



Laurentian University
Université **Laurentienne**

McEWEN SCHOOL OF ARCHITECTURE
ÉCOLE D'ARCHITECTURE

Magnetic North Conference

June 12, 2023

Dr. Aliko Economides
Assistant Professor, MSoA













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pear
boutique

500
www.ultimatechocolate.com

WOLF & PINE
KITCHENWARE

MAKES
NORTH





JUST A BUNCH OF TREE

GRIN MICKLE

ACT UP!

ATE GING NT WE?

THE

CULTURE



ArchDaily > Projects > Educational Architecture > Canada > McEwen School of Architecture / LGA Architectural Pa

McEwen School of Architecture / LGA Architectural Partners



Curated by María Francisca González

EDUCATIONAL ARCHITECTURE, HIGHER EDUCATION, UNIVERSITY · SUDBURY, CANADA

Architects: **LGA Architectural Partners**

Area: **72849 ft²**

Year: **2018**

Photographs: **Bob Gundu**

Manufacturers: **Kingspan Insulated Panels, ABF Reinforcing Steel, Atkar, Carlisle SynTec, Cetco, EBS Geostructural, Forma-con, Provincial Steel, Second Generation Furnishings, Timmerman Timberworks, Trulite**

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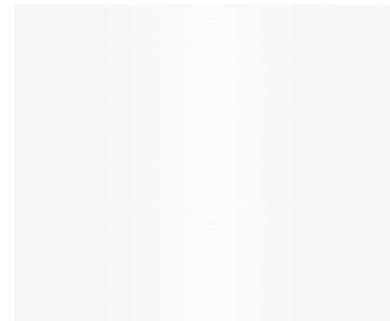
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MORE EDUCATIONAL ARCHITECTURE

Residence In Aglantzia / Yiorgos Hadjichristou Architects, Petros Constantinou

University of Connecticut Social Sciences and Classroom Buildings / Leers Weinzapfel Associates

[More Educational Architecture »](#)



MORE FROM LGA ARCHITECTURAL PARTNERS

Native Child and Family

<https://www.archdaily.com/892818/mcewen-school-of-architecture-lga-architectural-partners>

DESIGN



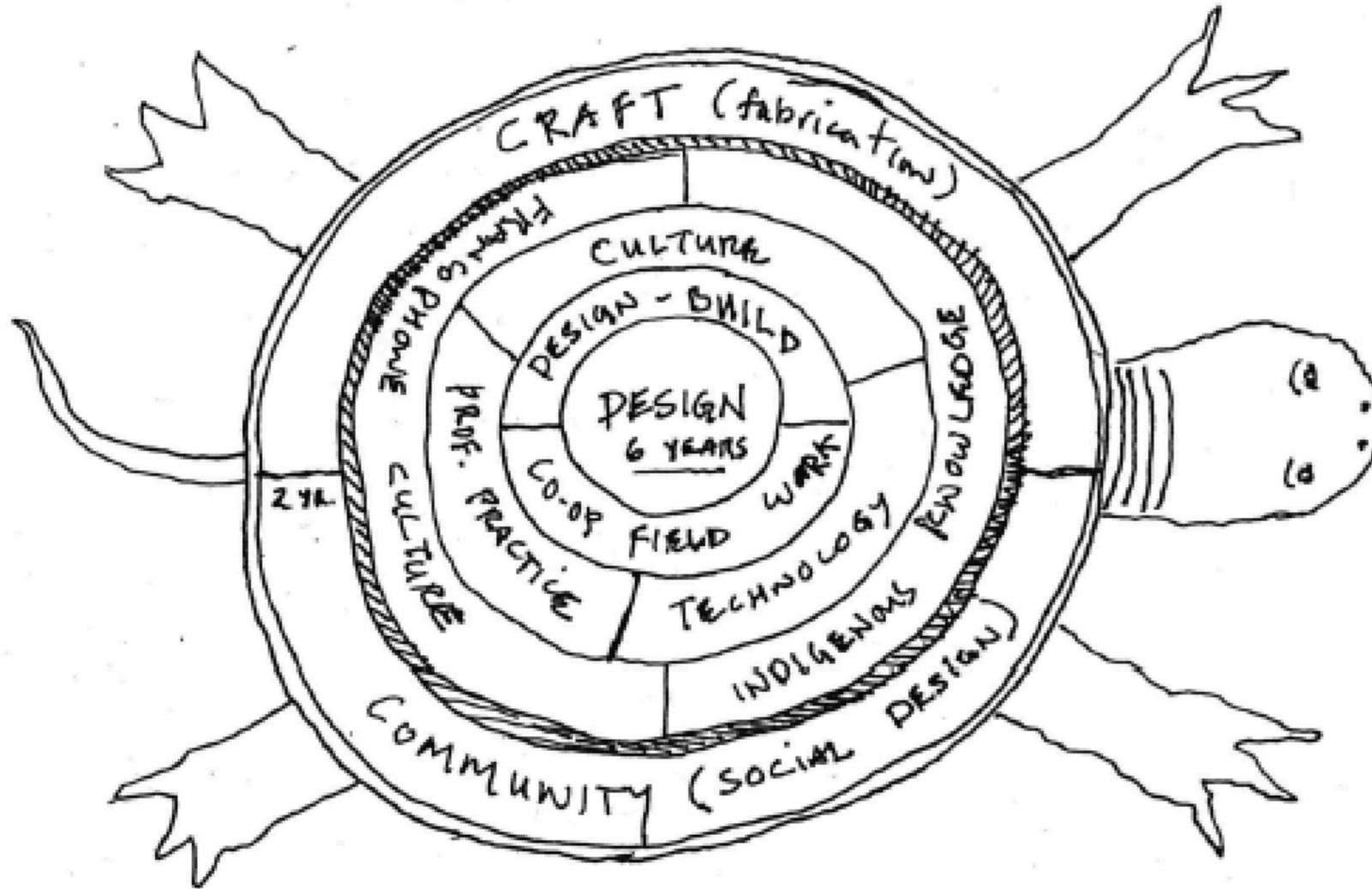
CULTURE

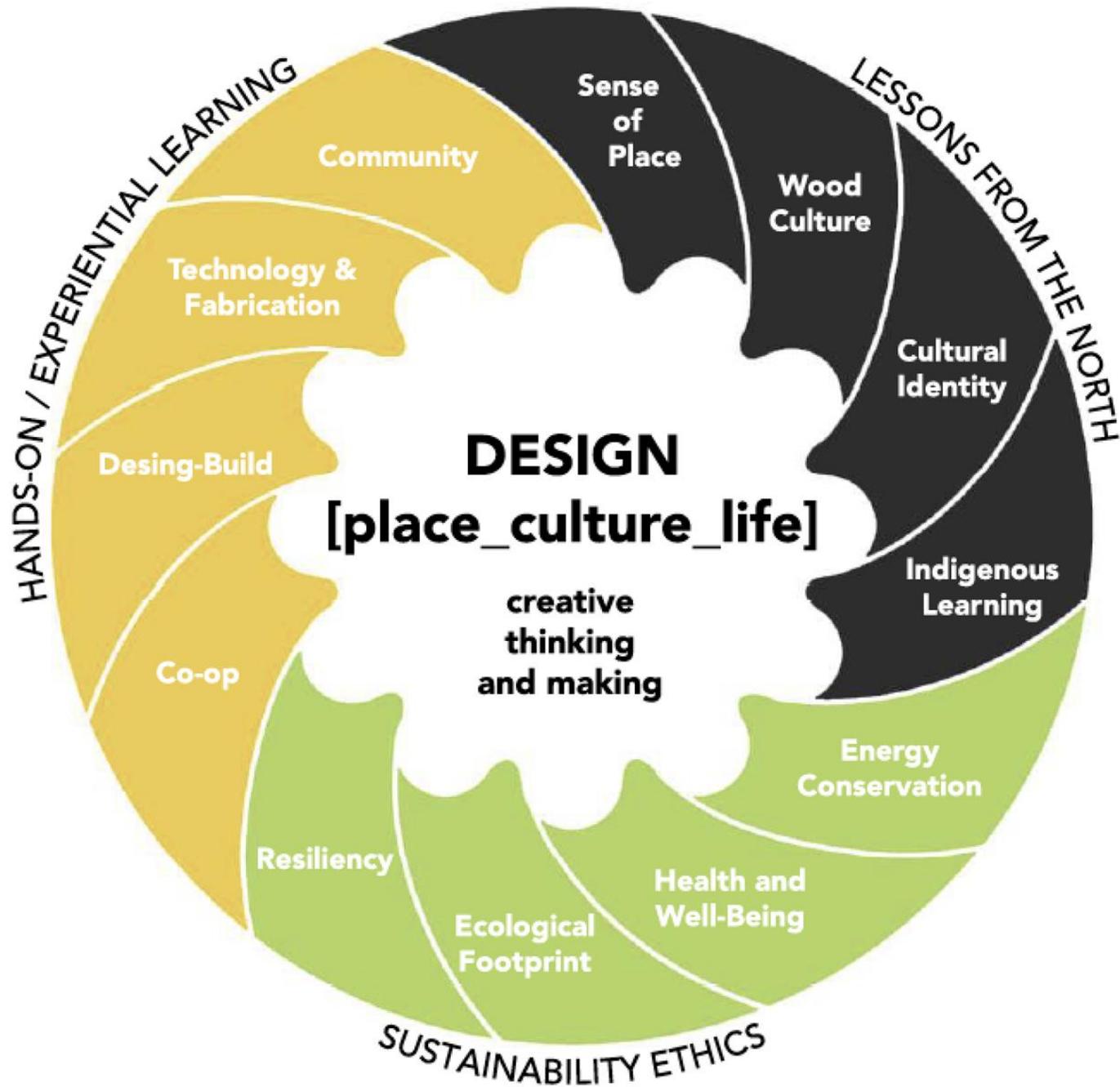


TECHNOLOGY



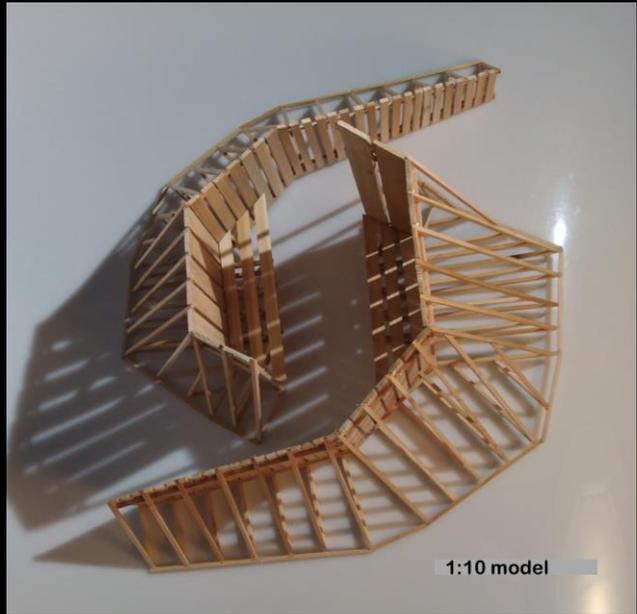
PROFESSIONAL PRACTICE







1st year BAS studio | Design-Build Ice Stations on Ramsey Lake

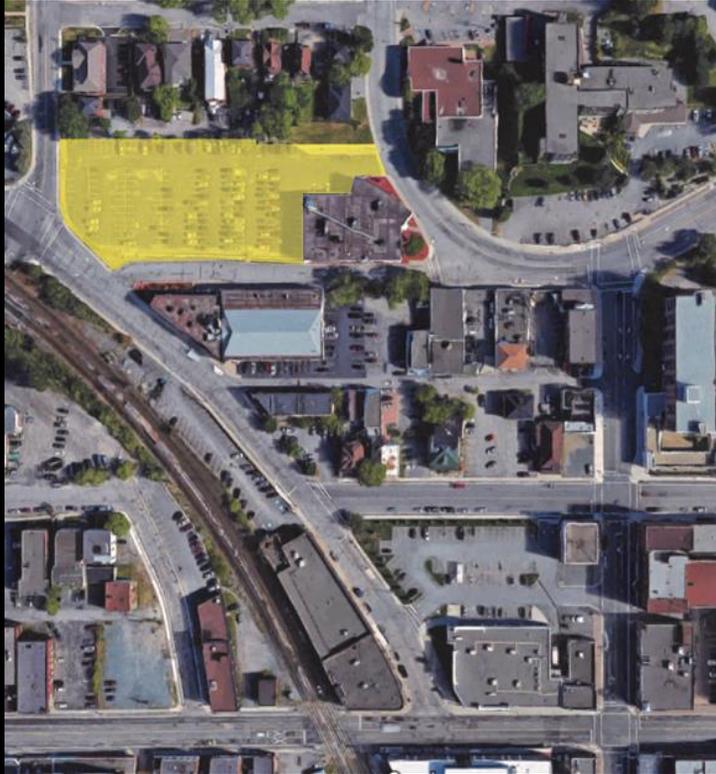


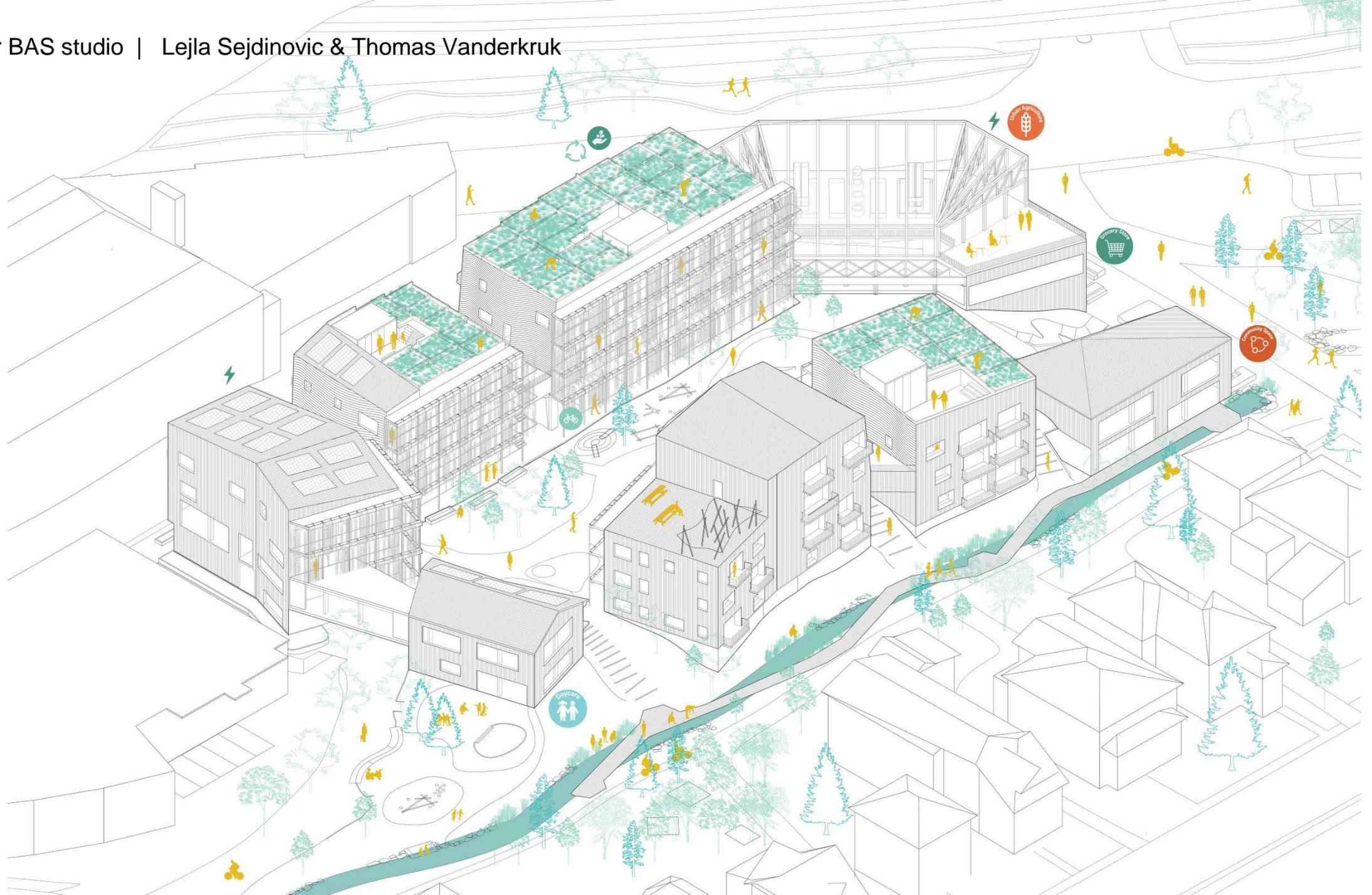


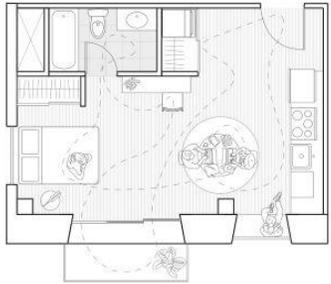




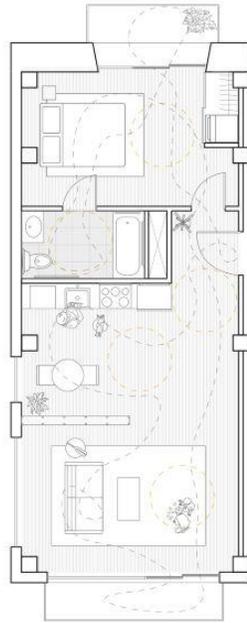
Greyfield Site | Site en zone grise



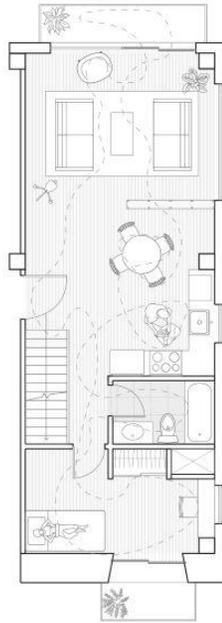




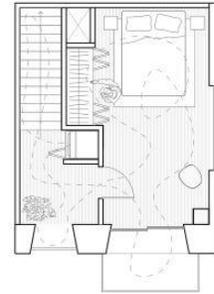
1 room + k 35m²



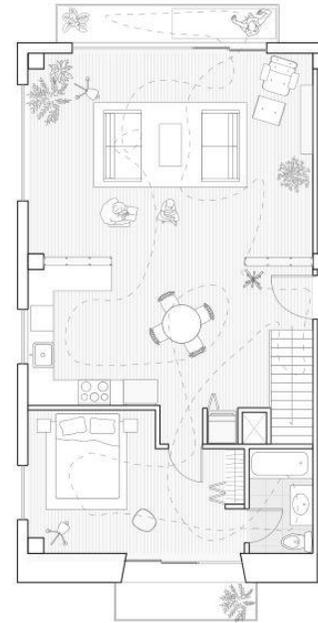
2 room + k 58m²



1. Floor
3 room + k 75m²



2. Floor



2. Floor
4 room + k 112m²

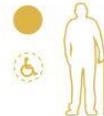


1. Floor

STUDENTS



SENIORS

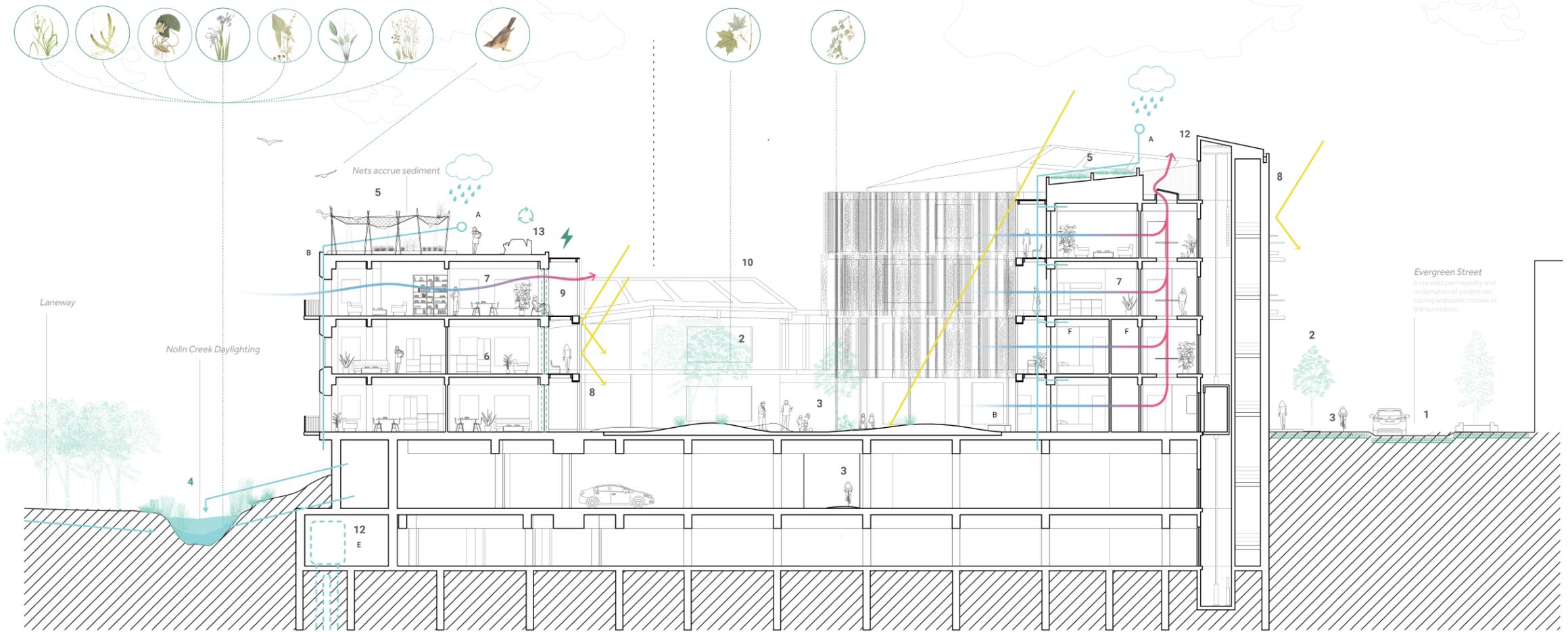


SMALL FAMILIES



LARGE FAMILIES





PASSIVE STRATEGIES

ACTIVE STRATEGIES

0m 5m 10m

Urban Development Strategies

- 1 Permeable Streetscape**
Evergreen st. improvements increase pervious materials and reduce storm-water runoff
- 2 Native Landscaping**
Landscaping through two strategies to encourage a rich biodiversity within the site
- 3 Walkability**
Encouragement of natural flows within the site in opposition to the past car-centric mentality
- 4 Nolin Creek Daylighting**
Increased biodiversity, on-site pedagogy.
- 5 Green roofs**
Communal living, increased biodiversity, heat island mitigation.

Solar Strategies

- 6 High Thermal Inertia (Thermally Massive Timber (CLT))**
The materials acts as a heat sink mediating the interior temperatures
- Solar Orientation**
All buildings oriented with 15 degrees south with elongated forms to maximize solar heating

Passive Cooling

- 7 Natural Ventilation**
Operable windows allow for user customization and natural ventilate the units through cross and stacked ventilation
- 8 Solar Shading**
Semi-recessed balconies + inhabited screens protect from unwanted heat gains

Material Life-cycle

- Low-embodied Energy materials**
Locally sourced materials lower the materials embodied environmental impact
- Material Carbon Storage**
Mass-timber building holds materials sequestered carbon

Photovoltaics

- 9 Photovoltaic Glazing (Thermally Massive Timber (CLT))**
The materials acts as a heat sink mediating the interior temperatures
- 10 Roof Mount Solar Panels**
Semi-recessed balconies + inhabited screens protect from unwanted heat gains

Rainwater Collection

- A Collection Area (Roofs Direct Rainwater)**
- B Catchment**
- C Primary Filtration (Rain Gardens)**
- D Rain Water Temporary Storage**
- E Rain Water Storage & Recycling**
- F Redistribution**

Geothermal Heat Pump

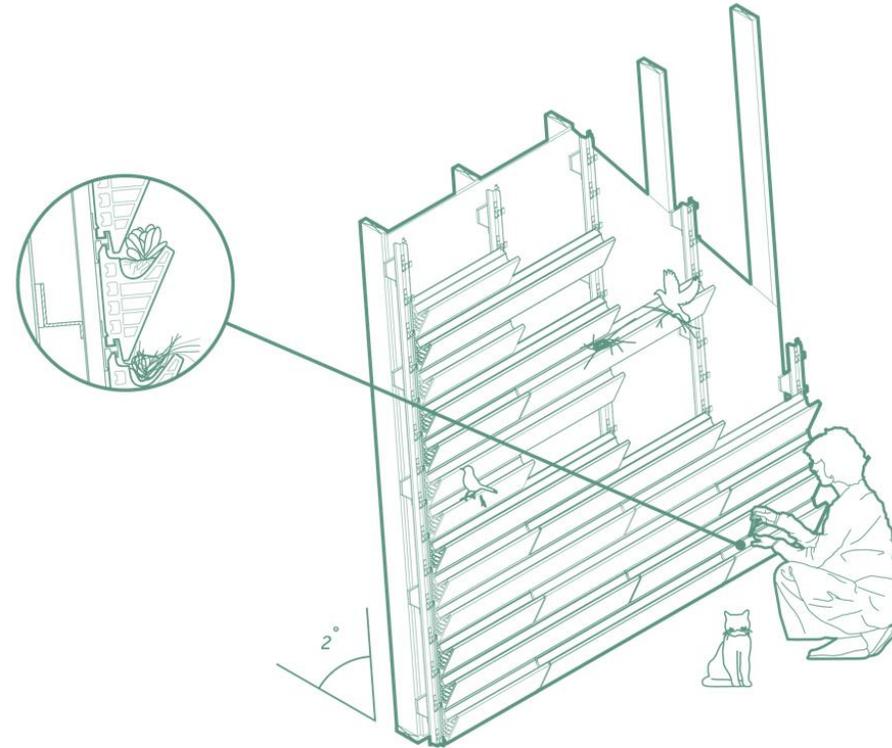
- 12 Vertical Coil Heat Pump**
Radiant floor heat evacuation returns unwanted heat to the earth, replenishing the ground source

Biomass

- 13 Rooftop Biomass System**
Rooftop biomass systems generate natural gas through on-site composting and used in unit kitchens



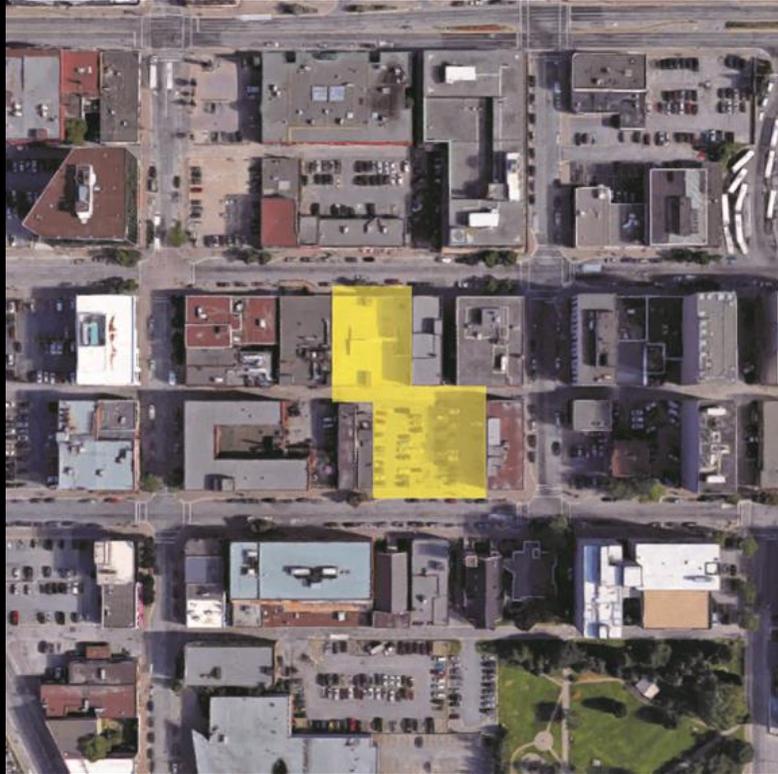




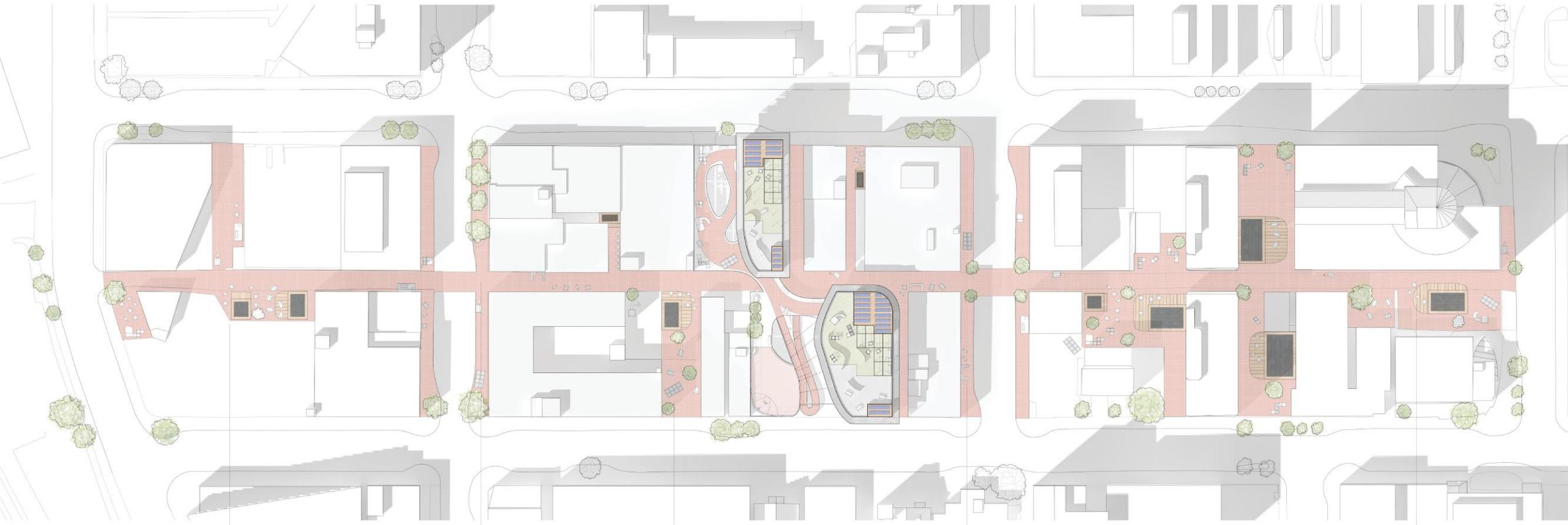
Inhabitable Facade - Terra Cotta

The terracotta facade is designed for inhabitation. The non-combustible material provides the required fire-protection between the adjoining building groves while creating moments for further inhabitation. The building facade no longer simply protects but now also collects.

Infill Site | Terrain intercalaire



URBAN DESIGN
Interconnecting the city



MARKET OUTLETS

BRICK MATERIAL
NARRATIVE

URBAN PARK
ELEMENTS

SATELLITE MARKET
VENDORS

CREATIVE STUDIO
OUTLETS

1:500 SITE PLAN



1:150 SITE AXONOMETRIC



LARCH ST. ELEVATION

PERFORATED
BRICK



CUSTOMIZABLE
SCREENS



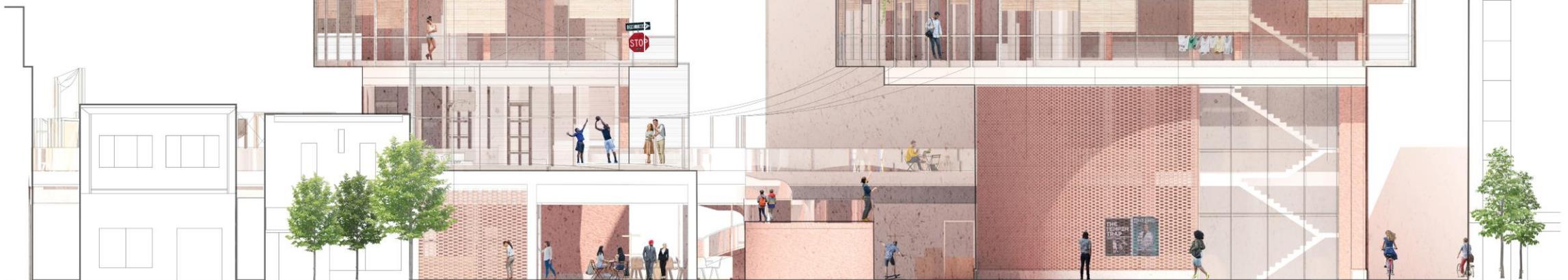
GLASS BRICK
PERFORATIONS



VARIED BRICK
PATTERNS



CURTAIN
WALL



SYSTEMS INTEGRATION
Freedom for customization

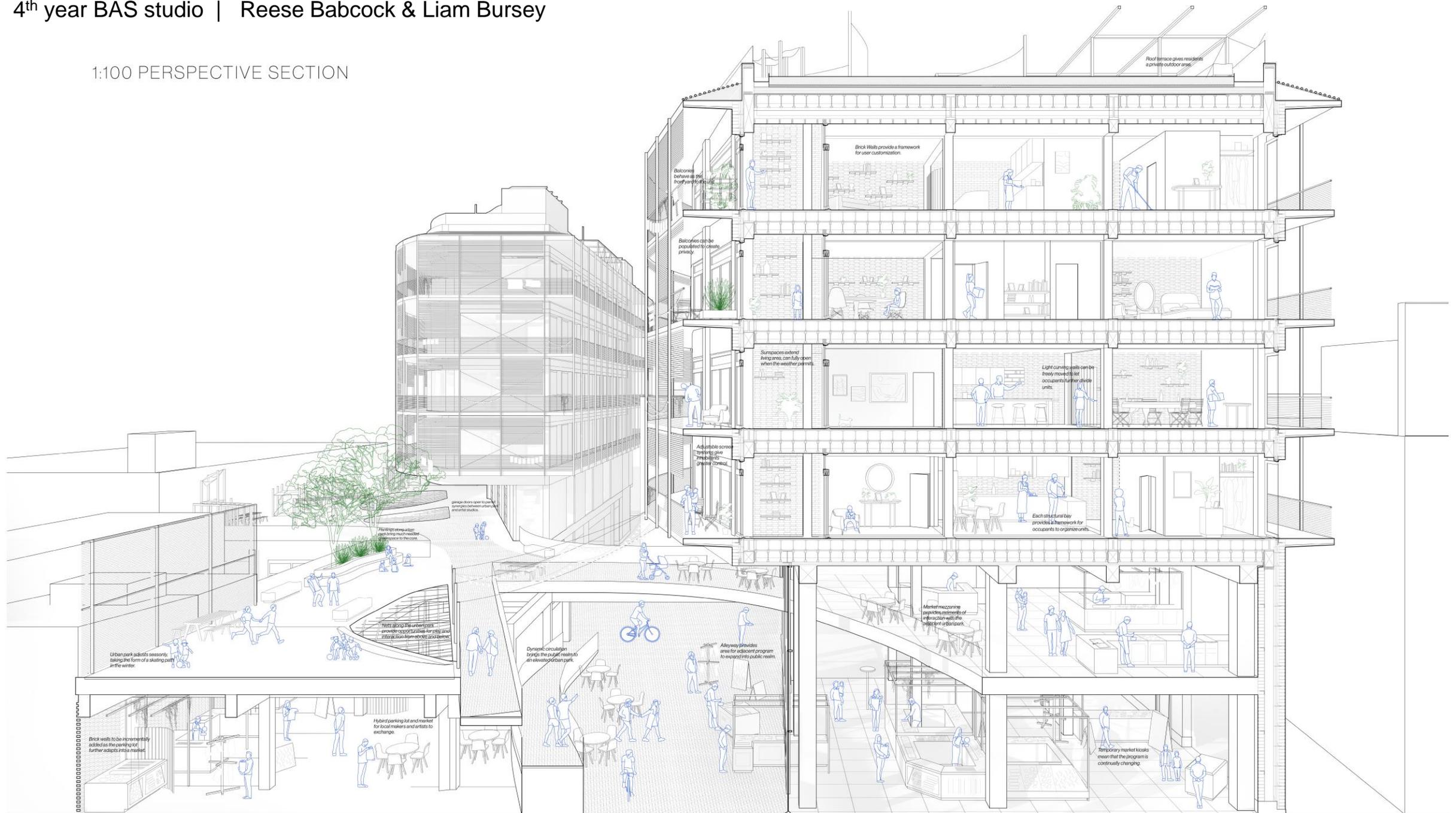


CENTRALIZED AIR HANDLING UNIT

- Mechanical room located on roof with water filtration system
- Free space for customization within unit
- Zone damper and re-heating coils for individual room heating and cooling at duct output registers

STUDENT UNIT AXONOMETRIC SECTION

1:100 PERSPECTIVE SECTION





Market interior with glass-brick wall



Parking hybridizing as a skatepark

Movement Legacy Framework

Six Pillar Approach:



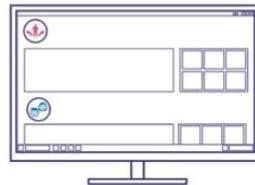
Future Intentions:

Summary Brochure



- A succinct summary of key findings and actionable design moves.
- For cheap and fast dissemination of information
- Includes imagery of great precedents
- Provides step by step approach to implementation
- To be shared with design community, municipalities, students, etc.

Website



- More robust version of the brochure, including hyperlinks to research
- Contact information, discussion forums
- Tool for sharing inspiring work that focuses on physical activity
- Tool for reaching other disciplines, encouraging research collaboration

1. Safety

Nudge Group



- Principles**
- Comfortable
 - Secure
 - Inviting (Perceived as safe subconsciously and instantaneously)
 - Quality of walking surface
 - Follows human-scale principles
 - Safe for people of all abilities

- Design Elements**
- Ideal prospect-refuge composition
 - Eyes on the Street
 - Traffic slowing measures
 - Appropriate lane widths
 - Adequate lighting
 - Clarity of wayfinding



3. Joy

Destination Group



- Principles**
- Sparks curiosity
 - Invites creativity
 - Delightful
 - Genius Loci
 - Overlapping of programs and functions
 - Socialization (see and be seen)

- Design Elements**
- Seating - opportunities for pause and conversation
 - Local scenery, music, artwork, identity
 - Aesthetic of quality
 - Interesting or bold use of colour
 - Exciting or novel programming combinations



5. Movement

Evidence Group



- Principles**
- Most important factor for site selection****
 - Music, exercise, seating, urban fabric and movement patterns
 - Identify and remedy physical barriers to movement
 - Prioritizes physical activity as critical modifiable behaviour
 - Harness the commute, daily errands, free time, and living area
 - Gather local intel from cycling and walking/running clubs

- Design Elements**
- Maximizing number of modes of physical activity (bike lanes, pedestrian paths, sport courts, tai chi facility, etc.)
 - Innovative programming as linkages between existing urban tissue
 - Multi-use trail systems integrating with architecture
 - Multi-scalar approach to physical activity
 - Bike parking, showers in offices, honouring master plans



2. Choice

Nudge Group



- Principles**
- Multiple options to engage with
 - Variety of ways to engage with elements
 - Variety of programming
 - Comprehensible (options are easily understood)
 - Opportunity for new experiences at different times (seasonal activities)

- Design Elements**
- Unexpected combinations of programming
 - Seasonal markets
 - Bifurcating paths
 - Accommodating multiple modes of active transportation



4. Nature

Destination Group



- Principles**
- Connects with local climate and ecology
 - Close proximity to nature
 - Biophilic design principles
 - Nourishing
 - Sustainable

- Design Elements**
- Views (landscape vistas where possible)
 - Natural light and shade both available
 - Abundant fresh air
 - Water features (if outdoor)
 - Native species used in landscaping



6. Measurability

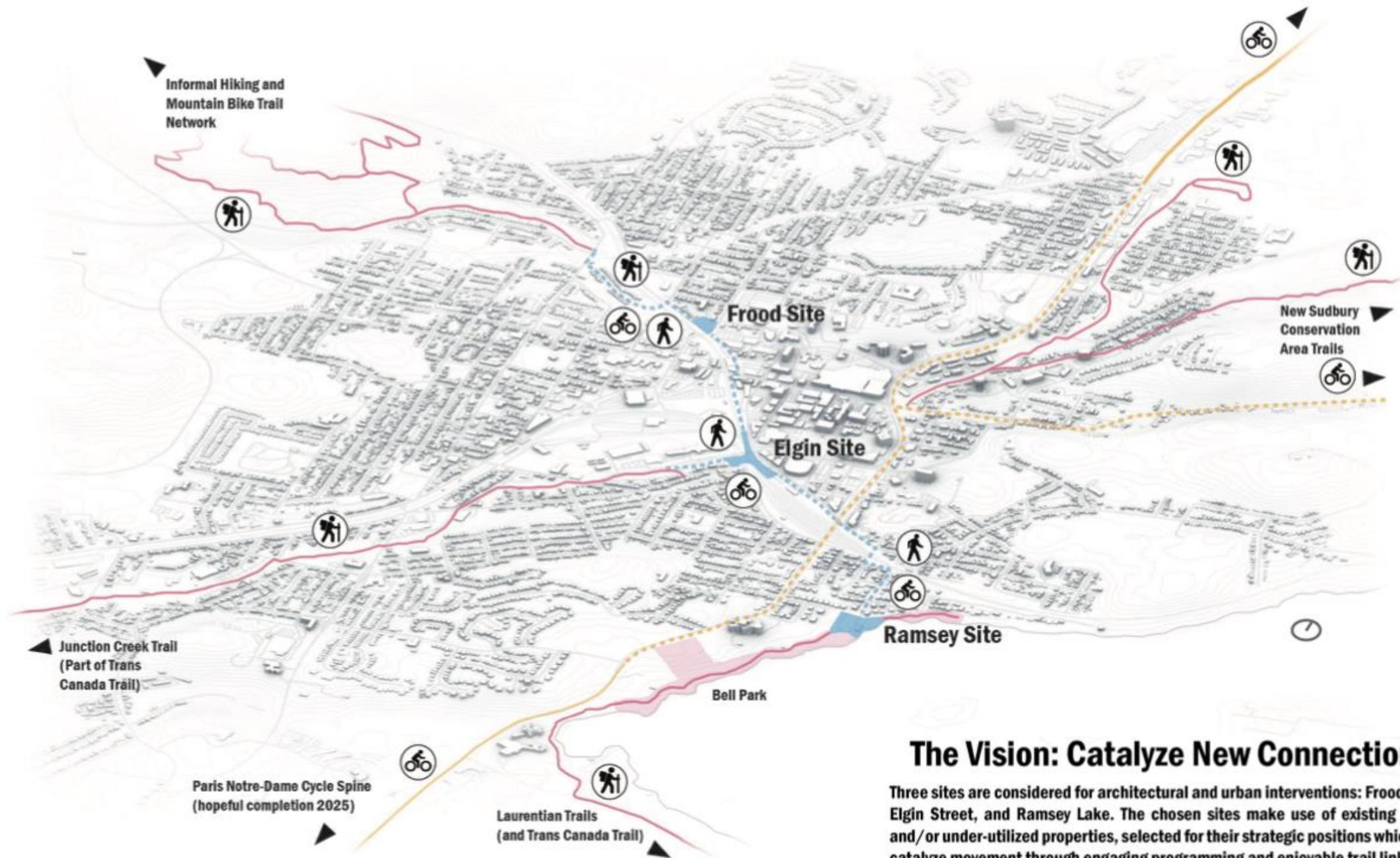
Evidence Group



- Principles**
- Include a clear vision for the project and beyond
 - Have clear hypothesis (qualitative and quantitative)
 - Have methodology for measuring the effectiveness of the project
 - Measure the project
 - Synthesize the data and discuss
 - Revisit the hypothesis
 - Offer tangible insights for future improvements

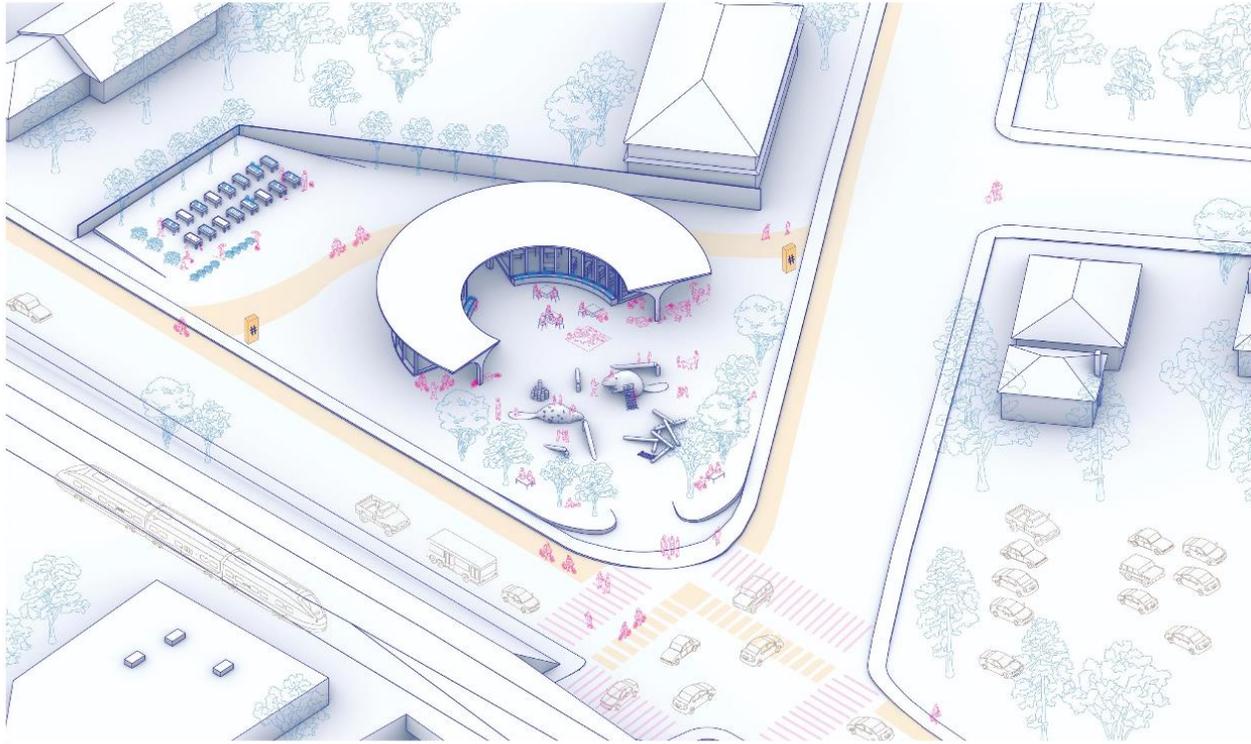
- Design Elements**
- Studying precedents
 - Feasibility studies
 - Research plan
 - Collecting data (counting users, tracking movement, comparing healthcare claims before and after an intervention, etc.)
 - Generating reports





The Vision: Catalyze New Connections

Three sites are considered for architectural and urban interventions: Frood Road, Elgin Street, and Ramsey Lake. The chosen sites make use of existing vacant and/or under-utilized properties, selected for their strategic positions which help catalyze movement through engaging programming and enjoyable trail linkages.



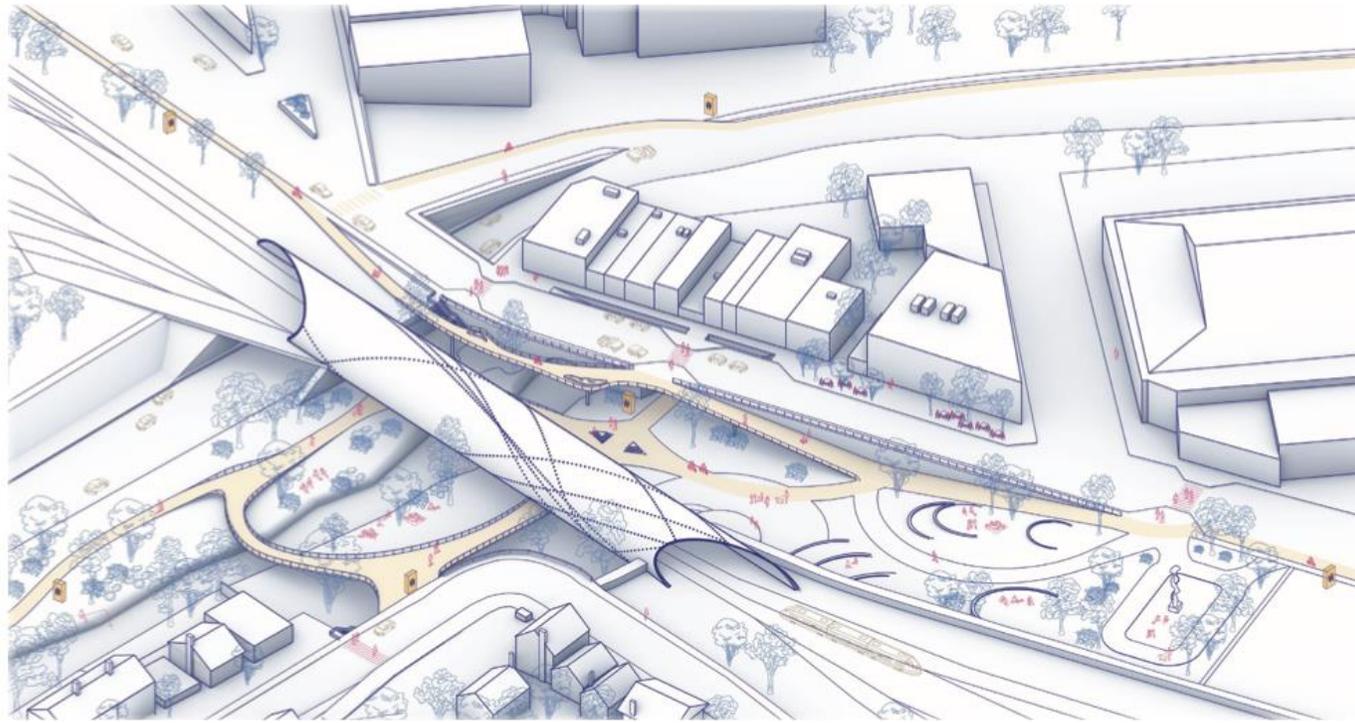
Isometric view of Grow 'n Go



View of Grow 'n Go playground



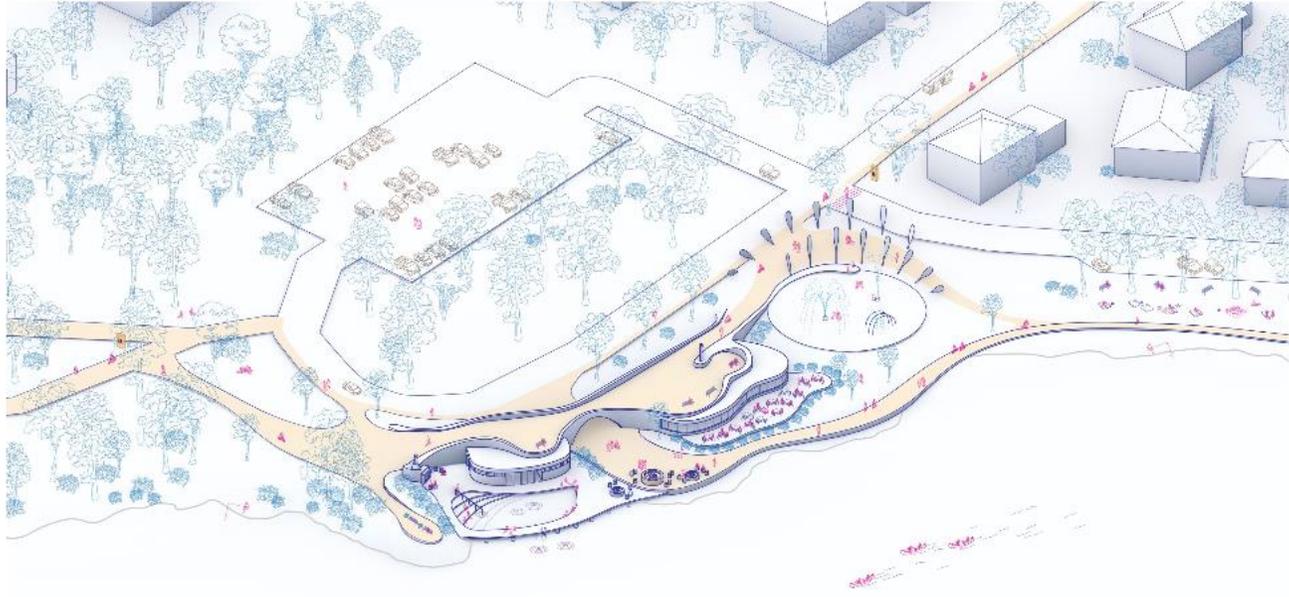
View of Grow 'n Go community garden



View of Sudbury Nexus lower park next to newly day-lit section of Junction Creek



View of Sudbury Nexus in winter



| Isometric view of Loving The Lake Centre



| View of Loving The Lake Centre barrier-free accessible rooftop



| View of Loving The Lake Centre sauna docks

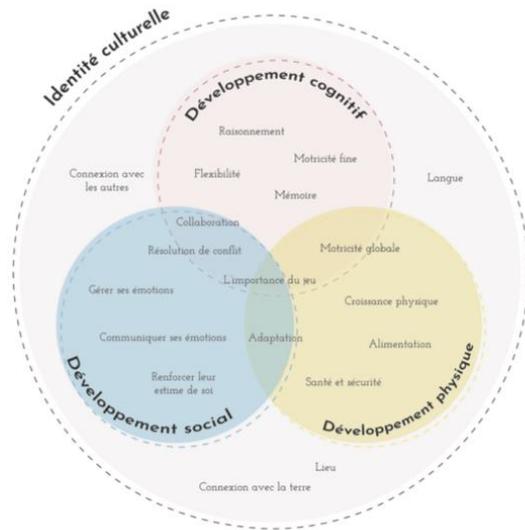


Figure 1
Développement holistique de l'enfant

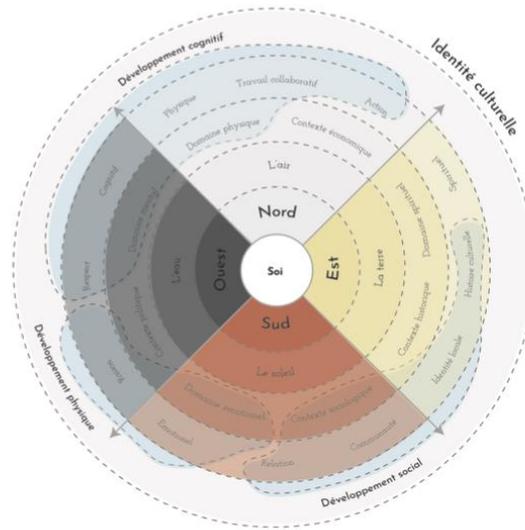


Figure 2
Théorie holistique autochtone

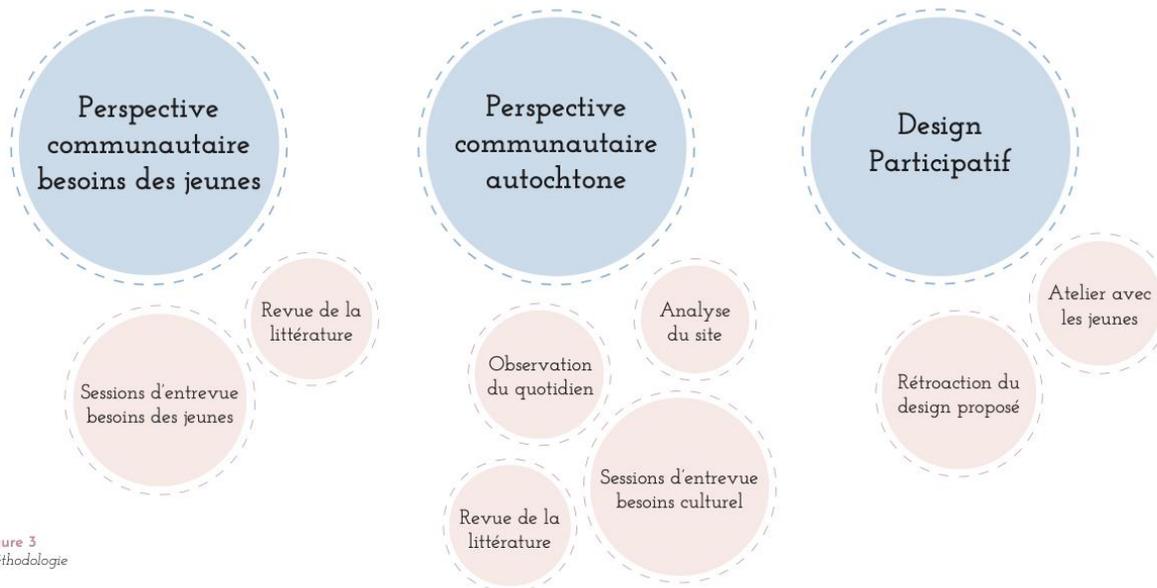


Figure 3
Méthodologie

Design participatif - Atelier de design

Atelier de dessin



L'atelier avait comme but de déterminer les sortes d'activités et d'espaces que les élèves préfèrent. Lors de cette activité, les enfants ont reçu du papier et divers outils de dessin et étaient invités à dessiner, les éléments suivants :

- Leurs espaces préférés (où ils sont le plus heureux).
- Des activités qu'ils aiment faire seul ou entre amis.
- Quelque chose de nouveau qu'ils aimeraient ajouter dans la communauté et qui les rendrait heureux, (activité, espace, ressource).

Classification de précédents architecturaux



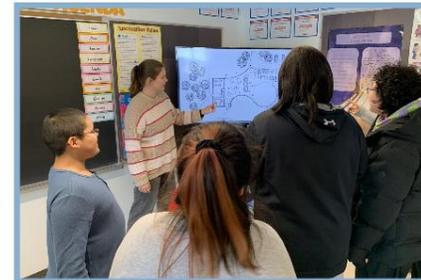
Cette activité visait à explorer l'organisation et l'expression spatiale liée au programme architectural du projet. Une variété de précédents, utilisant une approche autochtone ou non autochtone, ont été présentés aux jeunes lors de l'atelier pour identifier leurs préférences esthétiques ou symboliques de la matérialité, des formes volumétriques et des espaces.

Atelier d'activités souhaitées ou préférées



À partir d'images, les jeunes étaient invités à identifier les activités qu'ils aiment faire ou qu'ils aimeraient essayer et qui, en outre, les inciteraient à fréquenter la maison des jeunes régulièrement. Les activités présentées aux jeunes variaient entre des activités culturelles et certaines dites modernes.

Atelier de rétroaction



Quelques semaines après ces activités, une session de consultation de design a été organisée avec les groupes qui ont participé aux ateliers d'association et de dessin. La session avait comme but de donner la chance aux jeunes qui ont pris part aux ateliers d'offrir de la rétroaction sur le programme proposé en lien avec l'analyse des résultats.



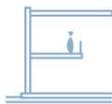
La fenestration devrait offrir aux jeunes le pouvoir d'observer l'extérieur, mais ne devrait pas laisser les gens les voir de l'extérieur. L'idée de voir sans être vu.



Divers espaces à différentes échelles leur permettent d'être à la fois sociaux et indépendants.



L'intégration de matériaux simples qui s'intègrent facilement avec le cadre bâti existant.



Des lieux en hauteur qui permettent une connexion visuelle à tout ce qui les entoure.



Des espaces ouverts à l'extérieur, celle-ci en rapportant de la verdure dans la ville qui crée des lieux idéaux pour le jeu.

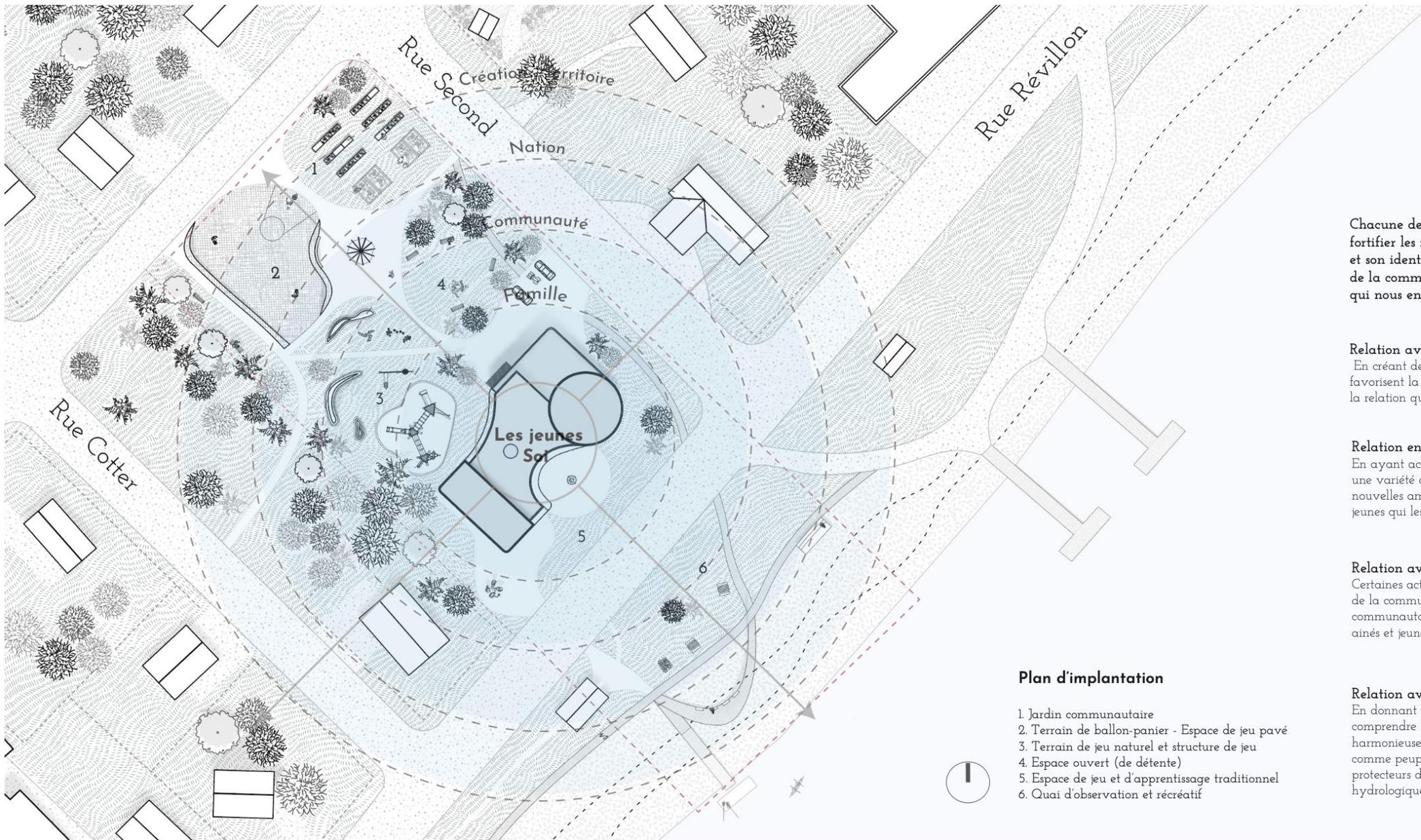


Des espaces flexibles qui permettent à la fois l'exploration de pratiques traditionnelles pour ceux qui le veulent et toutes autres activités.



Un lieu qui offre un sentiment de chez-soi.

Figure 4
Les grandes conclusions des ateliers de design



Chacune des interventions du projet propose à fortifier les relations que nous formons entre soi et son identité indépendante, avec les membres de la communauté et les éléments territoriaux qui nous entourent.

Relation avec soi

En créant des espaces intérieurs et extérieurs qui favorisent la découverte de soi-même, nous soutenons la relation que nous développons avec nous-mêmes.

Relation entre nos amis et notre famille

En ayant accès à divers espaces qui favorisent une variété d'activités, les jeunes peuvent tisser de nouvelles amitiés ou des amitiés plus solides avec les jeunes qui les entourent.

Relation avec la communauté

Certaines activités ou espaces demandent le soutien de la communauté, tel que l'entretien du jardin communautaire, le partage de connaissance entre aînés et jeunes et encore plus.

Relation avec le territoire

En donnant la chance aux jeunes de voir et de comprendre l'importance que jouent nos relations harmonieuses avec la terre à notre survie comme peuple, les jeunes apprennent à être des protecteurs de leurs terres et de leur environnement hydrologique.

Plan d'implantation

1. Jardin communautaire
2. Terrain de ballon-panier - Espace de jeu pavé
3. Terrain de jeu naturel et structure de jeu
4. Espace ouvert (de détente)
5. Espace de jeu et d'apprentissage traditionnel
6. Quai d'observation et récréatif





Perspective intérieure - Lieu de rassemblement



Perspective intérieure - Espace de rencontre commun



Perspective intérieure - Espace d'étude commun



Perspective extérieure - Élévation Sud