City of Richmond

Report to Committee

Planning and Development Department

To:	Planning Committee	**Date:**	May 1, 2013
From:	Wayne Craig Director of Development	**File:**	08-4057-07
	Gavin Woo, Senior Manager, Building Approvals		
Re:	**Proposed Expansion of Convertible Townhouse Features Through Inclusion of Selected SAFERhome Standards**		

Staff Recommendation

That the Convertible Unit Guidelines, which apply to townhouse development, be expanded to include the specific SAFERhome features identified in this report.

Wayne Craig
Director of Development

Gavin Woo
Senior Manager, Building Approvals

DN:kt
Att:3

REPORT CONCURRENCE			
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER	
Policy Planning	☑		
REVIEWED BY DIRECTORS	INITIALS: DW	REVIEWED BY CAO	INITIALS: GT

Staff Report

Origin

The purpose of this report is to respond to a referral from the May 17, 2011 Planning Committee:

"That, in relation to the SAFERhome Standards Society, staff: (i) look at issues the City can implement; and (ii) undertake discussions with (a) small builders, and (b) the Richmond Committee on Disability".

Background

SAFERhome Standards Society

SAFERhome Standards Society is a non-profit organization that promotes the adoption and use of housing standards and practices that are safe, healthy and sustainable for everyone in the community. To achieve this objective, SAFERhome Standards Society offers a range of educational programs and advocates for changes within the construction industry. The organization's Executive Director familiarized members of Council with the 19-Point SAFERhome Standards that consist of a set of criteria for safer and more accessible homes, which was compiled by the organization and are listed in **Attachment 1**. Staff have been directed to review whether the criteria can be implemented in new development and to consult with small builders within the development community and the Richmond Committee on Disability (RCD).

Current Accessible Housing Options

The City has always taken a proactive role in securing a range of accessibility provisions in new developments. The following provides a synopsis of the five (5) types of accessibility identified and supported by the 2041 Official Community Plan (OCP). **Attachment 2** provides a detailed list of the features associated with each of the following typologies.

Aging in Place
Aging in place features improve accessibility and use for those with minor mobility challenges and respond to the needs of an aging yet active population. Aging in place features are required in all new townhouse and apartment developments.

Barrier Free Housing
Barrier Free Housing is designed and built to facilitate a move-in ready condition for an occupant/owner with mobility challenges. It is voluntary and developer/owner initiated.

Basic Universal Housing or Adaptable
Basic Universal Housing units, which may also be referred to as Adaptable units, facilitate ready access, use and occupancy by a person with a disability. As an incentive to the development community to build Basic Universal Housing units, 1.86 m^2 (20 ft^2) per dwelling unit is excluded from the floor area ratio calculations provided the unit includes all the features articulated in Section 4.16 of the Zoning Bylaw (**Attachment 3**). Construction of Basic Universal Housing units is voluntary; however, designated affordable housing units are regularly constructed as Basic Universal Housing units and include all the features listed in the bylaw.

Convertible Units
Convertible housing features are secured in townhouse projects. They are designed and built to look like standard units but include features that facilitate ready accessibility and easy installation or modifications to suit the needs of an occupant with mobility challenges. Convertible Unit Guidelines were drafted by staff to ensure consistency in the delivery of these units. There is no bylaw requirement for the provision of Convertible units. However, since 2007, at least one (1) Convertible unit has been secured in new small townhouse developments, and half of all townhouse developments consisting of more than 20 townhouses have provided two (2) or more Convertible units.

Visitability
Visitable units are designed and built to enable a visitor with mobility challenges to enter the unit, visit with the occupant, and easily use one (1) bathroom. Adaptable, Barrier Free and Basic Universal units all facilitate visitability. Provision of the units is voluntary. Convertible units are visitable provided that the washroom is on the main floor or a lift mechanism has been installed.

Although all improvements to accessibility are supported and encouraged, aging in place features, Basic Universal Housing units, and Convertible units are actively negotiated during the development review process and built throughout the city. To ensure the delivery of accessible units and features, the location of Convertible and/or Basic Universal Housing units is noted on Development Permit and Building Permit plans, and specifications articulating the accessibility provisions within the building are drawn and/or noted on the plans. Through the building inspection process, building inspectors verify that the units have been built as noted on the Building Permit plans.

Once the Convertible and Basic Universal Housing units are constructed, they are sold or rented to the public by the developer; the City is not involved in the long term use or ownership of the units. However, there is interest in maintaining a consolidated information catalogue of the number and location of Convertible and Basic Universal Housing units being constructed in Richmond. Staff are actively working with the development community to investigate a means of establishing an information catalogue and its potential future application, as well as to develop and apply a suitable means to collect and manage this information. Staff anticipate bringing additional information forward to the Mayor and Councillors as part of a subsequent report.

Analysis

Analysis Methodology

Convertible unit features are tailored for inclusion in townhouse units, compared to the City's Basic Universal Housing features, which are applicable to single storey apartment units. A comparison of Convertible, Basic Universal Housing and SAFERhome features confirmed similarities between Convertible unit and SAFERhome criteria, whereas Basic Universal Housing units provide a more comprehensive list of accessibility provisions. Therefore, the focus of the analysis is whether incorporating the SAFERhome Standards criteria into the Convertible Unit Guidelines, which apply to townhouse development, is practical and

implementable. In addition to staff analysis of the feasibility and impact of including the 19-Point SAFERhome Standards criteria in the repertoire of accessibility features being secured within townhouse developments, representatives from small home builders, Urban Development Institute (UDI), and the Richmond Committee on Disability (RCD) were consulted by staff.

Analysis and Consultation Outcome

Attachment 4 provides both a detailed comparison and synopsis of SAFERhome Standards criteria and Convertible Unit Guidelines, and implementation recommendations. Based on the comparative analysis and consultation with small home builders, UDI representatives, and RCD, staff recommend that the Convertible Unit Guidelines be updated to include the following SAFERhome Standards criteria and one (1) equivalency provision:

1. SAFERhome Criteria 2
   Comply with code constraints for thresholds within the unit;
2. SAFERhome Criteria 3
   Demonstrate bath and shower controls are accessible;
3. SAFERhome Criteria 4
   Provide pressure and temperature control valves on all shower faucets;
4. SAFERhome Criteria 5
   Include wall reinforcements at bathtub, shower and toilet locations;
5. SAFERhome Criteria 6
   Specify maximum pipe height to facilitate future lowering of countertops;
6. SAFERhome Criteria 7
   Ensure cabinets underneath sinks are easily removed;
7. SAFERhome Criteria 8 (equivalency)
   Increase minimum entry door width;
   Demonstrate wheelchair movement between the hallway and rooms. Widen hallway/doorway to SAFERhome specifications if the unit layout does not demonstrate that wheelchair access is facilitated;
8. SAFERhome Criteria 12
   Provide electrical outlets in specified locations;
9. SAFERhome Criteria 14
   Upgrade to 4-plex outlets in master bedroom, home office, garage, and recreation room; and
10. SAFERhome Criteria 18
    Include wall reinforcements at the top of stairs.

The SAFERhome Standards criteria that are not recommended for inclusion are features that would secure a less meaningful accessibility standard than those currently achieved and/or the associated cost is greater than the expected benefit. **Attachment 5** proposes updated Convertible Unit Guidelines, which identify the proposed additions in bold italicized text.

The consultation process created an opportunity to discuss accessibility provisions that are not included in the 19-Point SAFERhome Standards. Specifically, RCD advocated for the provision

of a side opening wall oven and an induction cooktop in the kitchen. The appliances would improve the range of accessible features within the kitchen; however, the appliances are more costly, and there are no industry standards for the vertical height of side opening wall ovens making them potentially difficult and costly to replace in the future.

Although Convertible units provide an option for individuals who desire enhanced accessibility in their home, the units are not necessarily occupied by owners/residents who require the accessibility features. To maximize the benefits of requiring the installation of a side opening wall oven and an induction cooktop, it is suggested that, as part of the OCP's required review of requirements and incentives associated with accessible units, the inclusion of these appliances in units that are secured for use by seniors be considered.

Financial Impact

The costs and associated benefits of SAFERhome features were considered in this analysis. The SAFERhome criteria proposed to be added to the Convertible Unit Guidelines have an associated nominal cost and are supported for inclusion by representatives of the development community and accessibility advocates. There is no financial impact to the City associated with the proposed amendments to the Convertible Unit Guidelines.

Conclusion

It is recommended that the Convertible Unit Guidelines be updated to include nine (9) SAFERhome Standards criteria and to introduce one (1) equivalency provision. Further, it is recommended that as part of the OCP required review of accessible unit requirements and incentives, the installation of a side opening wall oven and an induction cooktop be considered for housing secured for use by seniors.

By expanding the existing Convertible Unit Guidelines to include selected SAFERhome criteria, future townhouse developments will provide homes that include more accessibility provisions, which supports Council's term goal to reduce barriers to living a physically active life for vulnerable populations and people living with a disability.

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Planner 2-Urban Design

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Attachment 1: 19-Point SAFERhome Standards Criteria
Attachment 2: Accessible Housing Features
Attachment 3: Zoning Bylaw Section 4.16: Basic Universal Housing Specifications
Attachment 4: SAFERhome and Convertible Unit Comparison & Synopsis of Recommendations
Attachment 5: Proposed Updated Convertible Unit Guidelines for Townhouses

19-Point SAFERhome Standards Criteria

Criteria 1: Exterior Thresholds
All exterior thresholds are flush.

Criteria 2: Interior Thresholds
All interior thresholds are to meet minimal code constraints (e.g. shower entrance removed or lowered).

Criteria 3: Positioning of Bath and Shower Controls
Typically bath and shower controls are located directly under the shower head in the middle of the shower stall wall and the bath/shower is next to the toilet creating a "pinch point" between the bath/shower and toilet. The conflict may be resolved by:

i Adjusting the bathroom floor plan to accommodate a greater separation between the bath/shower and the toilet;
ii Offsetting controls to a location roughly half way between the center and outside edge of the bath/shower; and/or
iii Flipping the bath/shower and associated controls 180 degrees.

Criteria 4: Pressure/Temperature Control Valves
Install control valves on all shower faucets.

Criteria 5: Washroom Wall Reinforcements
All washroom bathtub, shower and toilet locations are reinforced with 2" x 12" solid lumber to facilitate proper installation of grab/safety bars in the future.

Criteria 6: Waste Pipes
By installing waste pipes at 304 mm-355 mm (12" – 14") to the centre of the pipe from floor level, instead of 457 mm (18") above the floor, sinks may be lowered in the future without incurring significant renovation costs.

Criteria 7: Sink Cabinets
Design and install cabinets underneath each sink to easily facilitate future height modification.

Criteria 8: Doors (pinch points)
Doors and pinch points are a minimum 863 mm (34") wide and ideally 914 mm (36") wide. The cost of a larger door is about $10 per door in new construction. The cost of installing a larger door post construction is about $1,500.

Criteria 9: Hallways
Hallways and staircases are a minimum 1016 mm (40") wide and ideally (1066 mm) 42" wide, and include 45 degree angles to open up hall corners.

Criteria 10: Positioning of Light Switches
Position light switches at 1066 mm (42") to the centre of the electrical box from the finished floor instead of at 1219 mm (48") from the finished floor height.

Criteria 11: Positioning of Electrical Outlets
Position outlets at 457 mm (18") to the centre of the electrical box from the finished floor instead of at 18" so that the user does not need to bend down as far, which has significant implications for people with reduced mobility.

Criteria 12: Placement Locations of Electrical Outlets

1. Beside windows, especially where draperies or blinds may be mounted to install automated curtain and window controls in the future. If the window is wider than 152 mm (6"), install an outlet on either side;
2. Bottom of stairways to plug in a stair glider and/or a vacuum cleaner;
3. Beside the toilet to plug in a lift mechanism;
4. Above external doors (outside and inside) for future door openers and outside control;
5. On the front face of the kitchen counter for those who cannot easily reach the back counter in the kitchen to plug in devices. The same outcome can be achieved by positioning an outlet on a side wall beside the counter; and
6. At Node Zero Location (the place where all important electrical, cables, telephone wires and low voltage networks come together).

Criteria 13: Electrical Boxes
All light switches and A/C outlets use Smart electrical boxes (larger grey electrical box).

Criteria 14: Four-Plex Outlet Locations
Four-plex outlets placed in master bedroom, home office, garage, and recreation room. Commonly there are only single outlets in these locations which results in too many electrical devices vying for too few outlets.

Criteria 15: Telephone Pre-Wiring (Level 5 – 4 pair)
Install CAT 5E (4 pair) wires and connect to one central area (Node Zero Location).

Criteria 16: RG-6 Coaxial Cables Runs
Install RG-6 Quad cables and connect to one central area (Node Zero Location).

Criteria 17: Low Voltage Runs
Wiring network (e.g., door bells, security systems, etc.) returns to one central area (Node Zero Location).

Criteria 18: Wall Reinforcements (Top of the Stairs)
Reinforce walls at the top of all stairways with 2" x 12" solid lumber at 36" to centre.

Criteria 19: Provision for Multi-Storey Connection
Include either an allowance for an elevator option in stacked closets, or build all staircase(s) with a minimum width of 1066 mm (42").

Accessible Housing Features

Aging in Place

Typical aging in place housing features include:

- Lever type handles for plumbing features and door handles;
- Solid blocking in washroom walls for future grab bar installation; and
- Stairwell handrails.

Barrier Free Housing

Barrier Free Housing is designed and built to facilitate a move-in ready condition for an occupant/owner with mobility challenges. Unit features include:

- One bathroom with a wheel-in shower stall;
- Grab bars in washroom(s);
- Lower countertops;
- Kitchen work surfaces with knee space below;
- Accessible appliances and cupboards;
- Wider corridors and circulation areas; and
- Incorporation of Basic Universal Housing, and/or Convertible unit features.

Basic Universal Housing (also referred to as Adaptable units)

Basic Universal Housing units facilitate ready access, use and occupancy of the dwelling unit by a person with a disability. The Basic Universal Housing features are articulated in Section 4.16 of the Zoning Bylaw (**Attachment 3**) and include the following:

- One accessible washroom (including accessible toilet, sink and tub area);
- One accessible bedroom (including doors and space, window hardware, height, closet);
- Accessible kitchen (including counters, cupboards, plumbing);
- One living area (including window hardware and sill height);
- Corridor widths and floor surfaces;
- Outlets and switches;
- Patio and/or balcony; and
- Task lighting, cupboard handle specifications, and slip resistant floor surfaces.

Convertible Units

Convertible Units include features that facilitate ready accessibility and easy installation or modifications to suit the needs of an occupant with mobility challenges. Typical Convertible unit features include:

- One accessible washroom (including accessible toilet, future grab bar installation);
- Accessible kitchen (including wheelchair turning diameter or turning path diagram, counter width, and plumbing and gas pipe location);
- Corridor and doorway widths;
- Vertical circulation (including provisions to accommodate a stair lift or a vertical lift);
- One accessible parking space;
- Lever-type handles (plumbing, doors, and windows); and
- Windows (bathroom, kitchen, and living room).

Visitability
A visitable unit is designed and built to enable a visitor with mobility challenges to enter the unit, visit with the occupant and easily use one bathroom. Typical features include:

- One entrance with no steps, a flush threshold and a wider door; and
- One accessible washroom on the visiting floor, with a wider door and manoeuvring space.

Zoning Bylaw Section 4.16: Basic Universal Housing Specifications

4.16 Basic Universal Housing Features

Purpose

4.16.1 The basic universal housing features **described in Section 4.16 are intended to facilitate ready** access, use **and occupancy of a** dwelling unit **by a person with a disability.**

Building Access

4.16.2 Each dwelling unit **and each type of** amenity space **shall be accessible to a person with a disability from a** road **and from an on-site parking area.**

4.16.3 Access **to the elevator shall be provided from both the** road **and the entry to the on-site parking area.**

4.16.4 An automatic door opener shall be provided for the main entry.

Doors and Doorways

4.16.5 The minimum clear openings for all entry doors to every dwelling unit **and doors in common areas shall be no less than 850.0 mm (which will be provided by a swing door).** *[Bylaw 8736, Sep 5/12]*

4.16.6 The minimum clear opening for the interior doors to at least one bedroom, **one accessible bathroom and to common living areas in every** dwelling unit **shall be no less than 800.0 mm (which will be provided by a swing door).** *[Bylaw 8736, Sep 5/12]*

4.16.7 Doors in every dwelling unit **and common areas shall be operable by devices that do not require tight grasping or twisting of wrist.**

4.16.8 Flush thresholds throughout the building **shall be a maximum of 13.0 mm in** height.

4.16.9 The above-noted requirements for doors do not apply to mechanical rooms, service areas, closets, etc. where through access **is not required and** access **to a person with a disability is not anticipated.**

4.16.10 Clear openings shall be measured as illustrated in Figure 1 below.

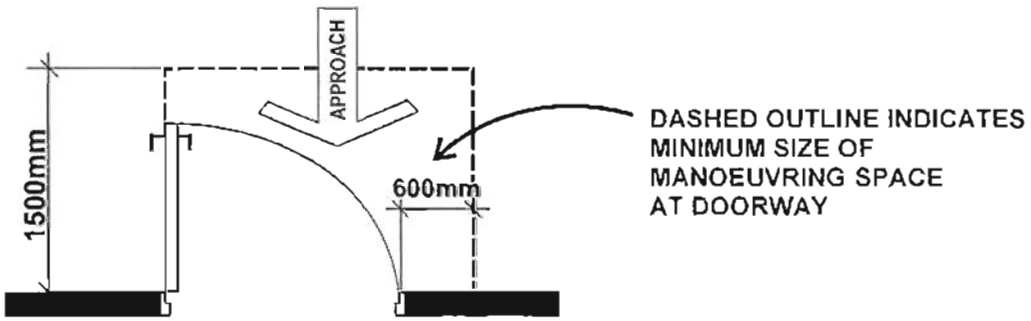
Figure 1. Clear Opening Measurement For Doors

Manoeuvring Space at Doorways

4.16.11 Entry doors to every dwelling unit **and door assemblies in common areas shall have a clear and level area which is not less than the following:**

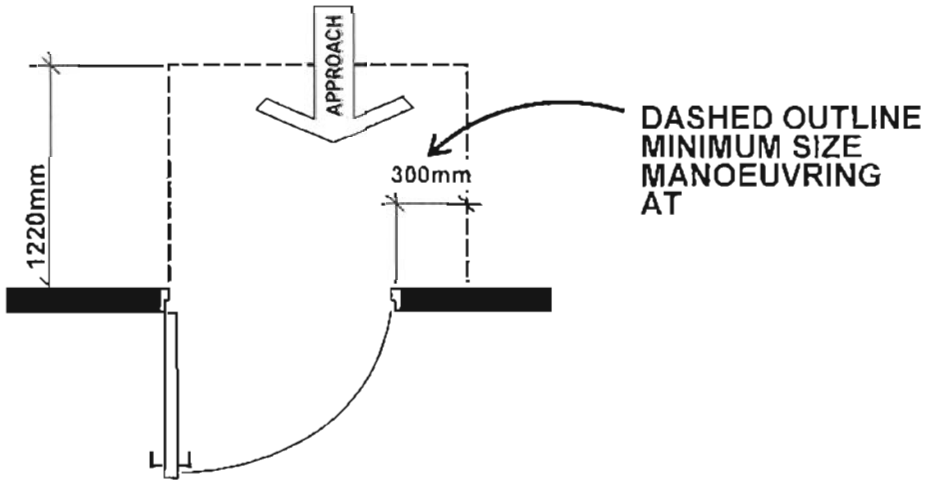
a) Where the door swings toward the area (pull door), 1500.0 mm long by the width of the door plus at least 600.0 mm clear space on the latch side, as illustrated in Figure 2 below. This requirement to apply to door assemblies to one bathroom and one **bedroom** in 2 **bedroom** and larger **dwelling units**. *(Bylaw 8736, Sep 5/12)*

Figure 2. Front Approach, Pull Side *(Bylaw 8736, Sep 5/12)*



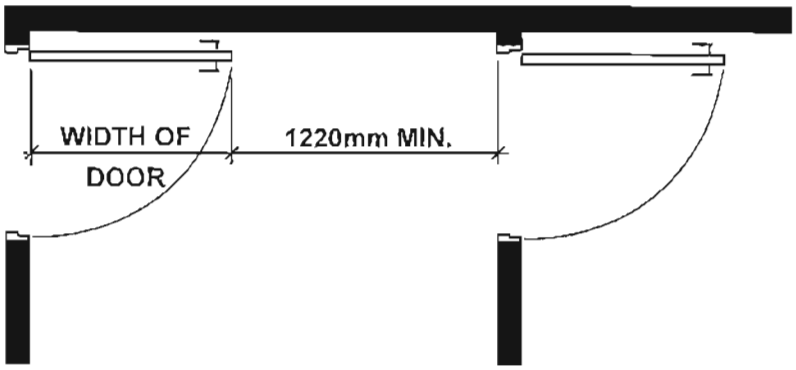
b) Where the door swings away from the area (push door), 1220.0 mm long by the width of the door plus at least 300.0 mm clear space on the latch side, as illustrated in Figure 3 below. This requirement to apply to door assemblies to common living areas in every **dwelling unit**, and one bathroom and one **bedroom** in 2 **bedroom** and larger **dwelling units**. *(Bylaw 8736, Sep 5/12)*

Figure 3. Front Approach, Push Side *(Bylaw 8736, Sep 5/12)*



c) Where there are doors in a series in common areas, there must be separation of at least 1220.0 mm plus the width of the door, as illustrated in Figure 4 below.

Figure 4. Separation of Doors in Series



d) Entry doors to every **dwelling unit** are exempted from the requirement to provide the 1220.0 mm long clear area and 300.0 mm or 600.0 mm clear space if rough in wiring is provided for future conversion for an automatic door opener. *[Bylaw 8736, Sep 5/12]*

Corridor Widths

4.16.12 Common corridors shall be no less than 1220.0 mm wide and provide a clear area not less than 1500.0 mm by 1500.0 mm adjacent to the elevator entrance. *[Bylaw 8736, Sep 5/12]*

Floor Surfaces

4.16.13 Floor surfaces throughout the building **shall have no abrupt changes in level, i.e., a maximum break of the flush threshold of 13.0 mm** height. **This requirement does not apply to exterior** balcony, **patio and deck door sills.** *[Bylaw 8736, Sep 5/12]*

4.16.14 Floor surfaces shall be slip resistant.

4.16.15 Where carpets are used, they must be firmly fixed, have a firm underlay and pile under 13.0 mm height.

Windows

4.16.16 Windows which are accessible shall have a window sill height **that does not exceed 750.0 mm above the floor to afford seated viewing. At least one window in the** bedroom **and one window in the living room shall afford such seated viewing.**

4.16.17 Windows which are accessible shall have opening mechanisms operable with one hand and of a type that does not require tight grasping, pinching or twisting of the unit.

Outlets and Switches

4.16.18 Light switches and electrical panels shall be 900.0 to 1200.0 mm from the floor. Intercom buttons shall be a maximum 1375.0 mm from the floor *[Bylaw 8736, Sep 5/12]*

4.16.19 Electrical outlets, cable outlets and telephone jacks shall be located 455.0 mm to 1200.0 mm from the floor. *[Bylaw 8736, Sep 5/12]*

4.16.20 Thermostats shall be located between 900.0 mm to 1200.0 mm from the floor. *[Bylaw 8736, Sep 5/12]*

4.16.21 The operable part of controls shall be located within reach of a clear floor area **that has a width of not less than 750.0 mm.**

4.16.22 Light switches will be rocker or paddle-type switches.

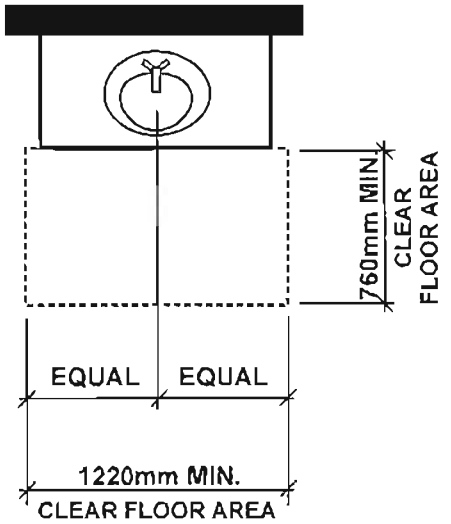
Bathrooms

4.16.23 At least one bathroom shall:

a) have a toilet positioned with the centre line of the toilet 420.0 mm to 480.0 mm from a side wall on which a grab bar can be installed and at least 510.0 mm from any obstruction on the non-grab bar side and at least 800.0 mm from any obstruction in front of the toilet; and *[Bylaw 8736, Sep 5/12]*

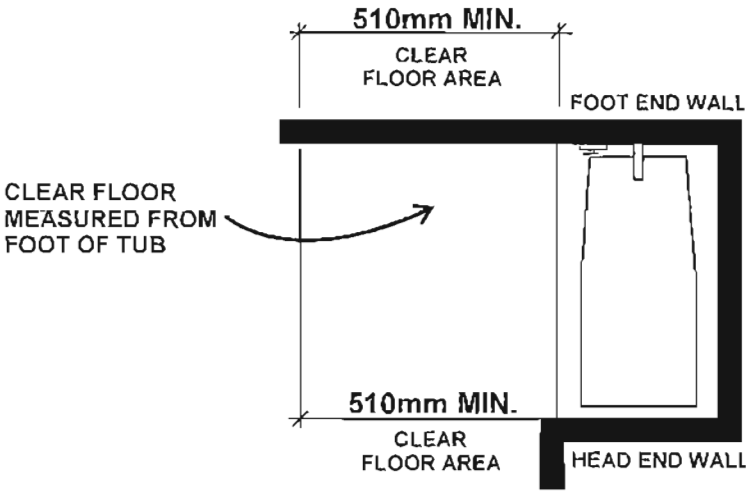
b) have a clear **floor area** at the sink of 760.0 mm by 1220.0 mm positioned for a parallel approach and centred on the sink, as illustrated in Figure 5 below.

Figure 5. Clear **Floor Area** at Sink



c) have a minimum clear area of 510.0 mm in depth along the full length of the bathtub, as illustrated in Figure 6 below. *[Bylaw 8736, Sep 5/12]*

Figure 6. Clear **Floor Area** at Tub *[Bylaw 8736, Sep 5/12]*



d) have structural reinforcement in walls behind and beside the toilet and the walls around the tub and/or shower to facilitate the installation of grab bars; and

e) include easy to grasp handles on faucets, e.g., lever-type faucets.

4.16.24 Where bathrooms are provided to serve a common amenity space**, at least one shall be wheelchair accessible as described in the Building Code and the top of the rim of the toilet in that one bathroom shall be 480.0 mm above the floor.**

Kitchens

4.16.25 The kitchen **must have:**

a) some usable counter space and cupboards that can be easily **accessed** by people with disabilities, including people with wheelchairs, e.g., continuous counter between the stove and sink; adjustable shelves in all cabinets; pull-out work boards at 810.0 mm **height**; and pull-out cabinet shelves;

b) easy to grasp handles on faucets, e.g., lever-type faucets;

c) easy to reach and grasp handles on cupboards, e.g., D or J type cabinet handles and grab edges under counters;

d) task lighting at sink, stove and key work areas; and

e) plumbing and utility pipes located to provide for a potential 810.0 mm wide under counter workspace so as not to prevent the easy future conversion of counter space and sinks to being universally accessible for knee space under the sink and where there is a counter top stove built in.

Bedroom & Closet

4.16.26 The space around a bed in a dwelling unit **that consists of a bachelor suite and at least one** bedroom **in every other** dwelling unit **shall have sufficient space to provide a turning diameter of 1500.0 mm on one side of a double bed.**

4.16.27 The clothes closet in a dwelling unit that consists of a bachelor suite and at least one bedroom in every other dwelling unit shall have a clear opening of at least 900.0 mm, clear floor space of at least 750.0 mm by 1200.0 mm and a clothes hanger rod than can be lowered to 1200.0 mm.

Patios and Balconies

4.16.28 Access doors shall have a minimum clear opening of 800.0 mm. *[Bylaw 8736, Sep 5/12]*

4.16.29 Minimum dimensions of any balcony or patio shall be 1500.0 mm by 1500.0 mm. This requirement does not apply to "Juliet" or "French" style of balcony or patio. *[Bylaw 8736, Sep 5/12]*

SAFERhome and Convertible Unit Comparison & Synopsis of Recommendations

Legend:

√ SAFERhome criteria feature currently achieved

X SAFERhome criteria not recommended

(S) SAFERhome criteria supported. Update to Convertible Unit Guidelines recommonded

(=) SAFERhome criteria not recommended but to achieve an equivalent outcome, an update to the Convertible Unit Guidelines is recommended

SAFERhome 19-Point Criteria	Convertible Unit Feature	Staff Recommendation
Criteria 1: Flush exterior thresholds		X SAFERhome criteria not recommended. Concern that lack of a threshold may result in water ingress.
Criteria 2: All interior thresholds within units meet minimal code constraints		√ SAFERhome feature currently achieved through compliance with BC Building Code.
Criteria 3: Position of bath/shower controls		(S) SAFERhome criteria supported. Applicant is to demonstrate that bath and shower controls are accessible either because of the bathroom layout or the placement of fixtures, which may require them to be offset, or flipping the bath/shower and associated controls.
Criteria 4: Installation of pressure and temperature control valves on all shower faucets.		√ SAFERhome feature currently achieved through compliance with BC Building Code.
Criteria 5: All bathtub, shower and toilet locations reinforced with solid lumber (2" x 12")	Wall blocking for future grab bar installation at toilet, tub and shower	√ SAFERhome feature currently achieved through compliance with existing Convertible Unit Guidelines.
Criteria 6: Waste pipes installed no higher than 304 mm to 355 mm (12"-14") from floor level		(S) SAFERhome criteria recommended. Allows easier future modification of kitchen and bathroom areas. No additional cost expected.
Criteria 7: Cabinets underneath each sink are easily removed	Clear area needed under future work space. Plumbing and gas pipes in-wall and in-floor located clear of under counter area of future work space (min. 810 mm wide counter)	(S) SAFERhome criteria recommended. No additional cost expected as most millwork is modular

SAFERhome 19-Point Criteria	Convertible Unit Feature	Staff Recommendation
Criteria 8: Doors (pinch points) Doors and pinch points are a minimum of 863 mm (34") but ideally 914 mm (36") wide	Entry door minimum 855 mm clear opening	(S) SAFERhome criteria recommended. Allows for easier access through entry doors. Estimated $15 additional cost per door. Update Convertible Unit Guidelines to increase entry door width.
	Patio/balcony min. 860mm clear opening	X SAFERhome criteria not recommended. Maintain existing Convertible Unit Guideline.
	Interior doors to main living areas, 1 bathroom and 1 bedroom, min. 800 mm clear opening with thresholds max. 13 mm height	(=) SAFERhome criteria not recommended. Through the consultation process, staff were advised that it is the layout of the unit, rather than the width of the hallway and doorway(s), that determines whether a wheelchair can make a 90 degree turn. Update existing Convertible Unit Guidelines to require the applicant to demonstrate that the unit layout facilitates wheelchair access and to widen the hallway and/or doorway(s) if necessary to secure access.
Criteria 9: Hallways Hallways are a minimum of 1016 mm to 1066 mm (40"-42") wide	Min. 900 mm width	X SAFERhome criteria not recommended. See comments associated with Criteria 8.
Criteria 10: Position of light switches Positioned 1066 mm (42") from the finished floor		X SAFERhome criteria not recommended. The BC Building Code specifications (900-1200 mm) secure a compatible location range.
Criteria 11: Position of outlets Positioned 457 mm (18") from the finished floor		X SAFERhome criteria not recommended. The BC Building Code specifications (455-1200 mm) secure a compatible location range.
Criteria 12: Location of Electrical Outlets		(S) SAFERhome criteria recommended.
Criteria 13: Electrical boxes		X SAFERhome criteria not recommended. Potential installation/coordination difficulties.
Criteria 14: Four-plex outlet locations		(S) SAFERhome criteria recommended.
Criteria 15: Telephone pre-wiring Criteria 16: RG-6 Coaxial Cable (WiFi) Criteria 17: Wiring network		X SAFERhome criteria not recommended. Wireless technology is common and can perform the function.
Criteria 18: Wall reinforcements (top of stairs)		(S) SAFERhome criteria recommended. Allows for easier future modification and no/limited additional cost.
Criteria 19: Either an allowance for an elevator option in stacked closets, or build staircase(s) with a minimum width of	Stair lift, staircase width, framing support and landings noted on floor plans in compliance with manufacturer specifications OR vertical lift,	X SAFERhome criteria not recommended. Clearance requirements are currently based on design specifications for lifts that don't require the minimum suggested width. Estimated cost to install elevator shaft option:

SAFERhome 19-Point Criteria	Convertible Unit Feature	Staff Recommendation
1066 mm (42")	depressed slab area, and landings, as noted on floor plans in compliance with manufacturer specifications. Framing to accommodate shaft construction without impact to surrounding structure.	$400 Estimated cost of building materials to construct wider stairway: $40 Maintain existing Convertible Unit Guideline requirement.
	Entry door clear exterior floor space minimum 1220 mm depth by door width plus 600 mm on latch side	Maintain existing Convertible Unit Guideline requirement.
	Lever type handles for all doors and plumbing fixtures	Maintain existing Convertible Unit Guideline requirement.
	Minimum 1 accessible parking space with minimum 4 m garage width	Maintain existing Convertible Unit Guideline requirement.
	Access from garage to living area minimum 800 mm clear opening	Maintain existing Convertible Unit Guideline requirement.
	Toilet clear floor space minimum 1020 mm at side and in front	Maintain existing Convertible Unit Guideline requirement.
	Kitchen: 1500 mm turning diameter or turning path diagram	Maintain existing Convertible Unit Guideline requirement.
	Bathroom, kitchen and living room: Min. 1 window that can be opened with a single hand	Maintain existing Convertible Unit Guideline requirement.

Proposed Updated Convertible Unit Guidelines for Townhouses

Convertible Unit Guidelines (Note: SAFERhome criteria proposed for inclusion are shown in bold italics)	
Doors & Doorways	***Entry doors are a minimum 863 mm but ideally 914 mm and have clear access.***
	Entry door clear exterior floor space min. 1220 mm depth by door width plus 600 mm on latch side (not needed if rough in wiring provided for future automatic door opener).
	Interior doors to main living areas, 1 bathroom and 1 bedroom, min. 800 mm clear opening with flush thresholds max. 13 mm height. ***Demonstrate wheelchair access between the hallway and rooms and widen hallway and/or doorway(s) if necessary to secure access.***
	Patio/balcony min. 860 mm clear opening. Note how accessed.
	All interior thresholds within units comply with BC Building Code.
	Lever-type handles for all doors
Vertical Circulation	Stair lift, staircase width, framing support, and landings, as noted on floor plans in compliance with manufacturer specs
	Vertical lift, depressed slab area, and landings, as noted on floor plans in compliance with manufacturer specs. Framing to accommodate shaft construction without impact to surrounding structure.
	At the top of all stairways, walls are reinforced with 2" x 12" solid lumber at 914 mm to centre.
Hallways	Min. 900 mm width.
Garage	Min. 1 accessible parking space with min. 4 m garage width.
	Access from garage to living area min. 800 mm clear opening.
Bathroom (Min. 1)	Toilet clear floor space min. 1020 mm at side and in front.
	Wall blocking for future grab bar installation at toilet, tub and shower. ***Reinforced with 2" x 12" solid lumber in all bathtub, shower, and toilet locations.***
	Lever-type handles for plumbing fixtures.
	Pressure and temperature control valves are installed on all shower faucets.
	Cabinets underneath sink(s) are easily removed.
	Demonstrate bath and shower controls are accessible (layout or fixture placement)
Kitchen	Clear area needed under future work space. Plumbing and gas pipes (in-wall and in-floor) located clear of under counter area of future work space (stove, sink & min. 810 mm wide counter). ***All pipes are brought in no higher than 304 mm to 355 mm to the centre of the pipe from floor level.***
	Cabinets underneath sink are easily removed.
	1500 mm turning diameter or turning path diagram.
	Lever-type handles for plumbing fixtures.
Windows	Min. 1 window that can be opened with a single hand (bathroom, kitchen, living room)
Outlets & Switches	***Placement locations of electrical outlets: beside window, bottom of stairways, beside toilet, above external doors (outside and inside), on front face of kitchen counter, within proximity of control centre for smart home options.***
	Upgrade to four-plex outlets in master bedroom, home office, garage, and recreation room.