECTION D: CENTRAL GARDENS AND APARTMENTS

PEDESTRIAN, BIKE AND GREENSPACE NETWORK



The design focuses on increased interconnectedness throughout the site for pedestrians, cyclists, and greenspace. All amenities and uses are accessible by cycle and pedestrian networks and two new pedestrian and bike bridges are proposed over the Elbow River to increase connectivity to surrounding areas. The brown network system illustrates the cycle and pedestrian network, while the yellow line highlights pedestrianized streets, which start from the urban plaza through the historical core site. These proposals aim to promote sustainable transportation practices and encourage a more connected and cohesive community.

ROAD AND AGRICULTURAL NETWORK

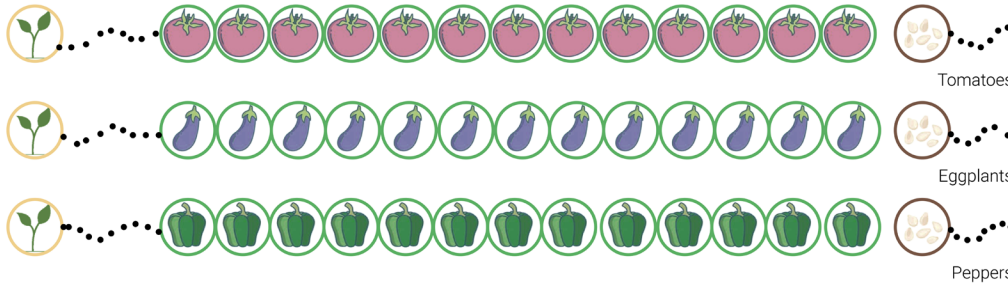


The proposed design for Cliff Bungalow-Mission features a well-connected system of roads and agricultural vehicle networks, enabling easy accessibility to the site for both types of traffic. The black lines represent the proposed road network, while the green lines illustrate the agricultural vehicle network. Additionally, the design includes accessible vehicle parking areas for proposed buildings, as indicated in the diagram. Further, the site is connected to an LRT Station from northeast and southeast. Overall, its approach ensures that the site remains accessible for both agricultural and vehicular traffic while prioritizing the site's sustainable transportation practices. By providing designated parking areas and a well-connected road network, the design aims to reduce congestion and promote efficient movement throughout the site.

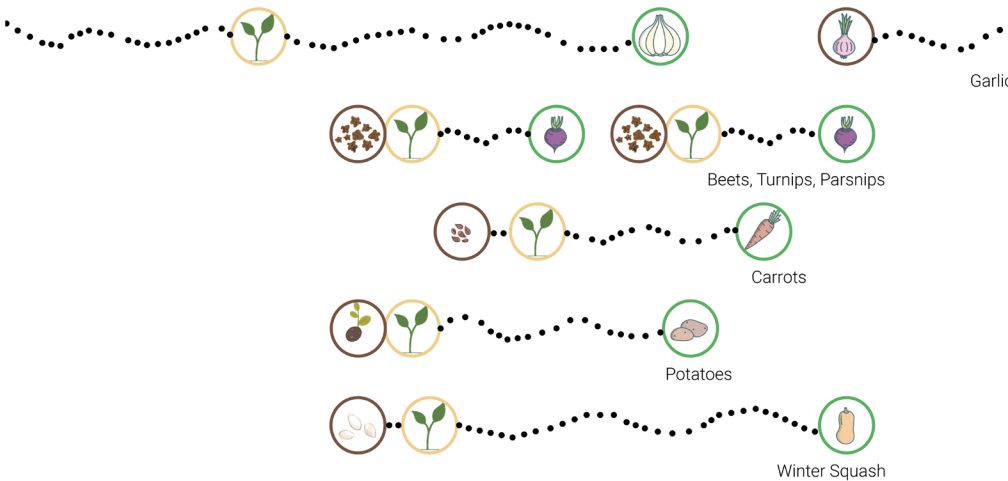
SEASONAL VEGETABLE GROWTH

JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

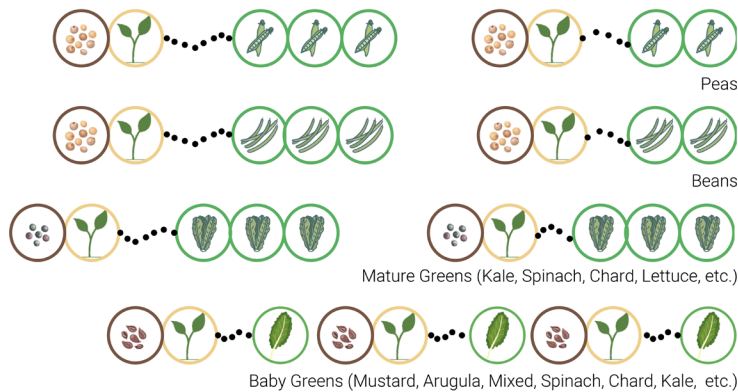
Greenhouse Grown



Direct Sow - Single Harvest



Direct Sow - Multiple Harvests



The seasonal vegetable growth diagram indicates seasonal flow in terms of farm produce. It shows that we can grow most of the produce needed for the community almost year-round. Processing and storage would further winter supply. In Alberta, December and January have insufficient sunlight for good production, so greenhouses are reseeded for the following year. The primary growing months run from May to October, depending on frost and snow. The community food chain connects the dots between farming, selling food through various local storefronts and distribution networks, and eating the freshest possible meals grown and sold just a short walk away.

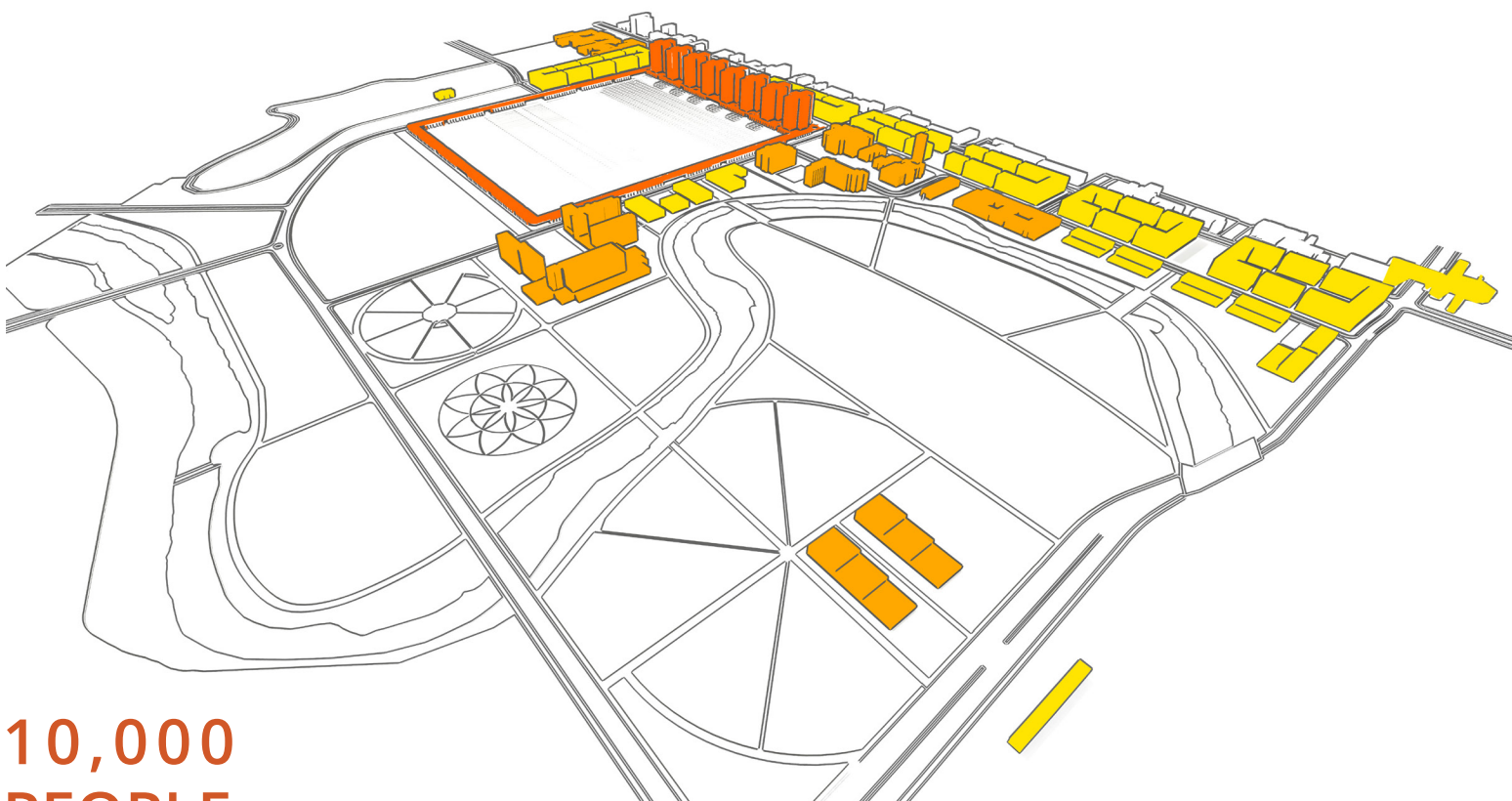
By focusing on year-round vegetable growth and supporting local farmers and businesses, this community has the opportunity to create a more sustainable and self-sufficient food system.



POPULATION PROJECTION

The proposed design can accommodate up to 10,000 people. The site dedicates a large area to agriculture, appropriately dense mixed-use housing and retail, and institutional spaces. This spatial distribution ensures that the site is balanced and that all amenities are readily accessible to all residents. In terms of phasing, it has planned for a three-phase development process over a 25-year period, as illustrated in our 5, 10, and 25-year phasing diagram. This approach will ensure that the development is financially sustainable, and it will allow for flexibility in responding to changing market conditions and community needs. The phasing also ensures that the site's infrastructure is developed in a coordinated and efficient manner.

- AGRICULTURE: 62.7 ha
- COMMERCIAL: 7.24 ha
- INSTITUTIONS: 4.59 ha
- MIXED-USE: 8.01 ha
- LIVE-WORK: 5.65 ha
- MID-DENSITY: 2.5 ha



10,000
PEOPLE

PART IV

POLICY PROPOSAL

5.5 Urban Agricultural Land Use is designated to facilitate urban food production, processing, and distribution to enhance the resilience of the food system in Calgary. Its primary objective is to promote accessibility to healthy and affordable food, with initial emphasis on the Cliff Bungalow /Mission Neighbourhood, followed by wider adoption across the city. By harnessing the potential of urban food production to improve food security and foster community well-being, this approach aims to create a sustainable and equitable food system that benefits all Calgarians.

5.5.1 Foundational Policies for Urban Agricultural Area

1. All areas outside the historic area that are prone to flooding shall be designated as Urban Agricultural Land
2. The Special Exemption Site is the gallery and apartments, which will be built based on conditions for flood resiliency.
3. All agricultural fields must be kept in active farming condition throughout the rental period.
4. Any field that is left neglected and/or unattended for more than 1 month during the active growing season between May-October will be transferred to a new renter.
5. All agricultural activities in the community shall not use artificial chemicals for growing, including but not limited to fertilizers, pesticides, herbicides, and insecticides.
6. Organic chemicals are allowed, subject to approval by the Cliff Bungalow-Mission Organic Agricultural Chemical Review Board
7. All additional agricultural and food policies will be agreed upon by consensus by the Cliff Bungalow Mission Agricultural Cooperative.



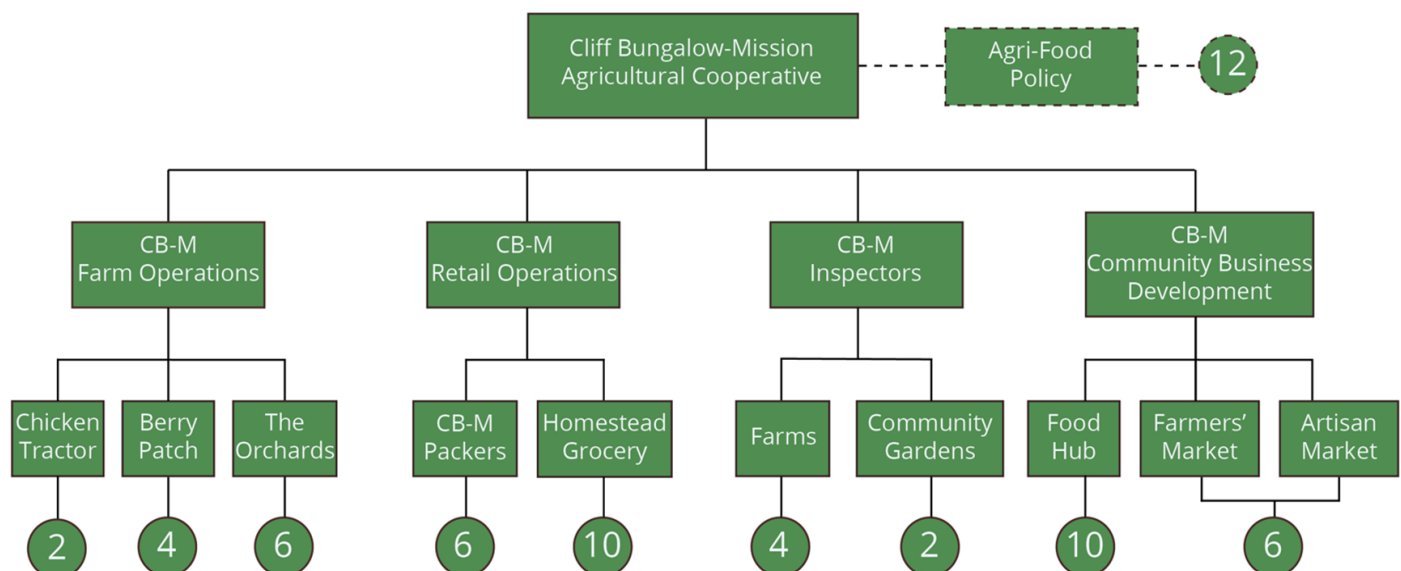
CENTRAL GARDENS, GREENHOUSES, AND APARTMENTS

5.5.2 Agricultural Cooperation Policy Framework

The following is a proposed cooperation policy framework for the management of agriculture land and operations in Cliff Bungalow-Mission:

1. Establishment of Cliff Bungalow-Mission Agricultural Cooperative (The Cooperative) to manage all agriculture land and operations within the community.
2. The Cooperative shall consist of twelve members, including two representatives each from the following groups:
 - Cliff Bungalow-Mission Agricultural Cooperative Inspectors (one from Farm and one from Community Garden Inspector)
 - Cliff Bungalow-Mission Farm Operations (representatives from two different farming operations)
 - Cliff Bungalow-Mission Retail Operations (one from Packers and one from Homestead)
 - Cliff Bungalow-Mission Community Business Development (one from Food Hub and one from Markets)
 - Cliff Bungalow-Mission Community Members
 - Cliff Bungalow-Mission Farmers
3. The Cooperative shall be elected annually by the voting population of Cliff Bungalow-Mission and all farmers actively farming in the community. Voting age shall begin at 14 years of age, and voting shall occur on February 1st of each year.

The Cliff Bungalow-Mission Agricultural Cooperative



4. The Cooperative shall provide a yearly budget for managing its diverse operations within two weeks after being elected. All board members must be present for the budget to be approved.
5. The Cooperative shall meet monthly to discuss operations, management, policy, and any challenges. A minimum of eight members must be present to hold a meeting. If a member of the cooperative board misses two meetings in a row without just cause, a snap by-election shall be held to appoint another member.
6. The Cooperative shall be responsible for maintaining and updating the agriculture and food policies within the community.
7. The Cooperative shall approve farmers for land rental and ensure plots are kept in good standing financially and agriculturally.
8. The Cooperative shall resolve any conflict in the agricultural areas of the site through the Agricultural Tribunal.
9. The Cooperative shall provide budgets and manage the financial operations of all operations, inspectors, and community business developments.

This cooperation policy framework is designed to ensure effective management of agriculture land and operations in Cliff Bungalow-Mission, while promoting community engagement and participation in decision-making processes. By establishing clear guidelines for Cooperative membership, election procedures, and operational management, this framework aims to enhance transparency, accountability, and fairness in the management of agriculture land and operations.

5.5.3 Agricultural Operations

5.5.3.1 Farm Operations

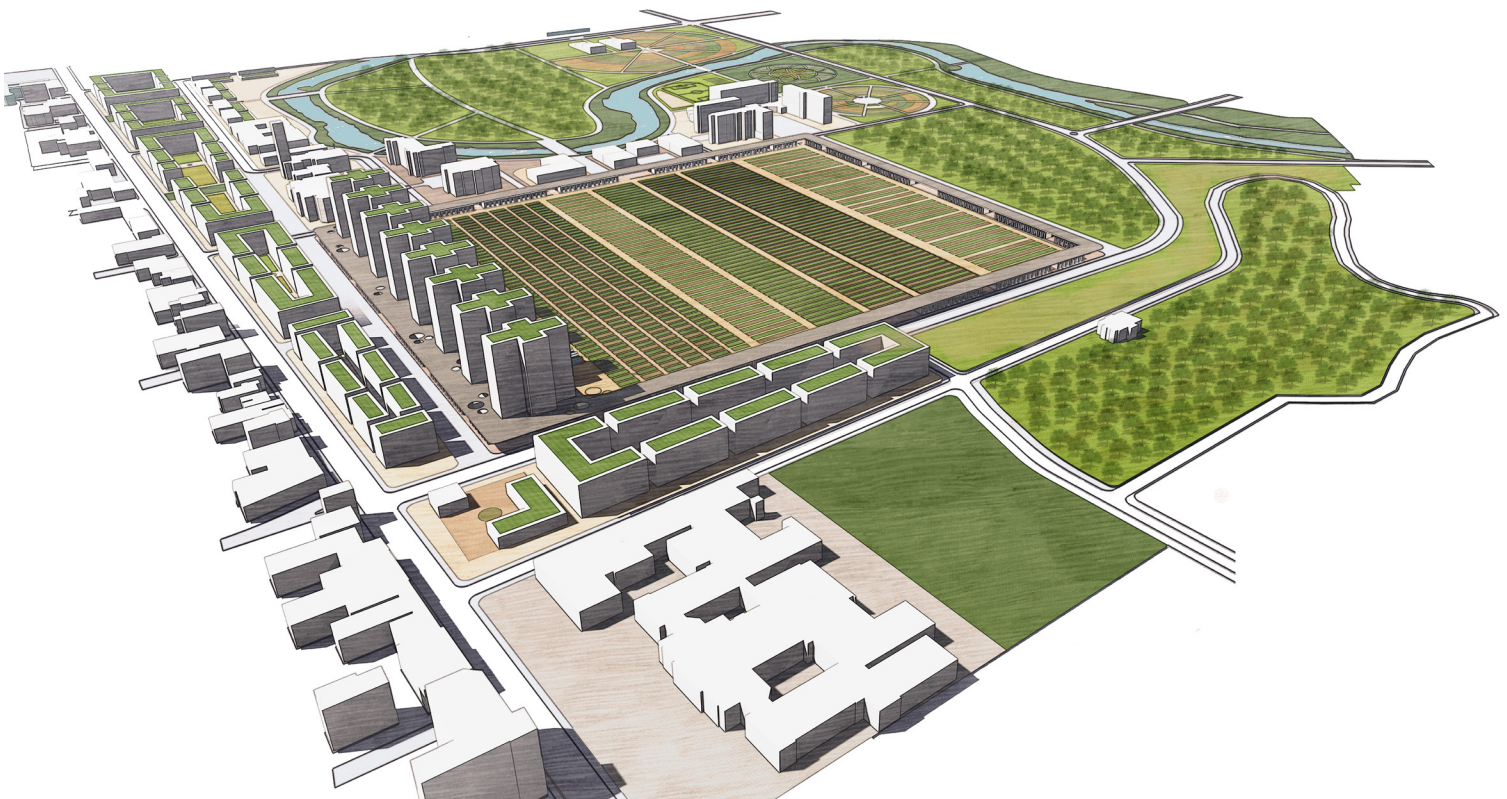
The Orchard Team

- The Orchard Team will be responsible for management, maintenance, and upkeep of the orchards on site
- The orchard operations team will consist of 6 seasonal employees paid via revenue from The Cooperative
- The team will ensure the orchards stay in good farming condition and harvest any additional produce not harvested by community members to prevent waste and rot

- The team will manage a small herd of Muscovy ducks for pruning, fertilizing, and regenerative orchard maintenance
- Extra produce not harvested by community members will be collected and given to The Cliff Bungalow-Misson Packers
- Additional responsibilities will include agricultural maintenance site-wide as required by request of The Cooperative

The Berry Patch Team

- The Berry Patch Team will be responsible for management, maintenance, and upkeep of the berry patch on site
- The berry patch operations team will consist of 4 seasonal employees paid via revenue from The Cooperative
- The team will ensure the berry patch stays in good farming condition and harvest any additional produce not harvested by community members to prevent waste and rot
- Extra berries not harvested by community members will be collected and given to The Cliff Bungalow-Misson Packers
- Additional responsibilities will include agricultural maintenance site-wide as required by request of The Cooperative



COMMUNITY VISION

The Chicken Tractor Team

- The Chicken Tractor Team will be responsible for management, maintenance, and upkeep of the perennial pasture on site
- The chicken tractor operations team will consist of 2 seasonal employees paid via revenue from The Cooperative
- The team will ensure the perennial pasture and chickens stay in good farming condition, harvest eggs daily, and tend to the chickens needs including field rotations
- Eggs will be collected and given to The Cliff Bungalow-Misson Packers
- Additional responsibilities will include agricultural maintenance site-wide as required by request of The Cooperative

5.5.3.2 Business Operations

The Cliff Bungalow-Mission Packers (CBMP)

- The primarily responsibility of the CBMP is the washing, processing, and packaging of excess food from the community including, but not limited to, the orchards, berry patch, and chicken tractor.
- The CBMP is based out of the Farmers' District in a warehouse building
- The packing operations team will consist of 6 full-time employees paid via revenue from The Cooperative

The Homestead Grocery Store

- The Homestead Grocery Store will be responsible for the marketing, sale, and distribution of farm and garden products from the Cliff Bungalow-Mission Community, including food from the CBMP and farmers in the community.
- The Homestead will partner with local farmers in the community and beyond to provide retailing for their produce at the store.
- The store is in front of the CBMP in the Industrial area in a shared building to optimize efficiency of operations.
- The Homestead operations team will consist of 10 full-time employees paid via revenue from The Cooperative.
- All profit from The Homestead will be returned to The Cooperative to cover wages and operational costs.

5.5.4 Business Operations

The Cliff Bungalow-Mission Food Hub

- The Food Hub is a gathering space for education, experimentation, demonstrations, gatherings, classes, collective kitchens, and food processing facilities.

- The primary use is educational, experimental and as a publicly accessible space for gatherings around food and agriculture.
- Additional space is available for rental including the collective kitchens, processing facilities, and event venues.
- The Food Hub team will consist of 10 members who will be responsible for management, programming, managing partnerships, and infrastructure maintenance.
- All profit from the Food Hub will be returned to The Cooperative to cover wages and operational costs.

The Cliff Bungalow-Mission Farmers' Market/Artisan Market

- The Farmers' Market is a space for local farmers to market and sell their products.
 - Priority will be given to farmers from Cliff Bungalow-Mission, however, opportunities for farmers outside the community will exist, especially for those offering food not produced within the community (meats, grains, etc.)
- The Artisan Market is a space for local makers to sell their goods
 - Priority will be given to people from Cliff Bungalow-Mission, however, opportunities for makers from outside the community will exist if availability permits
- The Farmers' Market/Artisan Market team will consist of 6 members who will be responsible for management, facilitating relationships, bookings, and other factors in building management



MARKETS, PUBLIC SEATING, AND SHOPPING

- The building will be shared between the Farmers' Market and Artisan Market to optimize staff and building use
- All profit from the Farmers' Market/Artisan Market will be returned to The Cooperative to cover wages and operational costs

5.5.5 Cooperative Inspectors

Farm Inspectors

- Farm Inspectors will ensure that the agricultural fields rented from and managed by The Cooperative are kept in *good farming condition*
 - Good farming condition requires weeds to be under control, fields to be under active management, and all agricultural policies to be met.
- The Farm Inspectors will conduct monthly audits of the community to identify successes, challenges, improvements, and changes required to ensure a positive urban agricultural experience.
- The Farm Inspectors team will consist of 4 full-time employees paid via revenue from The Cooperative.
- Additional duties will include outreach, education, troubleshooting, agricultural programming, and local farmer features in community publications



ARCADE PATIOS AND WIDE PATHWAYS

Community Garden Inspectors

- Community Garden Inspectors will ensure that community gardens rented from and managed by The Cooperative are kept in good farming condition
 - The Community Garden Inspectors will conduct monthly audits of the community to identify successes, challenges, improvements, and changes required to ensure a positive urban agricultural experience
 - The Community Garden Inspectors team will consist of 2 full-time employees paid via revenue from The Cooperative.
 - Additional duties will include outreach, education, troubleshooting, community garden programming and community garden features in community publications.
- The purpose behind the Inspectors is to ensure that a diverse group of farms and food growers grouped closely together can co-exist peacefully without weeds, agricultural insects, or other agricultural challenges cause community-wide disruptions.
- Inspectors will conduct inspections monthly to ensure all of the agricultural areas remain in good farming condition.
- Inspectors will be nominated by community members and farmers on an annual basis to ensure representation by suitable candidates

APPENDIX A

TABLE OF CONTENT FOR POLICY

1. Vision
2. Situation and Archipelago
3. Context - Scenario
4. Planning Documents
5. Agri-Culture Masterplan
 - 5.1 Residential Areas
 - 5.1.1 Live-Work Block and Gallery
 - 5.1.2 Mixed Used Areas
 - 5.1.3 Middle Density Housing
 - 5.2 Commercial Areas
 - 5.3 Preserved and Transformed Areas
 - 5.3.1 Food Hub
 - 5.3.2 School Areas
 - 5.3.3 Art Gallery
 - 5.3.4 Hospital Area
 - 5.4 Park and Recreational Areas
 - 5.5 Urban Agricultural Area
 - 5.5.1 Foundational Policies for Urban Agricultural Area
 - 5.5.2 Agricultural Cooperation Policy Framework
 - 5.5.3 Agricultural Operations
 - 5.5.3.1 Farm Operations
 - 5.5.3.2 Business Operations
 - 5.5.4 Business Development
 - 5.5.5 Cooperative Inspectors
 - 5.5 Transportation
 - 5.5.1 Road Network
 - 5.5.2 Bike and Pedestrian Network
 - 5.5.3 Agricultural Flow (Material and Vehicle)
 - 5.5.4 LRT and Bus Network
 - 5.6 Agri-Innovation Center
 - 5.7 Urban Plaza
6. Engagement and Tactical Urbanism
 - 6.1 Public Participation
 - 6.2 Tactical Urban Gardening – GT Express
7. Conclusion

Our team focused our design based on increased risk and high vulnerability to flooding in our community. Cliff Bungalow-Mission is one of many communities currently trying to understand how best to live harmoniously in floodplains. We believe that there are mutual benefits to adding urban agricultural production to areas with high flood risk by minimizing flood damage, increasing green space, capturing carbon, and providing healthy food grown right at the doorstep.



Squarely Rooted in Sustainable Living
