



City of Richmond

Report to Committee

To: Planning Committee **Date:** February 24, 2015
From: Cathryn Volkering Carlile **File:** 08-4057-01/2015-Vol
General Manager, Community Services 01
Re: Affordable Housing Resource Guide

Staff Recommendation

1. That the staff report titled "Affordable Housing Resource Guide", dated February 24, 2015, from the General Manager, Community Services be received for information.
2. That staff be directed to seek comments from the development community and other key stakeholders regarding the Affordable Housing Resource Guide and report back to the Planning Committee.

Cathryn Volkering Carlile
General Manager, Community Services
(604-276-4068)

Att. 2

| REPORT CONCURRENCE | | |
|---|---|--------------------------------|
| ROUTED TO: | CONCURRENCE | CONCURRENCE OF GENERAL MANAGER |
| Project Development Sustainability Law & Community Safety Administration Building Approvals Development Applications Policy Planning Transportation | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | |
| REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE | INITIALS: | APPROVED BY CAO |

Staff Report

Origin

The purpose of the Affordable Housing Resource Guide is to provide clarity and guidance to non-profit housing providers and other stakeholders regarding the City's Affordable Housing Strategy policies and processes when developing affordable housing. The document outlines expectations for the design, technical specifications and delivery of affordable housing to promote positive social, economic and environmental outcomes for new developments. The development of an affordable housing resource guide is part of the broader Affordable Housing Strategy update, responding to Policy Area #5 – Building Community Capacity.

This report supports Council's Term Goal #2 Community Social Services:

To develop and implement an updated social services strategy that clearly articulates and communicates the City's roles, priorities and limitations with respect to social services issues and needs.

2.5. Development of a clearer definition of affordable housing priorities and subsequent utilization of affordable housing funding.

The community benefits that this report addresses are:

- Providing resources and tools to non-profit housing providers builds the capacity within the community to respond to gaps and opportunities in the housing continuum; and
- Developing affordable housing promotes more intensive and efficient use of land and buildings by optimizing public investment in meeting the community's built and social infrastructure needs

Background

In 2011, Community Social Development staff facilitated focus groups with various community organizations in Richmond discussing affordable and accessible housing. The purpose of those focus groups was to assist staff to identify:

- Building accessibility requirements and guidelines for Council review and approval
- Social and Community accessibility recommendations for future policy work
- Recommendations for the City's 2041 OCP update process and Development Permit Guidelines
- Information to support informed dialogue with Richmond development community (e.g. Urban Development Institute, representatives from Richmond Small Builders, and Greater Vancouver Home Builders' Association)

The focus groups included participants from:

- Richmond Centre for Disability
- Richmond Community Seniors' Advisory Committee
- Richmond Intercultural Advisory Committee
- Richmond Seniors' Advisory Committee
- Richmond Youth Group, Community Services Department
- S.U.C.C.E.S.S.
- Vancouver Coastal Health
- Richmond Society for Community Living
- Minoru Seniors' Society
- Richmond Multicultural Community Services
- Pathways Aboriginal Centre, Richmond Youth Services Agency
- Qmunity
- Turning Point Recovery Society
- Canadian Mental Health Association
- Urban Development Institute
- Greater Vancouver Home Builders Association
- BC Non-Profit Housing Association
- Oris Consulting

Affordability, location, access, inclusive design, health and safety were some of the key themes identified by the focus group participants. In particular, inclusive design was described as "adaptive, barrier-free and socially inclusive design". Some examples include:

- Developments with accessible, common areas for socializing, community outreach, and social programming (e.g. developments with a common eating area or accessible housing with close proximity to a daycare design to be accessible)
- Adaptable, barrier-free design within the units, in common areas and throughout the community
- Consideration to varying socio-cultural norms and values when designing integrated developments

The findings from the community engagement sessions formed the basis of the Affordable Housing Resource Guide.

Analysis

Target Audience

The resource guide is primarily targeted towards non-profit housing providers and community organizations. As levels of funding from senior government are not expected to increase, non-profit housing providers may face increasing expectations of their roles in affordable housing provision. In addition to increased financial burden, some non-profit organizations may not have the technical or design capacity to take on developing affordable housing on their own. The resource guide may help in partnership exploration with different levels of government, non-profit housing providers and the development community. For example, the resource guide covers financial viability and addresses some of the costs associated with development that non-profit organizations may not be familiar with.

Affordable Housing Resource Guide Overview

The resource guide is comprised of five sections that will address the affordable housing development process (Attachment 1).

The document is designed to cover a broad range of topics, and provides information to a diverse group of stakeholders with differing experience with affordable housing provision. Responding to the City's Affordable Housing Strategy Policy Area #5 – Building Community Capacity, the resource guide is a means to support non-profit housing providers and community organizations with a tool to better understand City policies, planning processes and technical guidelines. This resource can equip non-profit organizations with information to work with developers in building and delivering affordable housing.

Potential Resource Guide Application

For stakeholders interested in purpose-built affordable housing, the resource guide provides a starting point for development. The document identifies key City policies to reference, development review and approval processes, and outlines the City's Affordable Housing Strategy priorities. The resource guide provides an overview of:

- The City's Affordable Housing Reserve Fund Requirements, for groups interested in applying for capital grant assistance
- Examples of stand-alone affordable housing developments
- A flow chart identifying key steps in the development process (e.g. from the owner developing the building program and schematic design to construction and occupancy)
- Technical guidelines outline applicable building regulations and expectations for unit configuration, materials and fixtures
- Checklists for non-profits to use while working with developers and City staff

Finally, the resource guide offers ideas for innovative housing development and provides project examples. For example, case studies highlight opportunities for seniors to age in place in their home, developing lock-off suites in supportive housing units for live-in caregivers, and considering energy efficient systems and building materials.

Proposed Consultation Framework

Based on Council's decision, staff will work through a proposed consultation framework and engage stakeholders to ensure that the resource guide can be utilized effectively as a housing development tool. The engagement sessions may be used as a means to respond to the original focus group participants. Some of the stakeholders that will be consulted include:

- Non-profit housing and service providers
- Council-appointed advisory committees
- Urban Development Institute (UDI)
- Representatives from Richmond Small Builders
- Greater Vancouver Home Builders' Association (GVHBA)
- Richmond Visitability Task Force
- Richmond Centre for Disability
- Richmond Homelessness Coalition

Financial Impact

None.

Conclusion

At a municipal level, the City can promote building capacity with non-profit housing and service providers in the community. As the funding climate around housing shifts, local governments and key stakeholders must respond to gaps in the community using innovative approaches. Providing resources to navigate development processes, the technical aspects of building housing, and a tool to partner with the development community and other organizations helps build capacity for housing providers to meet the affordable housing needs in Richmond.



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Att. 1: Affordable Housing Resource Guide – Summary Table
Att. 2: Draft copy of the Affordable Housing Resource Guide

Affordable Housing Resource Guide – Summary Table

| Section | Key Highlights | Benefits |
|---|--|--|
| Policy Context in the City of Richmond | <ul style="list-style-type: none"> • OCP • Social Development Strategy • Affordable Housing Strategy (AHS) • City mechanisms to assist with the delivery of affordable housing • Current implementation of AHS • Overview of development process • Building the optimal team to develop affordable housing projects | <ul style="list-style-type: none"> • Provides an overview of City policies and processes that non-profit housing providers may not be familiar with • Identifies milestones in developments and key individuals that are involved at each step • Outlines the current Affordable Housing inventory and future directions for affordable housing development opportunities |
| Financial Viability | <ul style="list-style-type: none"> • Financial viability for all stakeholders involved in affordable housing projects • Identify development and financing costs | <ul style="list-style-type: none"> • Provides a balanced approach that identifies the needs and costs of all sectors as part of an affordable housing development • Gives the non-profit/applicant an idea of the costs associated with development and what to budget for |
| Affordable Housing Development – Housing Mix | <ul style="list-style-type: none"> • Community needs • Housing demand | <ul style="list-style-type: none"> • Provides information and resources for nonprofits to respond to community need • Identify housing demands and potential development opportunities |
| Affordable Housing Project Design Considerations | <ul style="list-style-type: none"> • Context and environmental concerns • Housing design and interior spaces | <ul style="list-style-type: none"> • Identifies potential issues around zoning, relationship to grade and security • Highlights design |

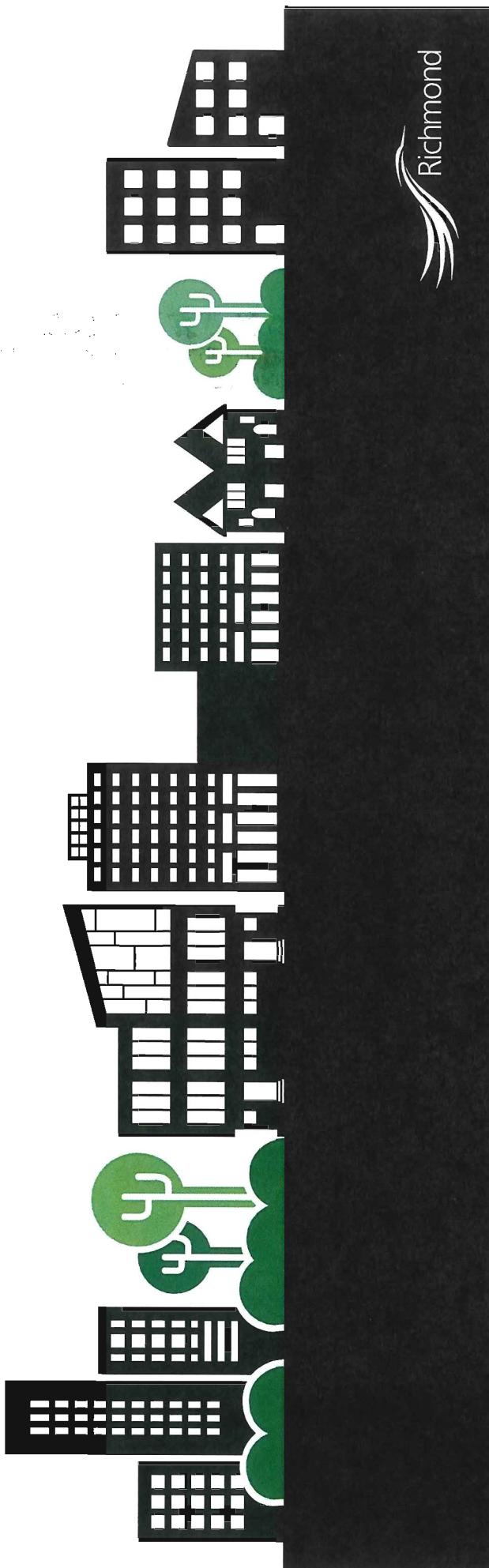
| Section | Key Highlights | Benefits |
|--|--|--|
| | <ul style="list-style-type: none"> • Exterior considerations • Sustainability issues • Innovative case studies • Supportive housing examples | <ul style="list-style-type: none"> considerations that can be used when working with developers and architects • Provides illustrations and examples of universal housing and accessible housing units to meet the needs of individuals with mobility challenges • Outlines sustainability considerations to promote energy efficient buildings • Opportunities for innovation to meet the diverse housing needs in Richmond |
| Affordable Housing Technical Specifications | <ul style="list-style-type: none"> • Applicable building code and City policy regulations • Technical guidelines for design and construction | <ul style="list-style-type: none"> • Practical suggestions and guidelines for stakeholders unfamiliar with building and construction regulations • Provides standards for fixtures, finishings and common areas to ensure construction is of similar quality to market developments |
| Checklists | <ul style="list-style-type: none"> • Building components | <ul style="list-style-type: none"> • Provides a tool for non-profit providers to negotiate and monitor development • Provides clarity for Building Approvals staff |



City of Richmond Affordable Housing Resource Guide

February 4, 2015

DRAFT



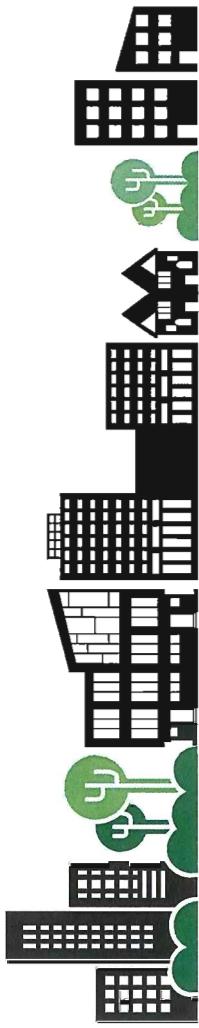


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Acknowledgements

The City of Richmond would like to acknowledge the participation and assistance of the following organizations in the creation of this resource guide:

City of Richmond Departments

Planning & Development

Community Social Development Department

Community Services Division

CAO's Office

Engineering & Public Works

Capital Buildings Project Development
Law & Community Safety

External Stakeholders

Richmond Centre for Disability

Richmond Community Seniors' Advisory Committee

Richmond Intercultural Advisory Committee

Richmond Seniors' Advisory Committee

Richmond Youth Group, Community Services Department
S.U.C.E.S.S.

Vancouver Coastal Health

Richmond Society for Community Living

Minoru Seniors' Society

Richmond Multicultural Community Services
Pathways Aboriginal Centre, Richmond Youth Services Agency
Qmunity

Turning Point Recovery Society

Canadian Mental Health Association

Urban Development Institute

Greater Vancouver Home Builders Association

BC Non-Profit Housing Association

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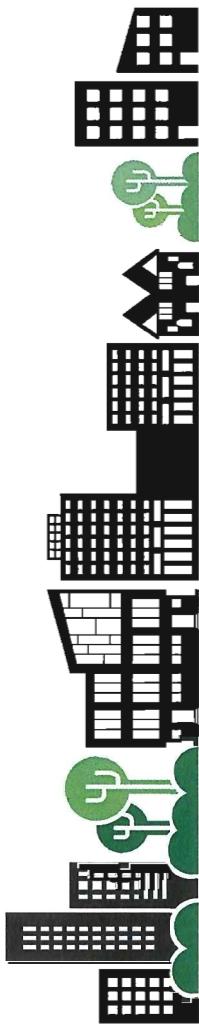


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Affordable Housing Resource Guide

Policy Context in the City of Richmond



Waterstone Pier, Richmond, BC | DIALOG project

1.1 Intent of this Document and How It Is To Be Applied

- In the City of Richmond, affordable housing is typically negotiated through the rezoning or development approval process. The intent of this document is to provide clarity for residents, land owners, developers, architects, housing operators, and others in the housing and non-profit sectors regarding the City's policies and expectations for the design and delivery of Affordable Housing in Richmond. By helping with design decision-making, the City hopes to promote enhanced urban design and social outcomes for new Affordable Housing developments.
- commitment to best practices in housing and sustainability
 - commitment to principles of accessibility and visitability
 - commitment to exploring ways to help provide appropriate housing and support for Richmond citizens who are part of vulnerable groups, or at-risk of homelessness
 - commitment to partnering with community health or other organizations that can assist with generating healing environments
 - development of resilient buildings for housing uses, that are durable and that minimize maintenance costs over the life of the building
 - commitment to sound public finance economic practice, and working pro-actively with all stakeholders in the delivery of affordable housing.
 - commitment to public engagement on the delivery of affordable housing

1.2 City of Richmond's Commitment To Affordable Housing

The City of Richmond is committed to facilitating the construction of quality, accessible affordable housing projects in the City, to enhance housing opportunities for all Richmond households and families, and to help foster overall economic stability and growth in the City.

Developing affordable housing is a challenging and costly process that the City cannot undertake on its own. While the City will assist where it can, funding responsibilities have to be shared with other levels of government.

FUNDING RESPONSIBILITIES FOR AFFORDABLE HOUSING

- meet existing community needs and anticipate future needs
- provide quality spaces, indoors and outdoors
- provide for equity in the development of housing opportunities
- commitment to working with the private, non-profit and various government sectors to partner with and deliver affordable housing in the City.

INTENT OF THIS DOCUMENT

This document is meant to serve as a resource and tool box for those interested in the development of affordable housing for the City of Richmond. It will be of particular interest to non-profits and community groups, as it provides design guidelines and technical specifications relating to affordable housing, and a checklist itemizing components of an affordable housing project.

Users of this document are also encouraged to review Richmond's Official Community Plan and sections of City Bylaws pertinent to the subject of affordable housing.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.3

Richmond's Affordable Housing Strategies Strategies to deliver Affordable Housing in Richmond are set out in three main policy documents:

1.3.1. Official Community Plan [OCP]

The OCP is a legally required City Bylaw which enables Council to plan, coordinate and manage City interests for social, economic and environmental sustainability, and land use over the long term.

Approved in November 2012, the 2041 OCP Bylaw 9000, provides a vision for the future for the City to the target year of 2041, and is meant to provide certainty for residents, land owners and the general public, about how growth in the City will be managed and shaped in the next 30 years.

Besides being required to meet Provincial legislative requirements such as addressing Greenhouse Gas [GHG] policies and targets, and preparing Regional Context Statements [RCS] indicating how Richmond will meet Metro Vancouver's Regional Growth Strategy, the OCP also establishes housing policies that will allow Richmond to meet housing needs for a period of at least five years.

1.3.2. Building Our Social Future

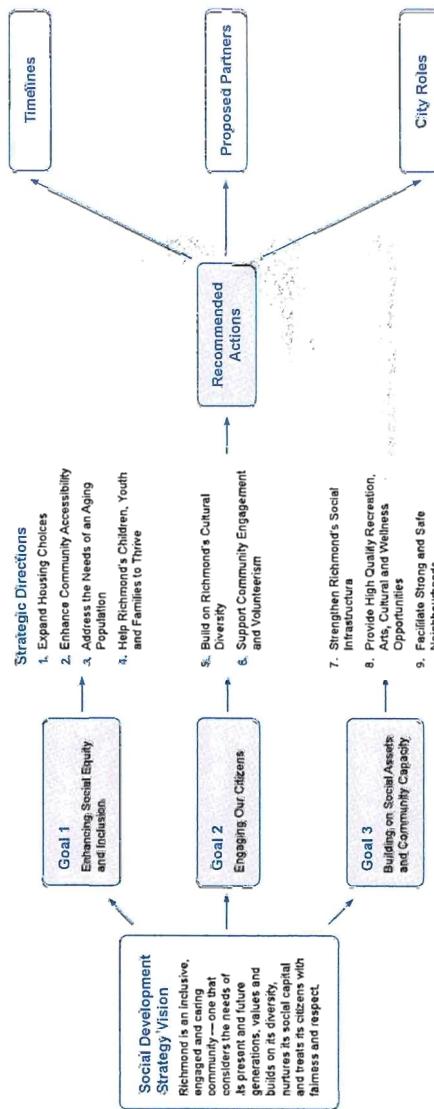
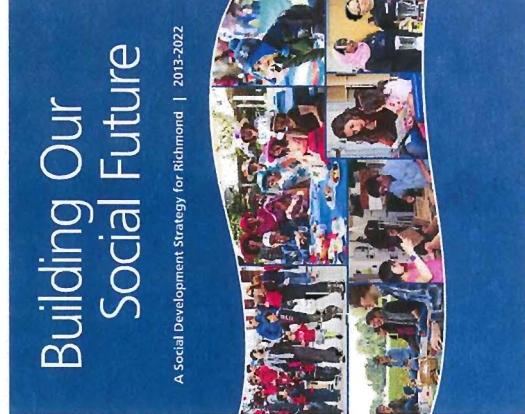
A Social Development Strategy for Richmond 2013 – 2022

This document envisions the City in 2022 being an inclusive, engaged and caring community, that not only addresses existing social issues of today, but also develops the capacity to deal with change in the future and the emerging needs of a diverse population.

The strategy presents a vision, and goals, strategies and recommended actions to work towards implementing the vision.

The Strategy also provides clarity, that the City cannot meet social goals alone, and that collaboration with other community partners is required, including senior governments and government agencies, and the nonprofit and private sectors.

The Strategy sets out that in order to help create an inclusive City, housing choices must be expanded and more affordable and accessible housing units created. This includes implementing, monitoring and enhancing the Richmond Affordable Housing Strategy of 2007, as well as developing a Housing Action Plan and additional housing strategies to enable current and future residents to live, work, play and thrive in the City.



Social Development Strategy Framework

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.3.3. Richmond Affordable Housing Strategy

Richmond City Council approved the "Richmond Affordable Housing Strategy" in May 2007, which sought to provide a range of housing options for households of different ages, family types and incomes.

The strategy recognizes that the City alone cannot adequately address the affordable housing needs of its citizens, and that substantial support and cooperation is required from other levels of government, and from the non-profit sector and the development community.

Richmond City Council has adopted the following Affordable Housing Strategies:

- Targeting priorities for affordable housing types and eligible tenant yearly income thresholds:

- 1st priority - subsidized rental [less than \$34,000]
- 2nd priority - low end of market rental [between \$34,000 or less and \$57,500 or less]
- 3rd priority - entry level homeownership [less than \$60,000]

- Providing for density bonuses for all multi-family rezoning applications:

- for apartment developments of greater than 80 residential units, 5% of the residential floor area is to be built as low end of market rental units, secured by Housing Agreement.
- for townhouse or smaller apartment developments, a cash-in-lieu contribution towards the City's Affordable Housing Reserve fund is collected.
- for single-family rezoning applications, 50% of the new lots being created must deliver a secondary suite or coach house as well as the principal residence, and a cash-in-lieu contribution is collected on all new single family dwellings.
- The City utilizes cash-in-lieu contributions deposited into the Affordable Housing Reserve Fund, to assist working with senior governments and community-based and non-profit groups to deliver affordable subsidized housing units.

Affordable Housing Reserve Fund Requirements

At its open meeting of April 10, 2012 Council endorsed the Affordable Housing Statutory Reserve Fund Policy 5008, Zoning Bylaw 8500 and Affordable Housing Operating Reserve Fund Establishment Bylaw No. 8206.

These policies provide Council with authority to direct:

1. Different proportions of contributions to the two capital and operating Affordable Housing Reserve Funds, from time to time, to support affordable housing "special development circumstances ("AHSDC's"); and
2. Capital potential financial support for specific affordable housing developments for affordable project eligible costs that include:
 - a. Municipal fiscal relief (ie., development cost charges, costs related to the construction of infrastructure required to service the land, and development application and permit fees);
 - b. The construction of infrastructure required to service the land on which the affordable housing is being constructed; and
 - c. Other costs normally associated with construction of the affordable housing (eg. Design costs, soft costs).

At the discretion of Council, 100% of contributions can be allocated to projects that meet the AHSDC requirements set out in Policy 5008; with the creation of subsidized rental projects being the first priority.

For more information on AHSDC's, see the City's website link to the Affordable Housing Strategy and the Report to Council dated 11 March 2013.

* Note that yearly income thresholds rates for the 3 priorities are 2013 rates.

| Priority | Affordable Housing Type | Household Annual Income Threshold * | Initial Annual Target (NOTE: Estimated housing needs) |
|----------|---------------------------|-------------------------------------|---|
| 1st | Subsidized Rental | less than \$33,500 | 73 housing units |
| 2nd | Low End Market Rental | between \$33,500 and \$51,000 | 279 housing units |
| 3rd | Entry Level Homeownership | less than \$60,000 | 243 housing units |

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.3.4 A Definition for Affordable Housing

The City of Richmond uses the standard accepted in the mortgage, finance and development sectors for affordability - that no more than 30% of the gross income of a household (not counting utilities and communication fees), should be spent on providing for housing for that household.

While meeting this threshold is often a challenge in today's climate of escalating real estate prices and high rental rates, the 30% of gross income level remains a useful point of departure for discussing the subject of affordable housing, as it indicates how difficult it is for some households to find accommodation within this threshold.

The following diagram, the "Housing Continuum", illustrates the range of housing types found in Richmond, and the general affordability associated with each.

The Housing Continuum

| Emergency Shelters | Transitional Housing | Supporting Housing | Affordable Rental Housing | Market Rental Housing | Entry Level Homeownership | Market Housing |
|--|---|---|---------------------------------------|-------------------------------|--|-----------------------------------|
| Year-round beds. Seasonal and extreme weather beds. | Includes provision of on-site support services in which residents may stay from 30 days to 2-3 years. | Integrates on-site support services available to residents. | Offers rents at or below market rent. | Offers rents at market rates. | Is considered to be affordable if the purchase price is below market price for a unit of similar size, type and number of bedrooms, and it is sustainable for the purchaser over time within a threshold of 30% of before tax household income (source: Canada Housing and Mortgage Corp.) | Single-family Condominium. Other. |
| | | | | Rental condominiums. | | |

Subsidized Rental Housing

* Requires subsidy in order to serve lower income individuals and households

* Note that while subsidy is required to make shelter and housing affordable for lower income individuals and households, many market rental units cannot be considered affordable, since residents pay higher than 30% of gross income for rent.

For example, Canada Mortgage and Housing (CMHC) statistics indicate that for households renting market housing, a growing number spend over 50% of gross income on housing and shelter costs.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.4 A Glossary of Definitions Pertaining to Development of Various Types of Affordable Housing

Affordable Housing developments have a descriptive and regulatory language that is specific to the needs and requirements of this sector. It is useful to define various Affordable Housing-related terms, to provide meaning and clarity to the various parts of this document.

Adaptable Housing - single storey units that are not ground-oriented and designed with the potential to be easily renovated to accommodate a future resident in a wheelchair. This is a term that is regulated by the BC Building Code - "Adaptable Units" are similar to the City of Richmond's "Basic Universal Housing Unit".

Affordable Housing - housing that meets the needs of households earning 65% or less of the median income in Richmond, with a goal of that household spending no more than 30% of total gross income on shelter.

Accessibility - housing that is barrier-free for users with disabilities or mobility challenges. Also, providing housing that is available or accessible to lower income households.

Aging in Place - the ability to live in one's own home for as long as possible. Often this depends on the living space allowing for adaptability to assist with health and wellness goals.

At-Risk Populations - individuals or households with income or health challenges, whose shelter needs are a concern, and who are homeless or at risk of homelessness.

Complete Community - a neighbourhood where households from all income strata can find options for stable, secure and comfortable housing. Also, a neighbourhood that features a wide range of uses, where all residents can enjoy options for living, working, learning and recreation.

Convertible Housing Unit - designed with the potential to accommodate a future resident in a wheelchair. Basic Universal Housing Unit - a City of Richmond zoning term, regulating features in housing unit design to accommodate a resident in a wheelchair.

Crime Prevention through Environmental Design [CPTED] - an approach to building and urban design which can foster feelings of security for residents and users, and perhaps result in crime prevention. CPTED principles include natural surveillance and overlook ['eyes on the street'], access control by means of fences and gates, and appropriate types of night-lighting.

Density - the number of dwelling units on a parcel of land. Usually expressed as "units per hectare" or "units per acre". Also, density relates to the total amount of floor space that is or can be developed on a parcel of land.

Flexible Housing - housing that can adapt to the changing needs of its users, including the ability to modify layouts to adjust one's housing over time. Related to "Aging in Place" and "Visitability".

Floor Area Ratio [FAR] or Floor Space Ratio [FSR] - a calculation where the total floor area of a building or development is divided by the site area of the site. Often the FAR or FSR is expressed as the maximum floor area allowed on a particular site.

Inclusionary Zoning - Zoning that encourages or mandates the inclusion of lower income housing options in a proposed development.

Healing Environments in Housing - housing that provides appropriate supports to enable residents to better deal with health-related challenges. Such supports include amenity spaces that encourage wellness for users, and facilities for supervisory staff.

Housing Action Plan - specific program adopted by Metro Vancouver Local governments in Metro Vancouver must adequately plan to meet the existing and projected needs of all economic segments of the community.

Housing Agreement - a regulatory tool that allows municipalities to secure different housing options over the long term in new developments. For example, as part of a incentive to develop, a Housing Agreement would be negotiated between the developer and the City to secure different housing options.

Housing Types relating to Household Income - City of Richmond

[See Richmond's Affordable Housing Strategy; Note that yearly income rates are 2013 rates.]

■ Subsidized Rental (also called Non-Market Rental) - targeted at households with an annual income of less than \$34,000.

■ Low End of Market Rental - targeted at households with an annual income of between \$34,000 or less and \$57,500 or less.

■ Entry-Level Market Housing - targeted at households with an annual income of less than \$60,000

Affordable Housing Resource Guide

Policy Context in the City of Richmond



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Crime Prevention through Environmental Design (CPTED)

- an approach to building and urban design which can foster feelings of security for residents and users, and perhaps result in crime prevention. CPTED principles include natural surveillance and overlook ("eyes on the street"), access control by means of fences and gates, and appropriate types of night-lighting.



Affordable Housing Resource Guide

Policy Context in the City of Richmond

1.5 City Approaches and Mechanisms to Assist in the Delivery of Affordable Housing

Priority Processing for Affordable Housing Projects

The City can expedite rezoning and development permit applications, at no additional cost to the applicant, where the entire development or building consists of affordable subsidized rental housing units.

Density Bonus Approach

As outlined above, this approach can be used to collect affordable housing contributions from larger sized residential and mixed-use developments.

Typically the intent is to require at least 5 per cent of the total residential building area to be made available for low-end market rental purposes. However, the City will also typically seek to maximize housing capacity, and will encourage the creation of more housing units rather than the delivery of a small number of larger units, except in cases where creating family housing is a priority.

Strategic Land Acquisition by the City

The City can acquire sites for affordable housing with funding coming from the Affordable Housing Reserve Fund and other sources where appropriate.

Development of such sites will typically involve funding from other levels of government or partnerships with the private sector and/or non-profit agencies or groups.

Rental Housing Preservation

OCP policy and the Affordable Housing Strategy both encourage 1:1 replacement when existing rental housing in multi-family developments is converted to strata-title or where existing sites are rezoned.

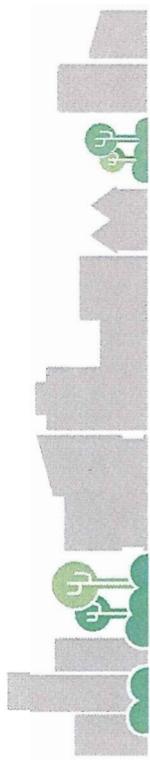
The City wants to work with owners and developers so that the existing stock of affordable rental housing is not eroded.

Entry Level Homeownership

As noted over, the intent is to see development of strata units at a price point that is affordable to purchasers with low to moderate incomes (i.e. less than \$60,000 per year).



Affordable Housing Resource Guide Policy Context in the City of Richmond



1.6 Current Implementation of the Affordable Housing Strategy

1.6.1 Richmond's Housing Stock

- Update on the progress status of the Affordable Housing Strategy as of 30 September 2014.

1. Affordable Rental Units in Richmond - 5,103 Units

- 3,797 affordable units in the existing inventory
- 1,306 units secured through the City's Affordable Housing Strategy (are constructed or in the process of being constructed)

2. Units Secured Through the City's Affordable Housing Strategy and Secondary Suite Bylaw - 1,350 Units (are constructed or in the process of being constructed)

- 411 market rental units secured in private developments
- 127 secondary suites and coach houses
- 812 secondary suite new construction and conversion applications

3. Affordable Home Ownership Units

- 19 units secured through the City's Affordable Housing Strategy

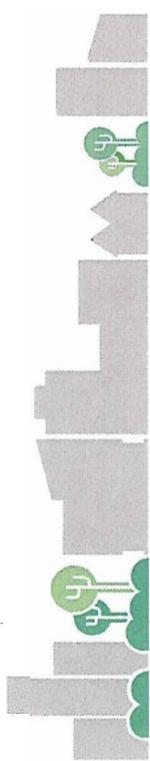
1.6.3 Future Directions for the Affordable Housing Strategy

1. Affordable housing contribution rates and reserve fund efficiencies
2. Low-end market rental unit management
3. Accessibility standards, including social, cultural and economic considerations
4. Affordable homeownership initiatives
5. Promoting multi-stakeholder investment opportunities in affordable housing.
6. Review of parking requirements in developments with affordable housing.

The Affordable Housing Strategy is making progress in helping to deliver more affordable housing units in Richmond. The goal is to sustain this progress, and to enhance the effectiveness of the strategy in the future.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.7 Examples of Recent Projects in Richmond that have delivered Affordable Housing Units

Seniors Rental Housing - Kiwanis Towers Non-Profit Landowner 6251 Minoru Boulevard



Estimated Need and Demand for Affordable Senior's Housing
(a senior is defined as someone over 65 years of age)

- The 2011 Census reports that Richmond senior's population is 53,635 an increase of 25 per cent from the 2006 reported total of 42,625 Richmond seniors.
- Over the next two decades, the Richmond Senior population is projected to increase by 163 per cent or 38,000 more individuals, comparing to a region-wide forecast rate of 118 percent.
- The 2006 Census reports that there are 26,980 Seniors in Richmond with incomes of \$29,999 and below, with 16,675 of these households with incomes of \$15,000 and below.

Public, Private and Non-Profit Collaboration

- Kiwanis Seniors Citizens Housing Society to provide land and Polygon Developments hired to provide development and construction management services. Polygon also assisted with the relation of the original tenant.
- Kiwanis Senior Citizens Housing Society, Polygon, City of Richmond, BC Housing, and Vancouver Coastal Health representatives are working together through the municipal approvals, project development, and community/resident amenity planning processes.
- Collaborative multi-stakeholder planning approach to address the policy, tenant and communication requirements.
- The use of City Affordable Housing Reserve Funds to provide financial support towards the proposed capital project costs.
- BC Housing financing and technical support.

The proposed development provides:

- A City Centre location - across from Richmond Centre, close to services and transit
- 296 units of senior's rental housing units for low-income households
- 710 square meters of resident amenity spaces

The development and funding for the project includes a collaborative effort with:

- Kiwanis Society - (Owner and Operator);
- Polygon - Design (Development and Construction Management);
- City - (Financial support towards project capital costs); and
- BC Housing - (Providing construction financing and facilitating long-term mortgage).

Affordable Housing Resource Guide

Policy Context in the City of Richmond



Affordable Housing - Storeys Development City-Owned Site 8111 Granville Avenue / 8080 Anderson Road



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The proposed project includes a collaborative effort between:
The applicant team consisting of six non-profit housing and service providers, including:

- Atira Women's Resource Society
- Coast Mental Health
- S.U.C.C.E.S.S.
- Tik'va Housing Society
- Turning Point Housing Society
- CMHA - operating Pathways Clubhouse

An example of multi-stakeholder approach to leveraging resources to support affordable housing

- City of Richmond (City owned land, Affordable Housing Reserves, Affordable Housing Value Transfers)
- BC Housing (project financing and technical support)
- Private Developers (City policy requirements for density bonusing)

The proposed development provides:

- A convenient City Centre location close to services and supports
- Approximately 129 units of affordable rental housing for low-income households
- 2,146 square meters of community amenity and service space (e.g. social enterprise coffee shop, community meal program, community support services, health and service provision spaces).

City and BC Housing collaborative development of an Expression of Interest Process:

- City and BC Housing representatives working together to develop the Expression of Interest document, expedite development, funding and project approval processes.
- Collaborative multi-stakeholder planning approach.
- City-owned land and use of Affordable Housing Reserve Funds to provide financial support towards the proposed capital project costs.
- BC Housing financing.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



*Low-End Market Rental - Cadence Development
Private Developer
5640 Hollybridge Way [Cressey Developments]*



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- Two market residential buildings with 14 and 15 stories facing Lansdowne Road with a total of 218 apartment units, located above commercial spaces on the ground and second floors.
- A five storey block facing Elmbridge Way with a 5,000 ft (465 m) childcare facility and 15 affordable housing units located above street-oriented commercial space.
- Street-oriented commercial space with two levels of decorative metal screened parkade located above and the 15-storey market residential tower and the five storey affordable housing / child care block located at each corner.
- A block of 13 townhouses and street-oriented commercial space facing Hollybridge Way.
- The City working with the selected affordable housing provider and local non-profit community service and health providers to develop a coordinated approach for access and delivery of housing, social programs and supports for the families (e.g. life skills, self sufficiency, financial literacy, health education, higher education, and employment opportunities).
- The City-owned childcare facility will be operated by a non-profit childcare provider with the expectation that spaces will be provided to accommodate children from the affordable housing units.
- The affordable housing units are located on the top three floors of the **five-storey** block facing Elmbridge Way on the south side of the **development** in which the 5,000 ft (465 m) to 5,500 ft (5.11 m) childcare facility is located on the fifth level.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



1.8 Developing Affordable Housing Projects in the City of Richmond – Overview of the Process

The City wants to work with the development community and housing sector and non-profit operators to help create high quality, affordable housing projects. To facilitate the process, it is important for project applicants to follow an appropriate Affordable Housing Development Methodology in order to promote successful applications. An overview of the process would include:

- review City and Provincial guidelines and requirements for affordable housing delivery, and operation and sponsorship of an affordable housing project.
- determination of community needs and identification of a site. Preliminary project discussions with City staff.
- a review of what consultants may be needed to help develop an Affordable Housing project. A list of consultants might include:
 - a Development Consultant specializing in affordable or non-profit housing
 - consultants to provide required site specific information, such as Land Surveyor (to provide a legal survey), a Geotechnical Engineer (to provide a Soils Report and Building Foundation Recommendations), an Environmental Consultant (to provide Environmental and Hazardous Materials Surveys and Recommendations).
 - a Cost Consultant (sometimes called a Quantity Surveyor)
 - a Construction Manager (to help with a market-based cost analysis)

Development Permit (DP)

- a development application for the project, comprised of design drawings that incorporate OCP DP Guidelines, City zoning regulations, the Affordable Housing Design Guidelines and Technical Specifications criteria, and any pertinent Provincial regulations.
- the City provides a Checklist on the DP application, so that Applicants are aware of the submission requirements that will accompany a development application.
- all projects containing affordable housing will be reviewed by the Community Services Department in conjunction with the Development Applications Department, to ensure that applications meet the City's affordable housing policies and objectives.

Building Permit (BP)

- City approval, that allows construction to begin, comprised of working drawings and specifications that demonstrate compliance with the BC Building Code, Zoning and Development Permit requirements, and City Bylaws.

Final Building Permit Issuing Occupancy Permit

- City final approval of the constructed facility, indicating that it is ready for use.

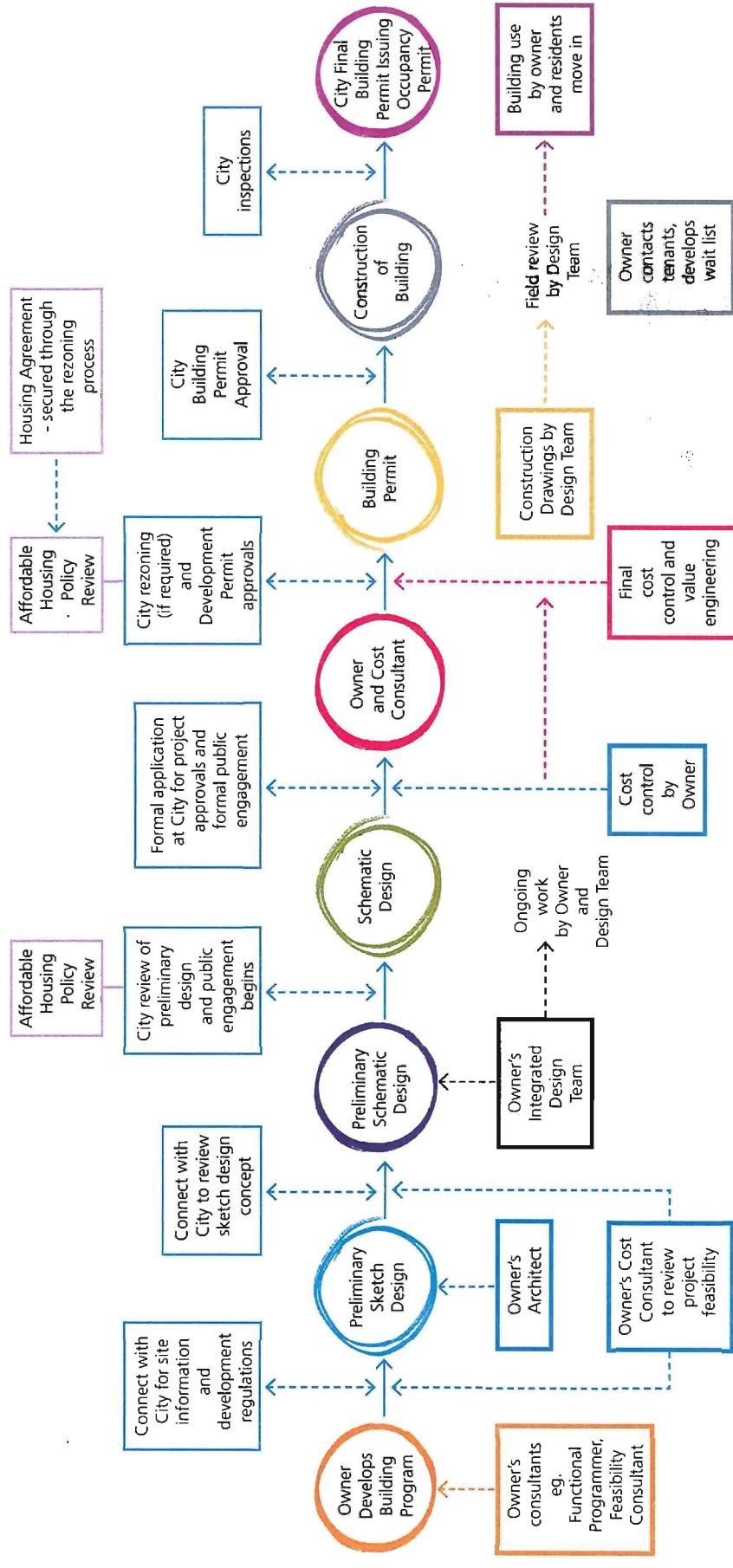
Affordable Housing Resource Guide

Policy Context in the City of Richmond



Affordable Housing Project - Overview of the Development Process

Multi-Unit Project



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Affordable Housing Resource Guide

1 Policy Context in the City of Richmond



1.9 Building the Optimal Consulting Team to Develop an Affordable Housing Project

As noted in the previous section, the list of consultants who would assist an owner to deliver an Affordable Housing project can be long and seemingly complex. Typically, consultants are grouped into two categories, non-design related and design-related consultants.

Design-Related Owner's Consultants

Owners will typically engage an architect to lead the design process. The architect not only designs the building, but also typically acts as the managing consultant who coordinates the work of the other engineering and specialist design consultants.

Again, it is useful if the architect selected to lead the design process, has affordable housing development experience.

Non-Design Owner's Consultants

One group of these consultants provide the owner with legal documents that are required for project approvals, such as environmental surveys or hazardous material remediation reports or certifications, or they provide inventories of existing site conditions, such as legal surveys or soil conditions.

Another group of non-design consultants are engaged to advise the owner on aspects of the development process as a whole. Many affordable housing developers, for example, are non-profit groups and might not be especially skilled in how to successfully deliver a housing project. These owners can engage development consultants who have experience in construction management and finance, to help lead the planning, budget, construction and operations aspects of a project. It greatly assists if the development consultant is well-versed in how to deliver affordable housing, as there are many aspects of development that are unique to this project type.

The architect can assist the owner with selecting other design consultants, and these consultants can either be engaged directly by the owner or sometimes by the architect.

The various engineering and specialist consultants play specific roles in helping to fully describe the building that is being designed. These include building structure, building systems for heating, cooling and ventilation, building lighting and fire and life safety concerns, and creating landscaping for the project.

All of the design-related consultants have specific responsibilities set out by provincial legislation and by professional organizations. The municipality, who acts as the approving authority, or "authority having jurisdiction" on a project. Design-related consultants must certify to the municipality that their designs meet all pertinent zoning and development regulations, and building code requirements.

Affordable Housing Resource Guide

Policy Context in the City of Richmond



The Integrated Design Process

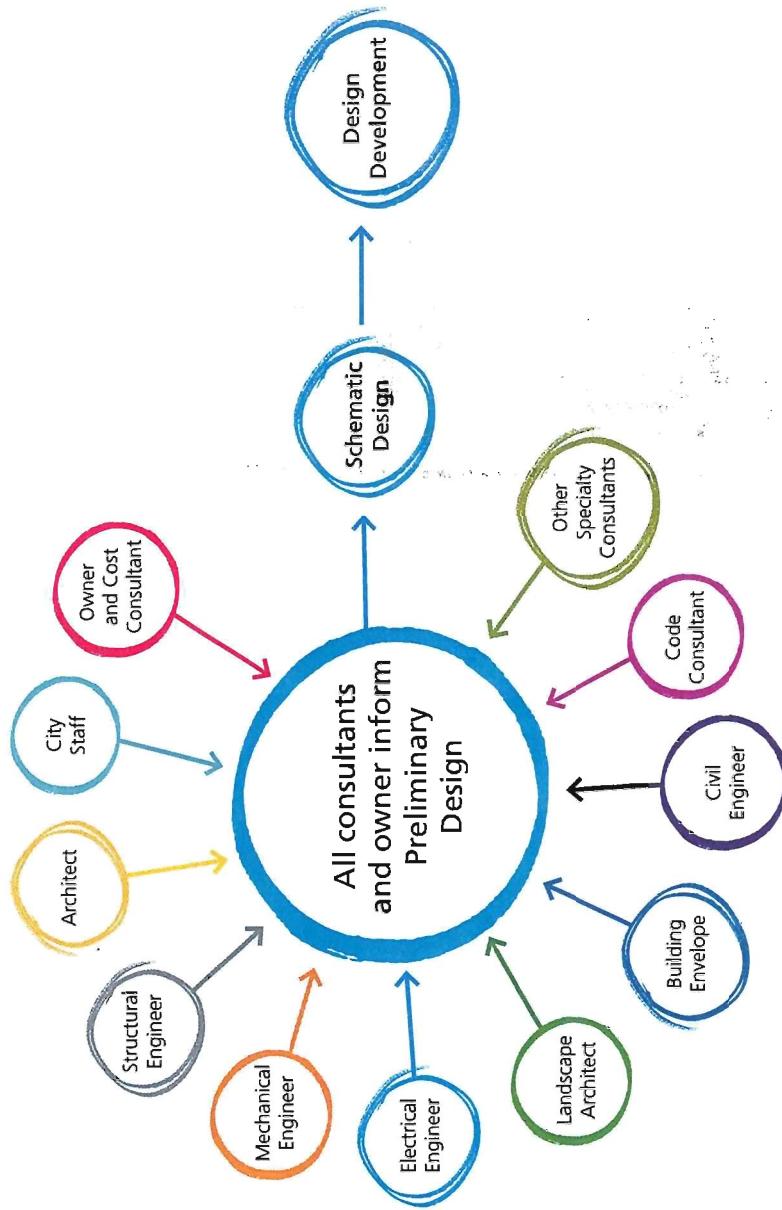
More and more in today's development world, projects are designed by an integrated team of consultants, who define project goals and set out how best to achieve these from the outset of the design process.

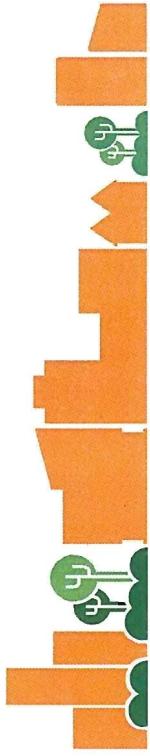
For example, in the contemporary context, it is becoming more prevalent that new buildings provide a high degree of energy utilization. To achieve this, the consultant team and the owner's team will decide early in the design process what design features and building systems the building should accommodate. Heating and cooling and insulation goals are set out at the beginning of the project, which helps inform the architect's overall design for the project.

Beyond being useful to develop high performance type buildings for energy utilization, the integrated design approach is also used to articulate a wide range of building and space planning goals for a building, including social and community building goals.

With an integrated team approach, appropriate design decisions can be made from the outset of a project to enhance the delivery of buildings that work for communities.

INTEGRATED DESIGN - THE TEAM APPROACH





2

Financial Viability

2.1 Providing for Financial Viability for both Private Sector and Affordable Housing Projects that involve the Public Sector

No matter who is developing housing, whether it is the private sector or an agency from the public sector, investment in and delivery of new or renovated housing is a complicated and costly process. It is often said that the biggest investment a household will make is to acquire and maintain home and shelter, and it is important to keep in mind the cost of, and effort required, to provide for the delivery of new housing supply.

Given the substantial investment required, it is fundamental that the financial viability of the development of a housing project be kept foremost in mind, so that new housing supply can be delivered successfully, and be maintained successfully over time, to meet evolving housing needs.

While concern for the bottom line is typically thought of as the purview and strength of the private sector, it is no less important that where the public sector is involved in delivering housing, specifically affordable housing, that individual projects be planned to demonstrate financial viability, in the planning and construction stages and especially over the longer term in the operations and maintenance stages of the building.

2.2 Financial Analyses

In the first stages of planning for a housing project that includes affordable housing components, financial assessments must be made of key project elements:

2.2.1 Identifying development and financing costs

This means that some aspects of housing delivery, such as maintenance and life cycle costs, which often aren't a primary concern in lower cost private sector projects, should be a key component of public sector affordable projects.

The overall message then, is that all housing developments require close attention to the cost of delivering new housing supply, and that while the private sector should be encouraged and made more viable by the setting out of clear regulation that delivers certainty while meeting community goals, the viability of affordable projects involving the public sector must take into account a wide range of public goals and objectives.

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The Cost of Land

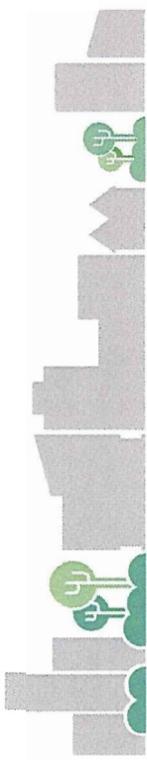
- capital costs, financing costs, legal and holding costs.
- project management costs, including development planning and financial consultant costs
- geotechnical (soils and foundation) consultant and legal survey costs
- environmental and hazardous materials survey costs
- design costs, including architectural, engineering and landscape consultant costs
- design contingency
- municipal fees
- project close-out and marketing costs
- public art amenity contribution

Project Development Soft Costs

- site development and servicing costs
- per sq.ft. (or sq.m.) costs of construction (based on the constraints, preliminary design)
- construction contingency

2

Financial Viability

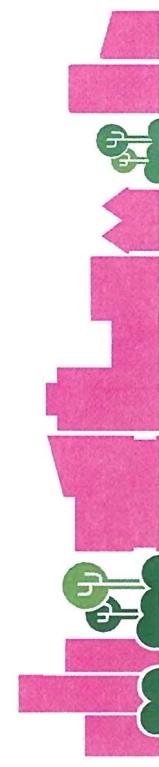


Identifying Operating Expenditures

- maintenance
 - heat and utilities
 - property management
 - taxes
 - replacement reserve (for eventual major servicing or replacement of constructed portions of the project)
 - long term financing commitments
 - demolition reserve fund
- ### Identifying Funding And Operating Income
- private lender funding
 - government funding
 - capital fund-raising
 - partnerships with other community service organizations
 - housing unit rental income
 - revenue from parking
 - possible revenue from services to tenants (eg. Laundry), or rents from commercial space in the project
 - possible revenue from social enterprises that might be incorporated in the building

Developing Proforms To Assess Project Viability

- updating proforms at project milestones, to assess project financial viability on an ongoing basis
- Long-Term Operations Models That Illustrate Financial Sustainability Over The Long term
 - summary of energy and utilities costs, and how these are evolving.
 - analysis of building systems replacement costs, and pressures on the replacement reserve
 - analysis of property management costs
 - summary of adequacy of revenues to meet operations costs



Affordable Housing Development 3 Housing Mix

3.1 Meeting Community Needs

As Richmond continues to grow and demographics change, community housing needs will continue to evolve. Individual development applications that include housing should respond to community needs, and provide housing types, including a range of affordable housing types, that match the profile of existing and future residents in Richmond.

3.2 Meeting Housing Demand

Metro Vancouver's Regional Growth Strategy stipulates that Richmond must absorb a significant amount of residential growth in order to meet anticipated Regional population increases. By 2040 it is estimated that Richmond must add 16,200 units over today's existing unit numbers.

To ensure marketability, and to meet the housing needs of the widest range of Richmond residents, new housing should provide a supply of various housing types, with an appropriate mix of numbers of bedrooms, in a variety of building forms.

2040 Total Demand:

- Additional Units (see Table 1 - Estimated Housing Demand, Regional Growth Strategy, May 2009)

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3.3 Additional Considerations Regarding Housing Mix and Unit Types

- Provision of amenity spaces or community services in an individual project or connectivity with amenities and community services nearby. (Refer to the City of Richmond Official Community Plan for minimum indoor amenity area requirements.)
- Level of resident independence
- Visibility aspects including accessibility and barrier-free design

Low-End Market Rental

Low-End Market [LEM] Rental in medium and higher density development is a priority in Richmond.

When part of a new market housing development, the LEM units should have the following four characteristics:

1. Constructed with the same level of finish as the market units.
2. LEM residents should have the same access to shared spaces and amenities as market residents.
3. No charges to residents for vehicle parking. [Parking requirements can be decreased for LEM units].
4. LEM units should incorporate Basic Universal Housing features, consistent with Richmond's zoning requirements.

Housing demand estimates in the City of Richmond - Table 1 - part of Metro Vancouver's Regional Growth Strategy

As part of Metro Vancouver, it has been determined that Richmond should deliver 400 units of affordable housing per year in order to accommodate growth in the region.

| City of Richmond | Overall Housing Demand | Ownership Demand | Rental Demand | Total Affordable Rental Demand | Low Income Rental Demand | Moderate Income Rental Demand | Market Rental Demand |
|---|------------------------|------------------|---------------|--------------------------------|--------------------------|-------------------------------|----------------------|
| RICHMOND: Annual estimated housing demand | 1,600 units | 1,040 units | 560 units | 400 units | 180 units | 220 units | 160 units |
| RICHMOND: 10-year estimated housing demand | 16,000 units | 10,400 units | 5,600 units | 4,000 units | 1,800 units | 2,200 units | 1,600 units |
| METRO VANCOUVER: 10-year estimated housing demand | 185,600 units | 120,700 units | 64,900 units | 46,800 units | 21,400 units | 25,400 units | 18,100 units |

Affordable Housing Project Design Considerations 4



4.1 Context and Environmental Concerns

4.1.1 Location in the Community

As Richmond continues to evolve as an urban centre in Metro Vancouver, with a more compact form of development, affordable housing will be delivered in more medium and higher density developments.

These should be strategically located close to community facilities such as community centres, schools, libraries and parks, and transit.

4.1.3 Zoning

As noted previously, the Richmond Official Community Plan (OCP) and Zoning Bylaws guide growth and change in the City. When reviewing a possible site for a project that contains affordable housing components or comprises the entire project, the zoning and development parameters must be determined, and early contact with City staff is recommended to discuss the potential development.

4.1.6 Importance of Natural Light

Natural lighting is an important aspect of creating useful and amenable housing projects. Indoor and outdoor common areas, as well as the interiors of the housing units themselves, require good exposure to natural light and at some direct sunlight.

A high level of daylighting for interior spaces can reduce artificial lighting needs and passive solar heat gain into housing units, and can reduce energy consumption in buildings, as well as improve the energy utilization levels over the long term.

4.1.4 Relationship to Grade

Affordable housing projects, and larger projects in general, should be designed to provide barrier-free, same level access from the public realm, through the exterior site areas and to the interior of the project. This allows for wheelchair accessibility and freedom of movement for all users, with all trip hazards also minimized.

4.1.5 Relationship of Indoor and Outdoor Spaces

In order to promote barrier-free design, and enhance visibility for projects, indoor and outdoor spaces should also be connected in a wheelchair accessible manner. Minor differences in grade should be accommodated by means of ramps, while vertical movement requirements will be provided by elevators as well as stairs. The elevator should be of sufficient size to accommodate mobility aides such as strollers and scooters, as well meet code requirements for wheelchairs and ambulance stretchers.

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4.1.7 Access

Walking, Biking, Transit

As Richmond continues to grow as an urban centre, especially in areas with transit-oriented development, the preferred means of movement will be non-vehicular. Richmond's flat topography is highly amenable to walking and biking, and a barrier-free, pedestrian-oriented public realm and means of access to housing developments is important.

Vehicular Access, Drop-Off and Parking, Parking and Loading Regulations

- While non-vehicular modes of mobility are to be encouraged, vehicle use must also be accommodated for new housing projects.
- The City of Richmond Parking and Loading Bylaw sets out minimum resident, and visitor parking and loading space requirements. City staff should be consulted on this matter.

Affordable Housing Project Design Considerations



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- New multi-unit projects should also provide for safe and convenient vehicular drop-off and short-term parking areas.
- Other vehicle movements considerations will include access for service and delivery vehicles, garbage trucks and emergency vehicles. As all of these parking, loading and traffic movement issues can be quite complex, early contact with the City's Engineering, Planning, Project Development, and Transportation Departments is encouraged.

Surveillance

- Typically, access to housing projects will be by interphone, with resident-controlled "buzzing-in" of visitors. Video monitoring of the entry area is recommended, to heighten residents' ability to survey and control who is asking for admittance to the building. Outdoor entry areas and interior lobbies should be well-lit. Security can also be enhanced by limiting elevator access to other floors to residents only, by means of electronic devices such as fobs and card-readers.

4.1.8 Security

Fences and Boundaries

- In higher density urban settings, it is important to provide a practical and highly amenable inter-relationship between the public realm, and semi-private and private areas that are part of the housing project.
- Typically, solid fences should be avoided, and separation between the public realm and the housing should be comprised of landscaping with grade changes, and open fence or glazed screens where appropriate. In this way, natural surveillance of the public and private realms is enhanced.

Gates and Security

- For higher density projects, gates that access entry courtyards or outdoor common areas should be secured with electronic locking devices that limit entry to residents only. Electronic security however must not compromise safe egress and emergency exit capability that is required by building code.

4.2 Housing Design - Interior Spaces

4.2.1 Housing Unit Size

4.2.1.1 Richmond Standards

While the City does not have any formal standards for minimum unit size, the City recognizes that unit livability and visibility relates directly to more generous unit areas, as well as to unit layout openness and overall design.

Unit size, however, also is closely related to housing affordability, and there is a trend in market housing in urban centers in Metro Vancouver, towards delivering smaller sized units to make housing more affordable.

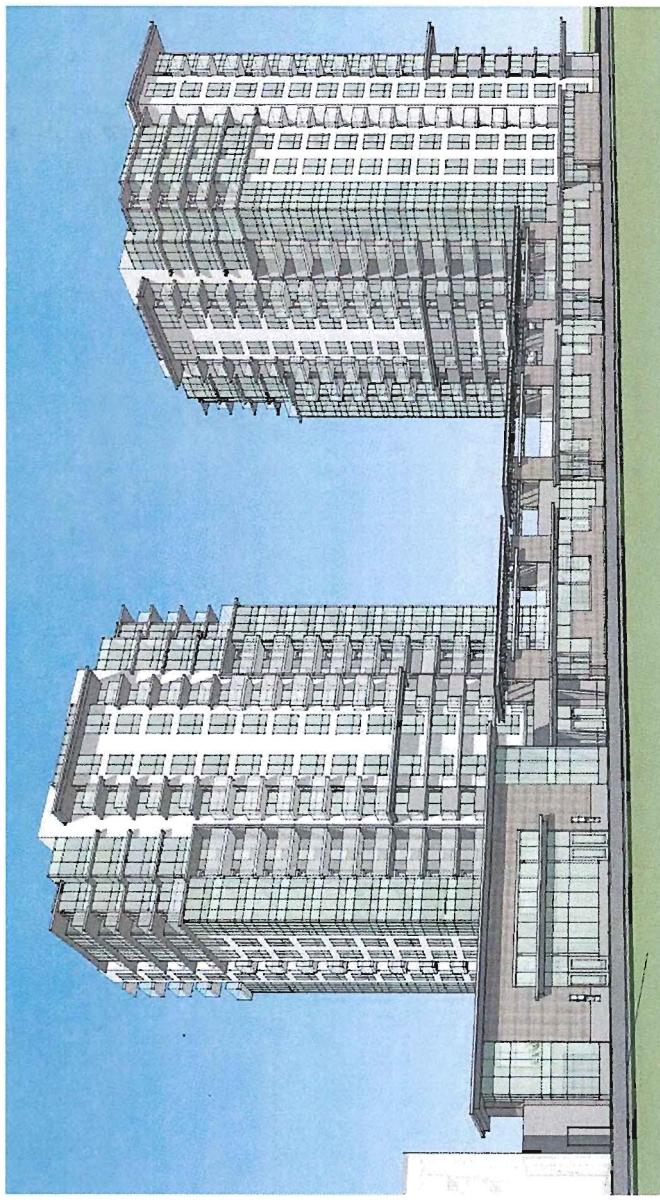
In the Richmond marketplace, smaller units are not typically the norm, but for affordability reasons it warrants consideration to make units as compact as possible, while still making the housing sufficiently open and spacious to meet visibility and aging in place concerns.

The following unit sizes should be considered as minimums for the purpose of **affordable housing** design:

| | |
|--------------|----------------------|
| Studio Unit: | 400 sq.ft. [37 sq.m] |
| 1 - BR Unit: | 535 sq.ft. [50 sq.m] |
| 2 - BR Unit: | 860 sq.ft. [80 sq.m] |
| 3 - BR Unit: | 980 sq.ft. [91 sq.m] |

Affordable Housing Project Design Considerations

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4.2.1.2 Design Characteristics for Affordable Housing Units - Universal Housing Units and Accessible Housing Units

The intention is that affordable units generally be designed as Universal Housing Units, incorporating features that will enhance opportunities for residents to remain in their homes over time, and allow for independent living over the long term. Richmond zoning regulations characterize such units as "Basic Universal Housing", with such features as:

- Open kitchen and living room
 - if the living spaces flow together in an open plan, areas can be made smaller while still allowing for ease of movement and flexibility in furniture arrangement.
- Wider hallways and stairs
 - ideally hallways and stairs should be 3'6" wide minimum.
- Wider doorways
 - doorways should typically be 3'0" in width, with a minimum dimension of 2'8".
 - if the front door opens into the unit, provide 2'0" of unobstructed clearance on the wall at the latch side of the door.
 - low profile wheelchair accessible thresholds at the front entry door.
- **Wider bathrooms**
 - provide at least 2'6" x 4'0" wide of unobstructed space between the toilet and the bath or shower stall, when these elements are situated opposite from each other, and the same unobstructed area in front of sink vanities.

Basic Universal Housing Units

Richmond's Zoning and Development Bylaw sets out basic universal housing features. See section 4.16. Bylaw 8500 provides a modest FAR exemption for single-storey residential units that incorporate the specified "Basic Universal Housing Features".

City staff encourage universal design features in all built affordable housing units.

Affordable Housing Project Design Considerations



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- Electrical outlets at a higher level off of the floor; light switches at a lower level
 - install outlets at 1'6" above finish floor to the centreline of the electrical box, and light switches at 3'6".
 - Have a lower sill for windows, and taller, brighter windows.
 - install sill at 2'0" above finish floor. (Windows will have tempered glass and be rated for guard loading structurally).
- Allow for future adaptability
 - provide backing for future grab bars in washroom tub, shower and toilet locations. (typically 2x10 blocking between studs in wood frame construction).
 - allow for cabinets under kitchen sinks and bathroom vanities to be removable, to provide for knee space for possible future wheelchair use.
 - rough-in wiring for a future possible automatic door opener at the unit entry door.
 - for multi-level units, stack closets or storage spaces over one another, to allow for a possible residential elevator/platform lift to connect floors. The closets must be deep and wide enough to accommodate construction of a rated hoistway.

- Allow for "smart home" options by providing a "Node Zero Location", where all housing unit wiring, including security, telephone, cable and data, meets in one place.
- Position bath and shower controls closer to the outside edge of the tub or shower, to assist with future mobility issues.
- Install low threshold showers that already have an "ADA" compliance rating [American Disabilities Association]
- Leave space on one side of the toilet

Allow for future adaptability

- Accessible Residential Units
- Accessible Housing Units have special design features to accommodate the needs of residents who require the use of a wheelchair. Such features include:

- space for turning wheelchairs and manoeuvring
- larger kitchen and bathroom areas
- specific appliance and fixture needs

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Richmond Zoning also allows for the construction of "Convertible Units" which are designed with the potential to be easily renovated to accommodate a future resident in a wheelchair.
Consult City staff regarding "Convertible Unit Guidelines" for townhouse units.

Affordable Housing Project Design Considerations



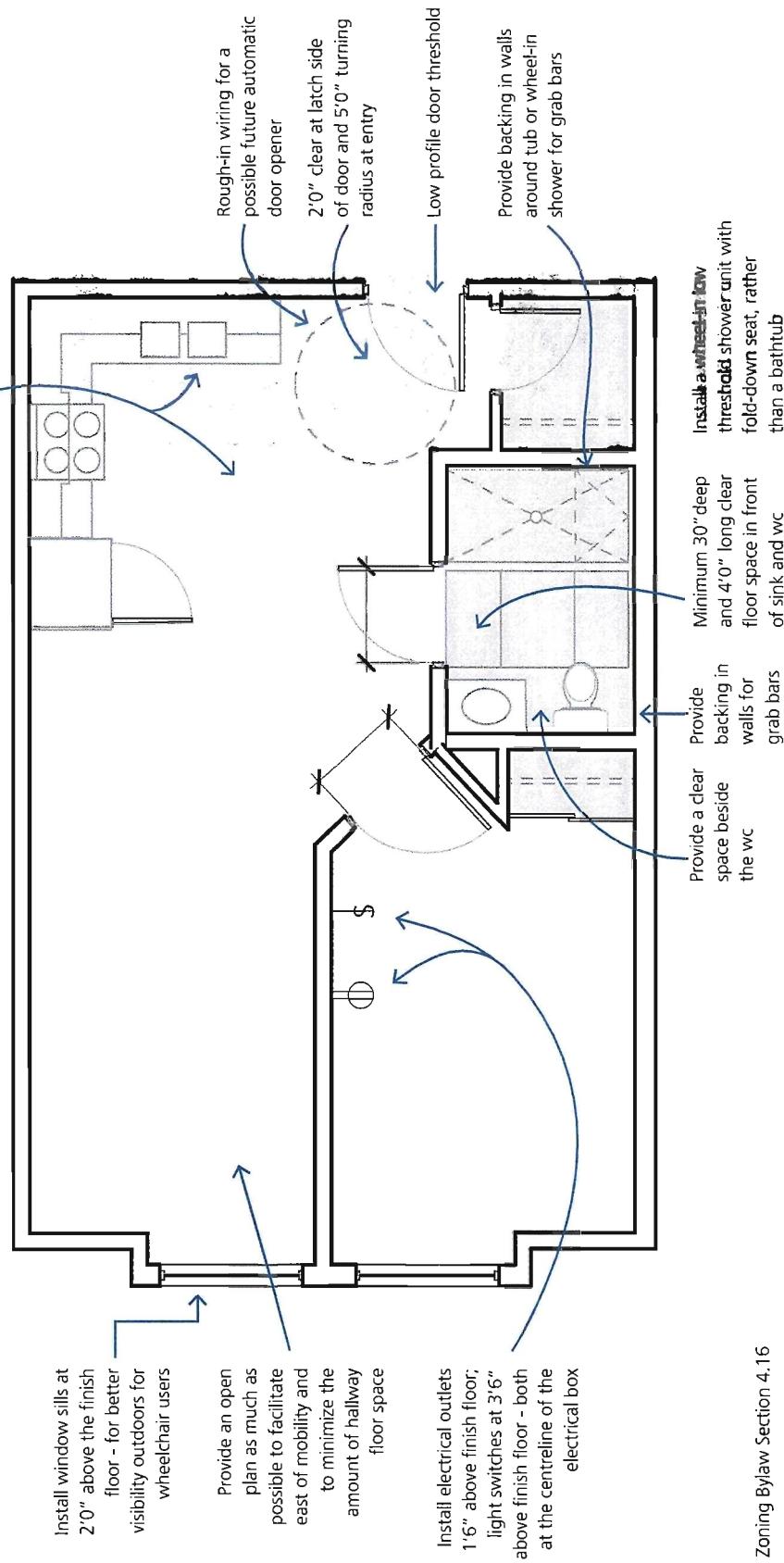
BASIC UNIVERSAL HOUSING UNIT

(also known as ADAPTABLE HOUSING UNIT)

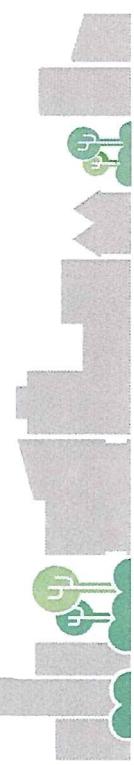
FEATURES TO ASSIST "AGING IN PLACE"

One bedroom unit shown - minimum unit size: 535 sq. ft

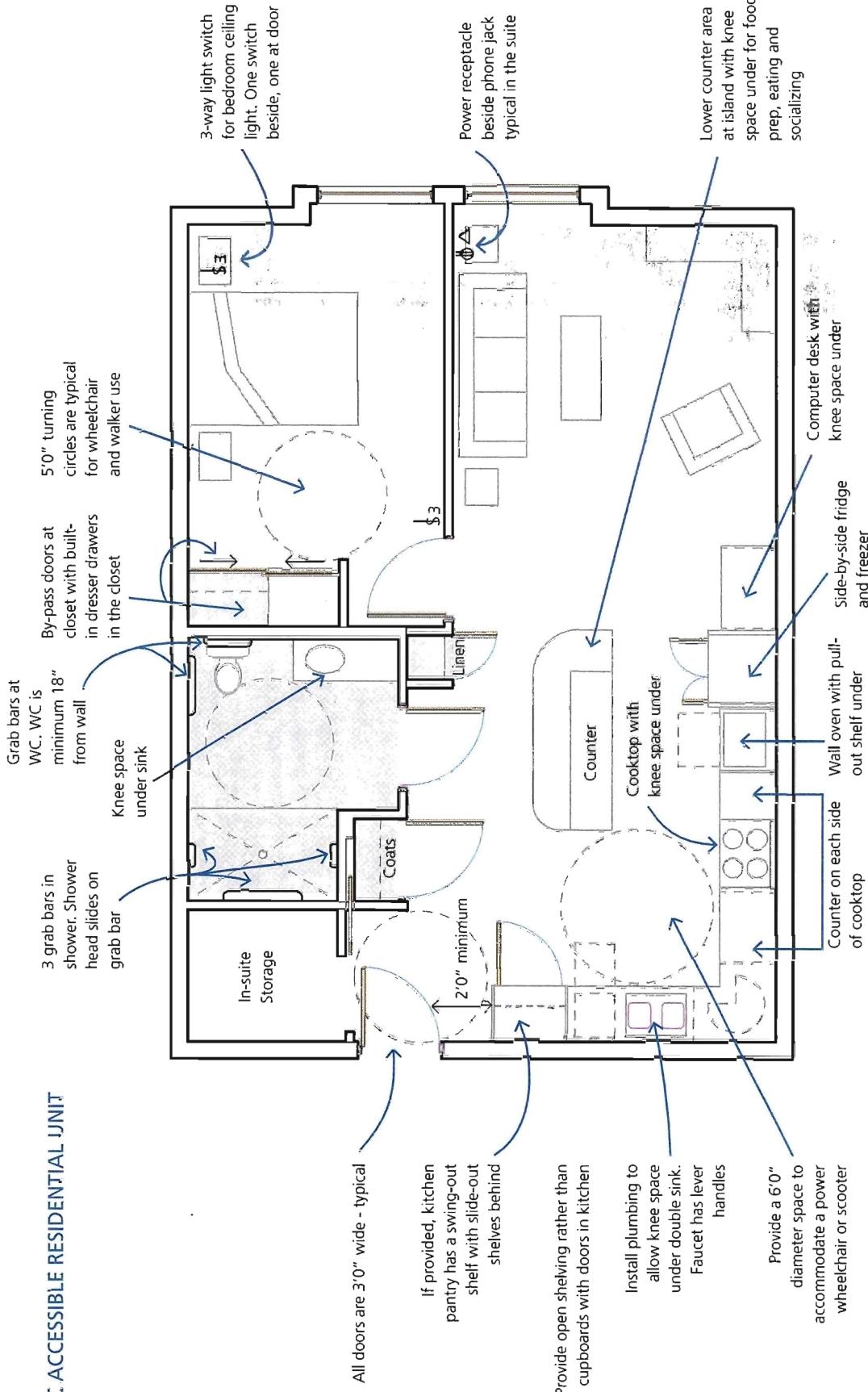
Allow for cabinets under kitchen sinks and bathroom vanities to be removable, to provide for knee space for possible future wheelchair use



Affordable Housing Project Design Considerations



BASIC ACCESSIBLE RESIDENTIAL UNIT



Affordable Housing Project Design Considerations

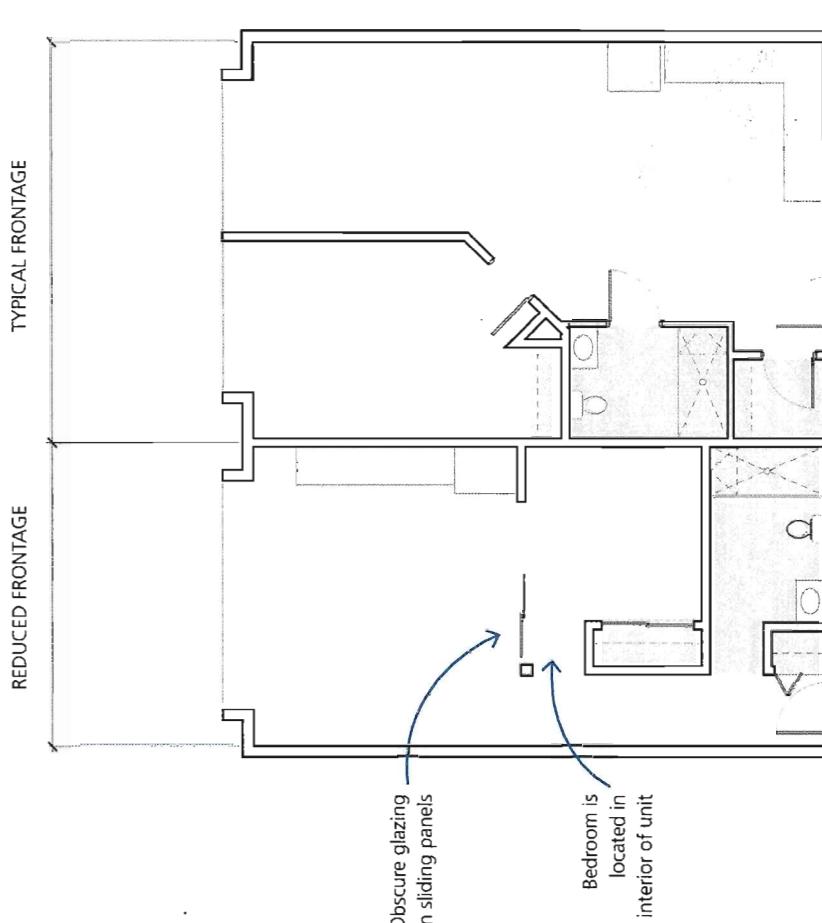


Affordable Housing Layout - Utilizing Less Building Frontage

One way to create more affordability is to accommodate a second or third bedroom wholly within the unit interior, with no exterior windows.

The light into the interior of this bedroom is borrowed light through high windows or obscure glass from an adjoining room that has outside windows. Additionally, good mechanical ventilation of such spaces are required, to provide fresh air supply in these spaces.

When housing units take up less building frontage, more units can be created within the same building footprint, which typically enhances affordability.



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ONE SUGGESTION FOR AN AFFORDABLE HOUSING LAYOUT
UTILIZING LESS BUILDING FRONTAGE

Affordable Housing Project Design Considerations



Common Areas in Buildings ~ Design Characteristics for Building Community

In affordable housing projects, it is important to consider including common areas in new developments that will enhance livability, and allow for building community among residents.

In some cases, these common areas might be provided for all residents in the development to use, but if this is not feasible, some of the following areas should be included where the number of affordable units in the project is greater than 10 units:

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- Community kitchen and dining area
- Library and common internet use area
- Lounge and multi-purpose rooms
- Common laundry area
- Use of the entry lobby as a casual meeting area
- Opportunities for gardening - greenhouses

The overall design intent here is to provide opportunities for residents to gather in various sized groups, whether casually, or in more structured meeting situations. The size of meeting areas can range from those that accommodate 4 to 6 people, to a larger meeting room or amenity space that holds most of the resident population.

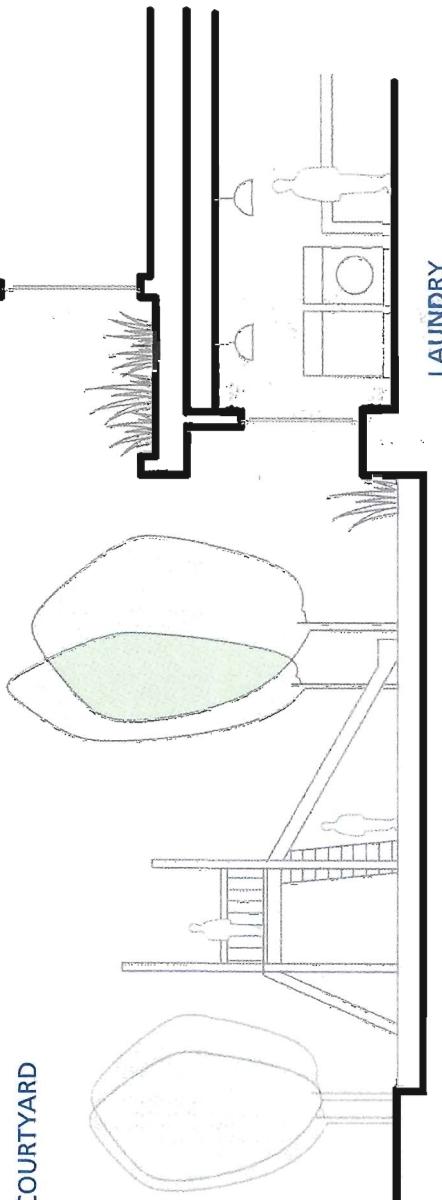
Additionally, in larger mixed use developments, the following opportunities should be reviewed:

- Possible commercial space
- Look at possibilities for multi-cultural uses
- Look at integration of public art

Locate social areas like meeting rooms and laundry rooms adjacent children's outdoor play areas.

In all, it is important for affordable housing sponsors and designers to review specific requirements for common areas in projects in Richmond's Official Community Plan, and coordination with City staff is recommended.

FAMILY HOUSING



Affordable Housing Project Design Considerations

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Supportive Housing Projects

These affordable housing projects typically serve specific target populations, and tend to be health-related housing operated by non-profit agencies partnering with government or with a private sector partner.

Some of the common area amenities listed in the above section should be included in these types of developments.

Such projects can also benefit from live-in staff, where 24-hour assistance is required for the resident group. A small self-contained unit, with bathroom and kitchenette, is typically satisfactory to provide supportive living assistance.

It is also preferred that supportive housing projects be integrated with appropriate services that serve the larger community, such as health services, child care, and seniors service facilities.

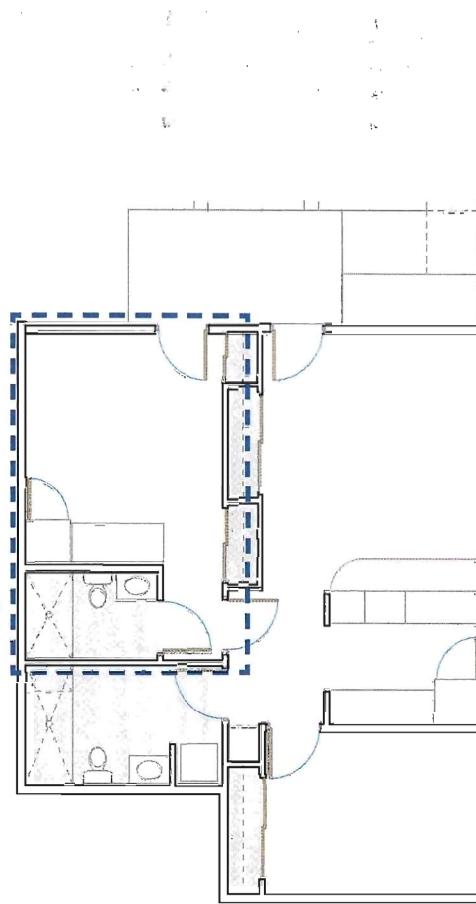
Supportive Housing Units with Adjacent Caregiver Suites [Lock-off suites]

As residents age in place, health issues may develop. Rather than relocating a resident to a care home, it may be preferable and more economical to allow the resident to remain in place, with the assistance of a live-in caregiver.

To accommodate the caregiver, a smaller self-contained (with bathroom and kitchenette) adjoining unit could be designed as part of the original unit layout. This unit would initially be locked-off from the main unit, and serve as secondary suite type accommodation in the overall development.

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Lock-off suite for caregiver or
microunit secondary suite



ONE-BEDROOM SUITE WITH LOCK-OFF UNIT

Affordable Housing Project Design Considerations



4.3 Affordable Housing Design - Exterior Considerations

4.3.1 Environmental Concerns

As noted in Richmond's Official Community Plan, well-designed private and semi-private outdoor areas can greatly enhance the livability and appearance of affordable housing projects. Addressing site specific environmental concerns is an important part of this aspect of the affordable housing design process, whether the outdoor area is an active zone for socializing, or a more passive landscaped area.

Wind Protection

Exposure to wind limits the use of outdoor areas. Locating building mass and wall extensions to shelter outdoor areas from prevailing winds and weather will assist in making outdoor areas more usable, especially for seniors and for children's outdoor play areas in family-oriented affordable housing projects.

Sun Exposure

Outdoor areas should be oriented to provide at least three hours a day of direct sun exposure at the winter solstice, preferably in the mid-day hours.

Provide Some Shade for Hot Days

Shade on hot summer days must be provided, by means of wide building overhangs, shade structures (such as pergolas and the like), and by strategically located specimen tree landscaping. Open roof structures can also be considered, which have the advantage of providing shelter on rainy days.

Provide Non-glare Surfaces

- Building materials on walls adjacent active outdoor areas, and those used for ground plane hard-surfacing, should not be shiny or be finished in bright reflective colours.

Protect from Car Traffic and Noise and Fumes

- Active outdoor areas should not be located where they can be negatively impacted by traffic noise or exhaust.

Pay Close Attention to the Location of a Building's Mechanical Equipment and Vents

- Do not locate a building's mechanical exhaust vents such that they exhaust into active use outdoor areas.
- Mechanical and electrical equipment should also not be located where equipment noise or vibration impacts such areas.

Hard Landscaping

- Hard surfacing must be carefully considered to meet universal design and accessibility requirements, and to provide ease of maintenance and meet long-term wear and resiliency characteristics.

- Slippery or unstable surfaces must be avoided, as well as sharp corners or rough surfaces.

Provide for Effective Surface Drainage

- Provide for effective surface drainage with adequate slopes to drain for all surfaces of $\frac{1}{4}$ " in 1'0", and avoid all ponding.
- For children's play areas, provide adequate fall zones and cushioned play surfaces around play equipment.

Soft Landscaping

- Significant areas of soft landscaping should be provided in affordable housing projects, including specimen trees and shrubs, massed planting and lawn areas.
- Ensure that plant species are vigorous and chosen for ease of maintenance and resistance to drought. If built-in irrigation systems are used, ensure they can be automatically operated.
- Provide for adequate drainage in lawn and landscaped areas to avoid pooling and standing water.
- Consider the use of indigenous plant material as a priority, and avoid toxic plants.
- Avoid known invasive plant species.
- Consider pollinator friendly landscaping strategies.
- Consider edible landscaping.

Lighting

- Provide adequate night-lighting in outdoor areas, but avoid lighting fixtures that produce glare. Consider the use of soffit or down-lighting that are International Dark Sky Association compliant.
- Consider using lighting projects and systems that are energy conserving, have long life, have a low cost of ownership and were accessible for service and maintenance.

Affordable Housing Project Design Considerations



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- **Rooftop Outdoor Space**
 - Rooftop areas have considerable potential for outdoor amenity areas in affordable housing projects, especially in urban areas where available outdoor space on the ground is limited or non-existent.
 - For these rooftop areas, the roof structure must be designed to support the weight of sufficient soil depth for landscaping, including larger shrubs and small trees.
 - If play equipment or landscape structures are contemplated, consider anchoring these into housekeeping pads that do not penetrate the roofing membrane. Locate heavier landscape elements over the building structure's columns and beams, to minimize added structural cost. Advance plan to prevent roof leaks and for repair of roofing membranes in the future.
 - Provide for positive slopes to drain of 1/4" in 10' minimum, and make all roof drains easily accessible for cleaning.

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- Boundary fencing should be designed to prevent climbing, and with a top that extends back into the rooftop area, as a deterrent to objects being thrown over the fence. Fencing should be high enough to meet Richmond by-law and safety requirements, and incorporate glazing panels to allow views from the rooftop.
- Allow for sun exposure, but provide shade opportunities since roof areas can get very hot in sunny weather. Use wind tolerant and drought-resistant landscaping.
- Locate mechanical exhaust vents and rooftop equipment away from active use rooftop areas, to avoid noise and fumes.

4.4 Affordable Housing Design - Sustainability Issues

Energy Efficiency and Utilization

It is recommended that purpose-built Affordable Housing projects in the City of Richmond be designed in accordance with the energy utilization guidelines as noted in the City's Corporate High Performance Building Policy.

The policy guidelines advocate for achieving "sustainable" building design through energy use optimized systems and on-going operations and maintenance procedures, such as commissioning and retro-commissioning on an on-going basis

- other areas of importance for the "sustainable" design of Affordable Housing project include the following:
- reduce landfill waste generation
- demonstrate a high level of operational efficiencies in energy use
- reduce greenhouse gas emissions



Rooftop Garden, Centro, Richmond, BC | DIALOG

- best practice efficient use of natural resources such as water, land and materials
 - minimize facility maintenance costs over the long-term
 - **Capability to Plug into District Energy Systems**
- The City of Richmond is encouraging the expansion of a District Energy System program to effect energy utilization savings and the reduction of greenhouse gas emissions in the centre area of the City.

New developments in the City Centre will be expected to be "District Energy Ready" - contact City staff regarding District Energy Ready specifications.

Resilient Buildings - Durability and Maintenance Considerations

Materials and Building Design

- New buildings should be appropriately designed, and constructed with quality and durable building materials, to promote structural and material longevity and ease of maintenance considerations.
- The goal will be to optimize occupant satisfaction and to minimize annual ownership costs for the building, including energy, operating, service and maintenance costs.

Building Systems

- Plumbing and heating, fire and life safety, and electrical, communication and security systems should all be designed and installed to deliver a high standard of performance and durability, while being as simple to maintain as possible.

Affordable Housing Project Design Considerations



- Building commissioning should be thorough, and operations and maintenance manuals should be comprehensive with maintenance schedules clearly laid out for effective upkeep of the building's physical plant.

Environmental Design Rating Systems

- Certification costs for Environmental Design Rating Systems are high, requiring a significant investment in consultant and testing agency fees, and in making application for certification itself.
For affordable housing projects, it will be sufficient that the criteria for certification only be followed to achieve equivalency, and that unless desired by the developer or housing sponsor, the costs associated with the actual certification process may be avoided.

Food Security - Community Gardens

- It is desirable that affordable housing projects provide opportunities for foodstuff gardening on site, either at grade or on rooftops.
- Sustainable Transportation**
- Consider adding EV charging stations in affordable housing projects
 - Encourage transit use, cycling, and provide dedicated car-share parking spaces.

4.5 Affordable Housing Design - Innovative Examples from Other Places

4.5.1 Aging-in-Place Affordable Housing Examples



Co-op City, Bronx, New York



Community Garden at Mole Hill Community Housing, Vancouver, BC | DIALOG / S.R. McEwen, Associated Architects

A) NATURALLY OCCURRING RETIREMENT COMMUNITIES ("NORC'S")

NORC's are multi-age communities with large concentrations of older adults. These communities have evolved in recent years, owing to a variety of demographic shifts in society:

- aging-in-place
- the arrival of more older adults coming to live in a community, seeking amenities and services that fit with their retirement lifestyle.
- the departure of younger people in search of opportunities, leaving behind the older generations.

Affordable Housing Project Design Considerations



Elliot-Chelsea Houses, Manhattan, New York



Ravenswood Houses, Queens, New York

Though funding to serve NORCC's has been established in over 25 states in the USA, some of the better known examples (all in NY state) include:

- Co-op City in the Bronx
- Elliot-Chelsea Houses in Manhattan
- Ravenswood Houses in Queens

B) PACE MODELS TO SERVE FRAIL SENIORS IN THEIR OWN HOMES

The Program for All-Inclusive Care for the Elderly (PACE) model is centred on the belief that is better for the well-being of seniors with chronic care issues (and their families), to be served in the community and remain in their own homes, rather than having to reside in a nursing home.

It has also been established, that this model delivers health care services to seniors at far less cost than institutionalization. The model is especially beneficial for lower-income frail seniors, who can live independently, or with family, and maintain a quality of life and better health outcomes without dependence on the acute care and long-term care health sectors.

Begun in San Francisco's Chinatown in the early 1970s as the On Lok Senior Health Services, with similar programs now in place across the USA, PACE services include the following:

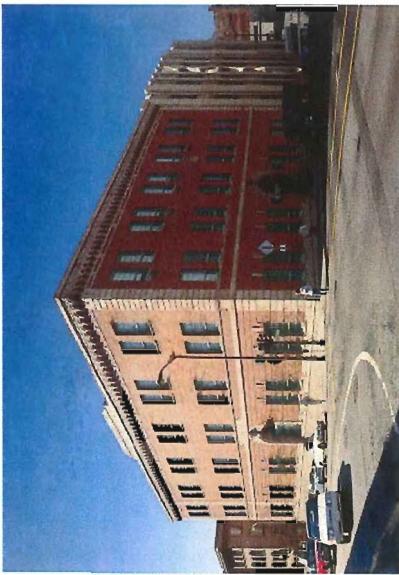
- assistance with maintaining independent living for frail seniors in their own home, providing home health care and personal care, and local treatment-related transportation.

medical care provided by a PACE physician, familiar with the history, needs and preferences of each participant.

- adult day care at a local Centre that offers physical, occupational and recreational therapies; meals and nutritional counseling; medical specialties, including all necessary prescription drugs.
- respite care and hospital and nursing home care when necessary.

C) INTENTIONAL COMMUNITIES

"Intentional Communities" have been created by residents in local areas in American cities, to advocate for and establish aging-in-place strategies to allow seniors to live independently and remain in their own homes. Rather than move to care homes to receive supports and assistance, seniors pay a membership fee and receive free or discounted services in their own home.



On Lok, Bush and Larkin, San Francisco, CA

Affordable Housing Project Design Considerations



Intentional communities are non-profit organizations, funded in part by medical insurance plans as well as membership fees. They are found across the United States. A well-known one is "Beacon Hill Village", located in Cambridge Massachusetts and adjacent areas.

4.5.2 Supportive Housing Examples

A) SENIORS HOUSING INTEGRATED IN A MIXED USE COMMUNITY PROJECT

KITSILANO NEIGHBOURHOOD HOUSE 2305 WEST 7TH AVENUE, VANCOUVER B.C.

Kitsilano Neighbourhood House [“Kits House”], developed by the Association of Neighbourhood Houses of BC, in conjunction with funding from the Province and the Municipality, is a mixed-use assembly and residential project. The building complex features the retention of two heritage buildings, joined by a new infill structure. The complex features child cares, a community meeting hall, a seniors lounge, rooftop gardens for urban agriculture, and meeting rooms for use by the general public, as well as 15 units of low-income seniors housing.

The intent is that the seniors will use the facility like their “living room”, while Kits House continues to serve the local neighbourhood.



Kitsilano Neighbourhood House Redevelopment incorporating Low-Income Seniors Housing / S.R. McEVEN Architect



Affordable Housing Technical Specifications

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5.1 Purpose

- Outline the design, construction, material and building system requirements for Affordable Housing Projects.
- To be used as a tool for preparing cost estimates early in the design process.
- For use by consultants who are ultimately responsible for ensuring that the completed Project meets the standards and conforms to the regulations of all authorities having jurisdiction.

5.3 Technical Guidelines for Affordable Housing Design and Construction

Note: Section numbers shown under the following headings refer to Sections organized in "Masterformat", the national standard for organizing Specifications for construction projects in Canada.

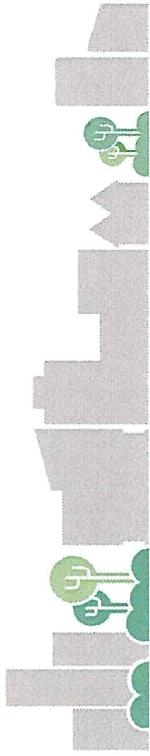
- 5.3.1. Building Construction**
 - refer to Building Code
- 5.3.2. Applicable Regulations**
 - Developers and Consultants must ensure that all applicable regulations are met, to the satisfaction of all authorities having jurisdiction. Regulations include, but are not limited to:
 - British Columbia Building Code
 - City of Richmond Official Community Plan (OCP)
 - City of Richmond Zoning Bylaw
 - Richmond Social Development Strategy
 - Affordable Housing Strategy
 - Energy Utilization and Building Performance Regulations
 - Energy components of the BC Building Code
 - National Energy Code for buildings
- 5.3.3. Technical Guidelines for Affordable Housing Design and Construction**
 - Exterior Openings**
 - Doors and windows to meet CAN/CSA-A440 standards and as per the Building envelope Consultant's recommendations.
 - Install windows generally with a sill height such that users can see out while seated.
 - Place restrictors on windows to limit the opening dimension to 4 inches.
 - Ensure opening windows are not a hazard at exterior pathways.
 - Pay attention to solar heat gain issues.
 - Division 8 - Openings**
 - Roofing
 - provide a minimum 5 year Roofing Warranty from the RCABC
 - provide roof edge safety barriers, fall protection and fall arrest as per the Building Code and WCB requirements.
 - Division 7 - Thermal and Moisture Protection**
 - provide roof edge safety barriers, fall protection and fall arrest as per the Building Code and WCB requirements.
 - Division 9 - Insulation**
 - consider the use of in-floor radiant heating loops set into a concrete floor topping, or increase the insulation R-values in the floor system beyond that required by the Building Code or ASHRAE 90.1 standards.
 - Section 03 54 00 Concrete Self-Levelling Topping**
 - Section 07 21 00 Insulation
 - Section 07 26 00 Vapour Retarders



Affordable Housing Technical Specifications

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- 5.3.3. Building Systems**
- Heating, Ventilation and Air Conditioning - if not a stand-alone facility, the Housing should have its own separate metering from the rest of the building.
 - Acoustic Design:
 - provide protection from external noise or that from adjacent occupancies.
 - consider enhancing STC ratings above those required by the Building Code.
 - Refer: Division 23 - HVAC
 - Section 07 21 00 Insulation (Noise Stop)
 - Section 07 92 00 Joint Sealants (Acoustic Sealant)
- 5.3.4. Floors**
- provide resilient low gloss flooring generally in living and wet areas
 - resilient flooring should be non-slip in wet areas
 - avoid carpet with underlay
 - consider high durability flooring at entries and high traffic areas
 - provide walk-off mats at entries
 - provide backing in walls and partitions to secure trim systems at stairs, with colour contrast nosings, and tactile warning strips at landings
 - Refer: - "Floor Covering Specification Manual" as issued by the BC Floor Covering Association
 - Section 09 65 10 Resilient Flooring (Note: use sheet vinyl goods in washrooms and wet areas, rather than natural fibre "linoleum" type products. Flash coving for flooring in washrooms and wet areas is recommended).
 - provide backing in walls and partitions to secure millwork, railings and fittings as required. Refer to BC Building Code and the Building Access Handbook for requirements for backing for grab bar locations
 - Refer: Section 06 10 00 Rough Carpentry (Backing Requirements)
 - Section 09 21 16 Gypsum Board Assemblies
 - Section 09 91 10 Painting
 - Section 07 92 11 Joint Sealants
 - Section 10 99 00 Miscellaneous Specialties (Wall and Corner Guards and Walk-Off Mats)
- 5.3.5. Walls and Partitions**
- painted drywall is the typical finish - consider acoustic requirements
 - use low volatile organic compound (VOC) paints and sealants
 - Gloss levels:
 - G5 (semi-gloss) - Kitchen, Washrooms, Laundry, Janitor's Room and all doors, door frames and interior trims.
 - G3 (eggshell) - typical for walls (Matte finishes not acceptable)
 - provide corner guards
 - impact-resistant drywall and/or wall protection paneling is recommended in activity and high traffic areas
 - for durability, consider the use of ceramic tile in Washrooms, and for Kitchen back-splashes
- 5.3.6. Ceilings**
- painted drywall is a typical finish - consider acoustic requirements (Kitchen ceilings must be washable).
 - use low volatile organic compound (VOC) paints and sealants (Refer to Gloss levels over)
 - acoustic T-bar ceilings:
 - install commercial quality
 - system to have an NRC of .70 or better.
 - provide access for above ceiling services.
 - Refer: Section 09 21 16 Gypsum Board Assemblies
 - Section 09 91 10 Painting
 - Section 09 51 13 Acoustic Panel Ceilings



Affordable Housing

Technical Specifications

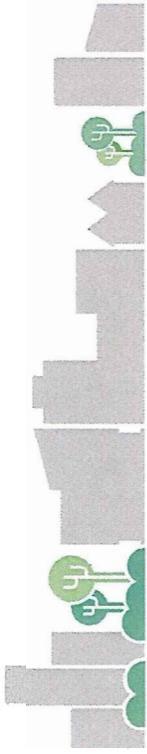
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5.3.7 Doors and Hardware

- doors into any public area are to contain glazing with tempered glass.
- doors typically shall be solid core, except for bi-fold and sliding bypass doors, which can be hollow core. Meet AWMAC standards for doors.
- **Hardware**
 - shall be commercial grade
 - shall meet accessibility and universal design requirements
 - door stops to typically be wall-mounted
 - sliding doors shall have the ability to be pinned in place to prevent unsupervised sliding.
 - swing doors to social areas to be equipped with "elephant's foot" or similar hold-open devices (unless not permitted by Code).
 - kick plates are required on the push side of doors with closers, and at all storage room doors.
- **Locks, Security and Alarms**
 - all doors to have locks with a "classroom" function except:
 - Storage Rooms or Laundry Rooms may have "classroom" or storeroom" function.
 - Janitor and service rooms to have "storeroom" function.

- provide a lockbox embedded in the building facade for Fire Rescue. [Refer to Fire Protection and Life Safety Bylaw No. 8306].
 - gates typically will feature child-proof latches. Emergency exiting, however, must not be impeded.
 - equip gates with heavy duty hinges.
 - review security and surveillance requirements.
 - consider controlling access with the use of enterphones.
 - equip doors to the building exterior, and certain interior doors with piezo type alarms, to prevent unsupervised access. Provide delay releases and alarms at emergency exits.
 - restrict access from elevators, parking areas and exits.
- Ref: Division 08 - Openings
- Section 08 70 00 Door Hardware
- Division 27 - Communications
- Division 28 - Electronic Safety and Security
- 5.3.8. *Housing Unit Bathrooms and Common Washrooms*

- self-rimming drop-in sinks in vanities with accessible type plumbing brass (locate sinks as close as possible to the front edge of the counter to promote accessibility)
 - wheel-in showers rather than bathtubs
 - **Washroom Accessories**
 - grab bars or future adaptability for same
 - **Lighting**
 - standardize fixtures and lamping as much as possible.
- Common Washrooms and Gender Neutral Washrooms**
- **Toilet Partitions**
 - **Acceptable products:**
 - plastic laminate covered high density particle board
 - Metal with baked enamel finish
 - Phenolic (if budget allows)
 - **Hardware**
 - Heavy duty stainless steel with tamper-proof screws. (concealed where possible).
 - Countertops - plastic laminate with large-size ceramic tile backsplash with dark grout colour.
 - **Accessories**
 - paper towel dispensers
 - toilet and waste unit
 - soap dispenser
 - toilet paper dispensers
 - diaper change table in washrooms



Affordable Housing Technical Specifications

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- Plumbing
 - Toilets
 - tank style toilets
 - Sinks
 - self-rimming drop in vanity sinks.
 - faucets to have aerators for water conservation and have temperature control (120 degree F / 49 degrees C maximum). (Provide mixing valves).
- Refer: Section 10 21 14 Toilet Compartments
Section 10 28 14 Toilet and Bath Accessories
Division 22 Plumbing
Division 25 Lighting

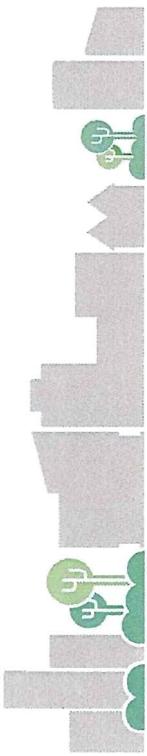
5.3.9. Housing Unit Kitchen and Common Area Kitchens

- Appliances - "Energy Star" rating
- Dishwasher:
 - typically not provided with Affordable Housing Unit Kitchens
 - for Common Kitchens consider a commercial style under-counter dishwasher with a sani-cycle.
 - 21.5 cu. ft. refrigerator for units and common kitchens
 - Consider an additional freezer for a community kitchen
 - 30 inch wide 4 burner stove with oven, with controls out of reach of children.

- Rangehood
 - Microwave oven:
 - generally not provided for Affordable Housing Units
 - 2.0 cu.ft., 1100 watt minimum for community kitchens.
 - Millwork
 - provide 10 inch deep stainless steel laundry sink in counter.
 - standard temperature hot water
 - stacked washer/dryer hook-up
 - laundry vent to exterior avoiding outdoor common areas
- Refer: Section 06 40 00 Architectural Woodwork
Section 11 31 00 Residential and Commercial Appliances
Division 22 - Plumbing
- Rangehood
 - 2.0 cu. ft. 1100 watt minimum for community kitchens.
- Millwork:
 - provide 10 inch deep stainless steel laundry sink in counter.
 - standard temperature hot water
 - stacked washer/dryer hook-up
 - laundry vent to exterior avoiding outdoor common areas
- Millwork:
 - Desk / Work Table
 - Room for Photocopier
 - Staff Lockers
- Refer: Section 06 40 00 Architectural Woodwork
Section 10 Metal Lockers

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Affordable Housing Technical Specifications



5.3.12 Storage Areas

- Provide in-suite storage closets, as well as coat and clothes closets
- Residential Storage - 200 cu.ft. caged storage locker for each unit
- Supportive Housing Additional Storage
 - configure as per specific requirements
- Refer: Section 10 99 00 Miscellaneous Specialties

5.3.13 Additional General Mechanical Considerations

- HVAC
 - all rooms to be adequately ventilated
 - if baseboards heaters or radiators are used, ensure hot surfaces cannot be touched.
 - all equipment to be easily accessible for maintenance purposes.
- Controls
 - to be Direct Digital Control (DDC), with the ability to tie into the City of Richmond's DDC networks.
 - install a permanent Carbon Dioxide monitoring system.
- Plumbing
 - hot water temperature shall be adjustable. Provide mixing valves as required.
 - high temperature water to be provided to the commercial kitchen plumbing and dishwasher, and residents' laundry and janitor's sinks.

- all faucets to have aerators for water conservation.
- provide hose bibs at residents' outdoor areas, and in garbage and recycling areas. Provide drains so no standing water occurs.
- Hose bibs should be frost-free with a vacuum breaker and be vandal resistant.
- Floor-mounted mops sink in the Janitor's Room to have an approved backwater prevention valve.
- provide outlets in Residential Units and in common Activity Rooms.
- consider having telephone cable/type specification (Cat 5e minimum) the same as data grade to allow for non-analog features.
- Data
- Cat 5e is the minimum specification but Cat 6 is preferred.
- provide as required, including:
 - in staff offices, 1 with fixed IP address for DDC controls
 - allow space for City fibre network connection and separate conduit network (if nearby) or capped at the property line.
 - Fire Alarm
 - ensure no proprietary alarm system is installed.
 - strobe light and audible signal in the dwelling unit
 - Security
 - review which type of entry security system is appropriate for the development. [e.g. Bell, buzzer, intercom, video telephone, etc.]

5.3.14 Additional General Electrical Considerations

- Power
 - all outlets to have shatterproof faceplates.
 - provide high outlets for use by seniors.
 - where the building has an emergency power generator, the emergency lighting system shall be powered by the generator, and not by separate battery packs.
- Lighting
 - provide sufficient illumination:
 - 50 ft. candles (540 lux) in Kitchen, Offices and Washrooms.
 - minimize the number of fixture types and lamp types. [No MR 16 lamp type fixtures].
- Controls
 - LED lighting is preferred.
- Access
 - review which type of entry security system is appropriate for the development. [e.g. Bell, buzzer, intercom, video telephone, etc.]



Affordable Housing Technical Specifications

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- it is recommended that a security consultant be engaged to assist with the appropriate security solution.
- consider the installation of card readers with pass cards or fobs for controlled access, including elevators
- After-Hours Security
- provide an intruder alarm system

5.3.15. Additional Interior Design Considerations

- Window Blinds
 - to be commercial grade, chain operated roller style preferred.
 - to be installed on all exterior windows, and at interior doors in meeting room and support staff areas.
 - all cords or chains to terminate 5 feet above the floor, or have a hook tie-off at that height.
- Mailbox
 - typically, one large mailbox accessible from the interior to be installed at the main entrance. All accessible elements to be no more than 4 feet above finished floor. Consult with Canada Post.
- Notice Boards and Tackboards
 - provide corkboard with trim tackboards and white boards
 - typical locations include the Meeting Rooms and support staff areas.
- Signage
 - conform with City of Richmond Sign Bylaw for exterior signs.
 - 50% or more of the content on a sign is encouraged to be in the English language.
 - provide wayfinding signage as required
 - provide all signage required for Fire and Life Safety.
 - provide signage in parking areas.
 - provide all required accessibility signage and room identification signage.
- Elevator Design Considerations
 - if the affordable housing is located in a mixed-income building, and has its own dedicated elevator, ensure that the elevator controllers are non-proprietary.
 - the cab size of the elevator must be able to accommodate sufficient person capacity and emergency stretcher size requirements.
 - elevators serving Affordable Housing projects with usable roof-top areas must be able to accommodate freight for the purposes of maintaining the rooftop areas. [Minimum capacity of 4000 pounds is recommended].
- Seismic Bracing
 - all furnishings greater than 4 feet high shall be secured to prevent tipping.

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6 Checklists

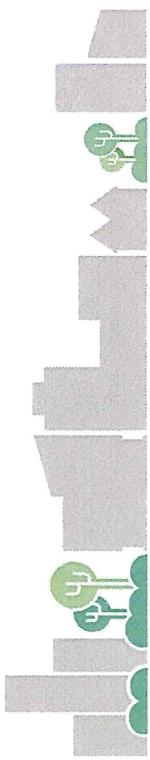
| Building Components | Implementation Details | Applicant Response to Implementation Details | Staff Notes |
|--|--|--|-------------|
| 1. Building Construction Assemblies | A qualified consultant will confirm all building envelope elements and assemblies in the project. | | |
| 1.a. Building Envelope | | | |
| 1.b. Exterior Finishes | Exterior finish materials are quality and durable products <ul style="list-style-type: none">- masonry, stucco or siding- fascias and trims- exposed structure- wall systems- painting (conforms to latest edition of MPI Manual) | | |
| 1.c. Windows and Doors | Meet CAN / CSA – A440 Standards with these minimum ratings: <ul style="list-style-type: none">- Air Tightness A-3- Water Tightness B-3- Wind Load Resistance C-3 as required by the Building Envelope Consultant, pre-installation lab testing and during construction field testing are specified. | | |
| 1.d. Roofing | Conforms to the standards set out in the RCABC [Roofing Contractors Association of BC], latest edition and updates, and provides a minimum 5 year RCABC Roofing Warranty <ul style="list-style-type: none">- low slope membrane roofing- asphalt shingles- roof hatch (with ladder)- rooftop equipment- service penetrations- venting- fall arrest equipment | | |
| 1.e. Interior Items and Finishes | | | |
| .1 Floors | Resilient flooring recommended <ul style="list-style-type: none">- non-slip vinyl in wet areas, with flash coving and cap stick- high durability in building entries and high traffic areas- walk-off mats at entries- vinyl or rubber tread systems at stairs | | |



6

Checklists

| Building Components | Implementation Details | Applicant Response to Implementation Details | Staff Notes |
|--|---|--|-------------|
| .2 Walls | <ul style="list-style-type: none"> Painted drywall is the typical finish. (Consider higher acoustic ratings) <ul style="list-style-type: none"> Use low VOC paints and sealants impact-resistant drywall in activity and high traffic areas. provide all backing in walls for all accessibility items and items to be installed in the future Ceramic tile recommended in washrooms and for kitchen splashes. | | |
| .3 Ceilings | <ul style="list-style-type: none"> Painted drywall is the typical finish (Consider higher acoustic ratings) Use low VOC paints Kitchen and bathroom ceilings must be washable Install commercial quality acoustic T-Bar ceilings with 70 NRC minimum. | | |
| .4 Doors and Hardware | <ul style="list-style-type: none"> Doors to be solid core, except for bifold and sliding bypass doors. <ul style="list-style-type: none"> doors in public areas to have glazing. Hardware to be commercial grade meet accessibility and universal design requirements. <ul style="list-style-type: none"> all doors to have a "classroom" function, except Storage or Laundry (can have "storeroom" function). Service and janitor rooms to have "storeroom" function. Surveillance and Security <ul style="list-style-type: none"> access control at entries, exits, and from parking areas. restrict access to certain floors in elevators. alarm exterior doors and key interior doors to prevent unsupervised holding open. | | |
| .5 Housing Unit Bathrooms and Common Use Washrooms | <ul style="list-style-type: none"> Plumbing Fixtures <ul style="list-style-type: none"> accessible height WC's with bolt-down lids. accessible plumbing brass. wheel-in showers not bathtubs grab-bars or future adaptability for same (backing in walls) Common Use Washrooms <ul style="list-style-type: none"> stainless steel towel and waste fold-down diaper change table low-flush WC's and aerators on faucets to reduce water consumption | | |

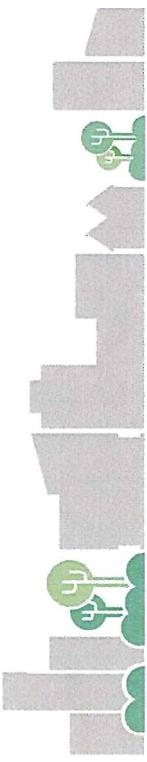


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Checklists

| Building Components | Implementation Details | Applicant Response to Implementation Details | Staff Notes |
|--|---|--|-------------|
| .6 Housing Unit Kitchens and Common Use Kitchens | <p>Appliances ("Energy Star" rated) and Fixtures</p> <ul style="list-style-type: none"> • Dishwasher <ul style="list-style-type: none"> - typically not supplied in Units - in Common Use Kitchens provide a "sani-cycle" appliance. • Refrigerators - 21.5 cu.ft. • Oven Range <ul style="list-style-type: none"> - 30 inches wide with 4 burners - 30 inches wide with 4 burners • Range Hood 2 speed, 180 cfm • Microwave <ul style="list-style-type: none"> - typically not supplied in Units - in Common Use Kitchens provide minimum 2.0 cu.ft. 1100 watt item • Kitchen improvements to aid accessibility <ul style="list-style-type: none"> - pull-out shelves under wall ovens - open shelving rather than cupboards with doors - install plumbing to allow knee space under sinks - cooktop with knee space under - lower counter area with knee space under for food prep and socializing in the Kitchen • Stainless steel double bowl sinks | | |
| .7 Millwork | <ul style="list-style-type: none"> • For Housing Units <ul style="list-style-type: none"> - residential casework standards • For Common Use Areas <ul style="list-style-type: none"> - plywood carcass construction - AWMAC standards | | |
| .8 Laundry Room | <p>Millwork as for Common Use Areas</p> <ul style="list-style-type: none"> • Laundry appliances <ul style="list-style-type: none"> - electrical and mechanical requirements for specific appliances - vent to exterior avoids outdoor common use areas | | |
| .9 Storage Areas | <p>Housing Units</p> <ul style="list-style-type: none"> - 200 cu.ft. storage lockers as well as in-suites storage. | | |
| .10 Mailbox | <p>One large mailbox at the Front Entry</p> <ul style="list-style-type: none"> - ensure all elements are accessible. | | |

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|--------------------------------|---|--|-------------|
| .11 Signage | Provide all required wayfinding, fire and life safety and accessibility-related signage. | | |
| .12 Elevator | Confirm elevator controllers are non-proprietary. | | |
| 2. Building Mechanical Systems | | | |
| 2.a Plumbing | <ul style="list-style-type: none"> • Confirm low water consumption fixtures are specified. • All faucets shall be accessible type. | | |
| .1 Potable Water System | <ul style="list-style-type: none"> • Confirm no water supply piping is in the outside walls, unless completely inside the exterior wall. • Confirm shut-offs for piping risers and valves are easily accessible. • Provide frost free hose bibs c/w automatic draining vacuum breakers / backflow preventer at: <ul style="list-style-type: none"> - garbage enclosure - main entry - landscaped areas | | |
| .2 Domestic Hot Water System | <ul style="list-style-type: none"> • Hot water temperature not to exceed 43 C (110 F) at tenants' faucets. • Hot water storage and distribution to Laundry systems shall not be below 60 C (140 F). | | |
| .3 Drainage Systems | <ul style="list-style-type: none"> • Minimize the number of stacks from roof to storm sewer, while requirements for 2-way drainage to flat roof drains. • Provide floor drains in housing unit Bathrooms, and in Laundry rooms and Common Use Kitchens. | | |
| 2.b Heating and Cooling | | | |
| .1 Corridors | Provide for positive pressurization in all common corridors. | | |
| .2 Suite Ventilation | <ul style="list-style-type: none"> • Supply air will be ducted directly to each suite. • Suite ventilation systems shall have heat recovery. • Exhaust fans to be ultra-quiet rated. | | |
| .3 Laundry Rooms | <ul style="list-style-type: none"> • Make-up air to be adequate volume and pre-heated to room temperature. • Dryer exhaust to be direct to outdoors. • Provide adequate space to service commercial equipment. | | |

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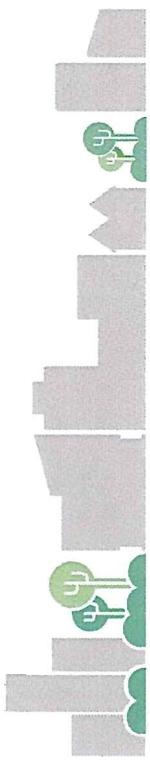
| Building Components | Implementation Details | Applicant Response to Implementation Details | Staff Notes |
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| .4 Parking Exhaust | <ul style="list-style-type: none"> Mechanical exhaust for common enclosed parking areas to have CO or combustible gas sensors. Exhaust louvers to be located away from building windows or entrances, fresh air intakes or outdoor activity areas. | | |
| 2.c Fire Protection | <ul style="list-style-type: none"> Provide a complete sprinkler system in accordance with the requirements of the BC Building Code and the Authority Having Jurisdiction. Provide sprinkler system zoning in accordance with NFPA 13 and the Authority Having Jurisdiction. Sprinkler system installation: <ul style="list-style-type: none"> avoid installing wet sprinkler system in cold attics and exterior walls. Provide furred out drops and wall-mounted heads in top floor units. Fire Extinguisher Cabinets <ul style="list-style-type: none"> recessed installations in corridor walls preferred. (Do not compromise fire separations or wall ratings) mount cabinet top 4'0" above finish floor. | | |
| 2.d Metering | <ul style="list-style-type: none"> Gas and Water <ul style="list-style-type: none"> independent /separate meters for residential, common areas and each separate lease space. Revenue metering for local utilities <ul style="list-style-type: none"> provide for a single utility meter on the entire service with the ability to change to individual suite utility metering. | | |
| 3. Building Electrical Systems | | | |
| 3.a Electrical | <ul style="list-style-type: none"> Project design shall incorporate best practices to reduce energy consumption, and incorporate sustainable technologies typical for LEED Gold buildings (although Certification for LEED is not a requirement). | | |
| .1 Utilities | Must be underground. | | |
| .2 Service Voltage | Not to exceed 250, to limit maintenance costs associated with higher voltage services. | | |



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|---------------------------|---|--|-------------|
| .3 Wiring Devices | Universal Design features: <ul style="list-style-type: none">- switches to be 42" above finish floor [AFF] to the centre of the box.- receptacles to be 20" AFF to the centre of the box. | | |
| .4 Lighting | <ul style="list-style-type: none">• Select luminaries to limit the number of different lamp types.• Provide a ceiling-mounted luminaire in suite bedrooms with a three-way switch, one at the door and one at bedside. | | |
| .5 Emergency Lighting | <ul style="list-style-type: none">• Where provided, an emergency generator must be utilized for supply of power to emergency lighting.• Otherwise, utilize emergency battery Packs with remote heads; units to have 5 year warranty. | | |
| .6 Fire Alarm | <ul style="list-style-type: none">• Provide a complete fire alarm system, integrated with the building's sprinkler system as required.• Provide smoke alarms in all suites, with a silence switch integral with the device. | | |
| .7 Auto Door Openers | <ul style="list-style-type: none">• Install these at entry and lobby doors, and at key interior doors, to allow free access for persons in wheelchairs.• Rough-in for future auto door openers at suites, to allow for "aging-in-place". | | |
| .8 Telecommunications | Provide a complete telecommunications cable plant to support telephone and personal call, TV and internet, and entryphone connections to suites. | | |
| .9 Security | Provide access control, intrusion detection and video surveillance. | | |
| 3.b Metering | Provide revenue metering to local utility standards, with provisions for separate metering of each residential suite, and of the "house" or common area. | | |
| 4. Building Service Rooms | | | |
| 4.a Size | Confirm size of rooms are adequate for proposed building systems. | | |

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|--------------------------------------|--|--|-------------|
| 4.b Location | <ul style="list-style-type: none"> Confirm rooms are located as close as possible to service entry points. Confirm the location of the rooms allow for efficient distribution, including space for servicing. | | |
| 5. Fire Safety Plan | <ul style="list-style-type: none"> Confirm a qualified consultant is engaged to produce this Plan. Confirm with the Fire Department whether a secure location in the proposed building lobby is required to locate the Plan. | | |
| 6. Sustainability | <ul style="list-style-type: none"> Provide an analysis to show compliance with City objectives for High Performance Buildings for Affordable Housing Development. <ul style="list-style-type: none"> - sets out LEED Gold focus areas, but meeting a LEED Silver points level for these is the requirement. | | |
| 7. Acoustic Design | Floor and Wall details are provided with STC required ratings, and notes that minimize flanking noise transmission | | |
| 8. Structural Differential Shrinkage | Minimize differential shrinkage that could result from the use of steel, concrete or engineered wood in conjunction with sawn lumber. | | |

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