



**MAKOLA**  
DEVELOPMENT  
SERVICES

# REQUEST FOR PROPOSAL: Building Envelope Services

Re: Sunshine Coast Community Services Society Development Project at  
5638 Inlet Avenue, Sechelt, B.C.

*Issue Date: Friday, October 9, 2020*

*Deadline for Questions: Wednesday, October 21, 2020 at 3:00 PM PST*

*Submission Deadline: Thursday, October 29, 2020 at 3:00 PM PST*



## Introduction

M'akola Development Services (MDS) is extending an invitation to prospective qualified proponents, on behalf of Sunshine Coast Community Services Society (SCCSS), to submit proposals for the provision of building envelope services for the project described below.

This is a publicly funded project, with the following list of funders (including additional stipulated conditions that may apply to the project):

- BC Housing
  - BC Housing's Design Guidelines and Construction Standards will provide the standards and technical guidelines for this project. See BC Housing's website for most up-to-date *Design Guidelines* for this affordable housing project. Refer to section 5 for BC Housing design review process.
  - BC Housing's Design Guidelines for Women's Safe Homes, Transition Houses, Second Stage Housing and Long-Term Rental Housing will apply. See BC Housing's website for the most up-to-date Guidelines.

## Project Description

The vision for this development is to be a mixed-use building with SCCSS services on the first two floors and affordable housing for women and children. The proposed development would be six storeys in height and provide 34 units of affordable housing for women and children. The proposed concept plan will have the 34 units over 4 floors and will have the following unit breakdown 7 studio, 12 one-bedroom, 9 two-bedroom, and 6 three-bedroom. The combined floor area of the residential space will total an estimated 2427m<sup>2</sup>. The bottom two floors will be used for SCCSS programming and office space and will have an estimated floor area of 1400m<sup>2</sup>.

This development will bring the majority of SCCSS programs located in Sechelt to one main location. This will reduce barriers to service and increase opportunities for individuals and families, particularly for those with complex challenges, to access a variety of services in one location. In addition to housing, the proposed project would include programming, administration space, and a commercial kitchen on the ground floor for SCCSS.

A BC Hydro Right of Way runs through much of the site. Within the ROW parking, a community garden and the existing storage building are proposed. Additionally, there is an archaeologist on the project team due to the high archaeological significance. Any land disturbance must involve the archaeologist.

See attachment A, B, C and D for the conceptual designs, BC Housing's Sustainability Guide, Technical Bulletin No. 1-2020.



## Site Description

**Site Location:** 5638 Inlet Avenue, Sechelt, B.C.

**PID:** 029-743-567

**Legal Description:** PARCEL A (BEING A CONSOLIDATION OF LOTS 12 AND 13, SEE CA4913451) BLOCK P BLOCK 303 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 14919

## Project Schedule

This project is publicly funded and therefore subject to schedule change, M'akola Development Services will advise project team on significant schedule changes if they arise. The project will be split into phases, the following are target milestone dates:

- A. Phase 1: Schematic Design
- B. Phase 2: Design Development
- C. Phase 3: Construction Documents
- D. Phase 4: Tender
- E. Phase 5: Construction Phase Services
- F. Phase 6: Post-Construction and Warranty Period Services

The following are target milestone dates:

- Rezoning (Public Hearing): November 2020
- Development Permit Submission: February 2021
- Construction Start: September 2021

## Sustainability

The [BC Energy Step Code](#) regulations – a part of the BC Building Code – was enacted in 2017 with the goal of making all buildings net-zero energy ready by 2032. BC Housing aligned their 2019 [Design Guidelines and Construction Standards](#) to meet upper steps of the Step Code as a requirement for BC Housing funded projects.

This new development requires an energy target of Step 4 based on BC Housing's [Sustainability Standards guide sheet](#) which provides an overview of the required sustainability measures.

An Energy Modelling Consultant has been procured to recommend the building specifications and confirm Step Code compliance. The architect and energy modelling consultant will work collaboratively through design development to ensure compliance with BCH's sustainability requirements.



## Scope of Work

The energy modelling consulting services will explore the most cost-effective design solutions for meeting the project's energy goals by adhering to the following principles:

- Assist in design decision making for optimizing energy performance by recommending integrated design solutions that are developed through the use of computer models.
- Assist the design team in achieving the project's energy performance targets in the most cost-effective way and that respects the owner's vision and requirements.
- Document compliance with project's requirements in relation to proposed Step Code requirements and/or NEBC/NBC requirements.

Building Envelope may commence at schematic design phase and will include close coordination with the Energy Modelling consultant to address thermal bridging and detailing of envelope assemblies and components. The building envelope consultant will be responsible for thermal bridging calculations on the project. Please refer to BC Housings [Thermal bridging guide](#). A copy of the building envelope report and relevant updates should be submitted at the end of each project phase to BC Housing. Reviews and recommendations are to be provided via marked up drawings and summary memos throughout all phases. Meetings are anticipated throughout all phases. Please indicate if extender service for thermal performance of building envelope assemblies are optional under a separate contract. A defined scope of work is listed below:

### Phase 1: Schematic Design – Preliminary Consultation and Analysis

In order to adequately inform the design direction, the consultant will attend building envelope performance requirement meetings to understand the energy targets. Schematic design phase drawing review will occur within 6-8 weeks of contract initiation. The analysis shall provide advice as to the suitability of envelope systems for their intended applications via marked up drawings in PDF format that include conceptual details. It will include an outline for building envelope performance recommendations and guidelines in a summary design review report- including thermal bridging.

### Phase 2: Design Development

Review the building envelope assemblies, elevations and plans in the architectural drawings provided by the design professional. The consultant shall provide recommendations via marked up drawings in PDF format and a summary memo. An outline specifications review shall include provision of recommendations for performance and testing requirements, relevant standards and acceptable materials/systems with recommendations delivered as marked up specifications.

### Phase 3: Construction Documents- Compliance Documentation and Construction Model

Review architectural drawings of the building envelope systems provided by the design professional at 50% and 90% competition stages or prior to building permit and issued for tender stages. Provide recommendations via marked up drawings. Specifications review will comment on specifications relative to the building envelope and provide recommendations via marked up drawings in PDF format and summary memo.

### Phase 4 and 5- Construction Administration

Product data sheet submittal reviews will review key envelope related product data sheets for general compliance with construction documents, good building practice and continuity of building envelope at



interfaces. Shop drawings will review key envelope systems-cladding and glazing systems- for good building practice and general compliance with contract documents to verify the intersections between different trades. Field reviews will be conducted via site visits to observe ongoing building envelope work for general compliance with construction documents and to trouble shoot details based on construction sequencing and site conditions. Reports with photographs and actions items lists will be provided after each visit. A Building envelope maintenance manual will be issued to owners for immediate use and long-term maintenance activities and renewals for the project including a timeframe for replacement and specific materials, product data sheets, copies of warranty certificates and contact information sheets of all parties involved in construction.

### Phase 6- Post- Construction and Warranty Period

The consultant shall collaborate with design and construction team to ensure that deficiency items follow up, closeout documentation, commissioning activities and building handover tasks are considered. The consultant shall visually review on site the building envelope systems approximately 12 months after substantial completion. Identify visual deficiencies to determine “as-built” variations from design, maintenance requirements and deficiency related to general performance of the building envelope. Issue a letter report prioritizing all items reviewed and identify any issues which became evident that the owner may wish to address. The report will provide cost estimates for any possible actionable items. Follow-up on deficiencies will be done on a time and expense basis.

## Evaluation

Each proposal will be scored out of 100 points based on the following criteria:

Evaluation Criteria	Possible Points
Proposal Presentation	10
Experience	15
Staff Resources	10
Scope of Work	15
Budgets & Fees	50
<b>Score:</b>	<b>100</b>

MDS’ intent is to enter in a contract with the proponent who has the highest overall score.

## Proponents Bear Own Costs and Waive Liability

Proponents are solely responsible for their own expenses in preparing a proposal. Neither MDS nor the Society will be liable, under any circumstances, for any claim arising out of the request for proposals process, including but not limited to costs of preparation of the proposal, loss of profits, loss of opportunity or for any other claim. By submitting a proposal, the proponent waives any right to or claim for any compensation of any kind whatsoever, including claims for costs of preparation of the proposal, loss of profits or loss of opportunity or for any other claim, by reason of MDS’ or the Society’s decision not to accept the proposal submitted by the proponent, to enter into a contract with any other proponent or to cancel this request for proposals process, and the proponent shall be deemed to have agreed to waive such right of claim.



For clarity, MDS and the Society reserve the right to cancel this request for proposals at any time and to reissue it for any reason whatsoever without incurring any liability and no proponent will have any claim against MDS or the Society as a consequence.

### **Conflict of Interest:**

The Society and MDS may disqualify a proponent for any conduct, situation or circumstances, determined by MDS and the Society, in its sole and absolute discretion, to constitute a conflict of interest or a perceived conflict of interest, or where there is evidence of collusion.

### **Conclusion of Process and Debriefing**

At the conclusion of the request for proposals process, all proponents who submitted will be notified of whether they were successful or not. Unsuccessful proponents may request a debriefing with MDS which may, at MDS' option, be conducted via telephone or email.

### **Contract Terms and Conditions**

By submission of a proposal, the proponent agrees that, should its proposal be successful, the proponent will be engaged under the terms and conditions acceptable to the Client and BC Housing which are in line with any applicable supplementary general conditions (SGC) of BC Housing.

### **Confidentiality and Access to Information**

This development is subject to BC Housing terms and conditions. As such, there shall be no announcement of the work or the development without prior written consent by BC Housing, Sunshine Coast Community Services Society and MDS.

The successful Proponent must agree to maintain security standards consistent with security policies of the Sunshine Coast Community Services Society. These may include, but not be limited to, strict control of access to data and maintaining confidentiality of information gained while carrying out their duties.

The contents of your proposal will be not be released or divulged to any other proponent(s), however, your proposal may be released to BC Housing upon their request. BC Housing is subject to FOIPPA.

### **Submission Requirements**

BC Housing has requested that all proposals include the following inclusion statement:

*"The attached proposal has been prepared for Sunshine Coast Community Services Society, **and for BC Housing Corporation as an intended user**" in response to the Request for Proposals regarding the*



*Sunshine Coast Community Services Housing Development project located at 5638 Inlet Avenue, Sechelt, BC.*

Submissions should be no longer than **10 pages** (not including appendices). Resumes can be included in the Appendix) and must be received by **Thursday, October 29, 2020 at 3:00 PM PST** to be considered. Please note work will commence directly upon award.

Submissions must include:

1. Introduction – summarize any unique experience, skill sets, approaches, or understanding of the assignment that you think would be relevant.
2. Company profile – a brief profile including company history, size/resources.
3. Roles and résumés – list principals and senior staff who will have specific responsibilities for this project, including a short paragraph describing their relevant experience. Indicate which individual will be project manager, primary designer, and main contact with the project design team.
4. Scope and method to complete work for each phase
5. Fee estimate, including disbursements - all disbursements are to be identified in the fee proposal.
6. Please provide fees broken down as follows:
  - A. Phase 1: Schematic Design
  - B. Phase 2: Design Development
  - C. Phase 3: Construction Documents
  - D. Phase 4: Tender
  - E. Phase 5: Construction Phase Services
  - F. Phase 6: Post-Construction & Warranty Period Services
    - a. The design and construction team ensure that deficiency items follow up, closeout documentations, commissioning activities and building handover tasks are taken into account. All project team members bear some responsibility for these activities.
7. Construction administration will include, but is not limited to the following:
  - Reimbursable expenses: Indicate reimbursements, if any.
    - Note: No mark-up is permitted on disbursements
  - Additional services: Provide a list of hourly rates for all billable staff.
  - Fee per trip: Indicate your fees for professional time and disbursements per site visit to 5638 Inlet Avenue, Sechelt, B.C. for integrated design planning meetings (schematic and design development phases – note most of these will be virtual meetings) and construction (construction document phase). Identify accommodation and meals as separate line items in the budget).



- Post-Construction services: The design and construction team ensures that deficiency items follow up, closeout documentations, commissioning activities and building handover tasks are taken into account. Provide hourly estimate.

Note: No retainers will be permitted.

8. Outline assumptions and limitations of work
9. Professional qualifications and proof of liability insurance coverage to a minimum of \$2,000,000.

### Submission Format

Please submit proposals electronically to:

**Matt Notley**, Project Planner, M'akola Development Services  
Email: [mnotley@makoladev.com](mailto:mnotley@makoladev.com)

All proposals must be copied to:

**Katy Fabris**, Senior Project Manager, M'akola Development Services  
Email: [kfabris@makoladev.com](mailto:kfabris@makoladev.com)

### Submission Confirmation

You will receive confirmation of your submission within 48 hours.

### Opening and Closing Dates

Proposals may be submitted from the date this request for proposals was issued until the submission deadline. Proposals must be received as set out by Thursday, October 29, 2020 at 3:00 PM PST. Proposals received after the closing date and time will not be accepted.

### Withdrawal and Resubmission

A proposal may be withdrawn prior to the submission deadline with a written request sent via email to Matt Notley, Project Planner and Katy Fabris, Senior Project Manager. A withdrawn proposal may be resubmitted so long as it is received before the submission deadline.

A proposal may not be withdrawn after the submission deadline and shall remain open to acceptance by MDS and the Society until the earlier of the date the successful proponent enters into a contract with the Society, or 60 calendar days after the submission deadline.



## Questions

All questions related to this request for proposals, including any requests for information and clarification, are to be directed, in writing, to:

Matt Notley, Project Planner  
Email: [mnotley@makoladev.com](mailto:mnotley@makoladev.com)

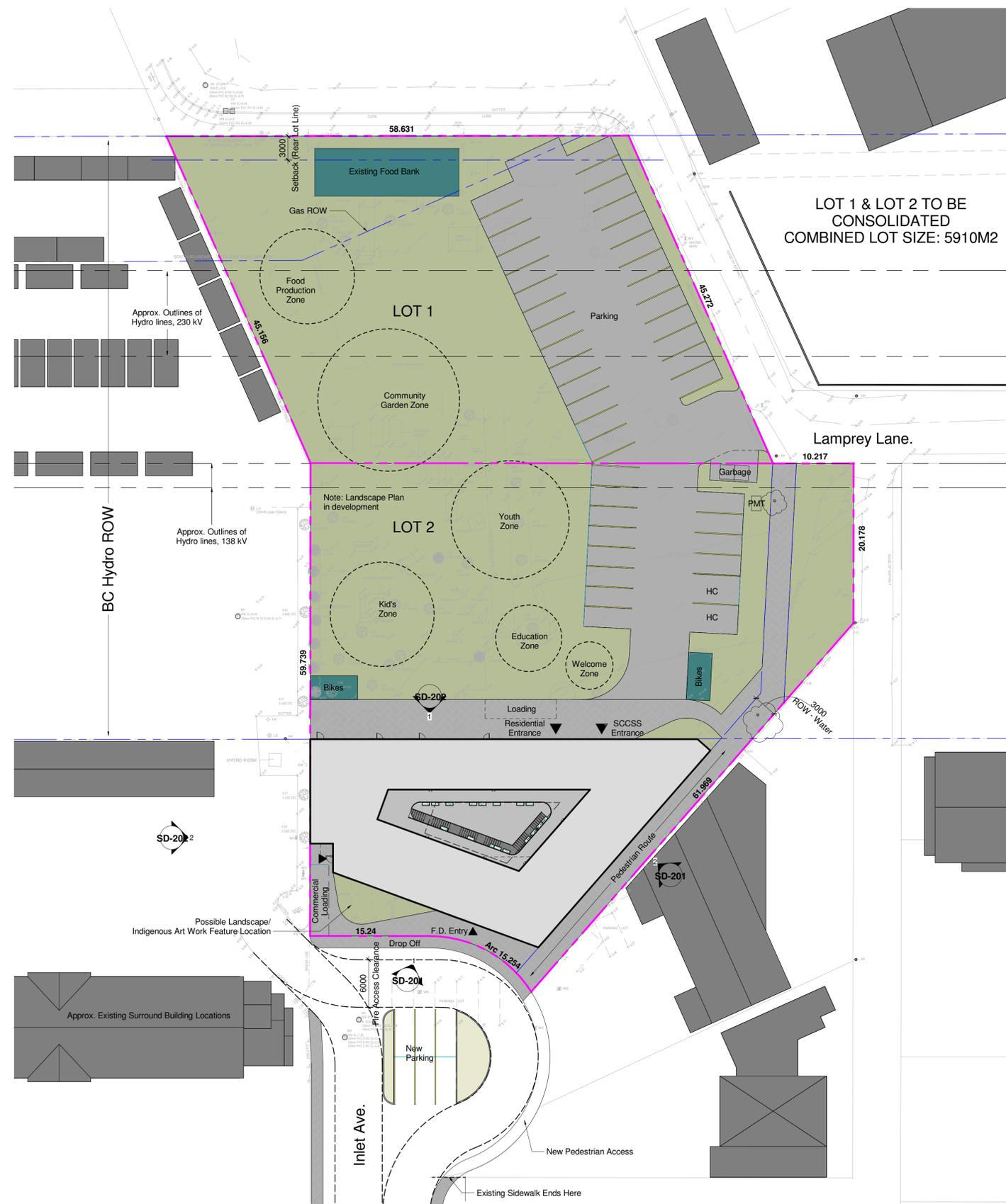
Questions will be responded to as time permits. The deadline for submitting questions is Wednesday, October 21, 2020 at 3:00 PM PST. Questions and any responses will be recorded and may be distributed via addendum, at MDS' option, if the question requires an interpretation or modification of this request for proposals.



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## Appendices

- Appendix A - Conceptual Design and Site Plan
- Appendix B - BC Housing's Sustainability Guide
- Appendix C - Technical Bulletin No. 1-2020



LOT 1 & LOT 2 TO BE CONSOLIDATED  
COMBINED LOT SIZE: 5910M2



5638 Inlet Ave Housing

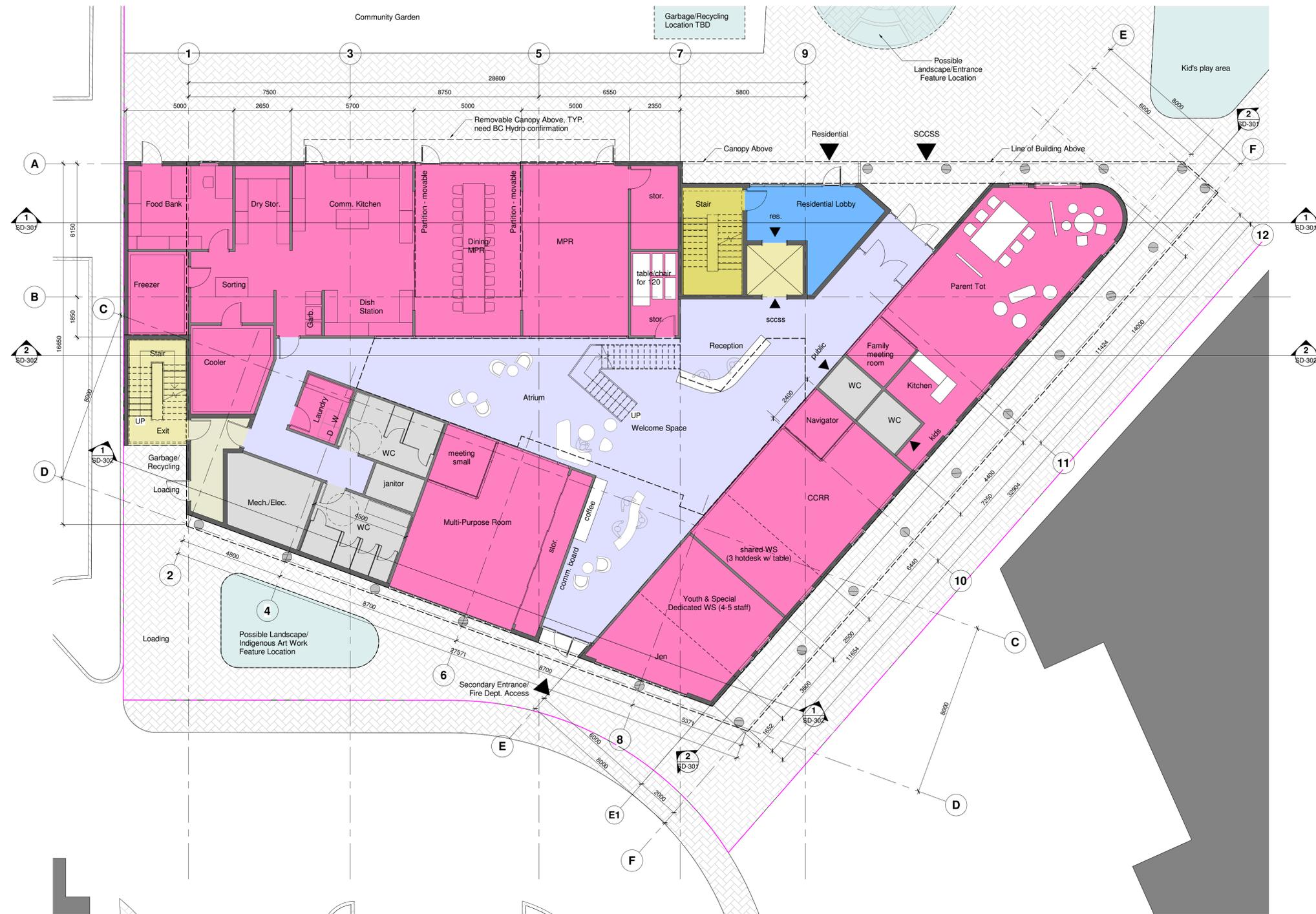
SITE PLAN

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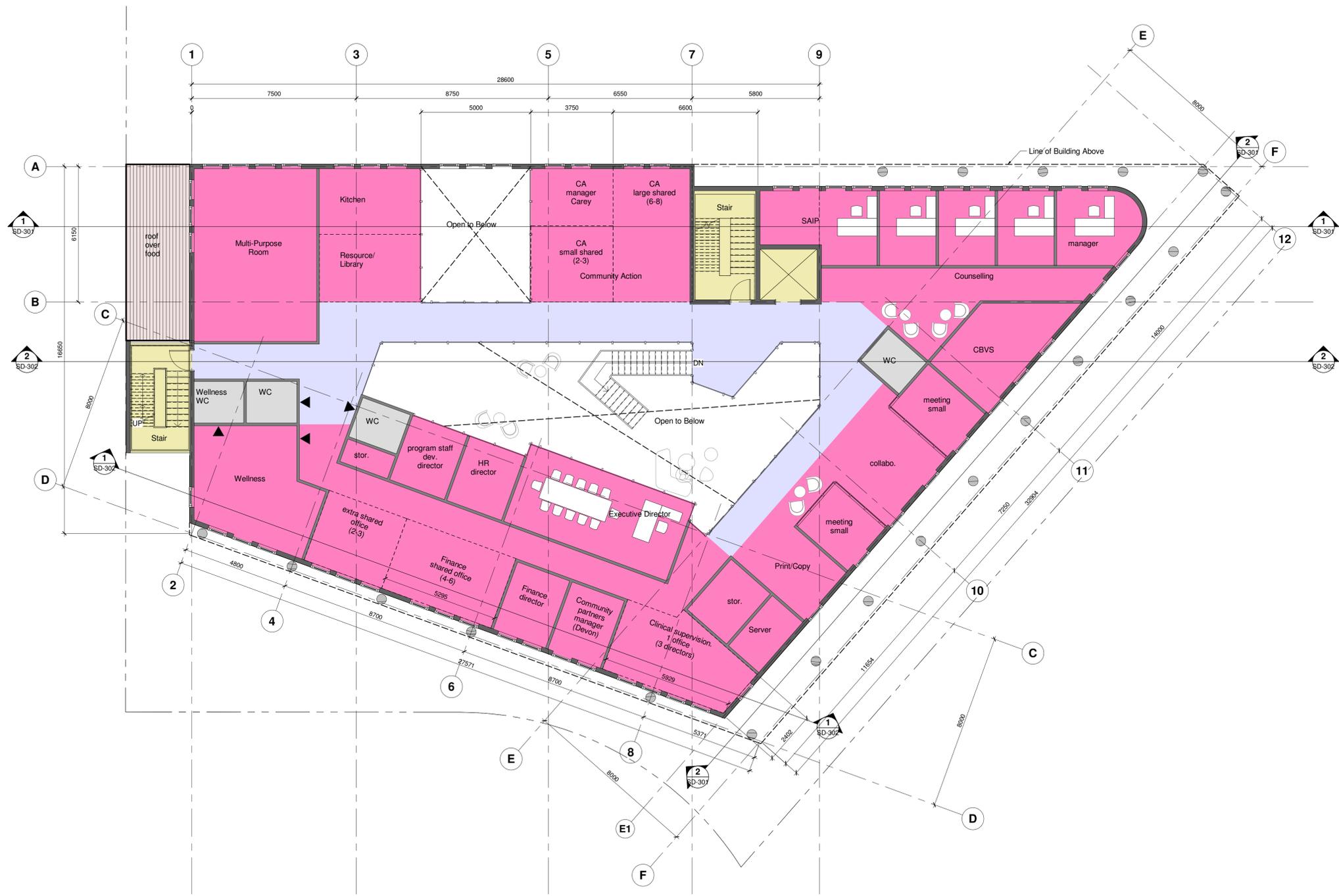
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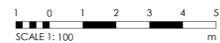


LEVEL 1		
NUMBER	NAME	AREA
100	SCCSS	705.53 m <sup>2</sup>
101	Res. Lobby	19.51 m <sup>2</sup>
102	Elev.	7.00 m <sup>2</sup>
103	Stair	15.45 m <sup>2</sup>
104	Outdoor Stair	14.50 m <sup>2</sup>
105	Corridor	9.71 m <sup>2</sup>
		771.70 m <sup>2</sup>

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SCALE 1:100 m



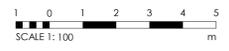
LEVEL 2		
NUMBER	NAME	AREA
200	SCCSS	591.41 m <sup>2</sup>
201	Elev.	7.00 m <sup>2</sup>
202	Stair	15.45 m <sup>2</sup>
203	Outdoor Stair	14.50 m <sup>2</sup>
		628.36 m <sup>2</sup>





LEVEL 3		
NUMBER	NAME	AREA
301	0 Studio	40.28 m <sup>2</sup>
302	1 Bed Room	53.81 m <sup>2</sup>
303	1 Bed Room	58.08 m <sup>2</sup>
304	0 Studio	44.30 m <sup>2</sup>
305	2 Bed Room	69.60 m <sup>2</sup>
306	2 Bed Room	69.60 m <sup>2</sup>
307	3 Bed Room	92.42 m <sup>2</sup>
308	1 Bed Room	58.00 m <sup>2</sup>
309	Res. Amenity	96.40 m <sup>2</sup>
310	Laundry	7.42 m <sup>2</sup>
311	Elev.	7.00 m <sup>2</sup>
312	Stair	15.45 m <sup>2</sup>
		612.36 m <sup>2</sup>

LEVEL 3 OUTDOOR		
NUMBER	NAME	AREA
313	Courtyard	237.58 m <sup>2</sup>
314	Outdoor Stair	14.50 m <sup>2</sup>
		252.08 m <sup>2</sup>



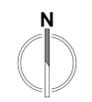
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- 0 Studio
  - 1 Bed Room
  - 2 Bed Room
  - 3 Bed Room
  - Courtyard
  - Elev.
  - Laundry
  - Res. Amenity
  - Stair



5638 Inlet Ave Housing

FLOOR PLAN - LEVEL 3

Scale: 1:100 Date: 2019-11-29



SD-103





LEVEL 4		
NUMBER	NAME	AREA
401	0 Studio	40.28 m <sup>2</sup>
402	1 Bed Room	53.81 m <sup>2</sup>
403	1 Bed Room	58.08 m <sup>2</sup>
404	0 Studio	44.30 m <sup>2</sup>
405	2 Bed Room	69.60 m <sup>2</sup>
406	2 Bed Room	69.60 m <sup>2</sup>
407	3 Bed Room	92.42 m <sup>2</sup>
408	1 Bed Room	58.00 m <sup>2</sup>
409	3 Bed Room	96.40 m <sup>2</sup>
410	Laundry	7.42 m <sup>2</sup>
411	Elev.	7.00 m <sup>2</sup>
412	Stair	15.45 m <sup>2</sup>
		612.36 m <sup>2</sup>

LEVEL 4 OUTDOOR		
Number	Name	Area
413	Outdoor Corridor	127.25 m <sup>2</sup>
414	Outdoor Stair	14.50 m <sup>2</sup>
		141.75 m <sup>2</sup>



- Room Legend
- 0 Studio
  - 1 Bed Room
  - 2 Bed Room
  - 3 Bed Room
  - Elev.
  - Laundry
  - Outdoor Corridor
  - Outdoor Stair
  - Stair



LEVEL 5		
NUMBER	NAME	AREA
501	0 Studio	40.28 m <sup>2</sup>
502	1 Bed Room	53.81 m <sup>2</sup>
503	1 Bed Room	58.08 m <sup>2</sup>
504	0 Studio	44.30 m <sup>2</sup>
505	2 Bed Room	69.60 m <sup>2</sup>
506	2 Bed Room	69.60 m <sup>2</sup>
507	3 Bed Room	92.42 m <sup>2</sup>
508	1 Bed Room	58.00 m <sup>2</sup>
509	3 Bed Room	96.40 m <sup>2</sup>
510	Laundry	7.42 m <sup>2</sup>
511	Elev.	7.00 m <sup>2</sup>
512	Stair	15.45 m <sup>2</sup>
		612.36 m <sup>2</sup>

LEVEL 5 OUTDOOR		
NUMBER	NAME	AREA
513	Outdoor Corridor	127.25 m <sup>2</sup>
514	Outdoor Stair	14.50 m <sup>2</sup>
		141.75 m <sup>2</sup>



- Room Legend
- 0 Studio
  - 1 Bed Room
  - 2 Bed Room
  - 3 Bed Room
  - Elev.
  - Laundry
  - Outdoor Corridor
  - Outdoor Stair
  - Stair



LEVEL 6		
NUMBER	NAME	AREA
601	0 Studio	40.28 m <sup>2</sup>
602	1 Bed Room	53.81 m <sup>2</sup>
603	1 Bed Room	58.08 m <sup>2</sup>
604	Res. Amenity	36.69 m <sup>2</sup>
605	2 Bed Room	69.60 m <sup>2</sup>
606	2 Bed Room	69.60 m <sup>2</sup>
607	3 Bed Room	92.42 m <sup>2</sup>
608	1 Bed Room	58.00 m <sup>2</sup>
609	2 Bed Room	81.68 m <sup>2</sup>
610	Laundry	7.42 m <sup>2</sup>
611	Elev.	7.00 m <sup>2</sup>
612	Stair	15.45 m <sup>2</sup>
		590.04 m <sup>2</sup>

LEVEL 6 OUTDOOR		
NUMBER	NAME	AREA
613	Outdoor Corridor	126.94 m <sup>2</sup>
614	Outdoor Stair	14.50 m <sup>2</sup>
		141.44 m <sup>2</sup>



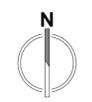
- Room Legend
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  - 1 Bed Room
  - 2 Bed Room
  - 3 Bed Room
  - Elev.
  - Laundry
  - Outdoor Corridor
  - Outdoor Stair
  - Res. Amenity
  - Stair



5638 Inlet Ave Housing

FLOOR PLAN - LEVEL 6

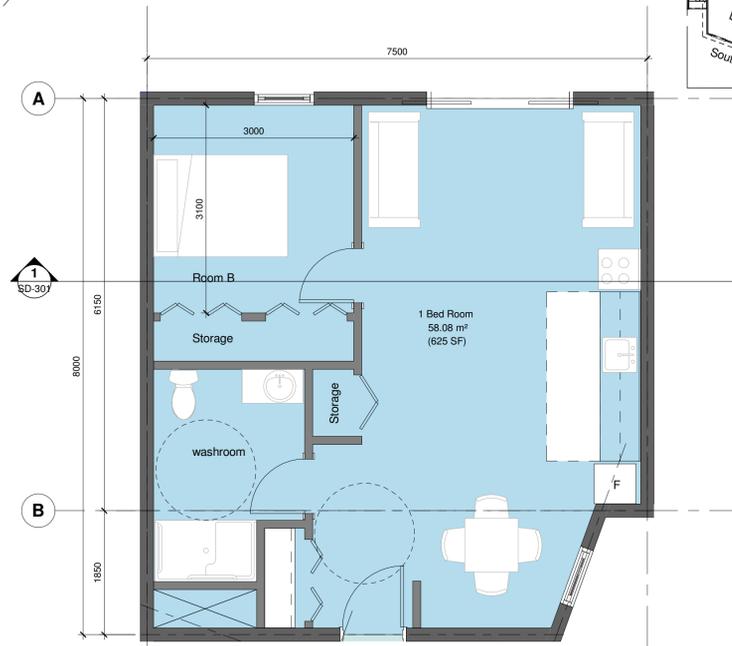
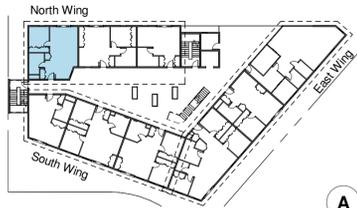
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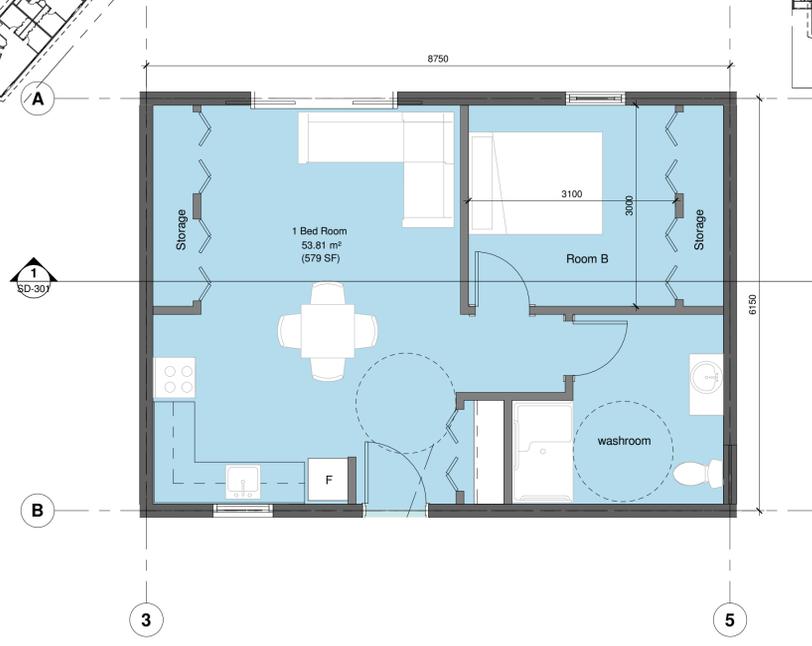
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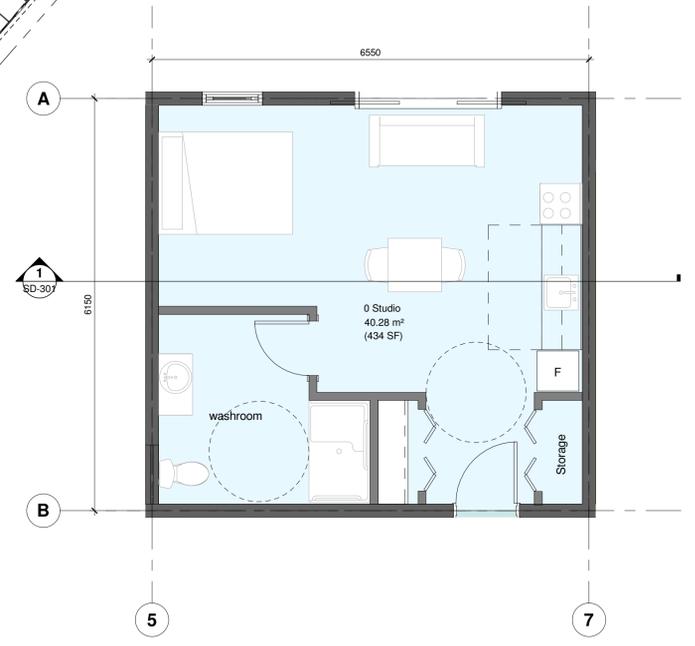
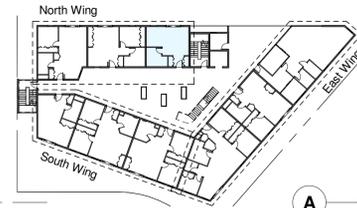




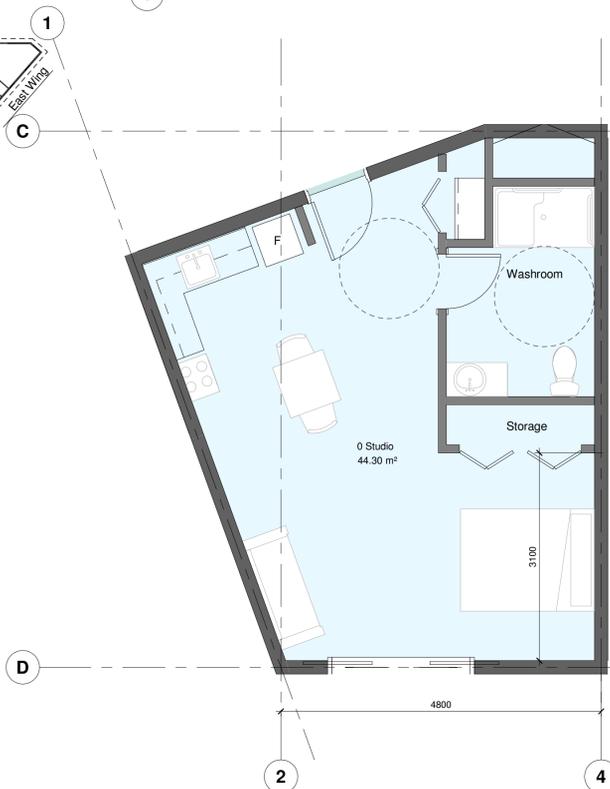
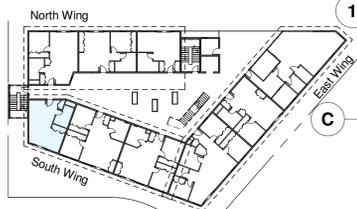
3 R004 LEVEL 3-6 - NORTH WING - 1BD CORNER  
SD-110 1:50



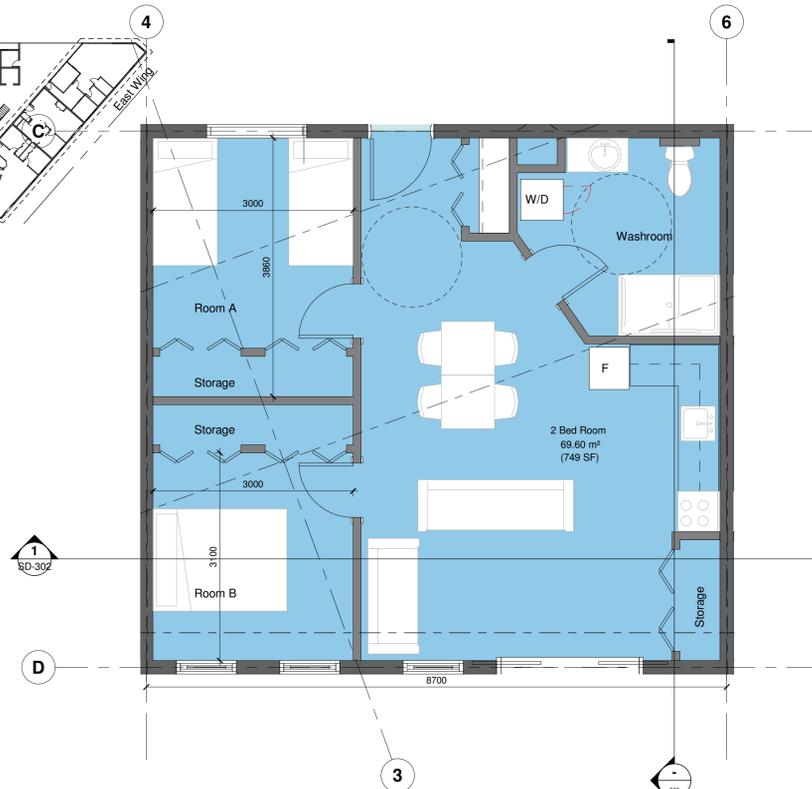
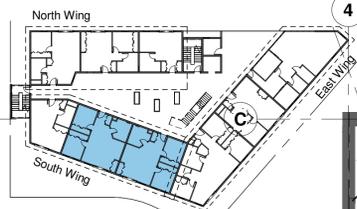
5 R004 LEVEL 3-6 - NORTH WING - 1BD  
SD-110 1:50



4 R004 LEVEL 3-6 - NORTH WING - STUDIO  
SD-110 1:50

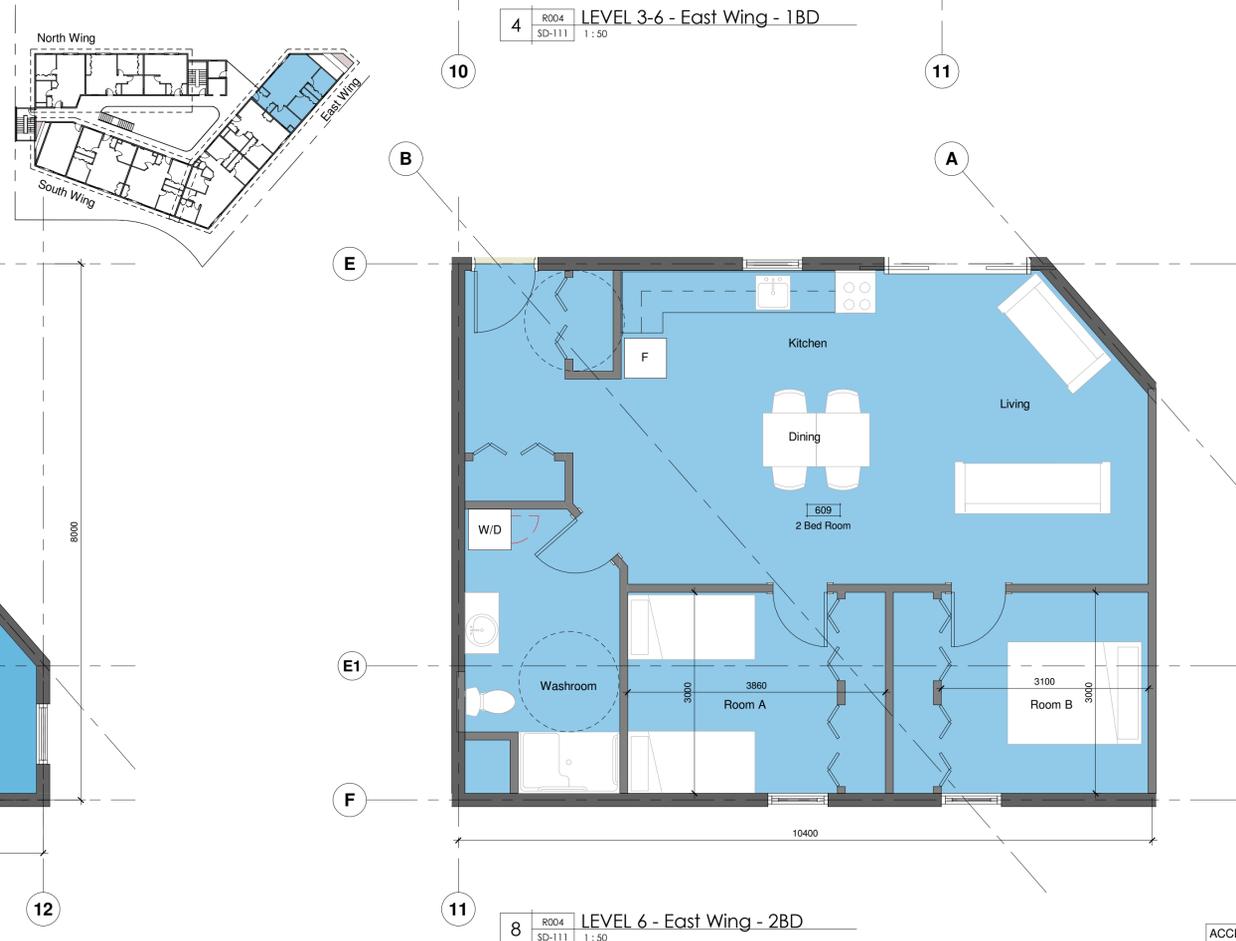
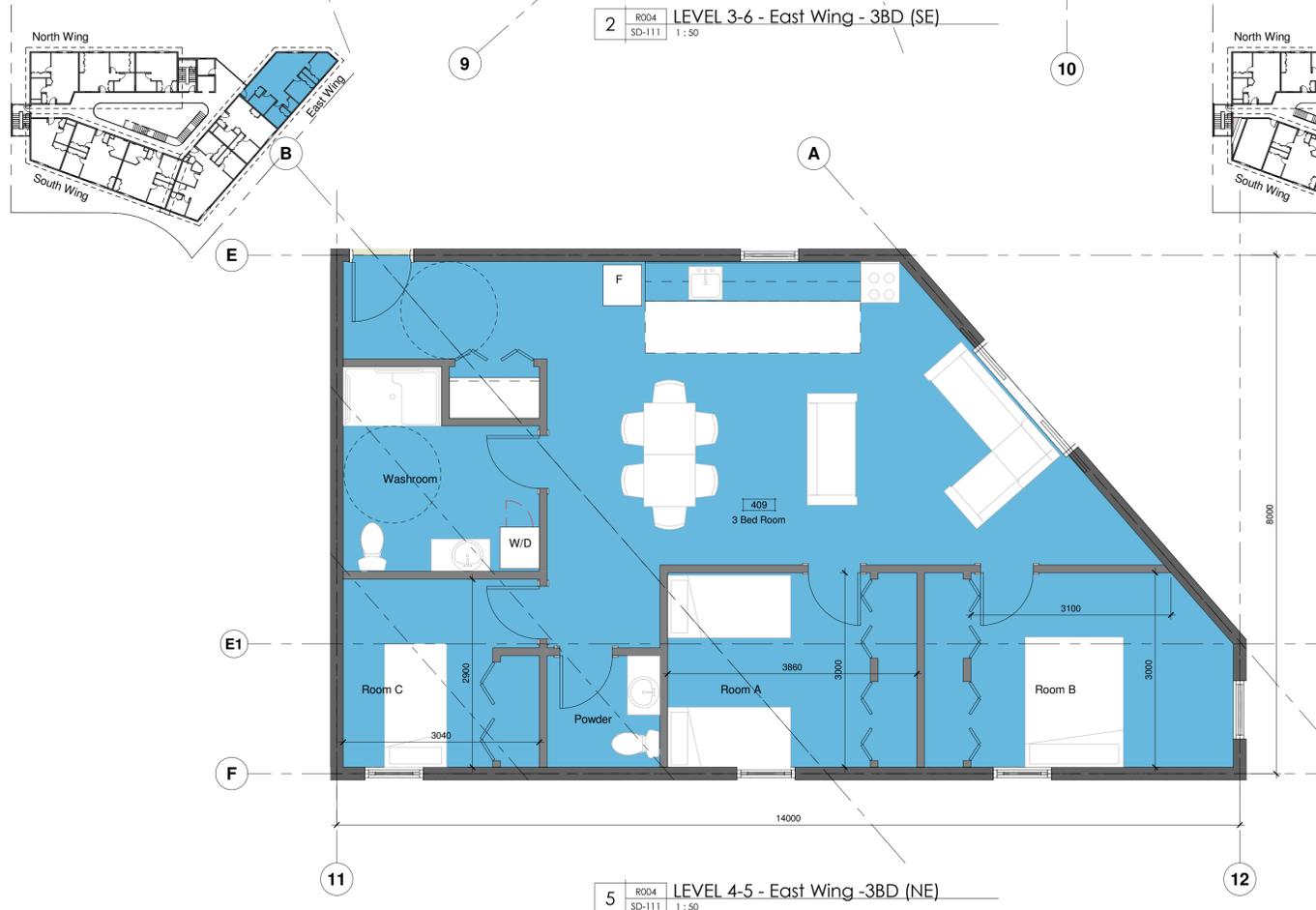
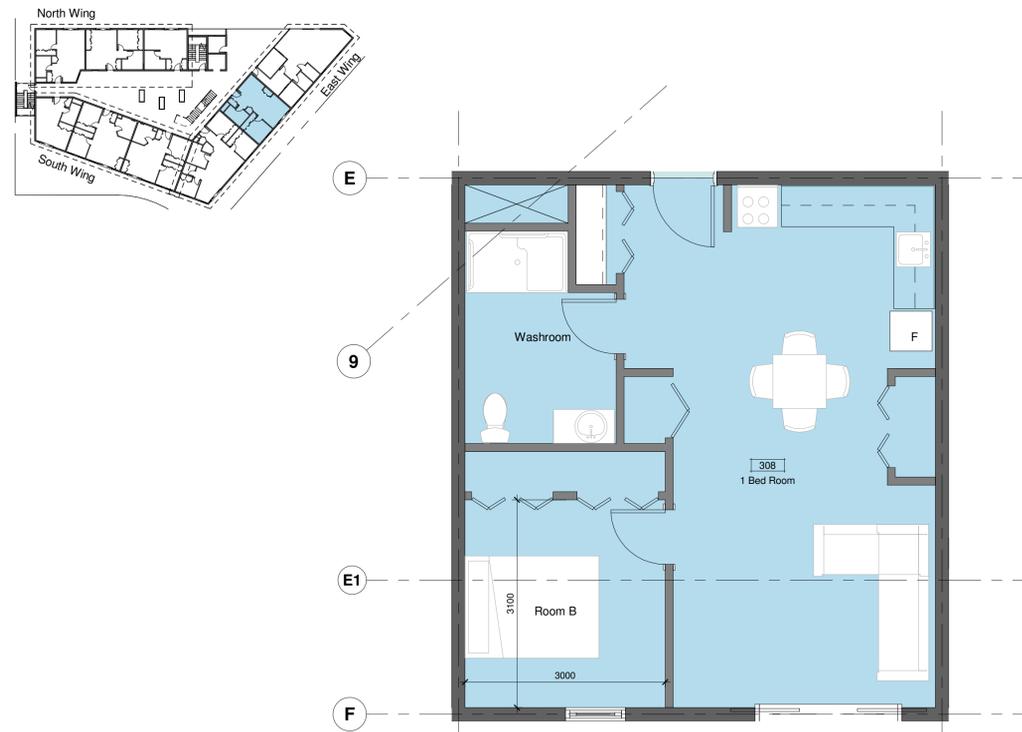


1 R004 LEVEL 3-5 - SOUTH WING - STUDIO  
SD-110 1:50



2 R004 LEVEL 3-6 - SOUTH WING - 2BD  
SD-110 1:50

ACCESSIBILITY STATEMENT  
\* 100% of units will be designed to meet CMHC adaptability standards.



ACCESSIBILITY STATEMENT  
 \* 100% of units will be designed to meet CMHC adaptability standards.

1 3 5 7 9

7500 8750 6550 5800



T/O Roof 22000  
 U/S ROOF 19000  
 LEVEL 6 16000  
 LEVEL 5 13000  
 LEVEL 4 10000  
 LEVEL 3 7000  
 LEVEL 2 4000  
 LEVEL 1 0

1 A200 SD-301 SD SECTION NORTH WING 1:100

10 11 12

7250 14000



T/O Roof 22000  
 U/S ROOF 19000  
 LEVEL 6 16000  
 LEVEL 5 13000  
 LEVEL 4 10000  
 LEVEL 3 7000  
 LEVEL 2 4000  
 LEVEL 1 0

2 A200 SD-301 SD SECTION EAST WING 1:100



5638 Inlet Ave Housing

SECTIONS 1

Scale: 1:100 Date: 2019-11-29

SD-301





# BC Housing Sustainability Standards

- This checklist has been prepared to give partners and design teams an overview of required energy and sustainability measures on BC Housing funded projects beyond meeting building code requirements. It is not intended to replace a careful review of our standards. For further details, please refer to **BC Housing’s Design Guidelines and Construction Standards Section 2 – Energy and Environmental Design** ([BC Housing Design Guidelines & Construction Standards](#)).

## Building and Energy Performance Target

### Energy Targets:

All buildings shall meet or exceed performance limits according to their building type and climate zone<sup>2</sup> in the table on the right. The energy target shall be verified through a mandatory building and energy modelling as described in the Provincial Energy Step Code, performed by an experienced Energy Modeller (part 3) or Energy Advisor (Part 9).

Building Type	Energy Targets		
	Climate Zone 4	Climate Zone 5	Climate Zone 6, 7, 8
Part 9	Step Code Step 4 <sup>1</sup>		
Part 3 – < 7 storeys	Step 4	Step 3	Step 2
Part 3 – 7 + storeys	Step 3	Step 2	Step 2
Modular	Step 3	Step 3	Step 2

### Airtightness Testing:

All buildings are to be designed and constructed with the intention of meeting an air-leakage target summarized in the table on the right. Whole-building airtightness (EALR<sup>3</sup>) for each building is to be tested and reported in accordance with the Provincial Energy Step Code. Airtightness of suites (IPALR<sup>4</sup>) is to be tested and reported as tested to ASTM E 779 or equivalent standard.

Building Type	Airtightness Testing	
	EALR <sup>3</sup>	IPALR <sup>4</sup>
Part 9	1.5 ACH @ 50pa	-
Part 3	2.0 L/s*m <sup>2</sup> @75 Pa (0.40 cfm/ft <sup>2</sup> @ 0.3" w.c.)	1.2 L/s*m <sup>2</sup> @50 Pa (0.23 cfm/ft <sup>2</sup> @ 0.2" w.c.)

## Passive Design Strategies

“**Passive design**” is an approach to building design that uses the building architecture to minimize energy consumption and improve thermal comfort. The intent of these strategies in BC Housing standards is to achieve high levels of energy performance while minimizing the complexity of mechanical systems focusing on **building envelope first design**; that includes:

- Minimizing unnecessary articulations, such as corners and protrusions;
- Continuous insulation, limiting thermal bridges, and identifying details to overcome them on drawings;
- Minimizing air leakage preferably with a continuous external air barrier;
- Providing of healthy levels of ventilation and including heat recovery ventilation;
- Minimizing of window to wall ratio;
- Incorporating solar shading and landscape to minimize heat island effect.

<sup>1</sup> The Provincial Energy Step Code for the Part 9 buildings is adjusted for the climatic difference of each region.

<sup>2</sup> Climate zone is based on Heating Degree Days (HDD) below 18°C for 25 years period ending in 2006 as per BC Building Code Appendix C - Division B.

<sup>3</sup> Envelope Air Leakage Rate

<sup>4</sup> Interior Partitions Air Leakage Rate

# Sustainability Requirement Checklist

Item	Section Reference	Submittal Requirement <sup>†</sup>	New Development	Renovation
<b>Energy efficiency</b>				
<b>Building and Energy Performance target</b>	Section 2, Article 2 Building and Energy Performance	<input type="checkbox"/> Submit energy model reports at specified stages. <input type="checkbox"/> Submit airtightness testing results at substantial completion.	✓	-
<b>Passive design strategies</b>	Section 2, Article 3 Passive Design Strategies	<input type="checkbox"/> Provide continuous thermal insulation and air sealing details on drawing.	✓	-
<b>Energy efficient products, and utility rebates</b>	Section 2, Article 4 Energy Efficient Products, Incentives and Reporting	<input type="checkbox"/> Provide cut sheets or manufacturers information for all fixtures and appliances.	✓	✓
<b>Energy Star Portfolio Manager sign-up</b>	Section 2, Article 4.5 Metering and Reporting	<input type="checkbox"/> Confirm Energy Star Portfolio Manager sign-up upon project completion.	✓	✓
<b>Energy Assessment and Energy Conservation Measures (ECM)</b>	Section 2, Article 4.6 Energy Assessment and ECM	<input type="checkbox"/> Submit energy audit report with a list of potential ECM options.		✓
<b>Water efficiency</b>				
<b>Low flow fixtures and water efficient appliances</b>	Section 2, Article 3 Water Efficient Design; Section 4, Division 22 Plumbing	<input type="checkbox"/> Provide cut sheets or manufacturers information for all fixtures and appliances.	✓	✓
<b>Building level water metering</b>		<input type="checkbox"/> Provide mechanical drawings outlining metering.	✓	
<b>Material and Resources</b>				
<b>Construction, Renovation and Demolition (C&amp;D) waste management</b>	Section 2, Article 5 Construction, Renovation and Demolition Waste Management	<input type="checkbox"/> Submit the <a href="#">Waste Management Plan Worksheet</a> prior to construction stage. <input type="checkbox"/> Submit <a href="#">Waste Management Tracking Form</a> at specified stages.	✓	✓
<b>Low emitting material</b>	Section 2, Article 7 Building Material Selection	No submittal requirement. Implementation required.	✓	✓
<b>Sustainable Site Management</b>				
<b>Construction Activity Pollution prevention</b>	Section 2, Article 8 Sustainable Site Management	<input type="checkbox"/> Submit pollution, erosion and sedimentation control plan demonstrating compliance. <input type="checkbox"/> Provide photos demonstrating compliance.	✓	✓*
<b>Heat island reduction; native or drought resistant landscape</b>	Section 3, Article 8 Sustainable Site Management	<input type="checkbox"/> Provide a narrative and any drawings required to demonstrate.	✓	✓*
<b>Sustainable water management strategies</b>	Section 3, Article 8 Sustainable Site Management	<input type="checkbox"/> Provide a narrative and any drawings required to demonstrate.	✓	✓*
<b>Recycling and Composting areas</b>	Section 1, Article 4 Building Common Areas;	<input type="checkbox"/> Provide as built drawings outlining facilities.	✓	-

\* Applicability depends on the scope of work

† Details can be found in the BC Housing's Design Guidelines and Construction Standards Section 3 – Energy and Environmental Design

April  
2020

# TECHNICAL BULLETIN NO. 1-2020

SUBJECT:

Energy Step Code and CleanBC program update

REFERENCE:

BC Housing Design Guidelines and Construction Standards  
May 2019

## SUBJECT:

**BC Housing Design Guidelines and Construction Standards May 2019 - revision to Section 2 Energy and Environmental Design.** The change is to take effect immediately on new projects and projects that have not gone past Design Development approval from BC Housing.

## PURPOSE:

To align BC Housing's energy performance targets with BC Building Code 2018 Revision 2 and BC Housing's GHG reduction target with the provincial Climate Change Accountability Act, legislated update December 25th, 2019. BC Building Code 2018 has issued Revision 2, effective December 12th, 2019. Revision 2 includes changes to BC Energy Step Code to better reflect colder climate conditions outside of Climate Zone 4. The Province also announced interim GHG reduction targets.

## DESCRIPTION:

The changes to BC Housing Guidelines and Construction Standards 2019 are:

### Section 2 - Energy and Environmental Design

- **1.0 Sustainability Goals**  
1.3.1; 1.3.2
- **2.0 Building and Energy Performance**  
2.1.1.1; 2.1.1.2; 2.1.3; 2.1.4
- **4.0 Energy Efficient Products, Incentives and Energy Assessment**  
4.1.1; 4.6

**DESCRIPTION:****Section 2 - Energy and Environmental Design****1.0 Sustainability Goals****1.3.1 Reduce energy consumption level and GHG emissions**

**Revise** as follows:

**1.3.1.2** BC Housing will reduce its greenhouse gas (GHG) emissions from PRHC owned and leased buildings relative to 2010 baseline by 50% by 2030 to align with the CleanBC Plan.

**1.3.1.3** BC Housing monitors and reports energy consumption and related GHG emissions to the BC Government for all PRHC owned and leased buildings under the legal requirement of Bill 44 - Climate Change Accountability Act (formerly titled Greenhouse Gas Reduction Target Act) and the Carbon Neutral Government Regulation. The emissions data, GHG reduction actions and plans and statement of relevant carbon offsets applied, are submitted by BC Housing as a Carbon Neutral Action report to the BC Government. The reports are made publicly available every year by the end of June.

**1.3.2 Achieve BC Housing's Building and Energy Performance Targets**

BC Housing established the following minimum Performance Targets for all new projects:

- Thermal Energy Demand Intensity (TEDI) (kWh/m<sup>2</sup>/yr)
- Total Energy Use Intensity (TEUI) (kWh/m<sup>2</sup>/yr)
- Greenhouse Gas Intensity (GHGI) (kgCO<sub>2</sub>/m<sup>2</sup>)
- Envelope Air Leakage Rate (EALR<sub>n75</sub>) (L/s/m<sup>2</sup>)
- Interior Partitions Air Leakage Rate (IPALR<sub>n50</sub>) (L/s/m<sup>2</sup>)
- Peak Thermal Load (PTL) (W/m<sup>2</sup>)
- Mechanical Energy Use Intensity (MEUI) (kWh/m<sup>2</sup>/yr)

Where required by the local by-laws, the BC Housing's Buildings and Energy Performance Targets should be achieved in addition to the municipal requirement of achieving other third-party certification. Consult the re-zoning and energy by-law requirements of the Municipality having jurisdiction before establishing the performance criteria for the project.

## 2.0 Building and Energy Performance

### 2.1 REQUIREMENTS

#### 2.1.1.1 Change the Article title to “Part 3 Projects - Less than 7 Storeys:”

Remove wording “Combustible (i.e. wood frame)”

Change the table in this article as follows:

Climate Zone <sup>1</sup>	Step Code Level	GHGI (kgCO <sub>2</sub> /m <sup>2</sup> )	EALR <sub>N75</sub> (L/s*m <sup>2</sup> @75 Pa)	IPALR <sub>N50</sub> (l/s/m <sup>2</sup> @50 Pa)
4 <sup>2</sup>	Step 4	5.5	2.0	1.2
5 <sup>3</sup>	Step 3	5.5		
6 <sup>4</sup> , 7 <sup>5</sup> , 8 <sup>5</sup>	Step 3	6.0		

1 Climate Zone is based on Heating Degree Days (HDD) below 18°C for 25 years period ending in 2006 as per BC Building Code Appendix C - Division B Climatic and Seismic Information for Building Design in Canada.

2 Less than 3000 HDD

3 3000 to 3999 Heating Degree Days (HDD)

4 4000 to 4999 Heating Degree Days (HDD)

5 Greater than 4999 Heating Degree Days (HDD)

#### 2.1.1.2 Change the Article title to “Part 3 Projects - 7 Storeys and higher:”

Remove wording “Non combustible (i.e. concrete)”

Change the table in this article as follows:

Climate Zone <sup>1</sup>	Step Code Level	GHGI (kgCO <sub>2</sub> /m <sup>2</sup> )	EALR <sub>N75</sub> (L/s*m <sup>2</sup> @75 Pa)	IPALR <sub>N50</sub> (l/s/m <sup>2</sup> @50 Pa)
4 <sup>2</sup> , 5 <sup>3</sup> , 6 <sup>4</sup> , 7 <sup>5</sup> , 8 <sup>5</sup>	Step 3	6.0	2.0	1.2

1 Climate Zone is based on Heating Degree Days (HDD) below 18°C for 25 years period ending in 2006 as per BC Building Code Appendix C - Division B Climatic and Seismic Information for Building Design in Canada.

2 Less than 3000 HDD

3 3000 to 3999 Heating Degree Days (HDD)

4 4000 to 4999 Heating Degree Days (HDD)

5 Greater than 4999 Heating Degree Days (HDD)

### 2.1.3 Thermal Comfort Evaluation

Revise as follows:

**2.1.3** Thermal Comfort Evaluation: A thermal comfort evaluation is required for all passively cooled buildings (i.e. buildings without full mechanical cooling in all occupied spaces). For all BC Housing buildings, it shall not exceed more than 20 overheating hours per year for any zone and must adhere to the City of Vancouver Energy Modelling Guidelines.

#### 2.1.4 Whole Building Airtightness Testing

**Revise** as follows:

- 2.1.4** Whole Building Airtightness Testing: Whole building airtightness shall be tested and reported. The Envelope Air Leakage Rate is to be confirmed through mandatory testing performed in accordance with the requirement of the Provincial Energy Step Code. Until the air leakage rate confirmed through testing is available, an air leakage rate determined in accordance with the City of Vancouver Energy Modelling Guidelines shall be used. If a more stringent placeholder is used as an assumption in the energy model, the building is to be designed and constructed with the intention of meeting the modelled air leakage target. The architect must work closely with the whole team but especially the mechanical and electrical engineer, envelope consultants, and contractor to ensure the design details and contractor's responsibilities are met. The airtightness testing result shall be submitted by the contractor at substantial completion. Refer to Section 4 Division 7 Thermal Bridging and Airtightness.

The buildings that do not achieve the airtightness target, the contractor must find and seal the sources of air leakage (using techniques such as visual inspection, smoke testing, and/or thermal imaging), and then re-test. Where the building is still unable to meet the target, a follow up report must be provided by the architect in coordination with the contractor. The report shall include the findings of a visual air barrier inspection, any air leaks that were found and sealed, remaining sources of air leakage and why they could not be sealed, and recommendations for future buildings to achieve the target.

## 4.0 Energy Efficient Products, Incentives and Energy Assessment

### 4.1 ENERGY EFFICIENT SYSTEMS

#### 4.1.1 Heating, Ventilation, Air Conditioning (HVAC) Systems:

**Add** the following sentence at the end of first paragraph:

All make up air units (MUA) shall be high efficiency condensing model if using natural gas as a source.

### 4.6 ENERGY ASSESSMENT AND ENERGY CONSERVATION MEASURES (ECM)

**Revise** as follows:

- 4.6.3** Project team should implement ECM to achieve a 50% GHG emission reduction target in line with CleanBC requirements. Consult with BC Housing's Energy Management Team.