



BC HOUSING

Commercial Retail Unit Design Guidelines

JUNE 2020



BRITISH
COLUMBIA



BC HOUSING

ACKNOWLEDGMENTS and CONTENTS

BC Housing would like to express gratitude towards the City of Vancouver, Community Impact Real Estate, and Hessey Consulting + Architecture for their co-operation, consultation, and involvement creating this design guidelines, sharing their experience and expertise relating to market and social enterprise commercial retail units.

- Overview** _____ **3**
- Current and Future Needs** _____ **5**
 - Needs Analysis _____ 5
 - Consultation with Stakeholders _____ 6
 - Conversion, Renovation or New Construction _____ 7
- Design Principles and Objectives** _____ **8**
 - Building Form _____ 8
 - Universal Design and Accessibility _____ 8
 - Flexibility in Design _____ 8
 - Energy Performance & Sustainability Requirements _____ 9
 - Durability & Operating Costs _____ 9
 - Safety & Security _____ 9
- Design Requirements** _____ **10**
 - Space Configuration _____ 10
 - Width and Depth _____ 10
 - Clear Height _____ 10
 - Storefronts _____ 10
 - Interior Finishes _____ 11
 - Mailbox _____ 11
 - Wall Finishes _____ 11
 - Ceiling Finishes _____ 12
 - Floor Finishes _____ 12
 - Exterior Finishes _____ 12
 - Signage and CRU Address _____ 12
 - Tenant Signage _____ 12
 - Parking _____ 13
 - Loading / Garbage _____ 13
 - Building Systems _____ 13
 - Electrical Systems _____ 13
 - Mechanical Systems _____ 14
 - Fire Protection _____ 14
 - Plumbing _____ 15
 - Gas Service _____ 15
 - HVAC _____ 16
 - Elevator _____ 16
 - Design of Water Ingress Prevention _____ 16
 - Additional Design Considerations _____ 17

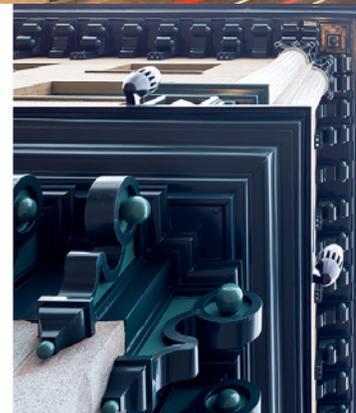
OVERVIEW

While BC Housing's mandate is to provide housing opportunities to British Columbians, the corporation has accumulated a portfolio of commercial spaces due to local government legislation for retail contiguity, partner agencies co-locating in housing projects and acquisition of re-development sites that come with existing commercial tenancies. The intention of this document is to focus on new project development that requires a commercial component and for renovation of existing stock that includes a ground floor retail component. The guidelines are to assist in promoting the creation of marketable, functional and adaptable commercial retail units (CRU) within BC Housing developments to minimize expensive refits in the future and provide quality space to BC Housing partners, retail tenants and non-profit users of these spaces.

It is BC Housing policy to consider the needs of the population in its building and the surrounding neighbourhood in determining tenant mix. Accordingly, non-profit tenants who provide local community initiatives are present in many BC Housing buildings as well as full market tenancies. In many cases, retail contiguity may prevent society office uses on ground floors in favour of pure retail activity providing opportunities for social enterprise as well as market tenants.

While the market-based businesses create jobs and generate positive economic impacts locally, the non-market uses generate a variety of impacts depending on the use, which may include accessible health-related services, affordable goods and targeted employment for those facing barriers to employment.

Tamura House has been fully restored and rehabilitated to provide 109 residential suites and a number of CRU spaces at the ground level for future retail opportunities.



BC Housing development projects vary significantly by size, building form, layout, and types of spaces created, some of which are included to fit with the target client residents. Many CRUs are created through the conversion of existing buildings. The viability including suitability from a commercial business perspective of the CRUs in a mixed-use project may depend on several factors, including: building location, configuration, residents in the building, public eye, importance of the street features such as sidewalks and parking, etc. In addition, estimates for the fit-out costs of CRUs will need to be considered as a project progresses in order to take into account the various related base building designs for the works. For these reasons, early and ongoing consultations are critical in the design stage. Parties to be consulted may include local government, Owner(s) and stakeholders. Consultation may need to cover topics including, but not limited to, ensuring the design meets lease requirements, operational needs, overall project budgets, etc; and to confirm the finished CRU's will suit the needs of potential actual and future commercial retail tenants' uses over the life of the building.

Consult with BC Housing Development and Real Estate Services team, and Owner at early design stage when CRU is to be designed to suit a food primary occupancy for now or if any potential of future depending on CRU location, and need in the community. When there are multiple CRUs in one development project, the design team shall consider which spaces are designated as food primary occupancy.

The purpose of these Guidelines is to ensure that the design of CRUs, whether for new build developments or for renovations, will incorporate these requirements beginning in the initial concept stage and carefully monitor and refine through ongoing design reviews. The project development team shall use BC Housing's most current version of [Design Guidelines & Construction Standards](#), which provides more detailed building specifications, requirements for interior and exterior materials and finishes, performance guidelines for building systems, energy and sustainable goals, Crime Prevention Through Environmental Design (CPTED) and drawings and document submittal required at each design stage.



The Rice Block has been fully restored and rehabilitated to provide 38 residential suites on the upper floor levels and 2 CRU spaces at the ground level for retail opportunities.

Current and Future Needs

NEEDS ANALYSIS

In general terms, local Official Community Plan provides guidance and direction for potential commercial uses for an evolving retail needs and types that should match the interests of the proposed development and commercial retail services in a community. The Plan also provides for a multitude of locations and opportunities for retail commercial activities in the City. Despite that it is important to understand that these needs and services are always changing. The project also could be in partnership with First Nations, Indigenous leaders, and Indigenous housing providers who owns the land and will operate the properties that are on/off reserve. The requirements could be diverse. To support the proposition of a new or renovated retail space within a mixed-use development, an analysis should be undertaken to determine the feasibility, changing needs, retail tenant group(s) to be served, required scale of the space, and suitability of the location to provide these services. The development team shall also check if the zoning may permit the proposed commercial use and occupancy type. When CRUs in a mixed-use development are proposed, the following considerations shall be used to align these occupancies with community needs and aspirations:

- a)** matching the appropriate CRU type to the characteristics of the community;
- b)** opportunities to provide affordable goods, services or supports that responds to the needs of residents of the local neighbourhood, and particularly for social housing residents in the building;
- c)** employment opportunities for local residents;
- d)** desirability of retaining options for walking and other alternatives such as parking;
- e)** role of the CRU being considered for development as a community meeting place and focal point for the local neighbourhood;
- f)** keeping the CRU flexible and adaptable as market conditions change;
- g)** opportunity of zoning to permit ground floor space having flexibility to occupy at different times by either residential or retail commercial uses, if necessary;
- f)** analyzing whether rezoning would be a community benefit or working within existing zoning bylaws which may be more attractive to budget and schedule to enable mixed-use development in appropriate locations;
- g)** ensuring CRUs are configured in such a manner to maximize prominence and serviceability, including accessibility and appeal to the general public.
- h)** municipal policies around retail contiguity and street animation may also determine use or limits to use of CRU spaces.

There are unique needs and resources within each community, and differences in types of CRU to match the interests. An understanding of surrounding community is required to ensure the successful occupancy and tenure of each propose commercial unit.

CONSULTATION WITH STAKEHOLDERS

The lease documents, which the City, BC Housing or non-profit society will use in making offers to commercial retail tenants and for entering into leases, often make commitments to certain levels of finishes and provisions of services that should be incorporated into the spaces which tenants will take possession of. This is important that this lease document should be reviewed, and consultation should take place in advance with the municipality, BC Housing Real Estate Services group, non-profit society, authority having jurisdiction and other stakeholders.

Often the municipalities pay a prepaid rent for the subleased CRU space equivalent to the construction costs of the CRU in social housing developments. Thus, an input from the municipality's Real Estate Services staff on a project by project basis, is critical to providing the necessary framework to allow for the design and specification requirements for each CRU space. In the instance of substantive discussions between the development team and municipality, the development consultant/architect involved in the project is to provide a comprehensive record in the form of a separate report that to be included with close-out documentation at building occupancy. The report shall include but not limited to relevant stakeholders, reference of design guidelines used, requirements of the jurisdiction having authority, information relevant to leasing, design, construction, fixturing and operation of the proposed CRU including the intended zoning use, and occupancy type, final as-built architectural floorplans, exterior provisions including glazing treatments, glazing films or other means of obscuring windows, security measures, operable weather protection, signage specifications, accessibility measures, patios and other seasonal or temporary exterior occupancies, required building services, mechanical and electrical drawings, required mechanical or electrical equipment such as interceptors, HRV, heat pump, etc. , allotment of loading, vehicle and bicycle parking, allotment of end-of-trip facilities, special permit requirements, municipal rights-of-way, and any site-specific covenants (if any).

The viability of the CRU space in the ground floor of mixed-use projects depends on several design factors; and success in the initial leasing as well as the continuing operations by the CRU tenants will be directly related to the degree to which these requirements are met. Retail space is also sensitive to:

- Overall building configuration
- Exposure to pedestrian and vehicular traffic
- Opportunities for signage
- Ease of fixturing and merchandising
- Availability of parking
- Appropriate mechanical, electrical and communications services to support their functions
- Structural capacity and serviceability of unit such as:
 - Loading
 - Garbage, Recycling & Compost
 - Access to Storage
- Ability to adapt easily to change in tenant and use



1st and Clark new development with 97 units affordable rental housing, 51 inpatient withdrawal management beds and 20 short-term transitional beds, and a social enterprise program space focusing on Indigenous healing and wellness.

The social enterprise space uses for healing and wellness and facilitating training and skills development in a workshop setting so this space is to be designed with flexibility for different functions occurring at the same time. Engagement of the social enterprise tenant often happens early at design stage to seek out opportunities for assisting with decision making around programming, and design.

The design team (Project architects, and consultants) will prepare the plans, floor layouts and specifications in accordance with these Guidelines, current version of [BC Housing Design Guidelines and Construction Standards](#) and any project specific requirements requested to the satisfaction of municipality or other authority having jurisdiction, BC Housing, non-profit society or any other funding partner, as necessary.

CONVERSION, RENOVATION OR NEW CONSTRUCTION

New construction versus renovation of an existing facility for different CRU use(s) or conversion of a space within an existing building suitable to the scale of need, that is appropriately located, and that will secure community and municipal support for rezoning and other approvals, is often a major challenge. Evaluation of these options (either new construction, renovation or conversion) shall be considered before proposing the CRU space in new development or renovation housing projects. Considerations that will affect the options could be; condition of the existing building, historic feature that could add to a point of attraction, flexibility, available space and finally the capital cost. Depending on the extent of the building rehabilitation, heritage and seismic considerations should be reviewed early on with the development team and authority having jurisdiction as both these elements may impact the future CRU footprint. Consideration should also be given to the existing tenants in the building that could provide community with significant social and economic value.

Design Principles and Objectives

The design principles are fundamental considerations to guide decision making for CRU space design. While considering the following principles, the design team shall keep in mind BC Housing's design goals such as safety and security, cost efficiency, sustainable design and construction practices, durability and long-term operational efficiency.

BUILDING FORM

Building form should recognize site patterns and help define entries to interior courtyards, building entrances, public spaces and enhance the pedestrian scale. Buildings can utilize elements such as massing, materials, windows, canopies or simply different colour schemes to ensure commercial spaces are identifiable and visually distinct from residential spaces of a mixed-use.

UNIVERSAL DESIGN AND ACCESSIBILITY

Commercial retail units should be planned, designed and built to be accessible for all people regardless of their age, size, ability or disability. Reasonable accommodation shall be made on sloped sites for at grade access without internal slab elevation changes. If a stair and/or ramp are provided, it must be easily usable by people with reduced mobility and impaired vision. Accessibility shall be accommodated in accordance with all applicable Building Codes and [BC Housing Design Guidelines and Construction Standards](#).

FLEXIBILITY IN DESIGN

Where possible, the CRU space should be designed with flexibility to meet needs of changing tenant groups for this use. A new build will give greater flexibility in creating the preferred layout than an existing building. Designs shall take into consideration location and style of door, to allow for flexibility to easily modify the door to a window system if two CRU spaces are combined into single unit. Both new and renovated CRU spaces within the City of Vancouver's DEOD (Downtown East-side Oppenheimer District) should be attentive to municipal zoning restrictions and the business continuity corridor. Consultation with the city authority and design team is recommended. Appropriate mechanical, electrical and telecommunication systems that allow flexibility for the CRU tenant to incorporate additional services of their own to support their functions, is also critical. Utility metering for each unit shall be kept separate.



The Anjok - 298 East Hastings, Vancouver - multiple small CRUs where there is a good possibility of combination by a single tenant

ENERGY PERFORMANCE & SUSTAINABILITY REQUIREMENTS

All buildings must meet [BC Housing's current Design Guidelines & Construction Standards](#) and minimum Energy Step Code Targets for new BC Housing projects as per Section 2, Energy and Environmental Design section. The building form and thermal performance of building elements (including architectural, structural, envelope and mechanical elements) should be carefully considered, optimizing the passive strategies in design. Recommended passive strategies are described in Section 2 of the Design Guidelines & Construction Standards. The CRU as part of the whole buildings must meet BC Housing's current sustainability requirements.

The targets should be verified through mandatory building and energy modelling, as per the Provincial Energy Step Code. All buildings need to be tested to determine Envelope Air Leakage Rates, as airtightness of the building envelope is critical to its performance.

Energy assessment (energy audit) shall be performed for all renovation and conversion projects including CRU spaces by minimum ASHRAE level 2 assessment or equivalent for appropriate project scope. Consult with BC Energy Management team for this requirement.

Follow BC Housing requirements on incentive and rebate documentation and construction waste management tracking. Select low emitting materials and products for interior paints, coatings, adhesives, sealants, flooring, composite wood, ceilings, walls and thermal acoustic insulation. More information is found in Section 4 of the [BC Housing Design Guidelines & Construction Standards](#).

DURABILITY & OPERATING COSTS

Operational costs for this space are impacted by the durability of materials used in the building's construction, ease of maintenance, as well as the various fixtures, and fittings. Design decisions should consider cost-effective building operations. Material choices shall follow Section 4 of the BC Housing Design Guidelines & Construction Standards.

SAFETY & SECURITY

Safety is important for all building users. The space should be designed with safety as the primary goal. Site planning and building design should consider Crime Prevention Through Environmental Design (CPTED) strategies, e.g. territoriality, natural surveillance activity support, and access control, as well as other recognized CPTED principles as outlined in Section 3 of the [BC Housing Design Guidelines & Construction Standards](#) for the entire building.

Exterior Lighting and landscape design are an integral part thereby encouraging safe access to these areas. Pedestrian areas need to be well-marked and well-lit with the source light being shielded to reduce glare, or light spillage off site or beyond parking lots and street. Storefront glazing and door hardware need special consideration in urban areas.

Design Requirements

This section considers specific design requirements, systems and materials for this space. Material selection and finishes should reflect CRU tenant type, durability, ease of maintenance, and local availability. Material choices reduce the opportunity for vandalism or abuse. The development team shall take into consideration these and additional project requirements as specified by the authority having jurisdiction, project Owner, and BC Housing Real Estate Services team.

Projects in City of Vancouver with CRUs, must follow City's "*Design Guidelines - Retail Elements Non-Market Housing Projects*" document that will be provided upon request by City of Vancouver's Real Estate team at concept stage.

Follow these design requirements and [BC Housing Design Guidelines and Construction Standards](#), Section 4 for detailed requirements of interior and exterior system, finishes and material to create project drawings and specifications.

1. SPACE CONFIGURATION

1. Width and Depth

- a. CRU spaces need to be capable of demising into spaces ranging from 50m² - 300m² (538ft² - 3,230ft²).
- b. The dimension of width and depth shall be reasonably proportionate for merchandising and accommodating most tenants' fixturing plans.
- c. Larger stores may require loading, garbage, parking ramps, etc. that have to be accommodated. Consult with BC Housing and Owner.

2. Clear Height

- a. Clear ceiling heights (floor to approximate location of suspended ceiling grid) will need to be 3.5m (11.5ft) minimum for the smaller range of stores and 4m (13ft) for the larger stores. This is the minimum clear ceiling height.
- b. There should be a floor to floor structural minimum of 4.5m(14.7ft) to allow for adequate accommodation of mechanical ducting, sprinkler and plumbing piping, electrical conduits and light fixture clearances.

2. STOREFRONTS

1. Storefront fenestration patterns should have generous amounts of clear glass and be designed to incorporate street visibility, whereas possible, thereby helping to provide "community eyes" and make these spaces more comfortable and safer.
2. The selection of fenestration shall provide effective security measure to prevent storefront damage and loss. Designing storefront with the installation of them in mind would be helpful.

3. The performance of the storefront fenestration shall meet BC Housing requirements under Section 4, Division 08 41 00 - Aluminum Entrances and Storefronts.
4. Storefront framing and glazing should be a minimum height of 2.7m (8.9ft) from finished floor.
5. Clear width for single door shall be 900mm (3ft) doors at a minimum and a sidelite can be accommodated. Where possible, double doors should be provided to accommodate moving equipment in/out of the space.
6. The storefront design should include the provision of the louvre systems described in the mechanical section of the guidelines.
7. Glazing on storefront and doors to be covered in 7 mil thickness anti-scratch, anti-graffiti protective film. The storefront glass is recommended laminated or tempered glass with shatter resistant film on the inside.
8. Consideration shall be provided to recess slab 1-2 inches as appropriate inside each CRU doorway for future "pedestrian mats" which if provided must be flush with finished floor. For safety, it can be temporarily in-filled with plywood, in the interim to prevent trip hazards until use, or permanently in-filled if the tenant foregoes use of "pedestrian mats" in their tenant fit out.

3. INTERIOR FINISHES

1. Mailbox

- a. Individual mail slots for each tenant are to be provided as part of base building. Generally, the mailbox is located in a secure common area of the building which is protected from the weather. Access will require.
- b. A metal mail collection container (anodized aluminium finish) can also be an option. If provided, this should be vandal resistant.
- c. Confirm mail requirements with Canada Post, and BC Housing Real Estate Services team for acceptance of design.

2. Wall Finishes

- a. Wall finishes shall be gypsum wallboard (GWB). GWB will be to the underside of the 2nd floor soffit, using a deflection channel detail, taped, sanded and primed. Include security mesh one side, if needed. When applied, security mesh is to be flattened expanded metal mesh 1/4 inch No. 20 standard plain steel. Firestopping of all joints and penetrations per BCBC, BC Housing Design Guidelines and Construction Standards and the authority having jurisdiction.
- b. Wall, floor and ceiling assemblies shall be with a minimum effective rating of STC 50 or higher.
- c. Considerations for high abuse GWB at the first 122cm (4ft) from the finished floor should be reviewed depending on the future intended use of the CRU space.
- d. Level 4 drywall finish, primed and ready to receive tenant finishes.

3. Ceiling Finishes

- a. Underside of slab (“USS”) above the CRUs is effectively the first CRU “ceiling” and in some cases depending on use, may also be the “finished ceiling” if an exposed finish. Regardless of the finish ceiling type, the USS above the CRU is to be primed and ready to receive tenant finishes.

4. Floor Finishes

Concrete topping to comply with BC Housing Design Guidelines and Construction Standards for levelness, flatness ratio, curing and tolerances; ready to receive tenant’s finishes c/w sealer.



The Hazelwood, 342 East Hastings, Vancouver – recessed 1-2 inches inside CRU doorway for future “Pedestrian mats”

4. EXTERIOR FINISHES

1. Signage and CRU Address

- a. Signage in the mixed-use building should be done to clearly relay information and should be appropriate scale to the building.
- b. Retail units address and unit number (if multiple CRUs) and wayfinding signage should be located properly.
- c. The address and unit numbers are to be determined in consultation with the authority having jurisdiction prior to building permit issuance.

2. Tenant Signage

- a. CRU tenant should provide an easy to read signage for their space that is compatible in scale and proportion with building design and other signs.
- b. The building design should incorporate an area approx. 1.2m (4'0") in height above the storefront to accommodate tenant signage independent of any allowance for a canopy/ weather protection.
- c. Sign criteria should be prepared for each project specifying the raceway(s) and mounting details proposed to attach signage to the building, along with the maximum and minimum

heights for letters as required by the municipality or minimum letter size should be 100 mm (4"). The raceway proposed to attach the signs to the building. Provide a 70% contrasting colour background. Position signs to avoid shadow areas and glare. All signage to conform to authority having jurisdiction's sign by-law.

- d. Provide a conduit with pull string for sign power to each sign and for each CRU bay location. Consider additional conduit with pull string, to accommodate data cable to CRU signs. The conduit shall be terminated in a junction box affixed to the soffit of the slab above the interior of the unit and connected to a weatherproof junction box at the exterior of the envelope in an inconspicuous manner in the signage area. Refer to Electrical Systems below for more information.
- e. Where awnings or canopies are provided, material selection shall be considered such that it is resistant to vandalism and designed in a manner for ease of maintenance and cleaning.

3. Parking

- a. Consideration shall be given for CRU parking spaces depending on size, use, configuration, future tenants, geographical location, or other peculiarities such as access from a lane or alternate street. Retail parking spaces, if provided at the overall building parking structure should be located so as to be the first spaces visible in the parking area and should be capable of being reached directly by tenants without needing to enter residential service areas or exiting the building.
- b. Where there is little or no need for parking for the housing component, consideration should be given to the commercial component to operate or share the parking area.

4. Loading / Garbage

- a. The garbage requirements for retail tenants will need to accommodate at least three containers, allowing for regular 'bagged' garbage, recycling of cardboard and paper and composting.
- b. Access to loading areas by tenants should be direct and where possible not requiring ramps.
- c. Wherever possible, loading and garbage areas will be separate for residential and commercial areas, and there will be no exiting or access to one component from another.

5. BUILDING SYSTEMS

1. Electrical Systems

Base building electrical requirements for a typical CRU space shall include the following:

- a. Provide separate sub-metering for each CRU;
- b. minimum 200-amp, 42 circuit panel complete with main breaker fed from base building electrical distribution; to be located preferably not on an exterior wall. CRU's HVAC equipment should be considered as additional to this 200-amp minimum;
- c. power to be provided as 120/208V 3 phase 4 wire to CRU. When CRU use is for food primary occupancy, additional electrical services shall be provided with base building;
- d. exit signage at the exits and preliminary emergency lighting. Final exit signage and emergency lighting to be completed by tenant to suit final layout;

- e. preliminary fire alarm devices as required by applicable codes and by-laws. Additional devices and system verification shall be by tenant to suit final layout;
- f. two 25mm (1") telephone/data conduits with pull strings from tenant space to main terminal board. Cabling will be by tenant to suite tenant communication requirements. CRU will choose their own service provider when occupied;
- g. any electrical connections for base building needed for HVAC equipment;
- h. a conduit with pull string, shall be provided from a junction box mounted on the underside of CRU ceiling slab, through to an exterior-grade junction box for each CRU sign location on the façade to provide for exterior signage power. Consideration shall be provided for the size of individual letter signs or box signs while designing the conduit. The tenant is responsible for providing power requirements and power cabling to tenant signage. Control for tenant signage and exterior lighting shall be in compliance with authority having jurisdiction requirements;
- i. rough-in for automatic door opener power and controls at the commercial entry doors and door leading to the service corridors shall be provided. Conduits system and rough-in should be concealed within storefront framing;
- j. depending on CRU use, security intercom system may need to be installed at entry and/ or between each CRU and the exterior loading access door. A door opening switch for the exterior loading door to be located within the loading bay area for convenience;
- k. temporary lighting fixtures to be installed to illuminate the vacant retail space prior to installation of tenant improvements;
- l. two outdoor exterior grade duplex GFCI receptacles c/w heavy duty locking covers to be provided. Locate proximal to hose bibs. To facilitate power washing of sidewalks, canopies, and outside maintenance;
- m. tenant exterior and interior lighting fit-out shall consider LED type for energy efficient and low maintenance;
- n. access control for the tenant space, elevator and parking, as needed and convenient access to garbage and recycling area; not elsewhere in the building;
- o. audio/visual devices to be decided in subsequent tenant improvements.

2. Mechanical Systems

Base building mechanical requirements for a typical CRU space shall include the following:

a. Fire Protection

1. Each CRU spaces shall be fully sprinklered. The sprinkler system shall be designed to conform to BC Building Code and the local by-law.
2. Base building sprinkler systems shall include flow and tamper devices, fire alarm system disconnects and back flow prevention as required. System must be pressure tested, fully operational, inspected and approved by local authorities.
3. The base building will incorporate the design, supply and installation of the approved fire sprinkler system c/w piping mains and branch lines to CRU space(s). Sprinkler upgrade to suit tenant layout and ceiling plan will be at the cost of tenant.

4. Wherever possible, CRU will be provided with individual fire zone.

b. Plumbing

1. Provide separate water metering for each CRU for their use and billing.
2. The base building service will comprise a minimum 25 mm (1") domestic cold-water supply line complete with water meter, remote water meter readout, if requested by Owner and shut off valve within each CRU. When food as primary occupancy is considered, provide a minimum 50 mm (2") domestic cold-water supply line or larger to suit for the use. Domestic water lines shall be capped for future fit-out.
3. A 75mm (3") diameter plumbing vent will be provided in the base building from the roof through flashing to a location above the proposed tenant ceiling in the Premises. Locate appropriately and avoid inappropriate locations for tenant use, i.e. to match the architectural floor layout described in the next paragraph.
4. A minimum 100mm (4") diameter sanitary drain line will be provided below grade roughed-in or a section with open concrete core in a slab on grade foundation for future washroom in each designated CRU. Project architectural floor layout should locate the future washroom. Consult with stakeholders if the sanitary should be sized to accommodate for additional washrooms. Provide plumbing rough-in for future washroom. CRU washroom fit-out will be at the expense of tenant.
5. Provide floor drain(s) when CRU is considering food primary occupancy for kitchen. It may be hard to provide the locations of floor drain(s) without the kitchen layout when the CRU space is intended for restaurant use. Consult with Owner.
6. Provision for grease interceptor recess to be provided and located in the parkade, ready for installation of grease trap as part of future tenant improvements for CRU with food primary use. Grease trap location shall be accessible and provide for practical ease of maintenance.
7. Tenant plumbing fixtures shall be under tenant fit-out and comply with water consumption requirements as outlined in Section 2 of BC Housing Design Guidelines and Construction Standards.
8. Exterior hose bib with locking panel cover accessible to the CRU storefront for pressure washing of sidewalk. If there are 2 or more CRUs, consider providing a 2nd lockable hose bib.

c. Gas Service

1. A gas service with sufficient capacity for a connection unit is to be provided within the base building services when CRU is food primary occupancy. Capped gas line to designated CRU space(s).
2. Provide separate metering for each CRU space identified as requiring gas service. Gas meter to be installed as part of the tenant improvements.
3. Where gas is provided there should be plans for proper venting.

d. HVAC

1. All mechanical equipment must be installed in an area that can easily and practically be serviced for ease of maintenance.
2. Independent heating and cooling are required for each CRU. Split fan coil and heat pump units will be designed for a cooling capacity based on one ton per 32.5m² (350ft²) of leased premises as part of the base building. Dual stage programmable thermostats will be supplied and coiled near the air supply with 15m (161ft) of coiled wire for installation by tenant. Location of heat pump units to be advised by Owner. Extension refrigeration line kit shall be allowed to all split fan coil heat pump units. Any additional cooling requirements will be for tenant fit-out.
3. Unit installed in colder climate zones shall be provided with a low ambient option. A supplementary electric baseboard is to be considered for this space in colder climate.
4. Tenant washroom exhaust fan and ductwork will be supplied and installed at the expense of tenant.
5. Wall louvre on storefront will be provided as base building to allow for installation of CRU washroom exhaust connection.
6. CRU ventilation design shall meet and comply with ASHRAE Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality) and BC Housing guidelines. This should be achieved by Energy Recovery Ventilators (ERVs) utilizing exhaust air to pre-heat / pre-cool outdoor ventilation air with 75% minimum efficiency. Ventilation air to tenant premises will be connected through wall louvers at storefront provide by Owner. Food primary occupancy may require additional ventilation requirements. Tenant ventilation is based on the use and occupancy and will be at tenant expense and shall use an energy recovery option. CRU tenant will ensure the ventilation system is properly balanced and the report will be shared with Owner.
7. The base building will be provided potential routing of future kitchen exhaust duct and make-up air duct as per NFPA 96 if CRU is designed as food primary occupancy. Commercial kitchen exhaust system and make-up air unit will not be provided. The future fit-out of the space will be provided the required system during fit-out.
8. Tenant kitchen exhaust system design and location shall be reviewed and approved by Owner and stakeholders before installation commences. If an alternative system is proposed due to issues of certification, its potential for certification must be verified, and must be approved by Real Estate Services staff by authority having jurisdiction at the concept stage, or else the 'default' NFPA system must be accommodated.

3. Elevator

- a. Elevator System from parkade to retail units may be required.
- b. Security access system will be required. An intercom may also be required for deliveries if main loading is in parkade. Consult with Owner at concept stage.

4. Design of Water Ingress Prevention

- a. Water leaks into CRU's from the above residential units is a common problem in social housing projects.

- b.** The residential floors above CRU's to be designed in a manner to minimize the risk of water damage to CRU's from leaks from residential suites. Design features such as floor drains and waterproof membrane/resilient sheet vinyl with integral cove base to be incorporated into design of residential suites in wet areas above the CRU's.

5. Additional Design Considerations

The CRU spaces with social enterprise or non-market use may complete with additional design finishes and materials to provide support for their services and strengthen their activities.

Consult with BC Housing and Owner at early design stage. Design that would accommodate:

- plumbing rough-in and drain vent to accommodate small kitchenette that include one sink and dishwasher in future. Plumbing fixtures, appliances, mill-work are to be tenant fit -out.
- automatic door operator at entrance complete with tamper-resistance controls. Automatic door operator is to be interfaced with electric strike at door latch. Provide electric strike complete with conduit for power terminated at junction box at structural soffit. For double doors, ensure electric strike is installed on inactive door leaf and that electric strike is fully integrated into storefront system including power transfer hinges.
- if washroom location is known complete the floor drain finishes.
- provide CRU ventilation according to ASHRAE Standard 62-2001 (Ventilation for Acceptable Indoor Air Quality) and BC Housing guidelines if the use and number of occupancy are known.
- provide a wall mounted electrical hot water tank and can be located in the potential washroom location.