

# Visioning Sunnyhill: Executive Report

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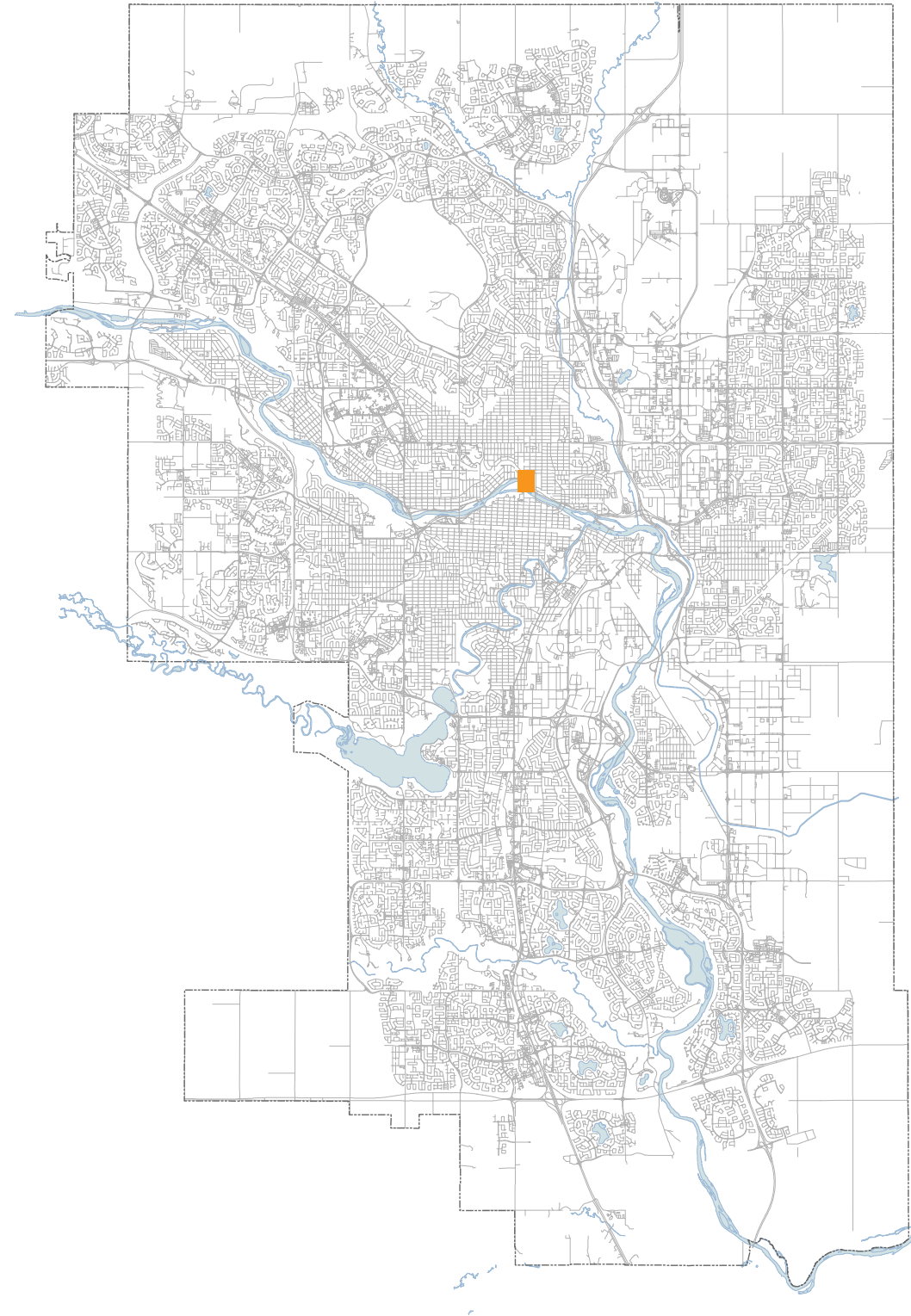


Fig 1. Sunnyhill within the city of Calgary



Fig 2. View of Sunnyhill from the top of the escarpment

### Terms of Reference

Sunnyhill Housing Cooperative is undergoing an extensive evaluation of its current situation. The community has undertaken this project as part of the national Cooperative Housing Federation's Compass 2020 initiative, facilitated by the Southern Alberta Housing Cooperative's (SACHA) Vision 2020 process. Vision 2020 is intended to examine Sunnyhill's history and evolution, current context and future opportunities. Our team was tasked with using a design methodology to support the Vision 2020 exercises while offering the Cooperative thoughtful and creative options for their future. Specific elements to be considered in the design were; post-carbon urban living, socio-cultural, economic and ecological sustainability and resilience, as well as intensification and diversity of land uses.

### Origins

Sunnyhill Housing Cooperative is situated within the Calgary neighbourhood of Sunnyside, one of the city's oldest and most politically active communities. The Housing Cooperative was brought to fruition in 1976 as a result of shared interests and strategic partnerships with the community and many levels of government. Sunnyhill was founded on the values of self-help, self-responsibility, democracy and equality.

Sunnyhill was conceived of and built by a group of citizens interested in establishing affordable and quality housing while maintaining a residential population in Calgary's central core. The project was endorsed and financially supported by the Hillhurst – Sunnyside Community Association. In supporting the Cooperative, the Association hoped to attract young families to the area and ensure the survival of the Sunnyside School, which faced imminent closure as a result of limited enrolment. The Cooperative worked to convince the City of Calgary that the project was viable and met a need not addressed by public housing. Through a process of negotiation the City agreed to lease the land to the Cooperative for a period of 60 years. The physical construction of Sunnyhill was made possible through financial assistance provided by the Canada Mortgage and Housing Corporation (CMHC), which was developing alternative models of affordable housing across the country at this time.

A total of 66 residential units were built at Sunnyhill, ranging from 1-3 bedrooms. The construction was phased in with the initial 25 units built south of 7th Avenue and the remaining units built to the north.

## Developing a Vision

In an effort to address the future of Sunnyhill Housing Cooperative our team carefully considered the terms of reference put forth and developed a mission statement to guide our design process. The mission statement read:

Our goal is to provide the Sunnyhill Housing Co-operative with an interdisciplinary design vision that will offer inspiration, direction, and advocacy as they confront future opportunities and challenges.

In our quest toward a holistic and nuanced understanding of Sunnyhill's particular existence, we will explore interconnected systems, identifying key relationships within the Co-operative and between the Co-operative and its broader context.

Throughout our process we will seek to celebrate, cultivate, and embody the spirit of Sunnyhill and its members.

## Context

The Sunnyhill Housing Cooperative is located on 3.3 acres within the neighbourhood of Sunnyside, at the intersection of 7th Avenue NW and 4th Street NW, just North of Memorial Drive. The Cooperative boasts an extremely attractive and valuable site; framed by the natural escarpment to the North, with close proximity to the Bow River, walking distance from the downtown core and at a confluence of the City's pathway system.

Sunnyhill is located in a flood plain and has historically been at risk for summer flooding caused by heavy rainfall and snowmelt runoff, as well as winter flooding due to break-up and damming of river ice. For the neighbourhood of Sunnyside the immediate threat from flooding has been diminished with berming along the river, however the City of Calgary enforces bylaws that ensure any new buildings in the flood plain are designed to avoid structural damage by floodwaters. In addition, Sunnyhill faces water drainage and icing issues within their site as a result of water seepage from the sedimentary composition of the escarpment.

The current land usage of Sunnyhill is 27% housing stock and 19% vehicle access and parking, with the remaining 48% set as green spaces and pathways. While the Cooperative is attractively situated within Sunnyside, it does not demonstrate an obvious physical relationship with the neighbourhood or the greater City of Calgary and therefore is not representative of the partnerships which enabled the Cooperative to be built and maintain itself.

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Fig 3. Typical Sunnyhill Units

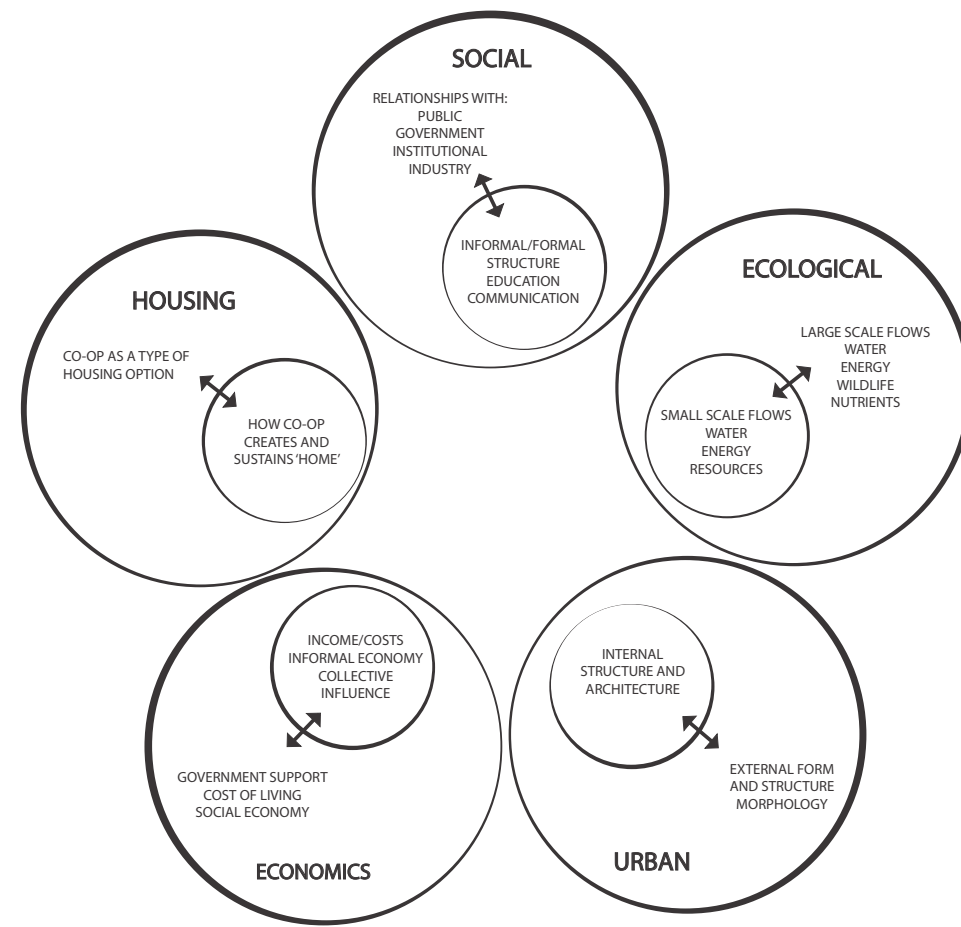


Fig 4. Systems framework

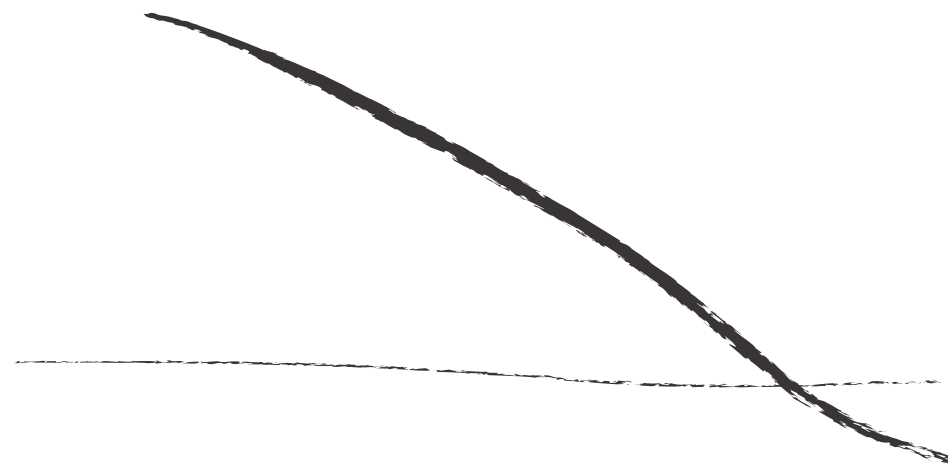


Fig 5. Early sketch: 'convergence'

In addition, the physical layout of the buildings at Sunnyhill is not reflective of the sense of community spirit, engagement and social capital embodied by the residents. There are limited opportunities for members to interact within the exterior spaces and there is no community building to facilitate events, or encourage the sharing of resources. Furthermore, the layout of the buildings does not celebrate the natural environment of Sunnyhill's site, nor does it encourage the residents to engage with the landscape.

Sunnyhill's building stock is outdated and inefficient. Much of the Cooperative's physical capital is in need of serious upgrades or replacement, as confirmed by a 2008 independent study prepared by Building Science + Architecture. This study assessed the current state, lifespan and replacement cost of 59 capital items over the next 25 years. Items such as plumbing, interior flooring, vinyl siding, windows and doors, appliances, landscaping, and concrete surfaces will all require replacement in the coming years.

Sunnyhill is financed through a mortgage which will be paid in full in 2029. In addition, the Cooperative contributes to a replacement reserve fund for capital projects at the rate of \$90 000 per annum. The fund has a current value of \$441, 984. The Cooperative is located on land leased from the City of Calgary that has an approximate value of \$13, 630, 000. The lease is set to expire in 2039.

Given these contextual realities, the Sunnyhill Housing Cooperative has reached a critical juncture in its existence. The convergence of ecological, economic, social, urban and housing realities demands that the residents of Sunnyhill act now to ensure the survival of the Cooperative for future generations. In order for Sunnyhill to prove its legitimacy as an alternative housing form and to maintain its existence in the current location, the Community must heed a call to action.

### Design Charette

In order to better understand the needs and desires of the Sunnyhill community our team conducted an intensive day-long design charette on October 10, 2009. The charette, housed in a temporary tent structure on site, created an interactive and festive mood for community engagement. Despite the cold weather, nearly 60% of residents participated in the event. The charette consisted of a series of activities that provided insight into the primary values held by Sunnyhill members, as well as the physical elements, materials and overall feelings that they attach to an ideal housing cooperative. The charette was also an opportunity for our team to understand the membership's level of engagement and eagerness to work together as a community when considering their future. The charette was organised in cooperation with SACHA and provided valuable input into the Vision 2020 process.

### Values Framework

Our experiences during the charette, together with member contributions were analysed and distilled by our team, as we sought to identify the primary characteristics associated with an ideal Sunnyhill Housing Cooperative. This process informed a series of representative icons that capture the major attributes and opportunities to be considered in developing an appropriate design response for Sunnyhill.

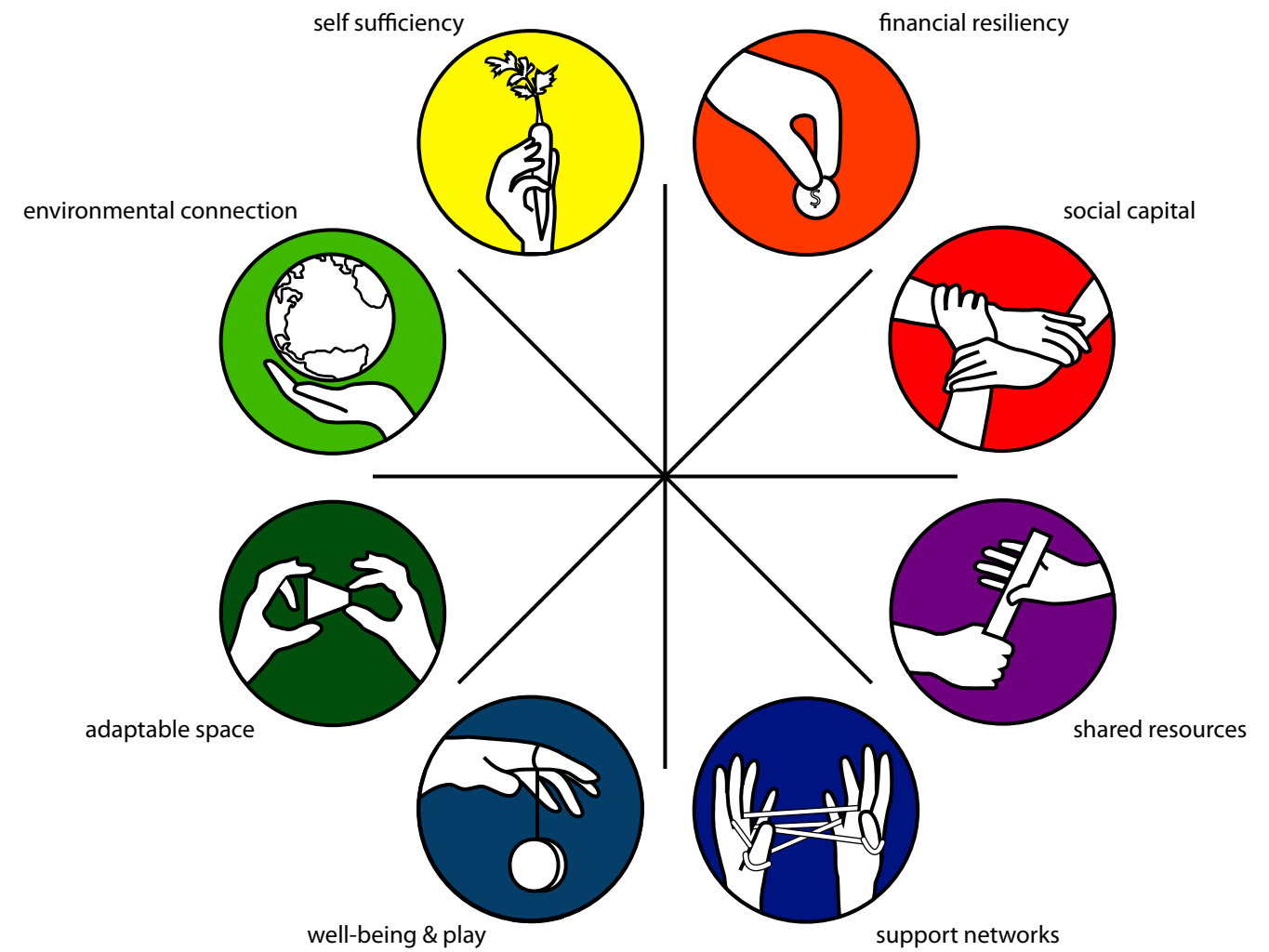


Fig 6. Sunnyhill values



Fig 7. The charrette was attended by over 100 residents throughout the day

Fig 8. 'Block Party' charrette exercise



Fig 9. A word cloud resulting from the 'architecture' charrette exercise

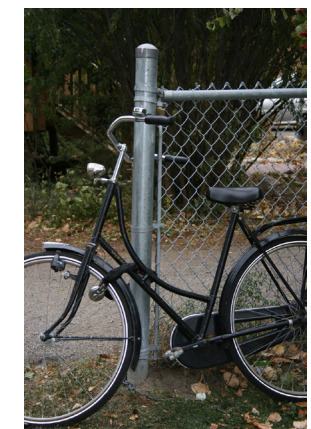


Fig 10. 'Eye Spy' charrette exercise

## District Concept Plan

The future potential of the Sunnyhill Housing Cooperative is both enormous and exciting. The Cooperative is rich with opportunity, shaped by origins, values and ambition that capture the spirit and power of an intentional community. Our team set out to design a bold and inspiring master plan that could harness the assets of Sunnyhill's current context, draw from its experiences and lead to a vibrant future.

A detailed examination of the Sunnyhill site and the surrounding properties revealed a substantial opportunity in the property to the east of the existing boundary. At present, the Calgary Curling Club sits adjacent to the Cooperative. The Club services a membership of approximately 1000 and is used for 6 months of the year. The area directly to the east of the curling club is designated as public parking and is used primarily by commuters going into the downtown core and people visiting Prince's Island Park. Neither of these properties, in their current use, reflects the potential of the land upon which they sit, in terms of both location and ecological significance. This land will undoubtedly face development pressures in the future. Within this context, the district concept plan proposes that Sunnyhill Cooperative become a leader in the promotion and revitalization of this unique area, to build an exciting and vibrant community within the City of Calgary.

Given the flood plain condition and the natural point of convergence where the escarpment meets the Bow River at the eastern edge of this expanded site, an ecologically integrated plan is envisioned. By conceiving of these areas as one continuous piece of land, new opportunities are made possible that allow for appropriate responses to the natural ecological flows in the area, including wind, sun and water. The district concept plan responds to the unique natural landscape by first drawing the escarpment down into the community throughout the built environment, creating green spaces for play and increasing self sufficiency through food production and energy generation. Second, the flood plain and water seepage are reconceived of as an asset and the landscape is used as an integrated water management system that captures storm and rain water, utilizes wetland filtration and mitigates localized water damage. Lastly, buildings on the site are protected through a series of raised berms and utilities are consolidated in an enclosed utilidor that links the buildings and service areas throughout the site. The utilidor provides easy accessibility to site infrastructure

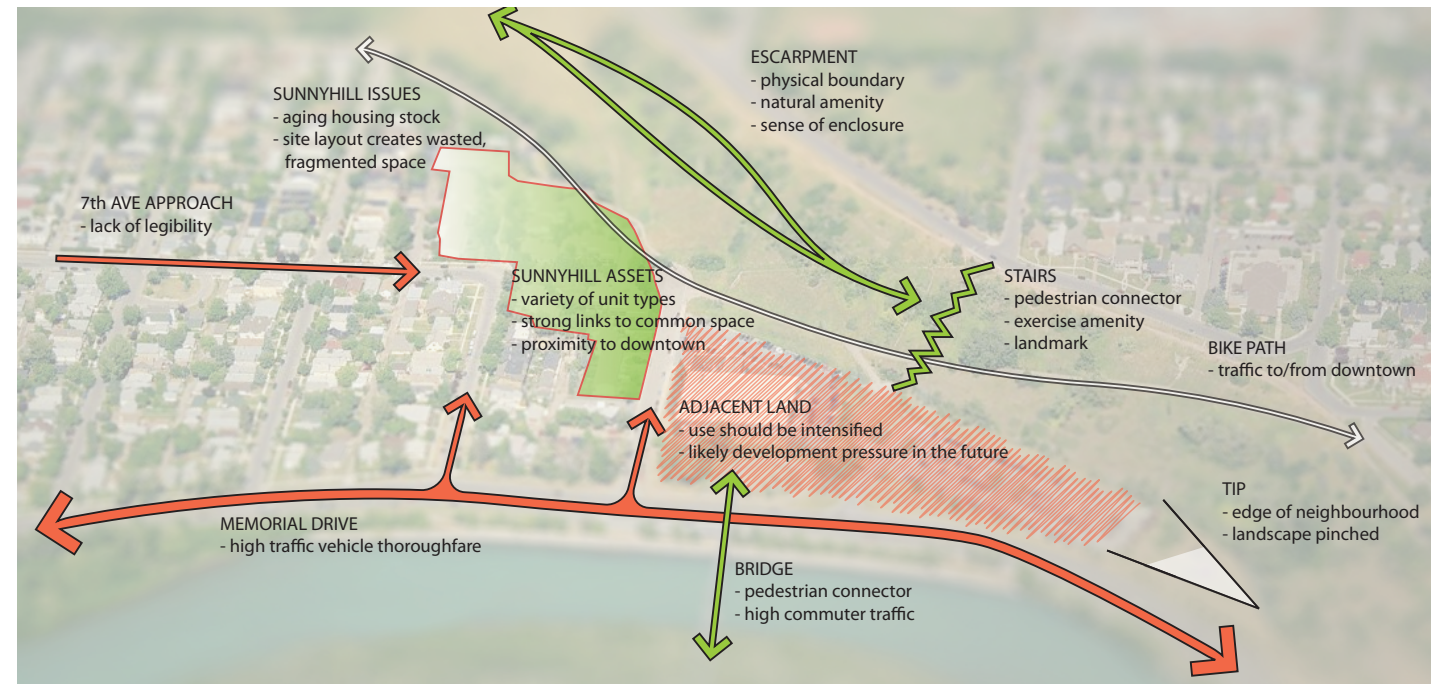


Fig 11. Assets & Issues

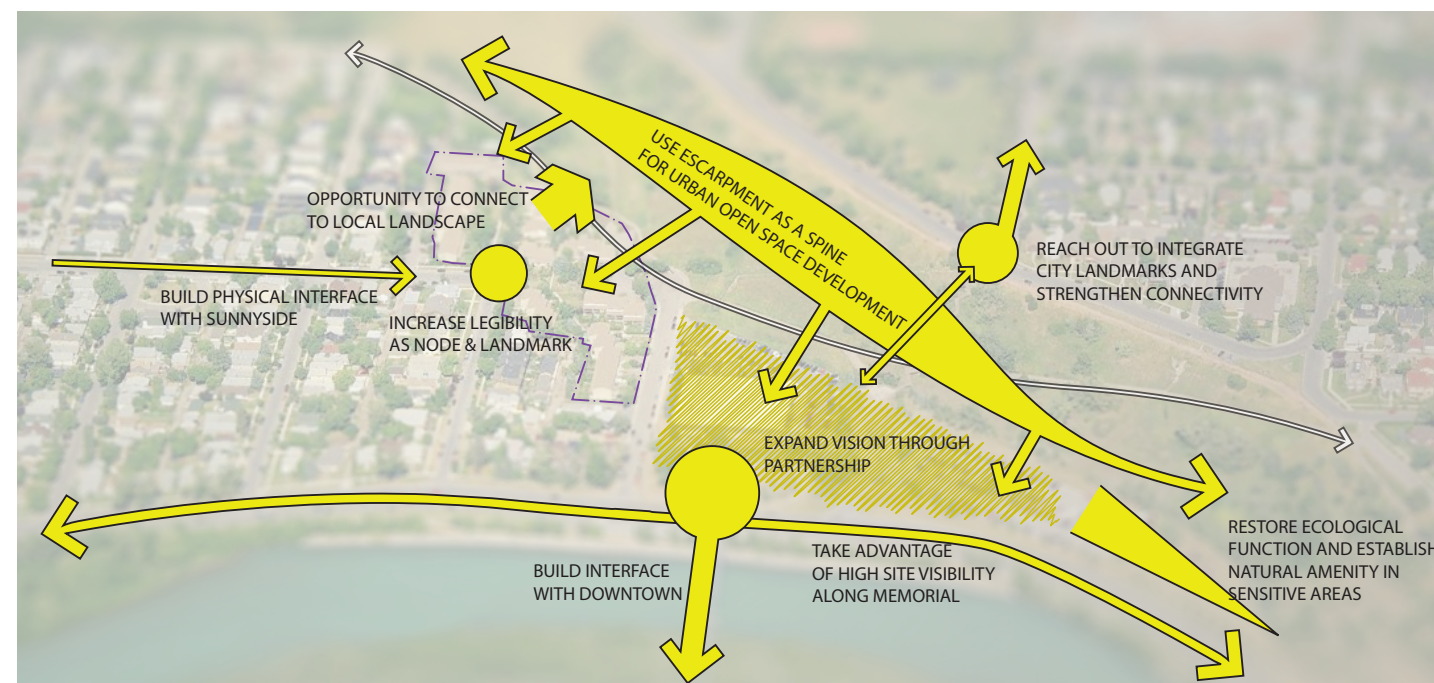


Fig 12. Opportunities



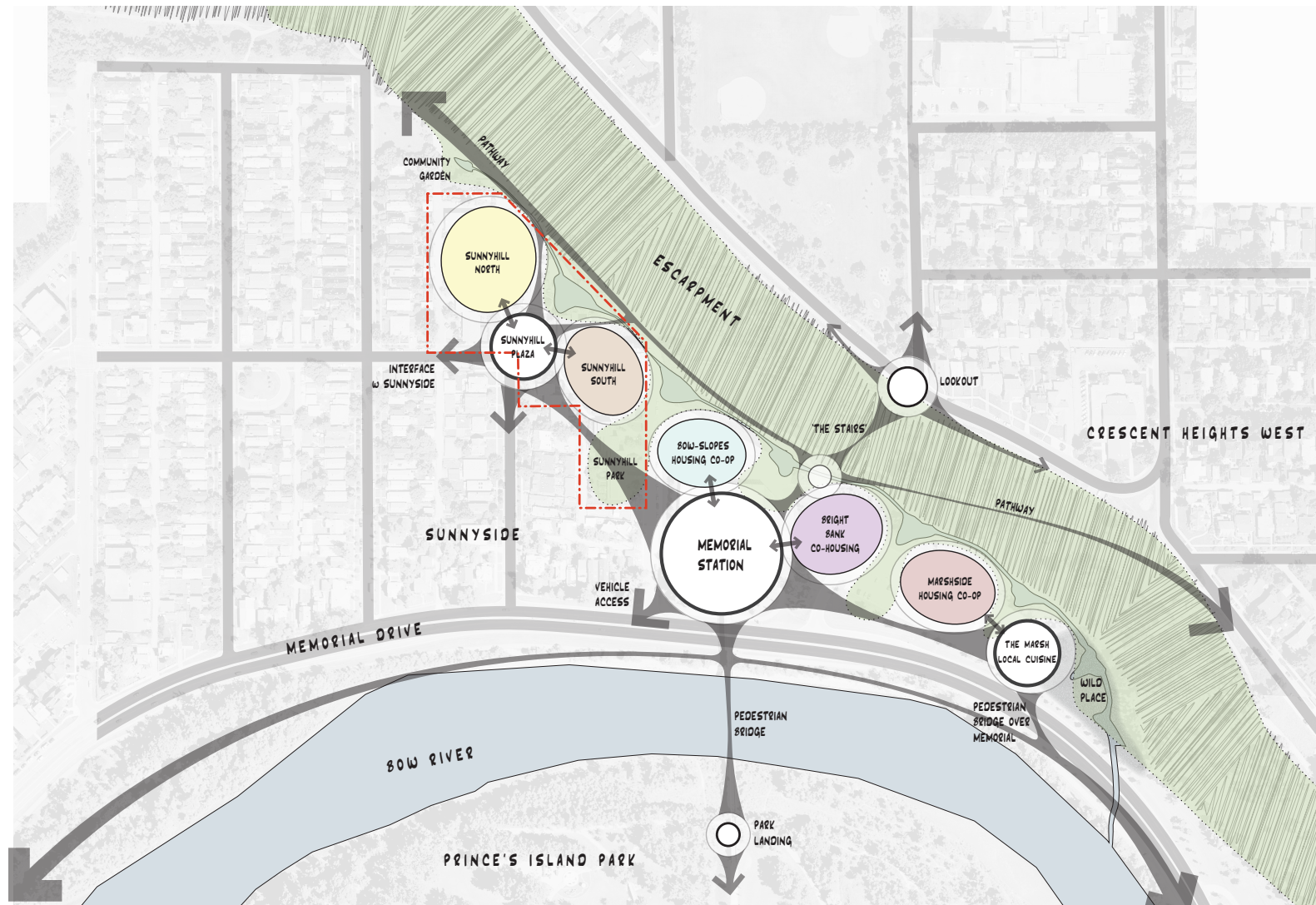


Fig 13. District Concept Plan

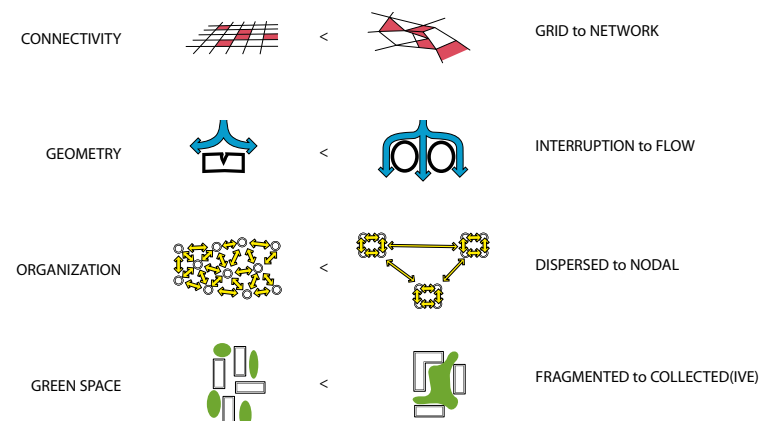


Fig 14. District Scale Patterns

for repair and maintenance, as well as the ability to move and affix additional service corridors in the future (for more information refer to [http://www.woodharbinger.com/4.650\\_newsteamutilidor.html](http://www.woodharbinger.com/4.650_newsteamutilidor.html) and <http://www.bueci.org/Utilidor.html>).

In developing the district concept plan we considered the current flow of pedestrian and vehicular traffic, while anticipating future movement around and through the site. In terms of resident's transportation, the plan acknowledges the current reliance on the automobile, however, parking has been consolidated and driveways eliminated in order to free up additional land. As well, the cul-de-sac at 3rd Ave NW is drawn back towards Memorial Drive, thereby creating additional green space on the site. Looking toward a post-carbon future, pathways in the design encourage pedestrian connectivity and there is a prominent transportation hub for Sunnyhill residents and commuters using the Memorial Drive thoroughfare.

A major focus of the master plan is to ensure that this expanded site has an attractive and functional interface with Sunnyside and the city beyond this neighbourhood. The design is focused on a central gateway for people from outside of the area to engage with Sunnyhill and other entities in the District. The gateway would be highly visible to commuters on Memorial Drive, as well as to pedestrian traffic using the City's pathway system. The district concept plan incorporates a mixed land use strategy, with retail and flexible spaces built into the main node. The inclusion of these spaces could help to support community economic development within Sunnyside and the City. Potential opportunities could include a day-care, a coffee house, artist studios or a bed and breakfast.

The district concept plan could provide affordable housing for a population base of between 600 and 800 residents in four nodes, depending on the desired density. The density of each node was established, in part to ensure a manageable number of residents from an administrative standpoint and at the same time provide residents with varying degrees of semi-public and private spaces within an identifiable community. With the expansion of the residential area, there is an opportunity for Sunnyhill to maintain its internally subsidized cooperative housing structure while the larger site is diversified with other housing types, such as market housing, co-housing or social housing.

As was Sunnyhill's inception in 1976, the entire district concept plan is grounded in cooperation and partnership. Sunnyhill has an opportunity to open the discussions on the idea of the district concept plan and build a network of alliances. The Cooperative's role in developing these partnerships will not only

contribute to the realization of the plan but will also underscore the legitimacy of the Cooperative. Within this context there is an opportunity for renewed engagement with the CMHC where Sunnyhill could offer itself as a demonstration site, and act as a catalyst for the renewal of cooperative housing in Canada.

The Cooperative must also cultivate and expand their existing relationship with the City of Calgary and become integrated into their land use and transportation planning. A strong potential for partnership is with the City's Landscape of Memory project, designed to highlight the historical significance of Memorial Drive while enhancing its accessibility and creating inviting spaces for local residents. The Cooperative may also wish to explore alternative arrangements for securing the land required for the master plan, including gifting an area of ecological significance (e.g. wetland interpretive area) back to the City for public use. In order to achieve the district concept plan, the residents of Sunnyhill will also need to consider new partners that can be integrated into this broad vision. Potential situations could include the integration of the Calgary Curling Club, renting space to organizations from the social economy, collaborating with groups who need land for alternative housing forms and establishing exchanges with international cooperative housing programs.

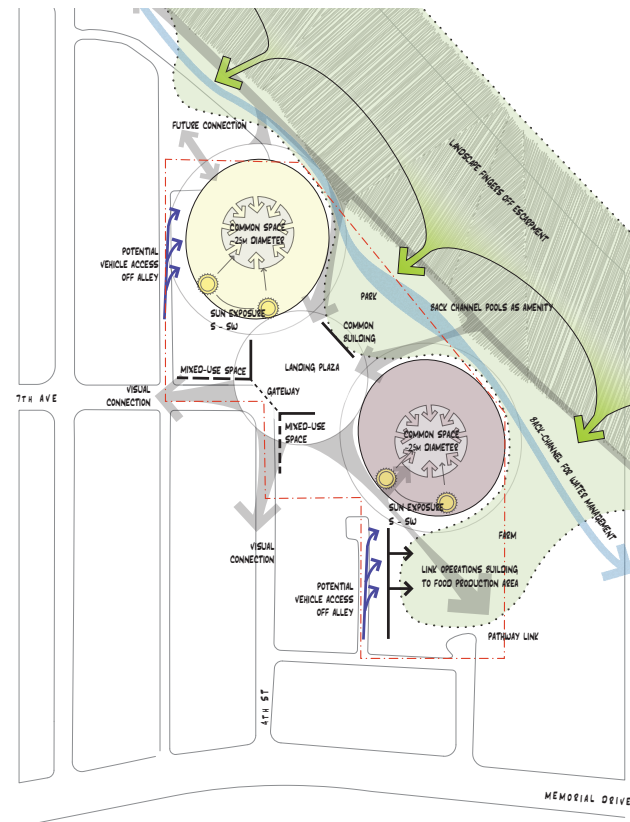


Fig 15. Sunnyhill site analysis

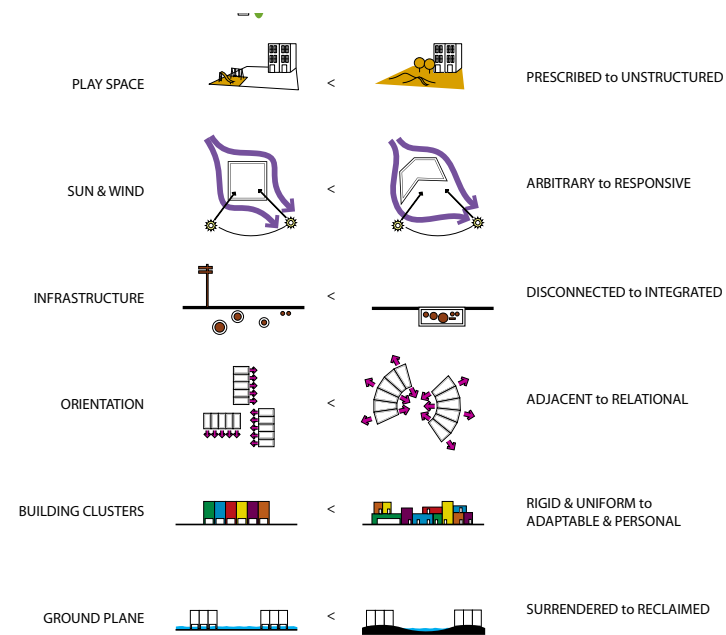


Fig 16. Site scale patterns

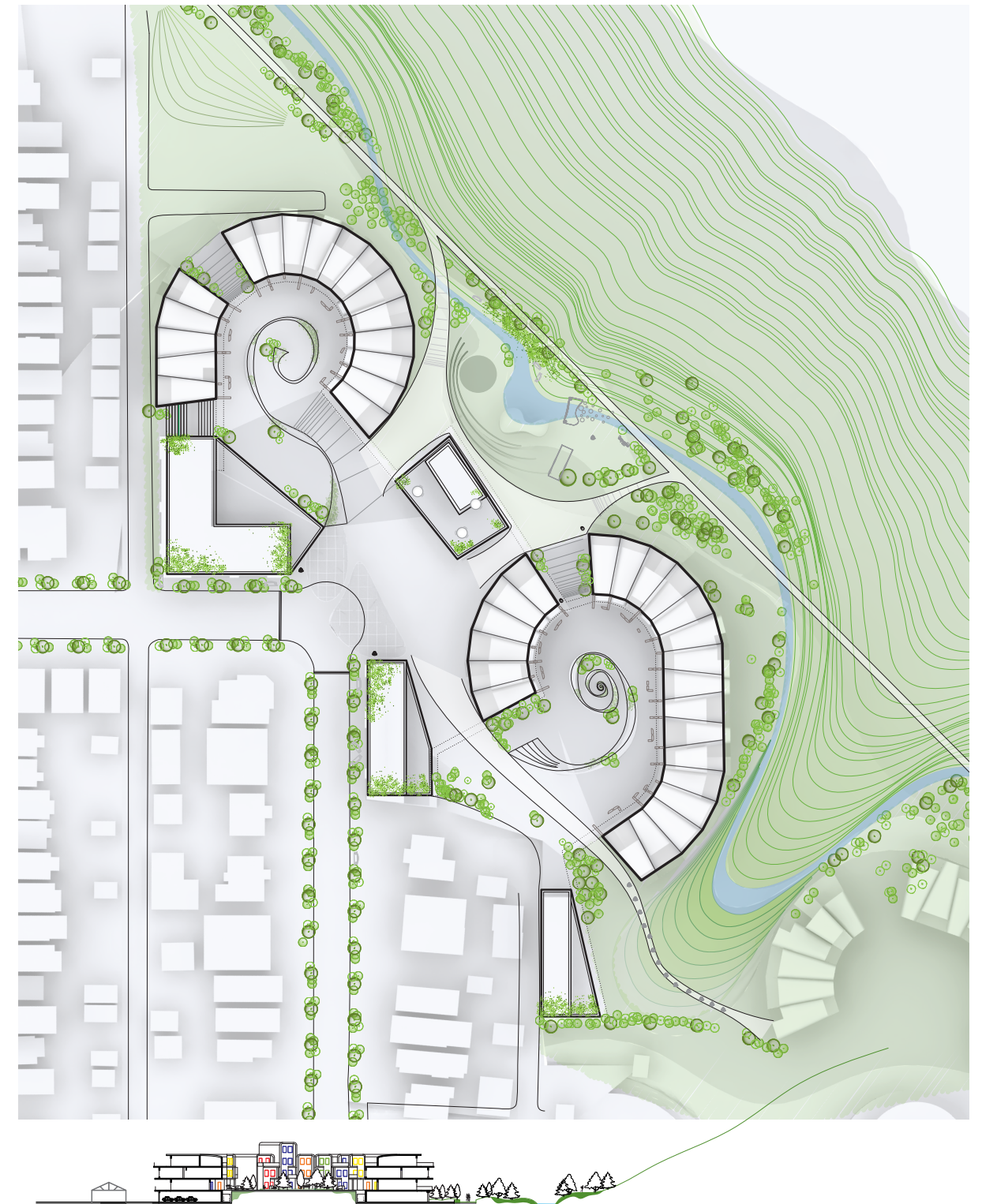


Fig 17. Site plan & section

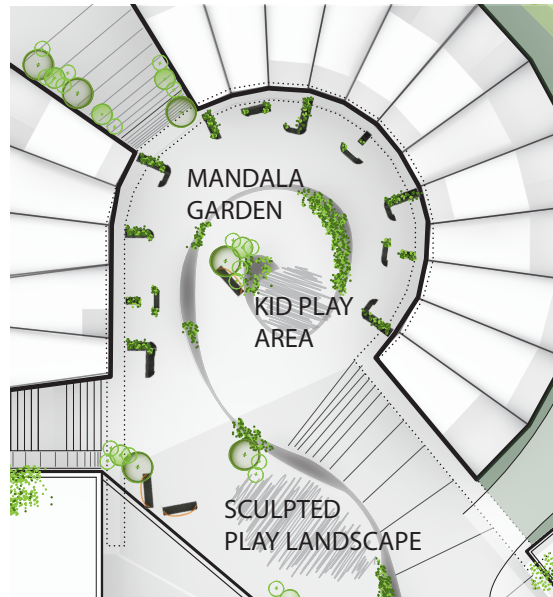


Fig 18. North laza plan



Fig 19. View of the back-channel & play area

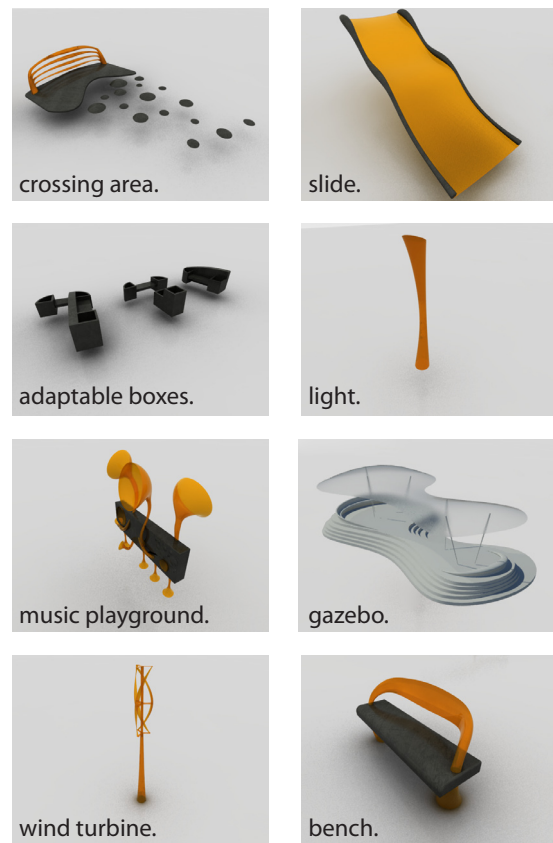


Fig 20. Site furniture concept

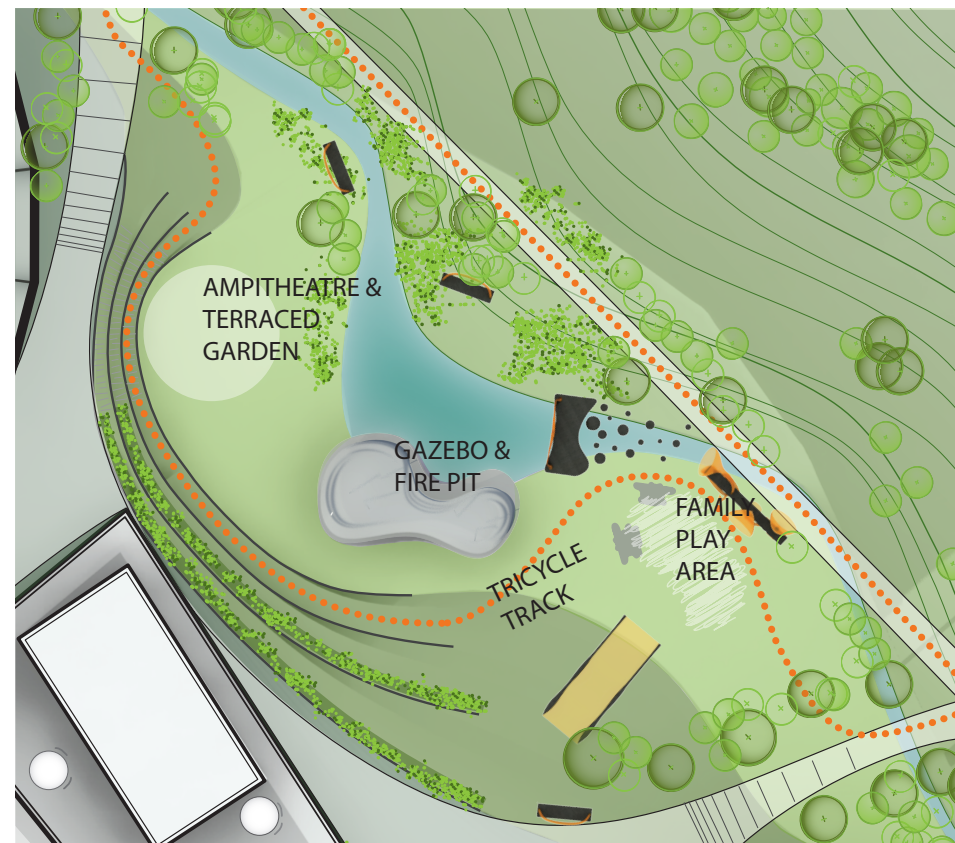


Fig 21. Sunnyhill Park

## Sunnyhill Site

The district concept plan puts forth a bold, long-term vision for the future of the Sunnyhill Housing Cooperative. Many of the same opportunities identified in this expanded plan, however, present themselves within the boundaries of the current Sunnyhill site. As such, our team has developed a detailed design strategy that could be phased into the current Sunnyhill site over time, independent of the district concept plan.

The Sunnyhill design maintains the ecologically responsive approach of the expanded plan. The overall topography remains bermed in order to integrate water management and mitigate flood damage. Extensions of the escarpment branch into the community and a physical connection is made with the existing Sunnyside Community Garden. Existing trees on the site are preserved and any new vegetation brought in should be native to the area. Fruit bearing shrubs and trees should be incorporated to provide food for residents, following the methods of permaculture.

One prominent community green space is the Family Play Area, which incorporates an amphitheatre, terraced gardens, a pond, quiet nooks and play spaces for young children with swings, a slide embedded into the landscape, a sound sculpture, bike path and sand pit. The Family Play Area is designed to encourage play activity in all seasons (e.g. skating, tobogganing) and while the focus is on fun, special attention is given to the security of children in the space. To this end the water channel acts as a barrier between the city pathway and the play area, and the space is highly visible from the community building above. There are designated play spaces for youth located within close proximity to each residential node with a sculptured landscape on the western extremity of the site and a climbing wall in the southern node.

Another major green space is the farm which contains approximately 20,300 square feet of growing area, organized with swales to capture water run-off and create a fertile growing base. The farm is irrigated with water captured onsite and drawn through the utilidor, as well as the back water channel that runs through the site. Wind turbines are placed along the pathway in this area allowing for energy generation. Within the farm there is a children's garden intended to allow younger residents to develop a sense of wonder and interest in growing of food. The main building within farm space incorporates a greenhouse, maintenance shed, chicken coop and tilapia pond. The farm is designed to provide a space for residents to engage with the land, as well as

heighten the community's resilience, promoting self sufficiency and security in terms of food and energy. There may also be a potential to generate income from the farm through the sale of food products or by selling energy back to the grid.

Each of the residential nodes on the site also contains green space within their configuration. The node to the north of the site features a mandala garden and the node to the south, an herb spiral. These spaces have been established to provide quiet areas for residents to interact with one another and each contains a secure, highly visible play area for small children. Residents are also able to define an area of personal outdoor space in the front of their units with mutable boxes that can serve as planters, storage and waste collectors. Additional green spaces can be found parallel to the community pathways and along the northern boundary of the property, where there is also a designated off-leash area for pets. Although the design of the green space is extensive, its development is an opportunity for the membership of Sunnyhill to contribute their time and labour toward a renewed space. Drawing on the social capital of Sunnyhill would allow members to contribute directly to the redevelopment of the site while freeing up funds for other projects.

On the Sunnyhill site there is again a move to reduce the space afforded to parking and vehicle circulation. The cul-de-sac on 3rd Avenue NW is drawn back. Parking is consolidated and priority spaces are provided for car sharing, with two designated unloading areas for resident's use. A public transit stop, with shelters is located in the main gateway area. There are removable bollards to allow emergency vehicles to access the site. Safe pedestrian flows are maintained with a pathway system and sufficient lighting, powered by wind energy is dispersed throughout.

Like the district concept plan, the design of the Sunnyhill site is centred on a main gateway that provides an interface with the larger community. The gateway is framed by the transit stop shelters and frames an open air plaza. On both sides of the gateway there are complementary buildings that can be used for retail space, transitional housing, underground parking and the like. These buildings could contain businesses that service Sunnyhill residents and others in the City, while providing the opportunity for income generation and on-site employment. A community centre is situated on the northern edge of the plaza. The space is multifunctional and provides the community with a shared kitchen, meeting rooms and event space while facilitating the sharing of skills and resources amongst residents.



Fig 22. The north plaza

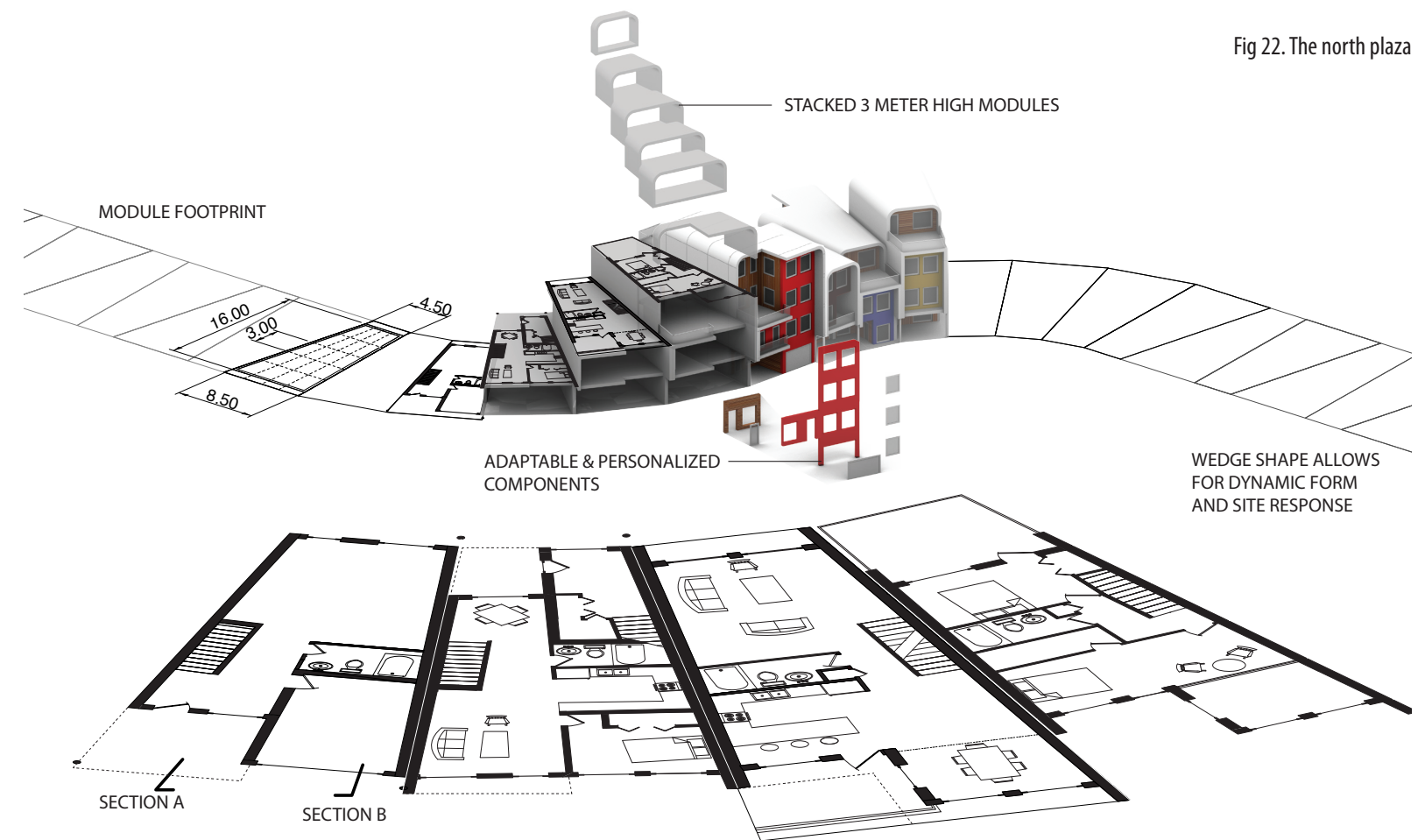


Fig 23. Architectural concept

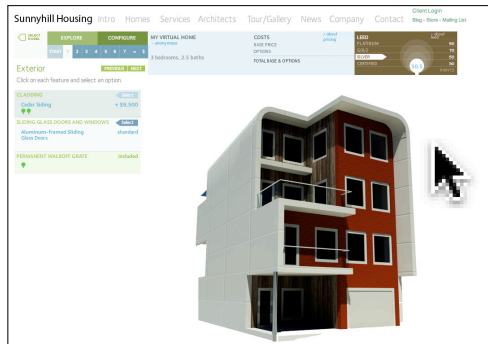


Fig 24. The modular process

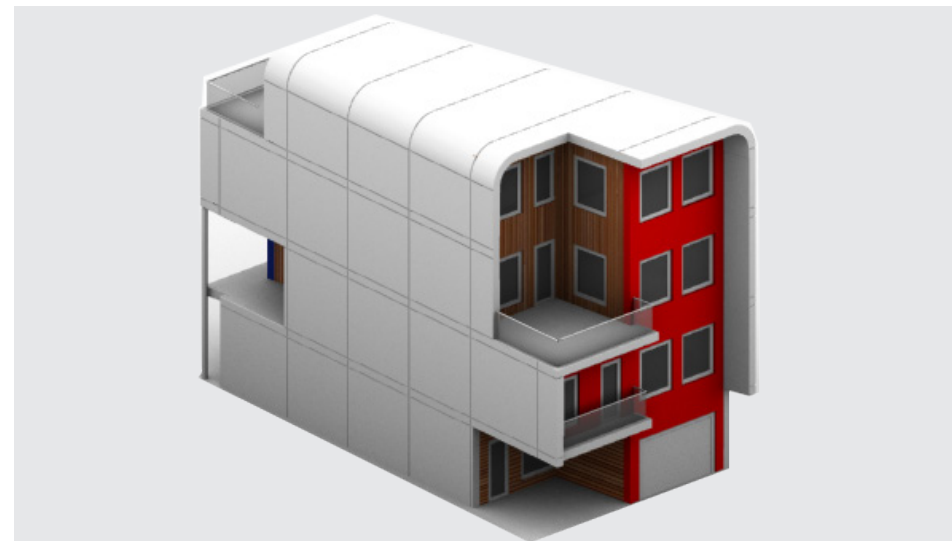


Fig 25. The wedge-shaped module

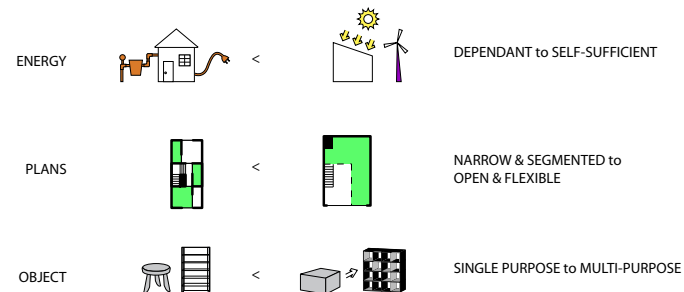


Fig 26. Building scale patterns

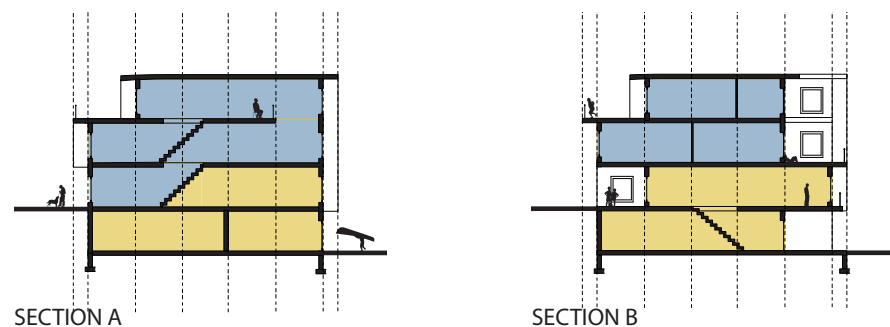


Fig 27. Module Sections

In developing this site, Sunnyhill could again benefit from renewed relationships with the CMHC and the City of Calgary, as well as other groups that can play an active role in realizing their vision. The Cooperative must nurture such relationships in order to prove their value as an affordable housing strategy and a legitimate tenant of the leased land.

### The Architectural Form

For residential units and accessory buildings alike, the architectural form of Sunnyhill is based upon the principles of modular and adaptable spaces that can respond to the changing needs of a dynamic community. The wedge shape of the residential units enables either a straight or circular form to emerge, making them adaptable to a given context and responsive to site conditions. In the case of Sunnyhill's residential nodes, the wedges were joined in a circular formation in order to allow for densification on the site (up to 200 residents) while creating a sense of semi-private community space. The residential nodes were oriented in response to pedestrian flows and connections, as well as the path of the sun, in order for the units to benefit from passive solar gain.

The buildings are assembled as a series of modules that are 3 meters deep and 3 meters high. This size ensures that each module can be easily transported and placed on site. The maximum unit footprint is 4.5m in width at the narrow end of the wedge and 8.5m in width at the larger end of the wedge. The units have a total possible depth of 16 meters. Units are flexible in terms of size and layout, across both vertical and horizontal dimensions. Depending on needs, Sunnyhill residents can define comfortable indoor and outdoor spaces, including appropriate access and circulation, with the option of adjusting these areas in the future. For example, issues of accessibility are addressed with the option of a living space built entirely at ground level or a family might expand its interior space with the addition of a child. Modules are designed to be stacked up to four storeys high according to the required density, with the option of a roof terrace. A panelized facade system is integrated into the roof, allowing for rainwater to be captured and directed to the utilidor. Photovoltaic technology can also be incorporated into the roof system or integrated into a panelized cladding system.

Our team is advocating for a prefabricated building type, where modules are built off-site and transported in as needed. For resident's ease and

quality control, the modules are to be built to a move-in-ready state. From an economic stand point, the prefabricated modules would allow Sunnyhill to benefit from economies of scale in the manufacturing process, as well as using their collective buying power to financial advantage. A further opportunity arises from the growing interest and acceptance of prefabricated building modules in the mainstream market. Sunnyhill could position itself to partner with a select manufacturer and become a demonstration site for their product. (For more information on these housing forms see [www.flatpakhouse.com](http://www.flatpakhouse.com), [www.livinghomes.net](http://www.livinghomes.net) and [www.scrapbookscrapbook.com/DAC-ART/modular-kit-houses.html](http://www.scrapbookscrapbook.com/DAC-ART/modular-kit-houses.html)).

A suggested finish for the buildings is reinforced cement panels (e.g. Swiss Pearl© [www.swisspearl.com](http://www.swisspearl.com)) and an exterior wood facade (Prodema© [www.prodema.com](http://www.prodema.com)). These materials are very high quality and provide ample opportunity for residents to demonstrate their personal expression with a range of colour options. Throughout the site, all material choices should reflect the environmental consciousness of Sunnyhill residents, including where possible energy efficient, non-toxic, locally made, durable and low maintenance products and systems.

### Phasing

The entire redevelopment of the Sunnyhill site has been designed around a phasing strategy. For the purpose of illustrating the phasing our team has defined three major transition periods which would accomplish the plan.

Phase one involves the consolidation of parking and transitioning some of the space presently used for parking and vehicle circulation over to green space. This phase also introduces the modular built form to the site through buildings such as the community centre. Residential units are established in areas not currently occupied by the existing buildings, in order to minimize disruption to residents.

The second phase of development involves the removal of some existing residences and further construction of the new units, along with the necessary berming. The utilidor is established and units connected. During this phase the supplementary buildings at the gateway to the site would be built and the green spaces further defined.

The final phase of the plan would see the remaining units constructed and the grading of the site finalised. Green spaces yet undeveloped, such as the farm, would be completed and pathways connected throughout the site.

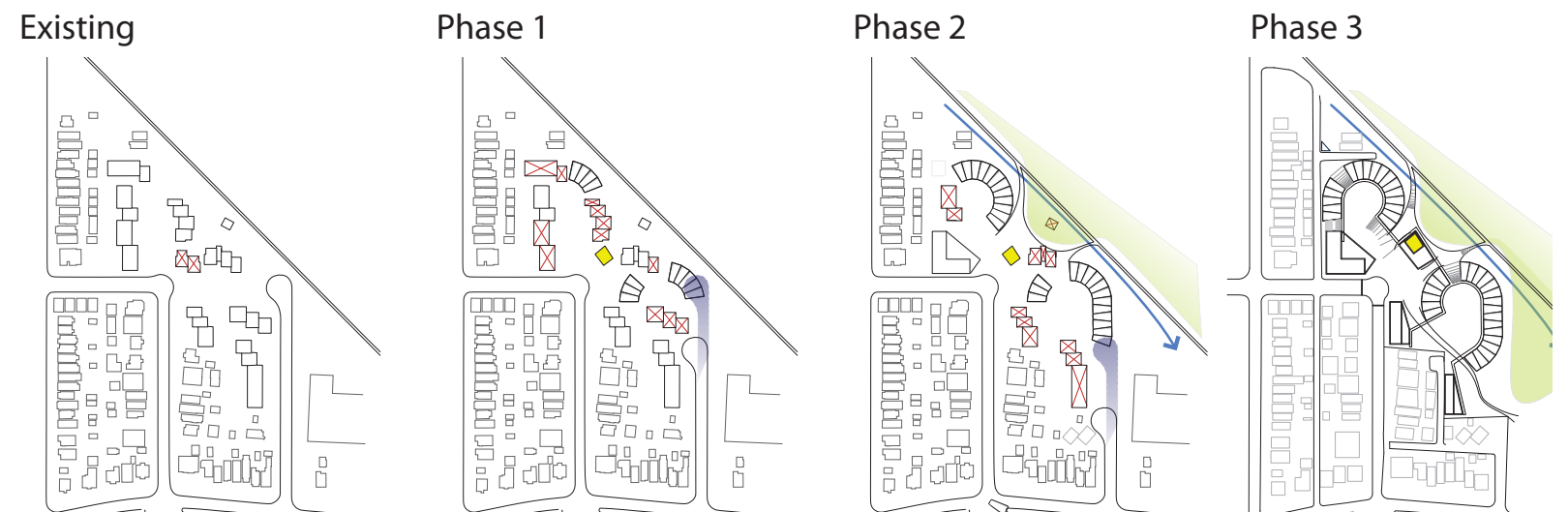


Fig 28. Phasing Strategy



Fig 29. Looking NW along the main corridor

Given these changes, the overall land usage on the Sunnyhill site would shift to 22% for housing (a decrease from 27%), 13% for multi-use and community buildings, which includes underground parking spaces and access (where as vehicle use currently accounts for 19%) and 65% for green spaces and pathways (an increase of 17%).

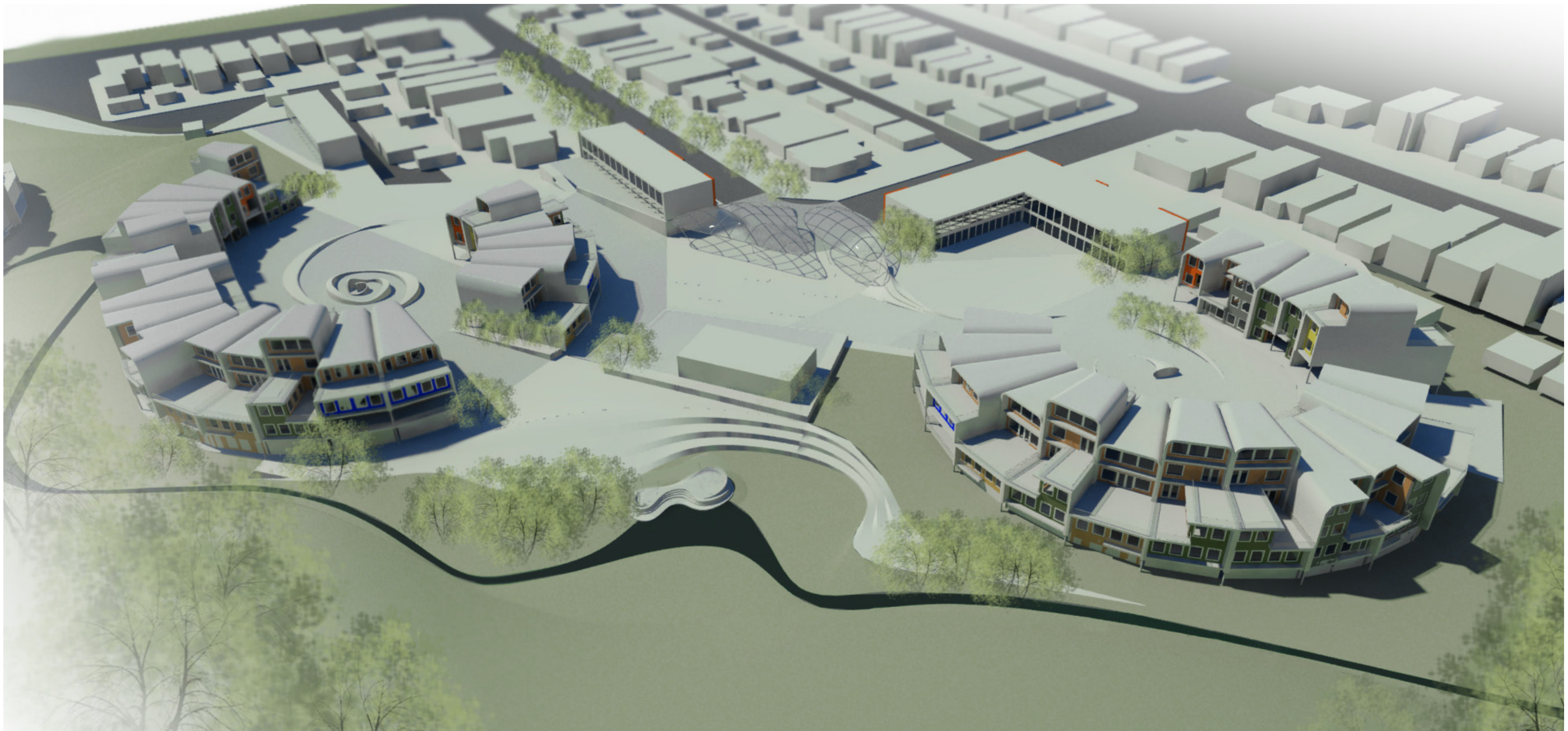


Fig 30. Looking down from the escarpment

## Action Items

Sunnyhill faces a period of intense change in the years ahead. The Cooperative must identify a long range plan from which to move forward if they are to continue to provide affordable, quality housing and a strong sense of community, while maintaining their current site. Although the plan put forth is ambitious, there are a number of individual action items that can move Sunnyhill towards the achievement of this ultimate vision.

- Acknowledge and draw upon the existing social capital within the Cooperative. Create opportunities to focus the social capital within the community towards common goals.
- Re-evaluate the replacement of paved surfaces and consider reclaiming these areas as green spaces.
- Consolidate parking and develop an auto-share system for Sunnyhill residents.
- Establish a community centre with building modules in a temporary location.
- Assess the administrative structure of the community in terms of resident numbers in order to determine the most effective community size.
- Strengthen ties with other cooperative housing entities within Canada and internationally.
- Educate the membership on native plants, sustainable gardening practices and renewable energy options. Build relationships with experts and industry leaders.
- Explore the idea of pre-fabricated, modular homes and explore partnerships with appropriate manufacturers.
- Strengthen and nurture partnerships with the CMHC, the City of Calgary, the Hillhurst-Sunnyside Community Association, The Calgary Curling Club, and organizations from the social economy.
- Develop a channel for collective, integrated water management on the site.
- Establish a dialogue with the City of Calgary on the Landscape of Memory Project.
- Work with the appropriate partners to draw back the cul-de-sac on 3rd Ave. NW.
- Have fun – the opportunities are enormous and the future for the Sunnyhill Housing Cooperative exciting!

