

AFFORDABLE HOUSING – INNOVATIVE DESIGN

PROJECT BACKGROUNDER FOR WORKING GROUP TEAM MEMBERS

About the Project

The Affordable Housing – Innovative Design project is facilitated by the Saskatoon Housing Initiatives Partnership (SHIP). The goal of the project is to develop a series of design ideas and templates for affordable housing construction in Saskatoon by engaging a wide variety of expertise from both within and outside the Saskatoon community. Four (4) working groups consisting of architects, architecture syllabus students, engineers, LEED building specialists, home-builders, planners, and non-profit housing providers shall spend six (6) months investigating design options and developing concept drawings for single detached housing units, multi-plex developments, street-oriented townhouses, and apartment style residential buildings.

Working groups shall be formed so as to bring together a mix of expertise to each group. The groups will each have an assigned housing form and location upon which to focus efforts. Guiding principles in four key areas shall also focus the efforts of the working groups. These design parameters were established by the Technical Assistance Committee of SHIP. All designs must be:

- a) affordable
- b) create a small ecological footprint
- c) accessible
- d) identify site plan implications

The scope of the project is set out in the time-table below.

Project Component	December	January	February	March	April	May	June
Stakeholder Engagement	Kick-off event with Dr. Avi Friedman				Consumer focus groups		Wrap-up event
Working Groups		Meeting #1 ORIENTATION	Meeting #2 (see objectives)	Meeting #3 (see objectives)	Meeting #4 (see objectives)	Meeting #5 (see objectives)	Meeting #6 (see objectives)
Group 1 – Single Family Units					JOINT GROUP MEETING WITH GUESTS		JOINT GROUP MEETING WITH GUESTS
Group 2 – Multiplexes							
Group 3 – Street-Oriented Townhouses							
Group 4 – Apartment Buildings							
Research & Reporting	Backgrounder	Confirm all project logistics and budgetary support	Summary reports on Principles and Objectives	Interim report to sponsors	Summary reports on Focus Groups	Summary reports to stakeholders	Final report to sponsors

Meeting Objectives

Meeting Date/Location	Objective	Resources
Meeting #1 – January	<ul style="list-style-type: none"> • Orientation to project, established work-plan, and expected outcomes • Form working groups and establish meeting dates • Discuss resource needs 	<ul style="list-style-type: none"> • SHIP Presentation
Meeting #2 – February Group 1: date/location TBD Group 2: date/location TBD Group 3: date/location TBD Group 4: date/location TBD	<ul style="list-style-type: none"> • Choose target niche market for development based on four (4) principles of affordability (see A. Affordability Principles) • Focus on the site (see D. Site Orientation) • Begin concept-mapping of ideas based on site and niche market 	<ul style="list-style-type: none"> • Current development bylaws and policies for the City of Saskatoon • SHIP Presentation on alternatives and approaches studied by the ACT Program
Meeting #3 – March Group 1: date/location TBD Group 2: date/location TBD Group 3: date/location TBD Group 4: date/location TBD	<ul style="list-style-type: none"> • Focus on ecological aspects (see C. Ecological Footprint Objectives) 	<ul style="list-style-type: none"> • Summary review of sustainability approaches
Meeting #4 – April Group 1: date/location TBD Group 2: date/location TBD Group 3: date/location TBD Group 4: date/location TBD	<ul style="list-style-type: none"> • Share progress to date among working groups • Learn about policies, programs, and initiatives related to the Innovative Design project from Federal, Provincial, and Municipal officials 	<ul style="list-style-type: none"> • Presentations by officials
Meeting #5 – May Group 1: date/location TBD Group 2: date/location TBD Group 3: date/location TBD Group 4: date/location TBD	<ul style="list-style-type: none"> • Based on results of consumer focus groups, focus on Principle 2 and Principle 4 of the Affordability Principles • Focus on accessibility (see B. Accessibility Standards) 	<ul style="list-style-type: none"> • Summary review of consumer focus groups
Meeting #6 – June Group 1: date/location TBD Group 2: date/location TBD Group 3: date/location TBD Group 4: date/location TBD	<ul style="list-style-type: none"> • Share progress to date among working groups • Identify work yet to be done prior to developing Request For Proposal packages for builders in a pilot initiative • Determine strategy for continuing the project through a demonstration phase 	<ul style="list-style-type: none"> • Resource needs as requested by working groups

What constitutes affordability?

The affordable housing market is defined as those people currently not appropriately housed without intervention. Whether they are homeless, having special needs, transitioning toward independence, or simply low to moderate-income (\$39,500 for families and \$35,000 for singles), people who cannot access housing in the marketplace on their own are the focus of affordable housing initiatives.

A. Affordability Principles

Principle 1: Housing Demand - A demographic profile of housing demand for “affordable” housing

FORECASTING HOUSING DEMAND

Identified Population with Housing Needs	Estimated Size of Need	Source of Estimate	Type of Housing	Forecast of Future Demand
Low-Income Singles	5300	Community Resources & Employment	Rentals: bachelor, one-bedroom	anticipate size of social assistance caseload of singles NOT to increase therefore stable demand
Low-Income Families	9000	CMHC	Rentals/Ownership: ground-oriented 2+ bedroom	"working poor" phenomenon on rise therefore increasing demand
Moderate Income Households	13680	StatsCan	Ownership: varies by household type	nature of work-force changing and becoming less stable for families therefore increasing demand
Low-Income Aboriginal Households	12500	StatsCan	Rentals: varies by household type	Saskatoon a migration centre for Aboriginal households therefore significant increasing demand
Moderate Income Aboriginal Families	6000	StatsCan	Ownership: ground-oriented 3+ bedroom	workforce initiatives paying dividends therefore significant increasing demand
Women and Children Fleeing Violence	2700	Bridges & Foundations	Emergency Shelter and Transitional housing	demand trend has been upward due to increasing pressures on families from addictions, employment, and other issues
New Immigrants	6000	StatsCan	Rentals/Ownership: ground-oriented 2+ bedroom	demand trend has been upward due to national and provincial immigration policies
Refugees	>200	StatsCan	Transitional and supportive rental housing	demand trend has been upward due to national immigration policies
Persons with Long-Term Mental Health Challenges	6400	Saskatoon Health Region	Supportive Rentals: bachelor, one-bedroom, housing pod concept	anticipate demand to be stable proportion of a growing population

Identified Population with Housing Needs	Estimated Size of Need	Source of Estimate	Type of Housing	Forecast of Future Demand
Persons with Addictions	12000	Health Canada	Care facilities and supportive rentals	demand trend has been upward due to increasing pressures on families from violence, employment, and other issues
Persons with an Intellectual Disability	1650	Community Resources & Employment	Supportive Rentals: varies by household type; intentional community	anticipate demand to be stable proportion of a growing population
Persons with a Physical Disability	15700	North SK Independent Living Centre	Intentional community; supportive and independent living: varies by household type	anticipate demand to be stable proportion of a growing population
Persons with a Learning Disability	N/A		Supportive Rentals: varies by household type; intentional community	anticipate demand to be stable proportion of a growing population
Persons with Fetal Alcohol Spectrum Disorder	1200	SK Fetal Alcohol Support Network	Intentional community; supportive living: varies by household type	demand trend has been sharply upward
Youth	260	Community Resources & Employment	Supportive Rental: group home; housing pod concept	demand trend has been sharply upward due to high proportion of youth in Saskatoon
Persons Released from Justice	N/A		Supportive Rental: group home; housing pod concept	demand trend has been upward
People Absolutely Homeless	200	2000 Homelessness & Housing Plan	Emergency Shelter and Transitional housing	demand trend not known -- working on homeless count for Saskatoon
Low-Income Seniors	3175	Community Resources & Employment	Supportive Rental; Life Lease; Assisted Ownership: bachelor, one-bedroom, group home, housing pods	demand trend has been upward due to high proportion of persons in older age groups

Principle 2: Affordable Price Ranges - 25% and 30% affordability calculations based on demographic income profiles

INCOME PROFILE OF HOUSING

Identified Income Points of Interest	Ability to Pay			Proportion of Population in the Circumstance at 2001 census	# Rental Units Affordable to Household as of October 2006	Portion of Housing Cost Available for Capital (less econ rent)	Affordable Cost of Construction -- Total Capital Generated based on 25-year mortgage at 6.5%			
	Household Annual Income	Monthly Income	30% Monthly				\$274	Rental	Rental ¹	Ownership ²
SAP Single	\$ 9,200	\$ 767	\$230	5%	6	-\$44	-\$ 6,569	\$ 61,431	\$ 17,414	\$ 37,500
Minimum Wage	\$ 14,496	\$ 1,208	\$362	8%	384	\$88	\$ 13,198	\$ 81,198	\$ 39,809	\$ 58,500
LICO 1 person	\$ 15,757	\$ 1,313	\$394		1403	\$120	\$ 17,905	\$ 85,905	\$ 42,678	\$ 63,500
SAP Family	\$ 16,600	\$ 1,383	\$415		3050	\$141	\$ 21,051	\$ 89,051	\$ 45,917	\$ 67,000
LICO 2 person	\$ 19,697	\$ 1,641	\$492		5609	\$218	\$ 32,610	\$ 100,610	\$ 57,854	\$ 78,500
	\$ 20,000	\$ 1,667	\$500		5609	\$226	\$ 33,741	\$ 101,741	\$ 59,057	\$ 79,800
LICO 3 person	\$ 24,497	\$ 2,041	\$612	10%	10347	\$338	\$ 50,526	\$ 118,526	\$ 76,362	\$ 97,000
	\$ 25,000	\$ 2,083	\$625		11913	\$351	\$ 52,404	\$ 120,404	\$ 78,306	\$ 99,000
Min Wage Dual	\$ 28,992	\$ 2,416	\$725		12762	\$451	\$ 67,304	\$ 135,304	\$ 93,714	\$ 114,500
LICO 4 person	\$ 29,653	\$ 2,471	\$741	12%	13290	\$467	\$ 69,771	\$ 137,771	\$ 101,324	\$ 117,000
	\$ 30,000	\$ 2,500	\$750		14537	\$476	\$ 71,066	\$ 139,066	\$ 102,736	\$ 114,000
LICO 5 person	\$ 33,148	\$ 2,762	\$829		14537	\$555	\$ 82,816	\$ 150,816	\$ 109,723	\$ 121,200
	\$ 35,000	\$ 2,917	\$875		14537	\$601	\$ 89,728	\$ 157,728	\$ 116,895	\$ 125,400
LICO 6 person	\$ 36,642	\$ 3,054	\$916		14537	\$642	\$ 95,857	\$ 163,857	\$ 123,234	\$ 130,700
	\$ 40,000	\$ 3,333	\$1,000	11%	14537	\$726	\$ 108,391	\$ 176,391	\$ 136,143	\$ 130,000
LICO 7 person +	\$ 40,137	\$ 3,345	\$1,003		14537	\$729	\$ 108,902	\$ 176,902	\$ 136,892	\$ 110,000
	\$ 45,000	\$ 3,750	\$1,125		14537	\$851	\$ 127,053	\$ 195,053	\$ 155,438	\$ 90,000

NOTES:
 1 - including CAHP construction forgivable loan of \$68000/unit
 2 - mortgage calculations courtesy Canada Mortgage.com (based on 5% downpayment)
 3 - including CAHP downpayment based on sliding income scale

Principle 3: Funding/Financing Resources - List of programs and criteria

Affordable housing projects respond to a priority need identified in the community. For housing developers (whether private or not-for-profit), equity might come from successful grant applications made to government, fundraising efforts to attract philanthropic dollars, an asset upon which a project might be levered (e.g. land), or equity financing.

FOR DEVELOPERS AND HOUSING PROVIDERS

National Homelessness Initiative (www.homelessness.gc.ca)

The National Homelessness Initiative includes a set of funding programs to address homeless issues in Canadian cities.

Supporting Community Partnerships Initiative (SCPI) is based on a community consultation process and provides funding support to increase the availability and access to a range of services and facilities along the continuum from homelessness to self-sufficiency. Funded projects include emergency shelters, transitional and/or supportive housing, capacity building, public awareness and prevention initiatives.

Urban Aboriginal Homelessness (UAH) is designed to provide flexible funding to initiatives that meet the needs of homeless Aboriginal people, through culturally sensitive services. The program focuses on enhancing the capacity of Aboriginal organizations to participate in broader community processes and improve the coordination of all levels of government, Aboriginal organizations and other partners to find local solutions to the complex issues facing Aboriginal people.

Urban Aboriginal Strategy (www.saskatoonuas.org)

The Urban Aboriginal Strategy (UAS) is designed to improve policy development and program coordination at the federal level and with other levels of government. The intent of the UAS is to reduce the level of disparity between urban Aboriginal and non-Aboriginal people by better tailoring programs to the local needs and priorities of Aboriginal people living in cities.

As a community directed initiative, the Urban Aboriginal Strategy seeks to:

- Target urban Aboriginal socio-economic needs within new and renewed federal initiatives;
- Coordinate and improve access to programs and services;
- Raise awareness of the challenges facing urban Aboriginal people;
- Coordinate policy research, knowledge, and information sharing related to urban Aboriginal issues; and,
- Improve horizontal linkages and policy integration within the federal government and seek opportunities for partnerships with other stakeholders (e.g., provincial and municipal governments, Aboriginal groups, and the private sector).

Centenary Affordable Housing Program (CAHP) (1-800-667-7567 or www.dcre.gov.sk.ca/housing)

The Centenary Affordable Housing Program provides forgivable loans for the construction, conversion, or acquisition and renovation of housing that is at risk of being lost from the market because of its condition. This program, administered by Saskatchewan Housing Corporation, funds the development of self-contained housing units that are modest in terms of size and amenities, and based on demonstrated household needs. Housing supported by CAHP may be rental, home ownership, or life lease. Affordable housing projects must be targeted to households with incomes not exceeding Maximum Income Limits (MILs), which for families today is \$44,500 (annual gross household income).

City of Saskatoon Innovative Housing Incentives Policy (975-2645)

The Innovative Housing Incentives Policy provides a capital contribution of up to 5% of the total project costs for the residential portion of a housing project for any household with a gross annual household income at or below the Maximum Income Level (MIL) as defined by Saskatchewan Housing Corporation (\$44,500 in 2006).

City of Saskatoon Enterprise Zone Incentives (www.city.saskatoon.sk.ca/org/city_planning/enterprise/index.asp)

The Enterprise Zone was established by the City of Saskatoon and consists of six neighbourhoods needing expanded job creation, economic opportunity, property value, and some essential commercial services. The incentives offered in the Enterprise Zone encourage targeted businesses to locate or expand their operations to create more economic activity. As well, incentives are targeted to property owners and developers to encourage investment in the renovation, expansion, or creation of new housing, and to increase consumer and investor confidence in the Zone.

City of Saskatoon Downtown Housing Incentive (975-2645)

In the Downtown, property tax abatement and building permit fee rebates are available for the construction of new housing projects on vacant land or as an addition to existing buildings, for the conversion of existing non-residential floor spaces to housing units, or to reestablish housing units in buildings originally designed in whole or in part for housing but which have been vacant for two years.

Residential Rehabilitation Assistance Programs (RRAP) (1-800-667-7567)

A variety of RRAP programs offer financial assistance to landlords and low-income homeowners to pay for mandatory repairs required to bring properties up to minimum levels of health and safety.

Shelter Enhancement Program (1-800-667-7567)

This program provides financial assistance to either renovate existing or increase the number of emergency shelters and second stage housing units available to victims of family violence.

CMHC Multiples Underwriting Flexibilities

Canada Mortgage and Housing Corporation (CMHC) has put together a set of mortgage insurance incentives for the construction or refinance of multi-unit rental projects that provide housing affordable to either 80% or 65% of market rents. The flexibilities include lower (or zero) premiums, lower allowable debt-coverage ratio, and waiver of rental achievement hold-backs.

FOR INDIVIDUALS AND HOMEOWNERS

Saskatchewan Rental Housing Supplement (1-888-488-6385)

The Province of Saskatchewan introduced a new Housing Benefit in April of 2005 to supplement the shelter allowances of 10,000 families and 3,000 persons with a disability across the province. These families now have the ability to pay more rent to landlords operating properties that meet established standards (as established jointly by the Saskatchewan Housing Corporation and the City of Saskatoon).

Centenary Affordable Housing Program (CAHP) – Homeownership Option (668-2759)

The Centenary Affordable Housing Program provides forgivable loans to households with incomes not exceeding Maximum Income Limits (MILs), which for families today is \$44,500 (annual gross household income). This loan provides up to \$19,500 toward a down-payment on a home.

City of Saskatoon Enterprise Zone Incentives (975-2645)

The Enterprise Zone has been designed to encourage property owners to invest in the renovation or expansion of their home to increase consumer and investor confidence in the Zone. Building and plumbing permit rebates are available.

Saskatchewan Home Energy Improvement Program (668-2717 or 1-866-338-8433)

The Saskatchewan Home Energy Improvement Program (SHEIP) provides low and moderate-income homeowners grants of up to \$4,000 to complete energy upgrades to their homes. This tax-free grant can be used for improvements such as high-efficiency furnace installation, draft-proofing and insulation retrofits.

Homeowners RRAP – Residential Rehabilitation Assistance Program (668-2717)

This program provides a forgivable loan of up to \$16,000 to low-income homeowners for the completion of repairs required to bring their home up to minimum health and safety standards. Other home modification programs for seniors and the disabled are also available.

Principle 4: Tenure - Ownership and management options affecting affordability to residents

Tenure Type	Definition
Fee Simple Ownership – Owner-Occupied	<p><i>Fee</i> (from the old word, feifdom) refers to legal rights in land. <i>Simple</i> means unconstrained. <i>Fee simple</i> ownership is the absolute and unqualified legal title to real property, including both buildings and land. This is the most commonly used type of ownership.</p> <p>Relevant legislation: Land Titles Act</p>
Condominium Ownership	<p>Each owner/ householder in a <i>condominium</i> owns: (1) the housing unit; and (2) rights of access/ participation in control over common spaces. In a <i>condominium</i>, the owner has individual title to the inside space of his unit. The unit may be in the form of a multiple-unit dwelling or single-unit dwelling (as in a bare-land <i>condominium</i>).</p> <p>Relevant legislation: Condominium Property Act, Land Titles Act</p>
Co-operative Ownership	<p>In <i>Co-operative ownership</i>, property is held by an entity in which each household is a shareholding member and each shareholder-member has rights of occupancy to a single unit.</p> <p>Relevant legislation: Co-operatives Act</p>
Shared Equity Ownership or Limited-Equity Co-operative	<p>A <i>Shared or Limited-Equity Co-operative</i> restricts the home value appreciation that flows to the homeowner on resale so as to maintain perpetual affordability.</p> <p>Relevant legislation: Co-operatives Act</p>
Shared Ownership	<p><i>Share ownership</i> is an economic joint venture between a sponsor (landlord, lender, investor) and a household (renter, buyer) whereby the household both owns a portion of the unit (with down payment and higher debt service requirements) and rents the remainder (usually at a stipulated or formula rent). The householder normally also has an open-ended option to acquire increments of ownership (again, normally on a formula basis) until eventually full ownership is transferred.</p> <p>Relevant legislation:</p>

Tenure Type	Definition
Life Lease	<p>Under a <i>Life Lease Plan</i>, residents purchase a <i>life lease interest</i>, at market value, in both the property and their suite, similar to purchasing a condominium. Homeowners then have exclusive use of their unit and shared use of all common areas and facilities. Actual ownership and title of the property remains in the name and protection of a non-profit organization that ensures high quality management and long term maintenance benefits for residents. What makes life lease housing attractive is the age restriction (typical), sense of community (programmed), the availability of services (programmed). Life lease titles may be treated as any other form of ownership.</p> <p>Relevant legislation: Residential Tenancies Act</p>
Private Rental	<p>In a private rental arrangement, the owner of the property (landlord) agrees to provide a housing unit in return for a monthly rental fee. The tenant has the right to live in the unit, but not sell it. Maintenance responsibilities are somewhat shared between landlord and tenant.</p> <p>Relevant legislation: Landlord and Tenant Act, Residential Tenancies Act</p>
Long-Term Co-operative	<p>A <i>long-term co-operative</i> is typically a multiple-unit dwelling owned by a legal entity that is itself non-profit, and thus the entity either delivers affordable rentals (via formulas designed to assure financial viability but limited cash return) <i>or</i> redeploys its profits into resident services or benefits. The co-operative may establish restrictions on who may become a member and may also require active participation by members in the operations of the co-op.</p> <p>Relevant legislation: Landlord and Tenant Act, Residential Tenancies Act,</p>
Lease Option To Purchase	<p>In a <i>lease with option to purchase</i> agreement, the occupant rents from the landlord by holds the right to buy the unit for a formula price at specified intervals.</p> <p>Relevant legislation: Landlord and Tenant Act, Residential Tenancies Act</p>

Tenure Type	Definition
Non-Profit or Public Rental	<p>In <i>non-profit or public rental housing</i> rents are held to an affordability standard (myriad formulas and structures are possible) via a combination of capital grants for construction (reducing operating costs for a mortgage), government ownership and/or operating grants, operating agreements, financial incentives, or financing. Qualification requirements restrict access to these units.</p> <p>Relevant legislation: Non-Profit Corporations Act, Crown Corporations Public Ownership Act, Adult and Youth Group Homes Regulations, Residential Services Act, Saskatchewan Housing Corporation Act, Residential Tenancies Act</p>
Informal Rental	<p>The <i>informal rental</i> market includes apartments, suites, and homes (sometimes substandard, sub-size, and/or non-conforming) rented out by a local occupant-owner or landlord. The tacit bargain is that the household gains maximum affordability (lowest cost) while the landlord provides minimal product and minimal if any services</p>

What constitutes accessibility?

The seven principles of Universal Design shall be used to define housing accessibility.

B. Accessibility Standards

Principle	Explanation	Guidelines	Considerations/Trends
Equitable use	The design is useful and marketable to people with diverse abilities	Provide the same means of use for all users: identical whenever possible; equivalent when not. Second storey units are designed with non-mobility challenged persons in mind. Avoid segregating or stigmatizing any users. Provisions for privacy, security, and safety should be equally available to all users. Make the design appealing to all users.	Ensuring units have same or similar features and accessibility. Locating project among housing of mixed tenure, mixed income, and mixed housing stock age. Apartment-style complex as opposed to communal living therefore affording privacy and several levels of security. Member participation in design.
Flexibility in use	The design accommodates a wide range of individual preferences and abilities	Provide choice in methods of use.	Freedom to customize units Physical accessibility has been considered in the design of all entrances, and hallways.
Simple and intuitive use	Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level	Eliminate unnecessary complexity. Be consistent with user expectations and intuition. Accommodate a wide range of literacy and language skills. Arrange information consistent with its importance. Provide effective prompting and feedback during and after task completion.	The project is designed with a level of predictability to ease navigation as well as simplicity of angles. The floor-plan lay-out of the project is common, innovation comes in the utility features added to the living spaces. Utility features added to the living spaces provide spatial and/or visual clues to use.

Principle	Explanation	Guidelines	Considerations/Trends
Perceptible information	The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities	<p>Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.</p> <p>Provide adequate contrast between essential information and its surroundings.</p> <p>Maximize "legibility" of essential information.</p> <p>Differentiate elements in ways that can be described (i.e. make it easy to give instructions or directions). This provides differentiation and ease of direction.</p> <p>Provide compatibility with a variety of techniques or devices used by people with sensory limitations.</p>	<p>Emergency preparedness and hazard information will be prominently displayed to tenants and guests using internationally-recognized mediums</p> <p>The project is designed with a level of predictability. Emergency preparedness information will stand out in contrast to other residential features of the project.</p> <p>Utility features added to the living spaces provide spatial and/or visual clues to use.</p> <p>The features and lay-out of no two rooms in a suite are exactly the same, yet spaces are simple in lay-out.</p> <p>Utility features added to the living spaces provide spatial and/or visual clues to use.</p>
Tolerance for Error	The design minimizes hazards and the adverse consequences of accidental or unintended actions	<p>Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded</p> <p>Provide warnings of hazards and errors.</p> <p>Provide fail-safe features.</p> <p>Discourage unconscious action in tasks that require vigilance.</p>	<p>The design and decorating includes features that "forgive" inaccurate use. Member input on design has ensured highest accessibility standards are balanced with livability desires.</p> <p>Emergency preparedness and hazard information will be prominently displayed to tenants and guests using internationally recognized mediums.</p> <p>The co-operative housing model provides a "neighbourhood watch" type mechanism of support among tenants.</p>
Low physical effort	The design can be used efficiently and comfortably and with a minimum of fatigue	<p>Allow user to maintain a neutral body position.</p> <p>Use reasonable operating forces.</p> <p>Minimize repetitive actions.</p> <p>Minimize sustained physical effort.</p>	<p>Member input on design has helped balance accessibility with livability.</p> <p>Accessibility features built into the project are based on industry standards for the mobility challenged.</p>
Size and space for approach and use	Appropriate size and space is provided for approach, reach, manipulation and use regardless of user's body	<p>Provide a clear line of sight to important elements for any seated or standing user.</p> <p>Make reach to all components comfortable for any seated or standing user.</p> <p>Provide adequate space for the use of assistive devices or personal assistance.</p>	<p>Member input on design (and individual unit customizations) provides increased livability.</p> <p>Physical accessibility for wheelchairs has been designed into the lay-out of all spaces in the project.</p>

What design considerations contribute to a small ecological footprint?

A review of identified solutions tested in commercial or residential construction projects in other jurisdictions shall be provided based on the following considerations:

C. Ecological Footprint Objectives

Element	Potential Solutions
Air quality	<ol style="list-style-type: none"> 1. Utilize voluntary initiatives for pollution level reduction 2. Utilize green roof technology 3. Set ventilation targets 4. Consider using zones to group areas with similar occupancies and ventilation needs 5. Utilize trees, waterways and planting options to improve 6. Use CO² sensors 7. Utilize electronic air cleaners (mixed results) to help indoor ozone
Water	<ol style="list-style-type: none"> 1. Treatment and recycling of grey and black water for toilet and urinal flushing 2. Low flow sinks, toilets and shower 3. Recirculation and distribution of used water 4. Water Smart Water Efficiency Program (charge for use; education; efficient appliance usage) 5. Green roof use in the retention of storm water 6. Roof top gardens for storm water distribution 7. Constructed wetlands 8. Tighter standards for appliances 9. Design roadways without curbs
Sustainable Site/Land	<ol style="list-style-type: none"> 1. Select land that is a short distance from public transportation 2. Select land that is a brownfield development already 3. Preserve natural areas 4. Utilize mixed-use developments 5. Ensure strong public transportation and limit other types
Building materials	<ol style="list-style-type: none"> 1. Look for appropriate salvageable materials 2. Use locally harvested or manufactured materials 3. Use low-VOC materials 4. Use materials with low environmental impact over their life 5. Utilize products that are environmentally friendly or innovative such as EnvironOxide Pigments
Energy	<ol style="list-style-type: none"> 1. Utilize straw bale and other high insulation-value materials 2. Utilize green roof technologies 3. Utilize district energy systems (eliminate individual systems) 4. Tap into incentives, demonstration programs, etc. 5. Implement sustainable building standards (i.e. avoid thermal bridges in walls, insulate foundations) 6. Utilize co-generation supplies for hot water and heating 7. Locate and size fenestration to capture the wind and fresh air 8. Utilize solar heat and light 9. Central heat recovery units for exhaust 10. Reduce internal loads with high efficiency appliances and lamps 11. Use individual monitoring for accountability

How does site orientation affect the proposed design concept?

Existing standards and considerations for the following shall be included in background materials:

D. Site Orientation

Technical consideration	Leading Questions
Side yard requirements	What might reasonable alternative side yard requirements for the development look like? Is there precedent for this?
Site coverage restrictions	Do site cover restrictions negatively impact the development?
Parking requirements	What is a reasonable parking requirement for this development?
Landscaping requirements	What forms of landscaping best serve the development and how do existing requirements support/hinder this from happening?
Density	Are there any policy restrictions preventing the desired density for the development from proceeding? (eg. secondary suite restrictions to single-unit dwellings)
Other Zoning issues	What other requirements within the zoning bylaw (or other relevant bylaws) are preventing innovation in the design of the development?
Solar orientation	How might daylighting, passive solar heating, and active solar use be maximized on the proposed site? What might be some issues with the site?
Grade	What grading features best support use of the site in the proposed development while at the same time maximizing on-site stormwater management?
Location	Comment on the location chosen for the development and list issues that may arise for residents or the potential developer.
Servicing/Infrastructure	Are there any options for developing alternative services on the site? Are there any infrastructure issues requiring consideration that might affect the development?