19th Annual Industry Workshop

November 22, 2023

Presented By:

The City Of Kitchener Building Division

Welcome

Matt Ruetz

MBO Technical Specialist

Agenda

9:00 am	Administration
9:25 am	Public Portal Registration Changes
9:45 am	Planning Update – 2 to 4 Res. Units
10:00 am	Technical Matters
10:20 am	**Break (10-15 minutes)**
10:35 am	Technical Matters (continued)
11:00 am	Part 9 Updates
11:30 am	Part 3 Updates
12:00 pm	Wrap up and Lunch

Administration

Mike Seiling

Chief Building Official / Director

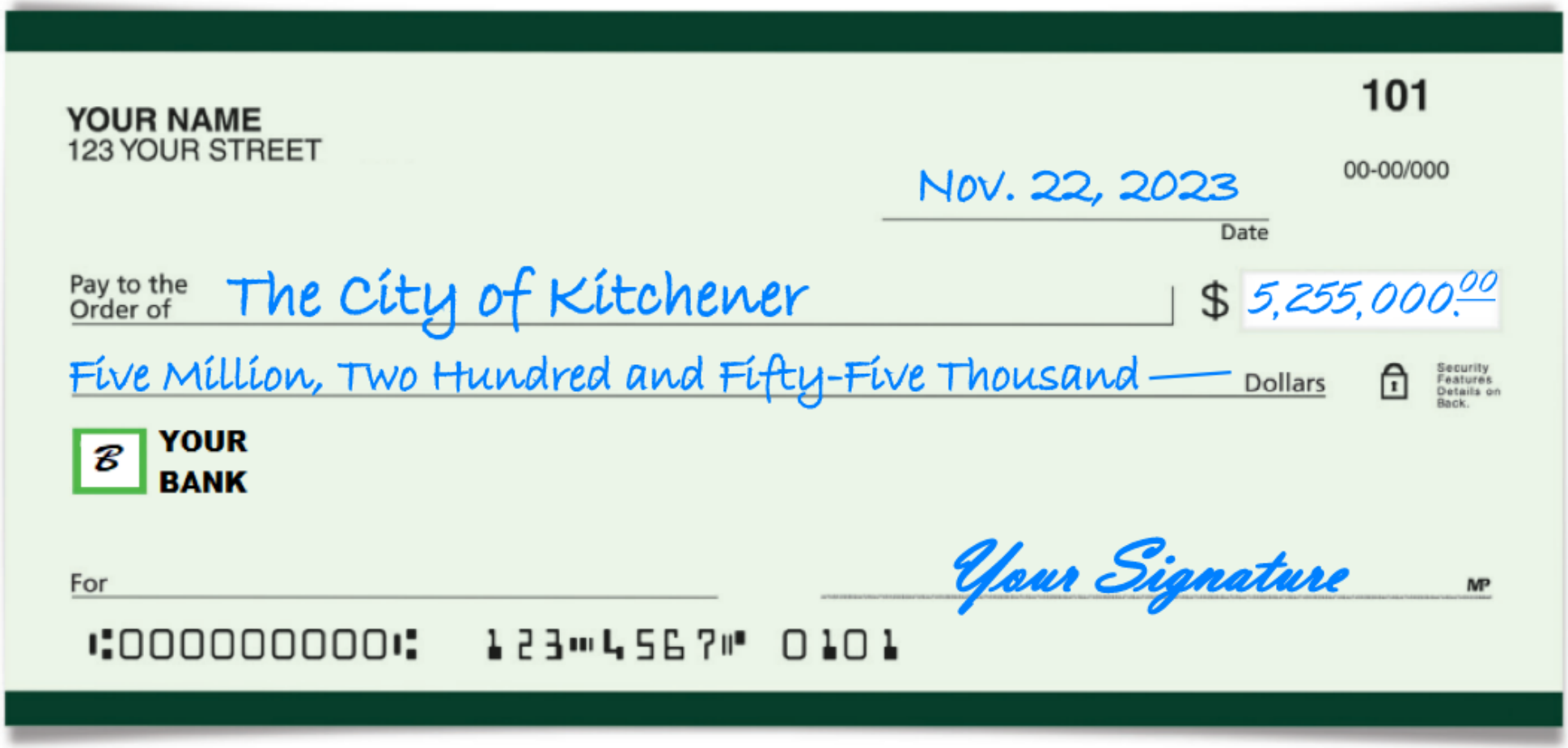
Why the Industry Workshop?

KITCHENER


TIME IS
MONEY
ESPECIALLY ON THE
CONSTRUCTION SITE

Important Reminders

Dropping Cheque off at City Hall-missing info



Dropping Cheque off at City Hall-correct

Dropping Cheques off at City Hall

When dropping a cheque off at City Hall please;

- Ensure to include the permit number and address on the cheque
- Drop off cheque in an envelope w/ Att'n Building Division-5th Floor

Incomplete Applications & Permit Revisions

- Incomplete applications take longer to issue
- No prescribed time frames for resubmissions
- Revisions: include the most recent approved floor plan and be upfront with the revision(s)
- Staff are meeting w/ customers to these ongoing issues to better understand and possibly implement changes

Innovative Materials and Systems

- When the OBC does not specifically reference a material or system, or when a performance standard either does not exist or does exist but is not referenced by the OBC, it is considered an innovative material, or system.

- In accordance with the Building Code Act and Regulations innovative materials or systems require either a;
  - Canadian Construction Materials Center (CCMC) Evaluation,
  - Building Materials Evaluation Commission (BMEC) Authorization,

  or,
  - Ministers Ruling

- **A P.Eng stamp does not supersede or waive the requirement for CCMC / BMEC**

Permit Expiry and Extensions

- Permit applications (not issued) may be cancelled where;
  - Incomplete or inactive for 6 months (Building Bylaw 710.3.14.)

- Issued permits may be revoked where construction or demolition;
  - has not seriously commenced within 6 months after its issuance (BCA 8(10)(b))
  - Written extension requests i.e., 1 month w/ rationale

  or,

  - has been substantially suspended or discontinued for a period of more than one year (BCA 8(10)(c))

New Building By-Law

- Update to current OBC references,
- Delete where not applicable or required i.e., Incomplete Submission Form,
- Removed duplication such as Permit Fee Rates as part of the Corporate User Fee Process. The COK website will show current permit fee rates,
- Removed the option of a Certified Engineering Technologist for final grading plan submission,
- In response to Bill 23 (Nov. 2022), where 4-10 res. Units, no SPA, added reference to the COK Engineering Development Manual, as amended & for transparency added reference to COK official website,
- Grading requirements for 1-3 res. units is same reference as above,
- Revise the Permit Fee Rebate Program on projects subject to SPA are NOT subject to final grading as part of the refund/forfeit,

Fees & Development Charges

Jordan MacLaughlin

Manager of Permits

2024 Permit Fee's

<u>NO CHANGE</u> from 2023 rates;

- Singles, semis, towns - $1.07/sq. ft.
- Apartment Building - $1.07/sq. ft.
- Interior Finishes - $0.37/sq. ft.
  (basement finishes & major renovations)
- Deck - $95.00 each
- Solar Panels - $ 95.00 for singles and duplex's
- Residential Revisions -$0.20/sq. ft. (min. $106.00), will be charged for <u>each</u> revision submitted

Payment Options

- You can pay your fee’s by Credit card, Online, Using electronic funds transfer, by cheque and In person appointment.

- Please note that Development Charges cannot be paid for by Visa or Mastercard either online or in person

https://www.kitchener.ca/en/development-and-construction/building-permit-fees.aspx

Development Charge Increase

2024 Development Charge Rates (check website)

- City of Kitchener (8.1% increase from current)*
- Region of Waterloo (8.1% increase from current)*
- School Boards (WRDSB & WCDSB) rates remain unchanged until June 1, 2024 (unless amended)

Complete applications for permits with a 10 business day review period must have been applied for by end of day Nov. 16th, 2023.

The new development charge rates will apply to all permits issued after Dec. 1, 2023

Development Charges

- For general information on DC Rate Freezes and Deferrals please refer to the link below to the City of Kitchener website for information.

https://www.kitchener.ca/en/development-and-construction/development-charges.aspx

- Further to this information you can also find a copy of last years Annual Industry Workshop presentation on the City of Kitchener website at the link below.

https://www.kitchener.ca/en/resourcesGeneral/Documents/DSD_BUILD_2022_Workshop_Presentation.pdf

Bill 23 Statistics

Bill 23 – The More Homes Built Faster Act

- 1.5 Million Homes by 2031
- 35,000 Homes over 10 years in Kitchener

https://www.ontario.ca/page/tracking-housing-supply-progress

Municipality	10-year housing target	Total housing starts since 2022	2023 target	2023 housing starts	2023 progress %	Housing target status
Kitchener	35,000	3,477	2,567	1,007	39%	Not met

Public Portal Registration Changes

Cathy Abbott

Technology Project Manager

Existing Public Portal

Public Portal was designed so that individuals can manage their own permit and licence applications but when organizations are involved we were forced to limit one portal account per organization

Organizations are currently able to be set up so that only one email address can be used to manage permits and licences for the organization.

CHANGES COMING SOON……

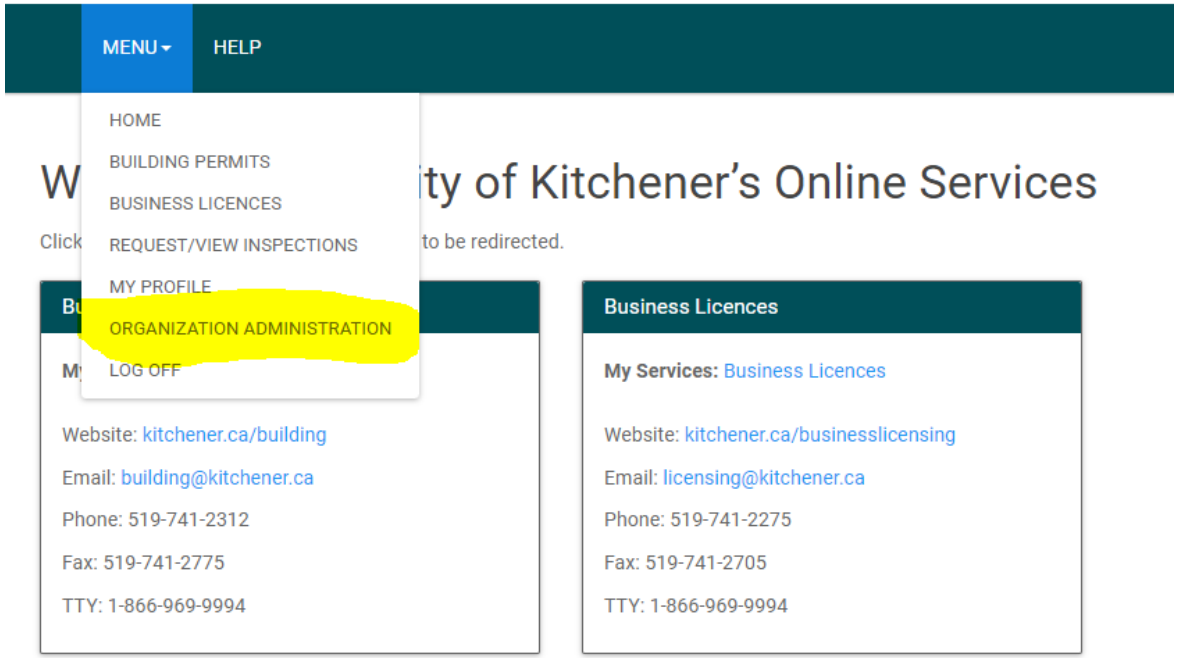
With the new version of AMANDA software we can now link contacts to an organization through a ‘Member’ tab

This has allowed us to re-design the public portal so that organizations using the portal can have multiple people representing them on the public portal

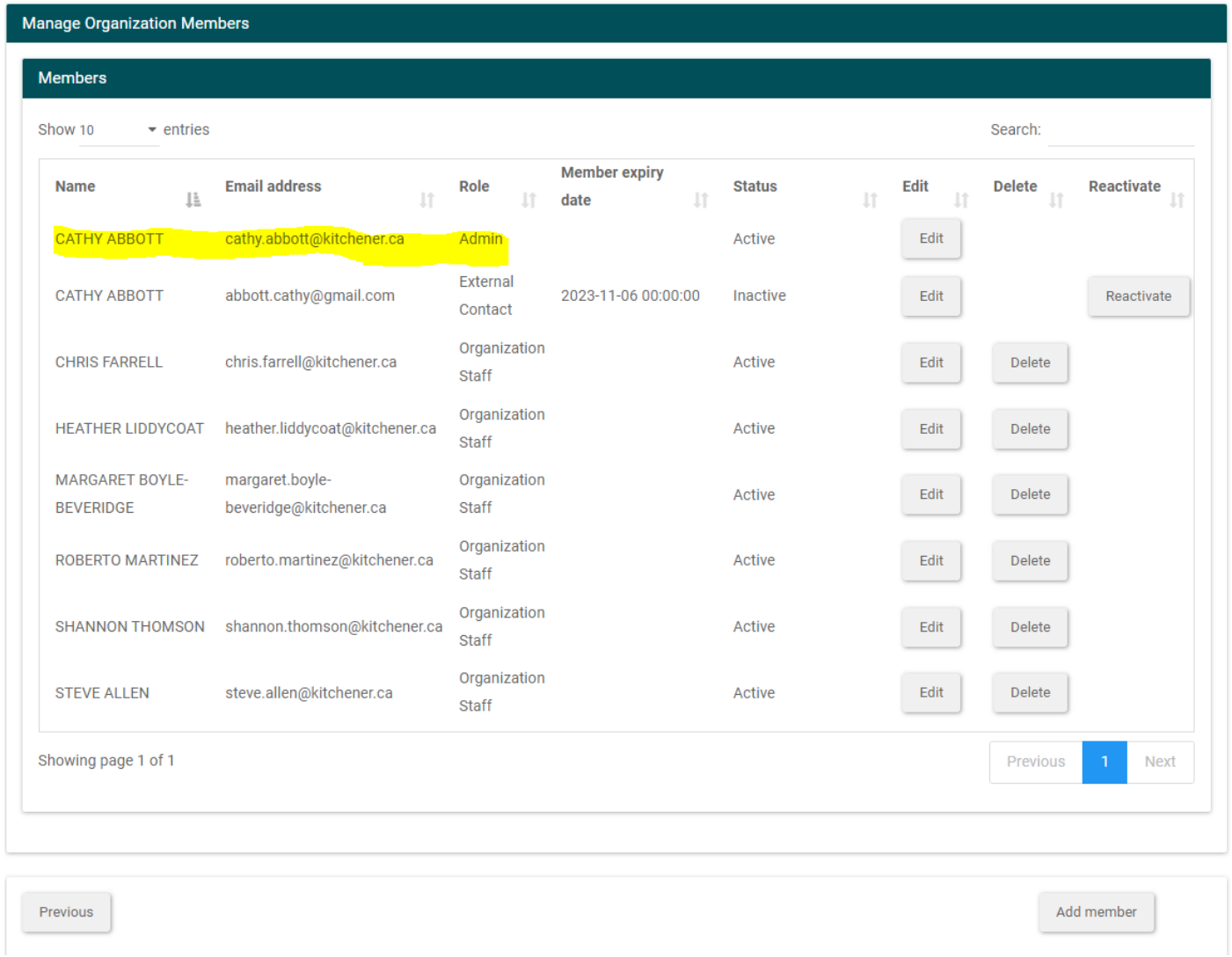
The other major change we have made is that portal accounts
are created automatically without intervention from staff in the office

Management of Members – Menu Option

- We designed the new registration part of the public portal so that Organizations can have one or more people manage who can represent them on the portal. Only ‘Administrators’ for an organization have access to this menu option



Management of Members



- An administrator can add, edit or remove members related to an organization.
- An organization can have more than one administrator
- In addition to the administrator(s) there can be Organization Staff and External Contacts added. Each of these roles has different permissions.

Existing Portal Accounts

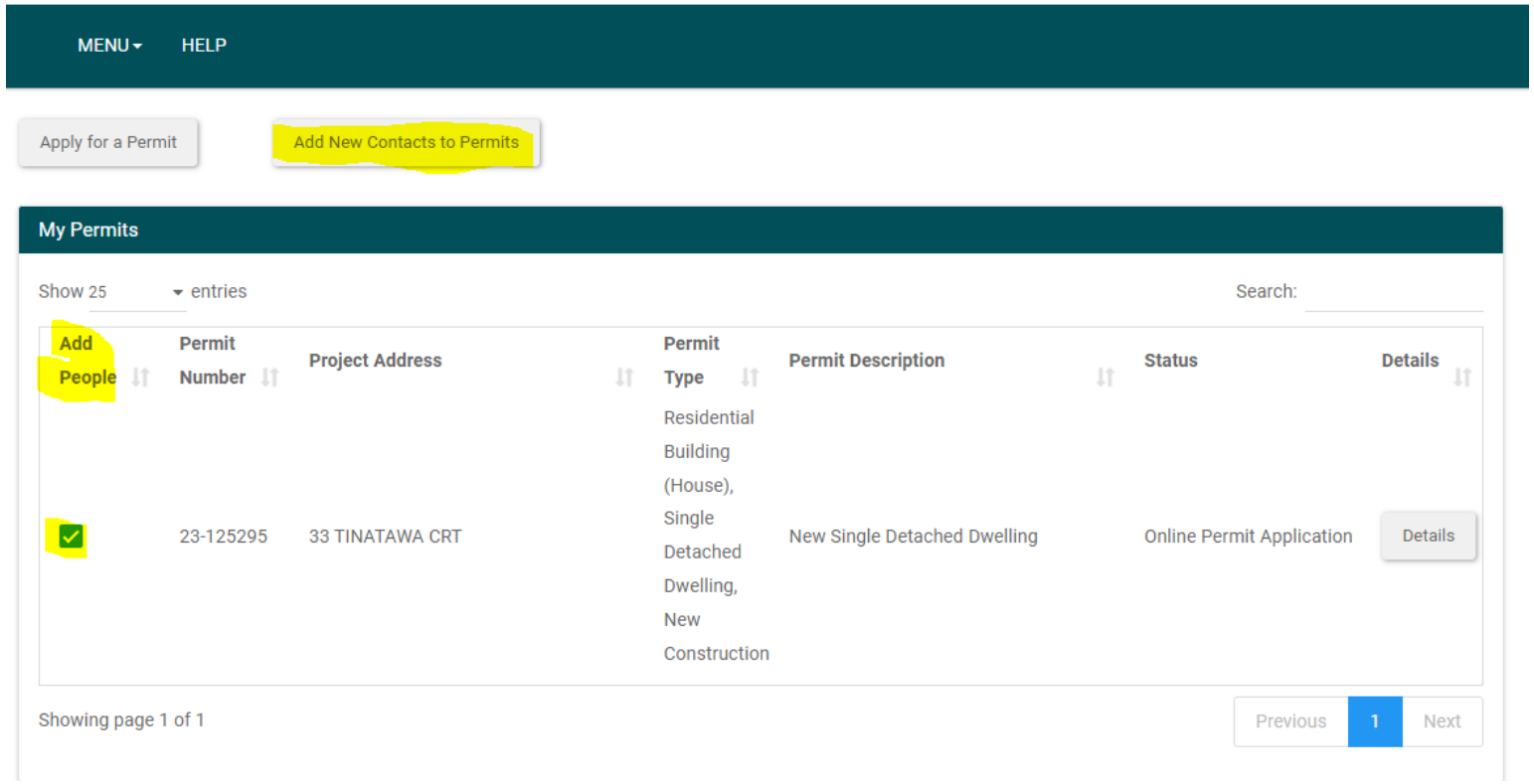
- We are currently working on ensuring that the one person who represents an organization currently is set as the ‘administrator’ for the organization by creating the member relationship in the data
- The administrator can then add more members
- There can also be more than one administrator

Administrator Role

- Can add, edit, remove or reinstate members of the organization
- Can see all permits and licences related to the organization
- Can add specific members to permits or licences if they were not the original applicant of the permit/licence
- Can edit any permit or licence related to the organization
- Can request inspections for any permit for the organization
- Often an organization has no more members than the original Administrator

Administrator Role – Adding contacts to permits

- Can add other ‘members’ of the organization to specific permits/licences



Organization Staff Role

- Organization Staff is normally someone who works for the organization
- Can see any permit/licences that they initiated or have been added to by the administrator
- Can request inspections for any permit related to the organization

External Contact Role

- An External agent is someone who is not an employee of the organization but may need to book inspections or provide information for a specific permit/licence. (eg a plumbing contractor or land surveyor)
- Can see/edit any permit/licences that they initiated or have been added to by the administrator
- Can request inspections for any permit that they initiated or have been added to by the administrator

Multiple Relationships

- An organization can have many members and an organization contact can be associated with more than one organization
  - Eg John Smith could be associated with Freure Nantucket Village Limited, Freure Riverstone Limited and Freure Promontory Inc

One email address per account

- As with the existing public portal there can be only one email address per account so each member of an organization will need to have their own email address.
- All email addresses MUST be valid email addresses as emails are sent for initiating connection as well as for the “forgot password” functionality.

Planning Update - 2 to 4 Units

Janine Oosterveld

Manager, Customer Experience & Project Management

Planning Division

Where are we now?

DUPLEXES

In most residential zones since 1994

3 UNITS

Permitted on lots with a single, semi or streetfronting townhouse since June 2023

4 UNITS

Permitted in some zones currently

4 UNITS ON MORE LOTS

Council motion to review and report back in March 2024

Rules of 3 units per property

IN ZONES THAT PERMIT	PERMITTED AS	KEEP IN MIND
✓Single detached	✓Up to 3 attached units	✓Apply for a zoning certificate for 3 units or a detached unit
✓Semi-detached	✓2 attached, 1 detached	✓Parking: curb cut permits and maximum driveway widths
✓Streetfronting townhouse dwelling	✓Regulations apply like lot area, setbacks and parking	✓Walkways and landings: for unit access at side and rear

More information available at [Additional dwelling units - City of Kitchener]

Where are 4 units already permitted?

IN SOME ZONES	PERMITTED AS	KEEP IN MIND
✓RES-4 and higher (bylaw 2019-051)	✓Considered a multiple dwelling	✓No longer requires site plan approval
✓R6 and higher (bylaw 85-01)	✓Regulations apply depending on the zone	✓Apply for a zoning certificate to confirm your project meets zoning early
✓Some other zones (check zoning bylaw)		✓Parking: designed as a parking lot with drive aisle, landscape and fencing

More information available at City of Kitchener – Residential dwelling units

Enabling 4 Units Everywhere

Subject to decision timing & appeals

January:

Engagement

March:

Council Decision

Spring (approx.):

Zoning rules in effect

Want to be informed? Katie.Anderl@Kitchener.ca

Keep in mind

- ✓ Work through **zoning** **first** before your building permit
- ✓ If you don’t meet zoning, you may need to change your plans or apply for Committee of Adjustment which adds time
- ✓ **Curb cut permit** for driveway widening
- ✓ Provide feedback through **Enabling 4 Units Everywhere** engagement in January!
- ✓ **Ask us**! Planning@Kitchener.ca or 519-741-2426

Technical Matters

Matt Ruetz

MBO – Technical Specialist

Next Edition of the OBC (2024)– What we know

- Expected to be approved and filed January of 2024
  - E-laws version expected shortly after at that time

- In effect by March 28, 2024
  - Transition Periods?

- Approximately 2400 technical changes

- **Kitchener Building Division plans to host a separate workshop dedicated to the next edition of the OBC once we have more details**

OBC Interim Code Amendments

r20 Amending Ontario Regulation 30/23 came into force on February 28, 2023.

- demountable stages and demountable support structures
- amendments to smoke damper waivers

r21 Amending Ontario Regulation 31/23 came into force on February 28, 2023.

- Temporary Health or Residential facilities – extended to March 31, 2024

r22 Amending Ontario Regulation 89/23 came into force on May 12, 2023

- Midrise combustibles relaxations
- standpipe in 4 storey townhouses
- correction to footings for stages

Demountable Stages & Demountable Support Structures

- Building permits are required for demountable stages and associated sound and lighting equipment towers.
- These stages must also comply with specific technical requirements for stage safety.
- This amendment responds to recommendations from a Coroner's Inquiry and from an expert panel on strengthening safety standards in the live performance industry following two stage collapses that resulted in injuries and a fatality in 2011 and 2012.

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Smoke Damper Amendments

Amendment:

- Revised definition of *fire compartment*
- Revised and added wording to Smoke Damper Waivers under Article 3.1.8.8A.

Impact:

- 0 hour fire separations will not require a smoke damper
- Penetrations for make up air, systems used to limit smoke movement (ie corridor pressurization) will not require a smoke damper. However a fire damper may still be required. (this exemption is very common for a high rise building with the make up air serving the public corridors)

Standpipe Amendment for 3 Storey Buildings with a Walk-out

Amendment:

- Wording change in Sentence 3.2.9.1.(7)
  - from “3 storeys above adjacent ground level” to “3 Storeys above ***grade***”

Impact:

- Standpipe is not required for a 3 storey building that has a walk out basement or entry.

Standpipe in 4 Storey Townhouses

Amendment:

- New Sentence 3.2.9.1.(8) added

3.2.9.1.
(8) A standpipe system is not required to be installed in a *building* classified as Group C *major occupancy*,

(a) that is not more than 4 *storeys* above *grade*,
(b) that does not contain a *public corridor* or other common areas,
(c) where each *dwelling unit*,
  i. is completely cut off from the remainder of the *building* so that there is no access to the remainder of the *building*,
  ii. has direct access to its interior by means of an exterior doorway located not more than 1 500 mm above or below adjacent finished ground level, and
(d) that conforms to the requirements of Article 3.2.2.44. or Article 3.2.2.45.

Impact:

- Exemption added to not require standpipe in 4 storey stacked townhouses

Mid-rise Combustible Construction
3.2.2.43A./50A. (NOT EMTC)

- Exit stairs are no longer required to be non-combustible construction
- Exit stairs are no longer required to be 1.5h FRR,
  - can now match the floor FRR typical for any other building.
- Storage Garages now permitted on the third story and below
  - Used to only be permitted up to second storey
- Changes to cladding requirements (comb vs non-comb) – Article 3.1.4.8.
  - Provides more options and less restrictive for buildings 4 storeys and greater
- Restrictions on combustible piping have been removed – Article 3.1.4.9. deleted
- Roof Covering requirements amended
  - Now only if roof is greater than 25m is Class A classification required
  - If multiple roof levels only those roofs greater than 25m require Class A classification
- Changes to criteria for considered to face one street
  - not less than 25% of the building perimeter is located within 15 m of a street or streets, or
  - not less than 10% of the building perimeter is located within 15 m of a street or streets, provided the exterior cladding conforms to Sentence 3.1.4.8.(2).

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Updated PDF of OBC

https://www.ontario.ca/page/request-digital-copy-2012-building-code-compendium

- Updated digital copy (pdf) of the 2012 Building Code Compendium
- Visit link above to request a copy
- Includes all the content that is found in the hardcopy version:
  - The Building Code Act, 1992
  - The Building Code (O. Reg.332/12) as amended May 12, 2023 (O.Reg. 89/23)
  - Supplementary Standards
  - Appendix notes

2025 National Building Code Consultation (1)

- Public Consultation currently open for the 2025 National Codes

https://cbhcc-cchcc.ca/en/public-review-of-proposed-changes-to-the-2020-national-model-codes/

- Consultation closes **December 18, 2023**

2025 National Building Code Consultation (2)

- Alterations to existing buildings
- Greenhouse gas emissions
- Radon
- Airtightness
- Accessibility – illumination levels and projection of protruding building elements
- Building envelope – thermal bridging and insulation
- Building fire safety
- Climatic loads
- Combustible construction – fire protection and safety
- Encapsulated mass timber construction
- HVAC equipment efficiency
- Large farm buildings
- Hazardous materials and activities
- Plumbing materials and equipment
- Prescriptive trade-off path
- Vegetated roof assemblies
- Windows, doors and skylights
- Environmental separation standards
- Fenestration – thermal characteristics
- Lighting
- Fire protection
- Use and egress
- Penetrations

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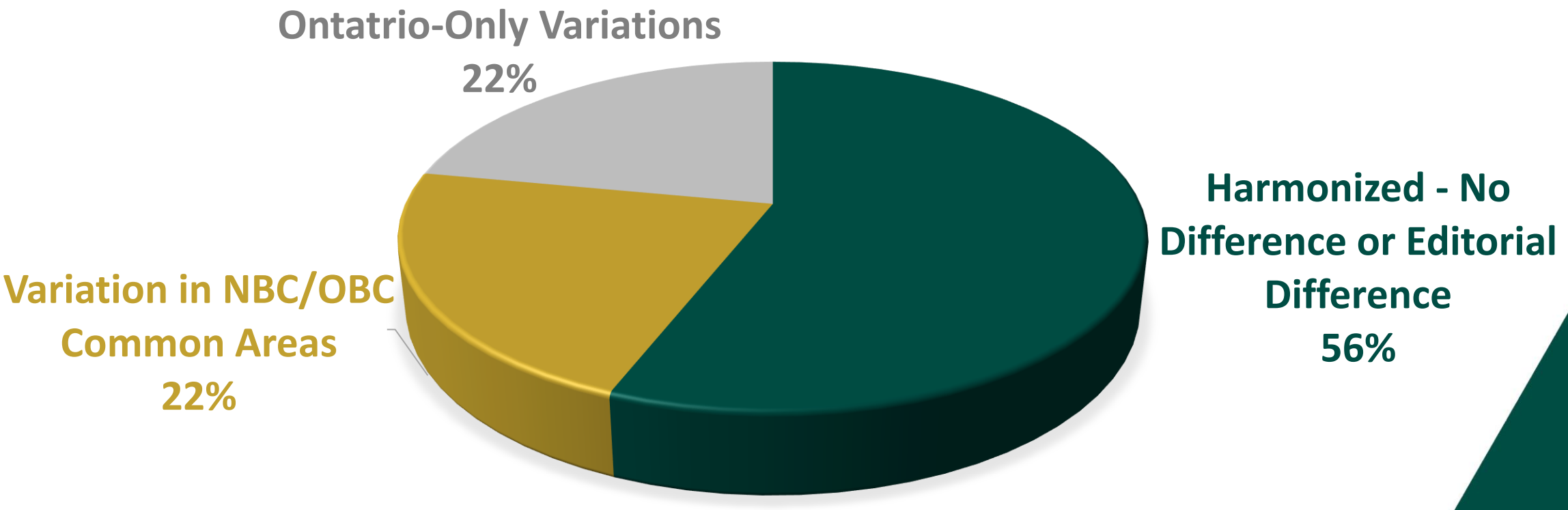
Harmonization with the National Codes (1)

- Under the Canadian Free Trade Agreement (2017), the Regulatory Reconciliation and Cooperation Table identified harmonization of construction codes as a priority, and a reconciliation agreement was signed

- Under the agreement, Ontario (as well as all other provinces and territories) are obligated to:
  - Reduce the number of technical differences (variations) between its Code and the National Codes
  - Release new (and increasingly harmonized) editions of its Code within specific timeframes following the release of new National Codes
    - 24 months for the next edition
    - 18 months for each edition thereafter

Harmonization with the National Codes (2)

BUILDING, PLUMBING, ENERGY, FARM, BUILDIGN CODES (VARIATIONS)



Building Code Interpretations

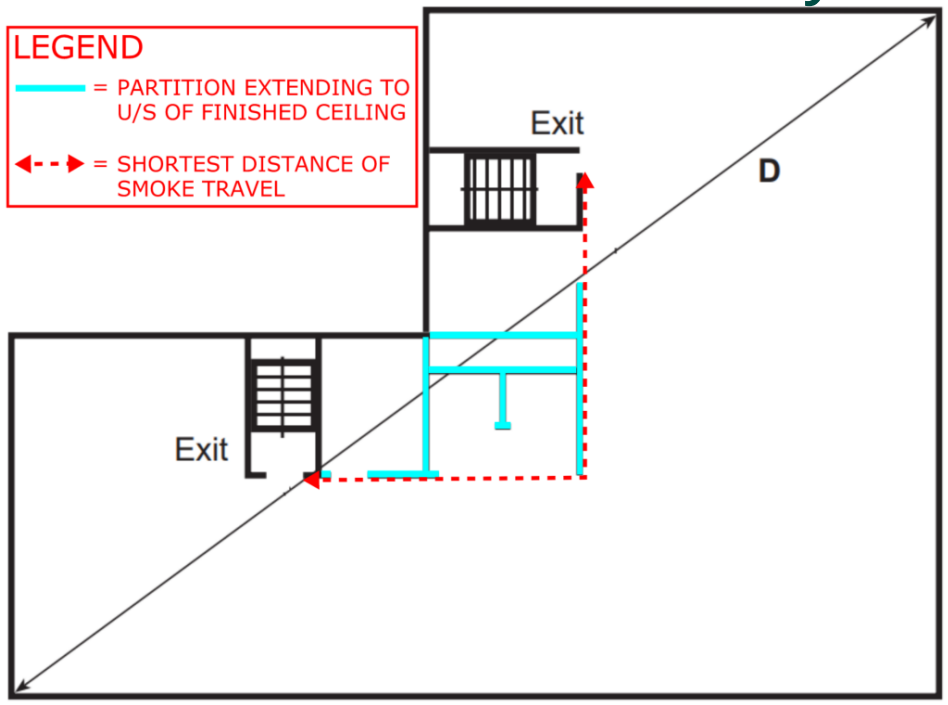
Distance Between Exits or Egress Doors How to Measure

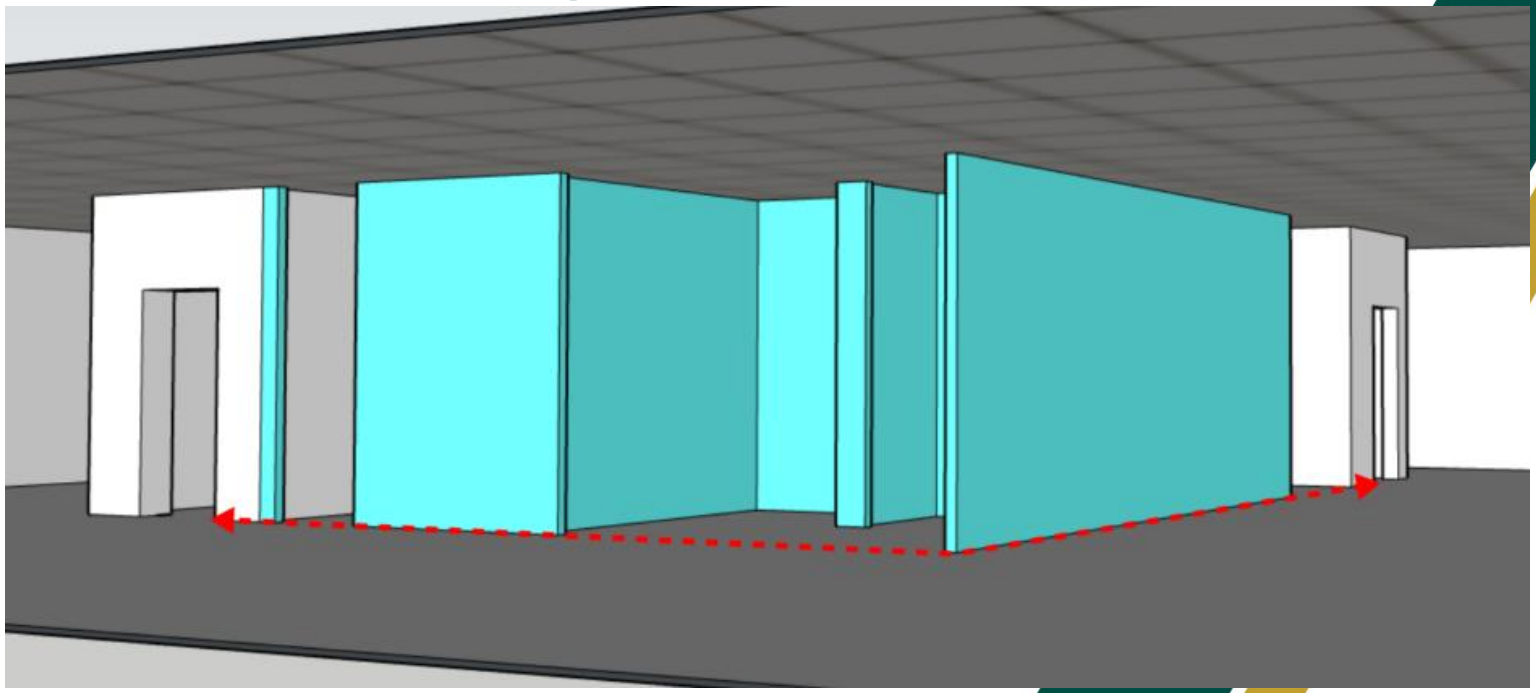
- When two exits / egress doors are required from a floor area, room, or suite the minimum distance between the exits / egress doors shall be;
  - **Exits** = 1/2 the overall diagonal of the floor area - 3.4.2.3.(1)
  - **Egress Doors** = 1/3 the overall diagonal of the room or suite – 3.3.1.5.(1)

- These provisions go on to state that the distance is measured as the shortest distance that smoke would have to travel between the exits or egress doors, assuming that the smoke will not penetrate an intervening fire separation.

Distance Between Exits or Egress Doors How to Measure – **Scenario 1**

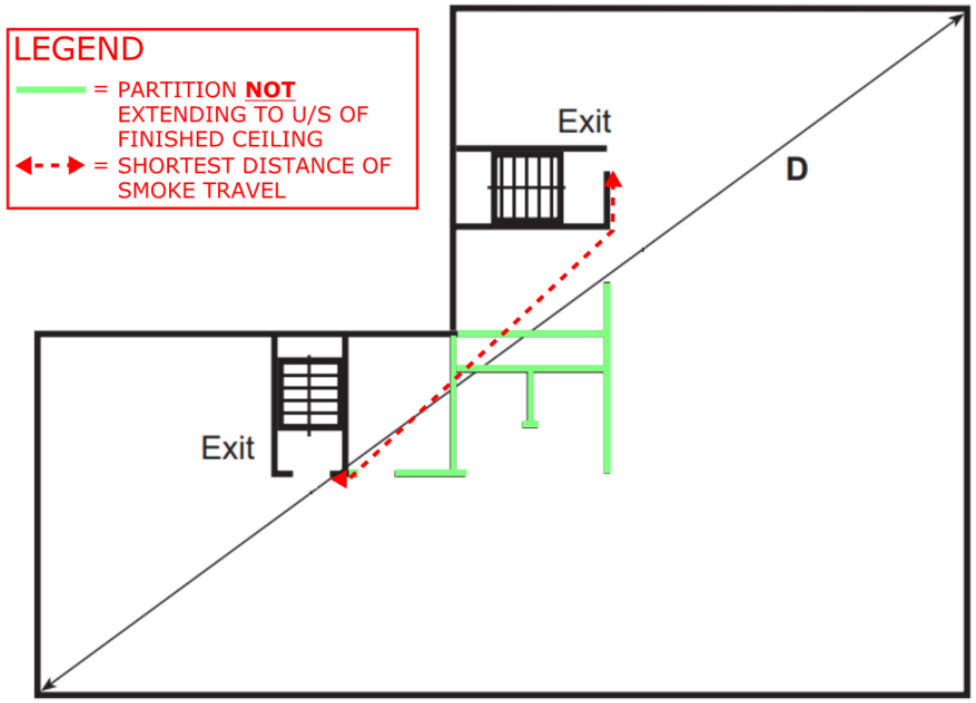
- Except as described in scenario 3, where interior partitions extend to the underside of roof/floor deck, or to the underside of finished ceiling (including a dropped acoustic tile ceiling), the measurement may be taken around the partitions.

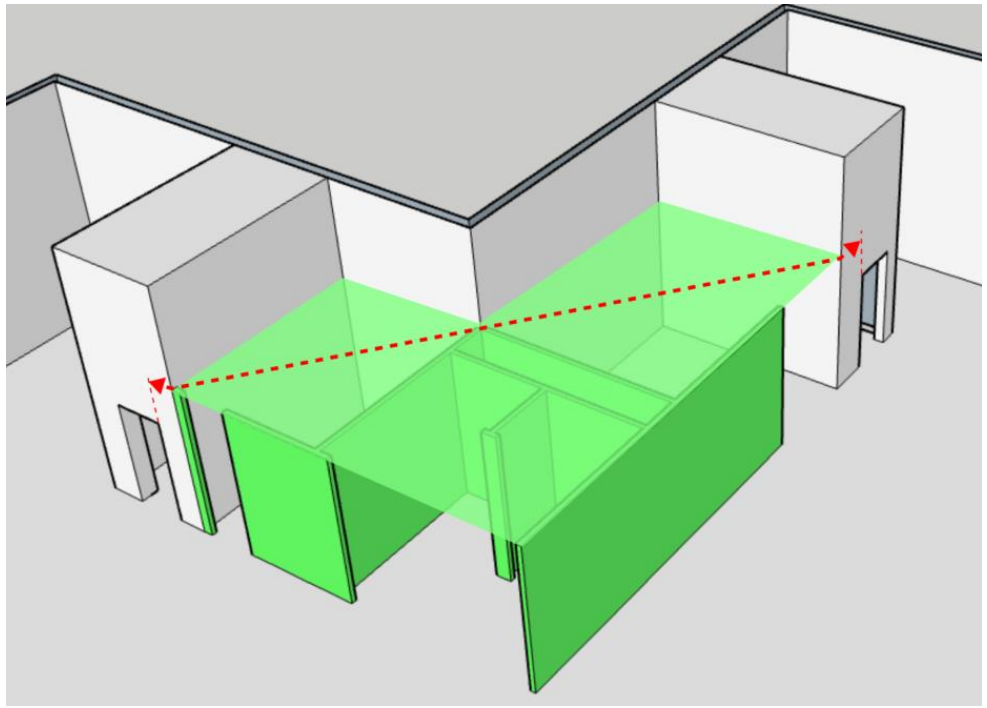




Distance Between Exits or Egress Doors How to Measure – **Scenario 2**

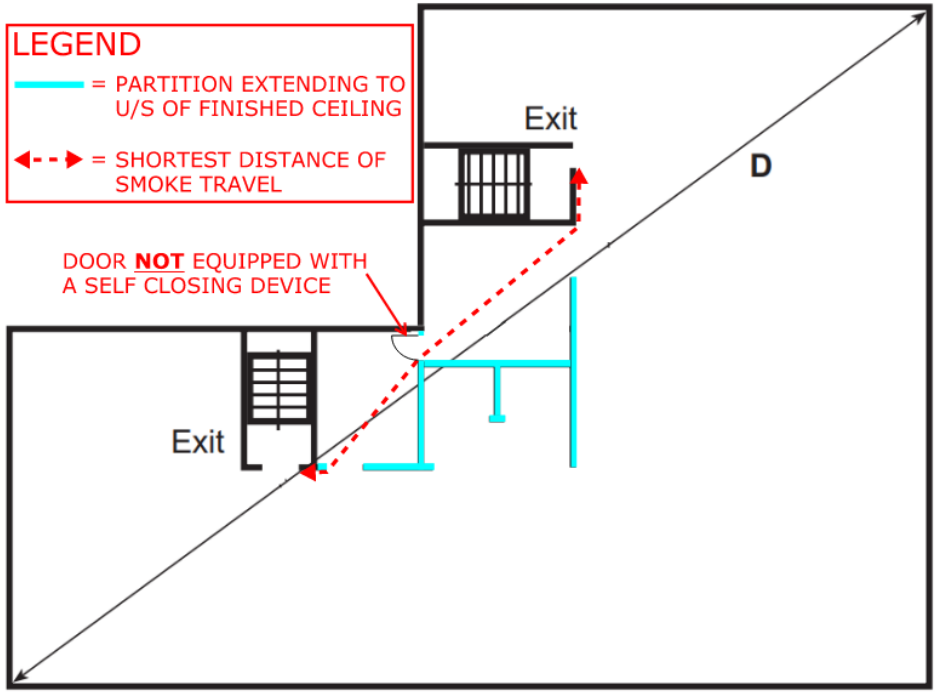
- Except as described in scenario 3, where interior partitions **do not** extend to the underside of finished ceiling, the measurement shall be taken as the shortest distance through or over the partitions, even where the partitioned area contains a finished ceiling.

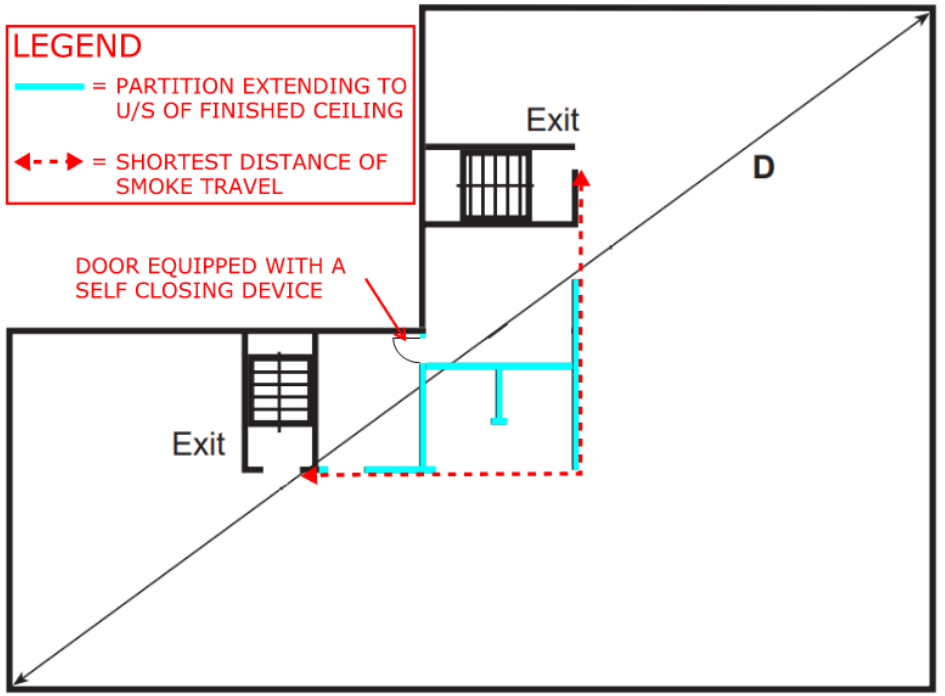




Distance Between Exits or Egress Doors How to Measure – **Scenario 3**

- Where the interior rooms or spaces are connected by doors (or other similar openings) that are not equipped with a self-closing device, the measurement shall be taken as the shortest distance through the rooms and the openings assuming smoke will travel through the opening **OR** as the measurement in accordance with Scenario 1 or 2, whichever is the shortest.





Distance Between Exits or Egress Doors

- Any partitions used to determine the shortest distance in which smoke would travel are to act as a smoke barrier, however **need not** be constructed as a 0 hour fire separation with fire stopping of penetrations etc.

- Where a Designer chooses to create partitions as a smoke barrier to determine the shortest distance in which smoke would travel;
  - make the appropriate notes on the drawings
  - illustrate the overall diagonal, and
  - show/dimension the shortest distance that smoke would travel.

Barrier-free Phone Rooms and Fitting Rooms

- The OBC DivB 3.8.2.1.(1) prescribes that a barrier-free path of travel be provided throughout all normally occupied floor areas

- There are some relaxations to this, however there is no exemption for fitting rooms, private phone rooms or other similar types of rooms.

- Therefore, technically each of these rooms provided would be required to meet the requirements for a barrier-free path of travel, which may be onerous.

Barrier-free Phone Rooms and Fitting Rooms

City of Kitchener Interpretation

Where fitting rooms, private phone rooms, or other similar types of rooms are proposed in a floor area that requires a barrier-free path of travel;

at least **5 percent (5%)**, but not less than one, of each type of use in each cluster provided and shall;

(a) have a clear turning space within the room of at least 1 500 mm in diameter,

(b) have a doorway with a clear width of not less than 860mm when the door is in the open position,

(c) where the doorway is equipped with a door it shall,

(i) comply with the door latch clearances in accordance with 3.8.3.3.(10), unless equipped with a power door operator, **and**

(ii) swing outward from the room, unless 820 mm by 1 440 mm clear floor area is provided within the room to permit the door to be closed without interfering with the wheelchair,

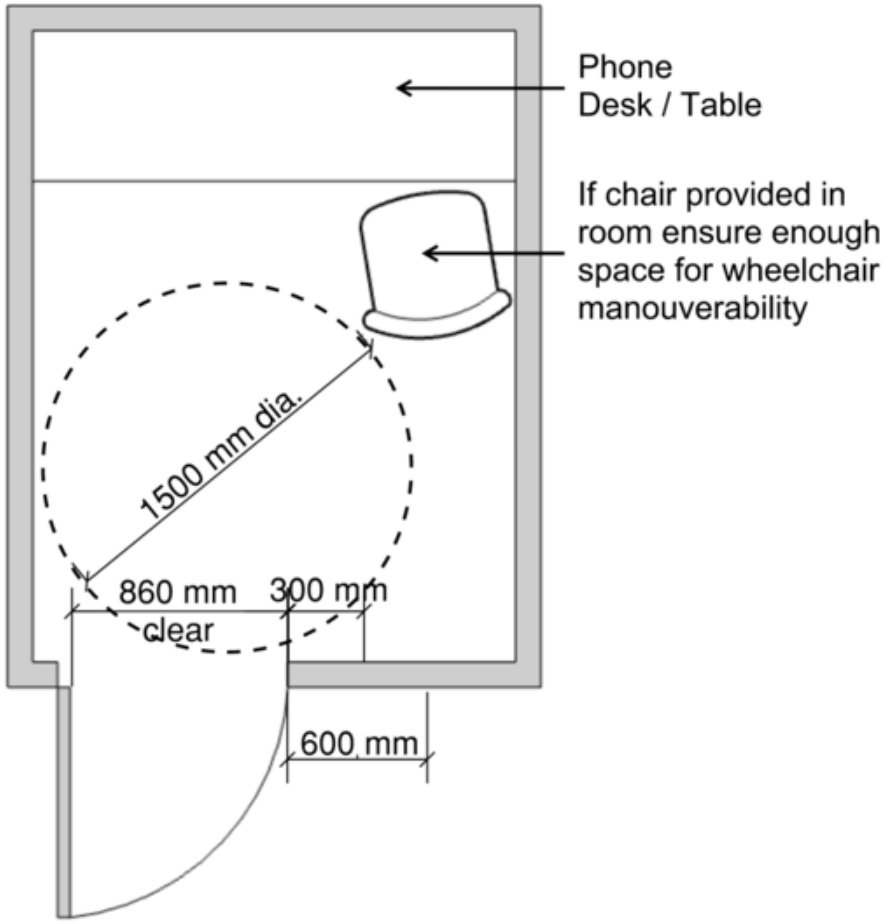
and,

(d) be equipped with a coat hook mounted not more than 1 200 mm above the finished floor.

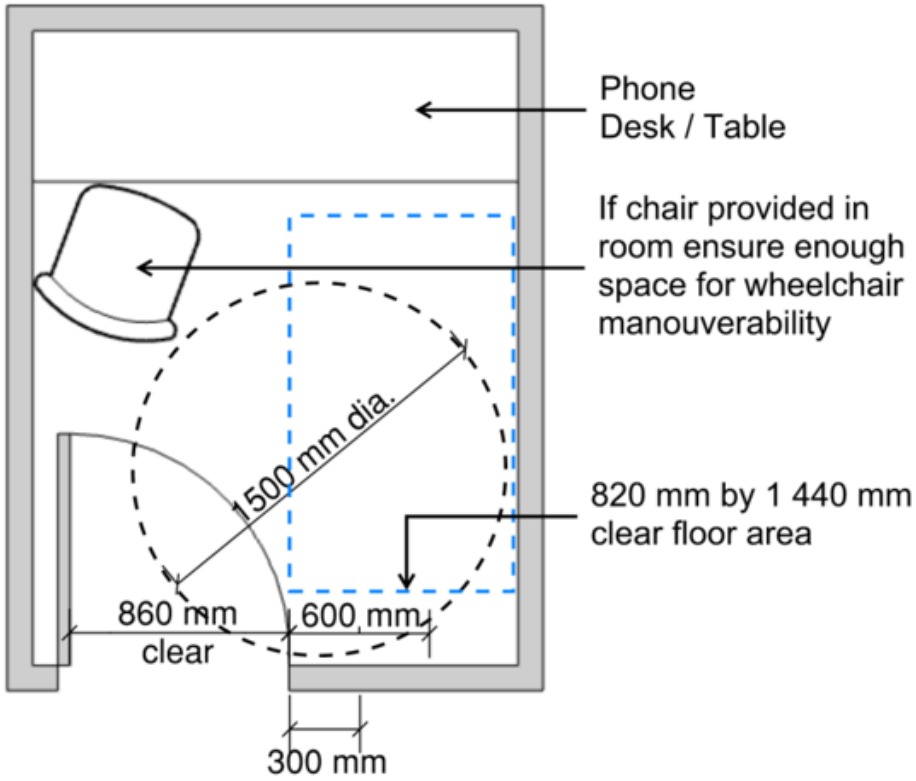
Barrier-free Phone Rooms and Fitting Rooms

Sample Phone Room Layout

Phone Room (outward swing door)



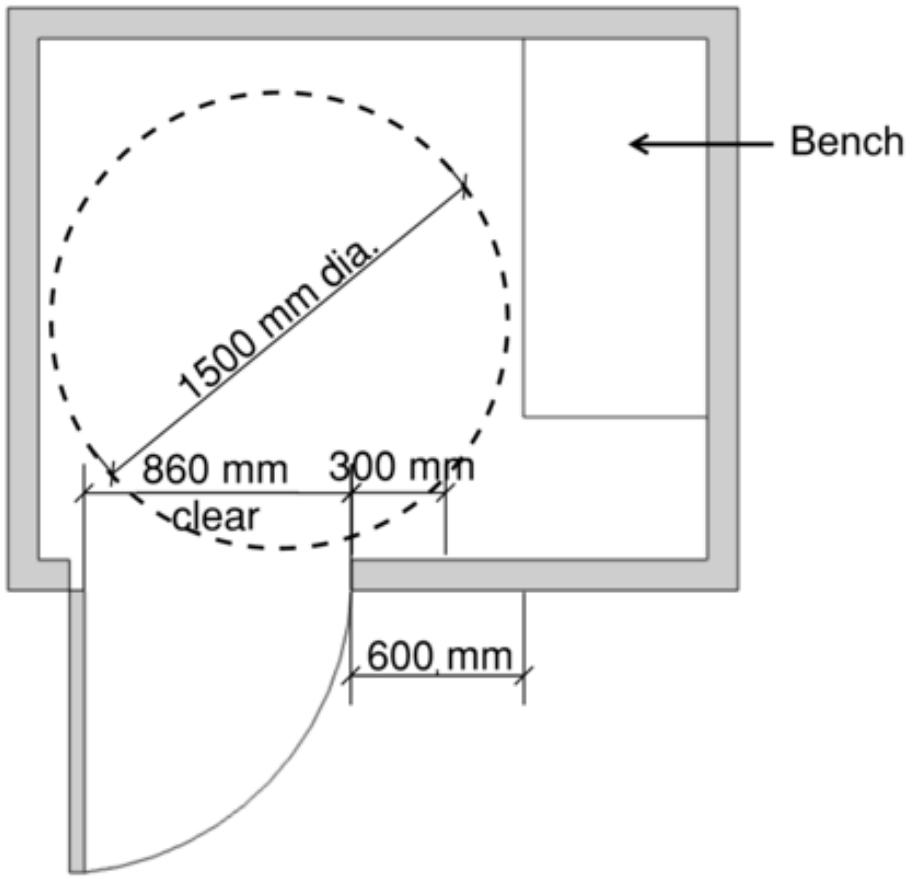
Phone Room (inward swing door)



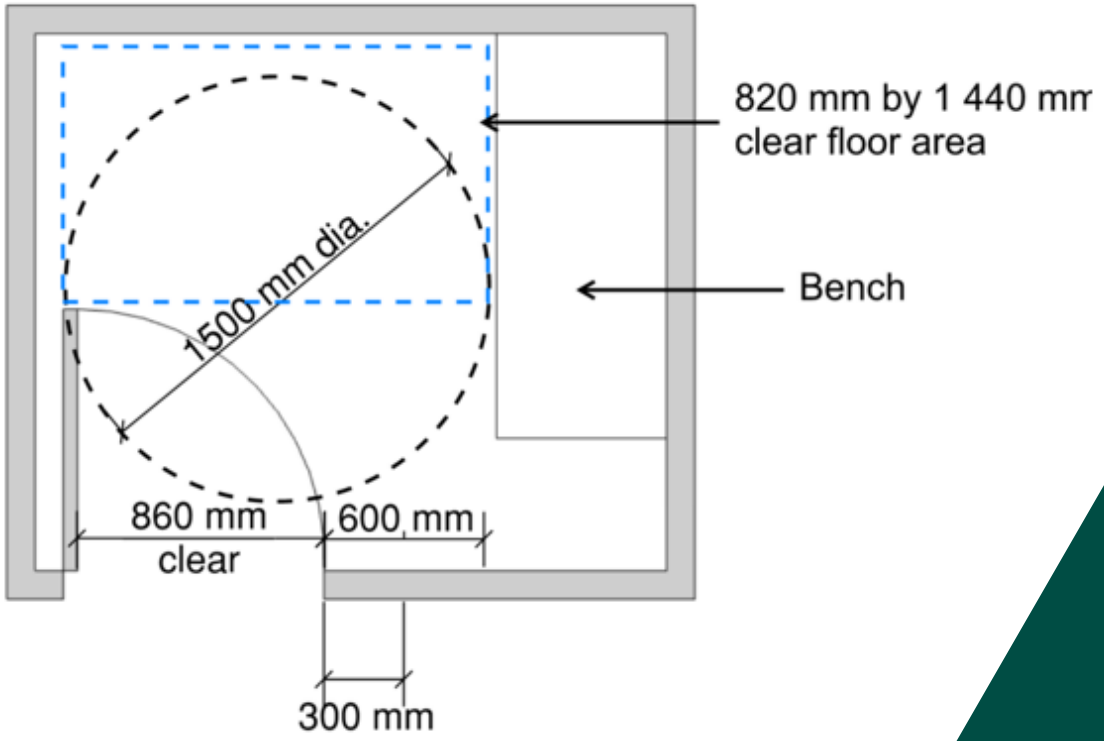
Barrier-free Phone Rooms and Fitting Rooms

Sample Fitting Room Layout

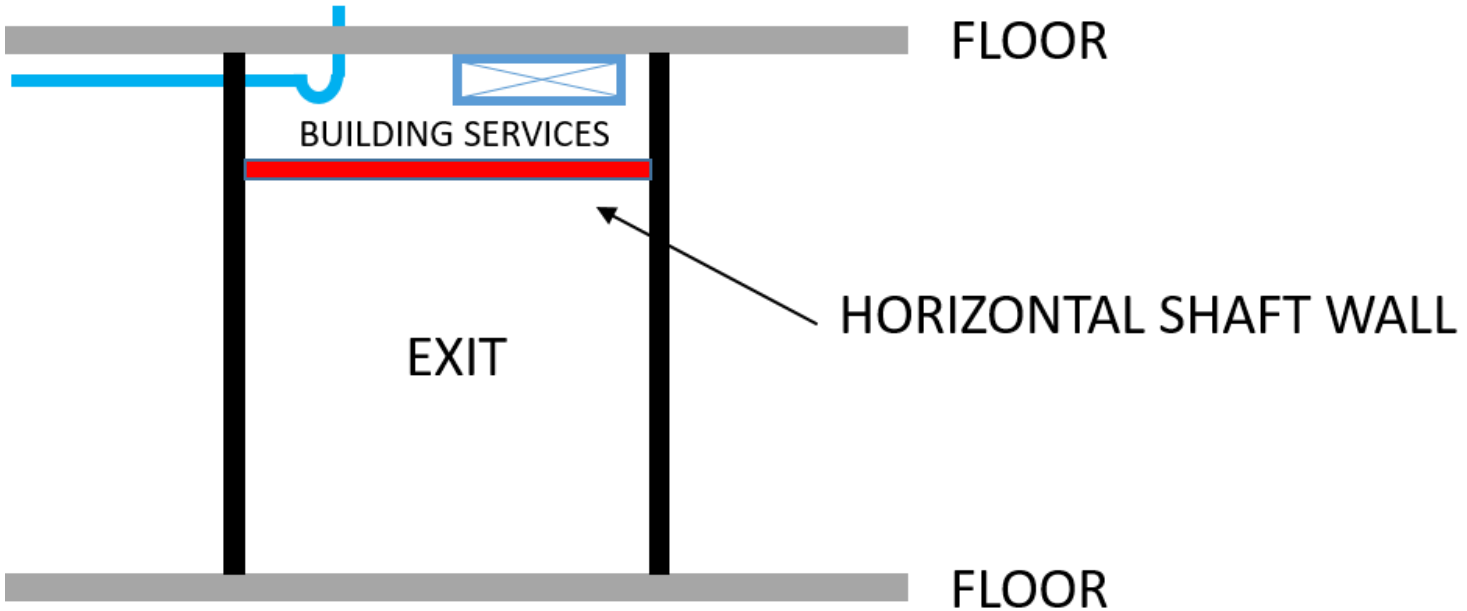
Fitting Room (out swing door)

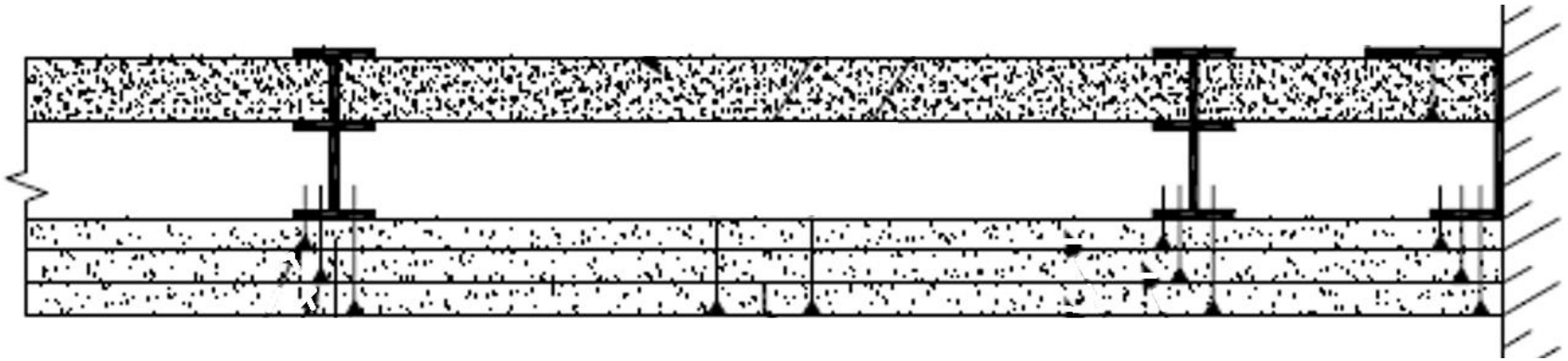


Fitting Room (inward swing door)



Horizontal Shaft Walls (1)





Horizontal Shaft Walls (2)

- Horizontal Shaft Walls used to have BMEC Authorizations.
  - The BMEC Authorizations were revoked March 2021

- The BMEC assemblies were tested from both sides
  - (tested from below, flipped and tested again)

- The current UL assemblies are tested from the underside only
  - not the same performance as the BMEC assemblies

- The City of Kitchener will accept a past BMEC Authorization for horizontal shaftwall systems with an Engineered Judgment
  - Link to Building Bulletin

Guidance Documents

Guidance Documents.

Presented at Last Years Workshop

- **NFPA 96 - Ecology Units** – Guide for the Use and Installation of Ecology Units
- **Standpipe Protection** – Guide to Protection of Above Ground Piping (NFPA 14 - 2013 Edition)

New Guides

- **Average Grade** – Guide to Calculating Building Height
- **Fire Load Calculations** – Guide to Determining Group F3 Occupancies
- **Portable Fire Extinguishers** – Guide to Installing and Locating Portable Fire Extinguishers

https://www.kitchener.ca/en/development-and-construction/standard-details.aspx

Average Grade Guide (1)

Building Division
March 2023

Average Grade

Guide to Calculating Building Height

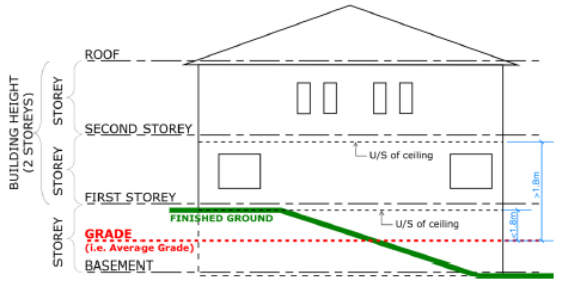
This document is intended as a general guideline for determining *Grade* for Ontario Building Code (OBC) purposes.

The OBC, Division A; 1.4.1.2.(1) defines *grade* as;

> ***Grade*** means the average level of proposed or finished ground adjoining a building at all exterior walls.

There are other important terms defined by the OBC to understand for determining the height of a building;

> ***Building height*** means the number of *storeys* contained between the roof and the floor of the *first storey*.
>
> ***Storey*** means the portion of a building,
> (a) that is situated between the top of any floor and the top of the floor next above it, or
> (b) that is situated between the top of the floor and the ceiling above the floor, if there is no floor above it.
>
> ***First storey*** means the storey that has its floor closest to *grade* and its ceiling more than 1.8 m above *grade*.
>
> ***Basement*** means one or more storeys of a building located below the *first storey*.



Average grade calculations may be necessary to determine *grade*, and the *building height*. To determine average grade, calculate the average of the finished ground elevation around the entire perimeter of the building at the exterior walls. Averaging spot grades (i.e. corners of building only, or averaging the grade points only) is not permitted as this would not represent the true average of the finished ground at exterior walls. The calculation below is a more accurate method and may be used to determine *grade* (average grade). Also see attached example.

$$\text{Average Grade} = \frac{\text{Segment 1 (L x SA)} + \text{Segment 2 (L x SA)} + \text{Segment 3 (L x SA)} + \text{Segment 4 (L x SA)} + \text{Segment 5 (L x SA)} + \text{Segment... (L x SA) ...}}{L^{S1} + L^{S2} + L^{S3} + L^{S4} + L^{S5} + L...}$$

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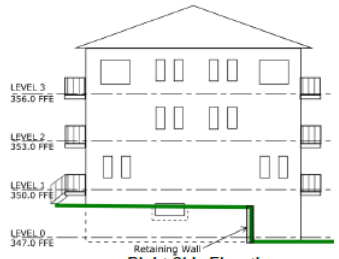
Example Building Elevations:

Front Elevation

Rear Elevation

Left Side Elevation



Right Side Elevation

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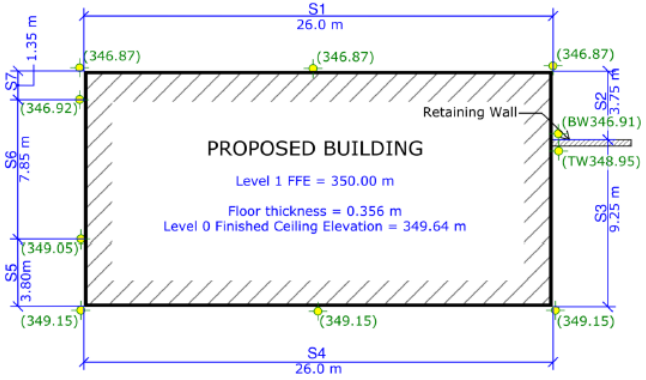
Example Grading Plan:



Segment Number	Length (L)	Start Elevation (EL1)	End Elevation (EL2)	Segment Average Grade (SA) (EL1 + EL2) 2
S1	26.00 m	346.87	346.87	346.87
S2	3.75 m	346.87	346.91	346.89
S3	9.25 m	348.95	349.15	349.05
S4	26.00 m	349.15	349.15	349.15
S5	3.80 m	349.15	349.05	349.10
S6	7.85 m	349.05	346.92	347.99
S7	1.35 m	346.92	346.87	346.90

$$\text{Average Grade} = \frac{\text{Segment 1 (L x SA)} + \text{Segment 2 (L x SA)} + \text{Segment 3 (L x SA)} + \text{Segment 4 (L x SA)} + \text{Segment 5 (L x SA)} + \text{Segment 6 (L x SA)} + \text{Segment 7 (L x SA)}}{L^{S1} + L^{S2} + L^{S3} + L^{S4} + L^{S5} + L^{S6} + L^{S7}}$$

$$= \frac{(26.00 \times 346.87) + (3.75 \times 346.89) + (9.25 \times 349.05) + (26.00 \times 349.15) + (3.80 \times 349.10) + (7.85 \times 347.99) + (1.35 \times 346.90)}{26.00 + 3.75 + 9.25 + 26.00 + 3.80 + 7.85 + 1.35}$$

$$= \mathbf{348.11\ m}$$

Level 0 Finished Ceiling Elevation = 349.64 m (noted on example grading plan)

Distance between *grade* and u/s of ceiling of Level 0
= 349.64 m - 348.11 m
= **1.5 m** (since this is not more than 1.8 m, the *storey* above Level 0 is considered the *first storey*)

Therefore Level 1 is the *first storey*. The *building height* is a 3 storey building plus *basement*.

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Average Grade Guide (2)

Guide to Calculating Building Height

Intended as a general guideline for determining *Grade* for Ontario Building Code (OBC) purposes.

The OBC, Division A; 1.4.1.2.(1) defines *grade* as;

Grade means the average level of proposed or finished ground adjoining a building at all exterior walls.

Average Grade Guide (3)

There are other important terms defined by the OBC to understand for determining the height of a building;

Building height means the number of *storeys* contained between the roof and the floor of the *first storey*.

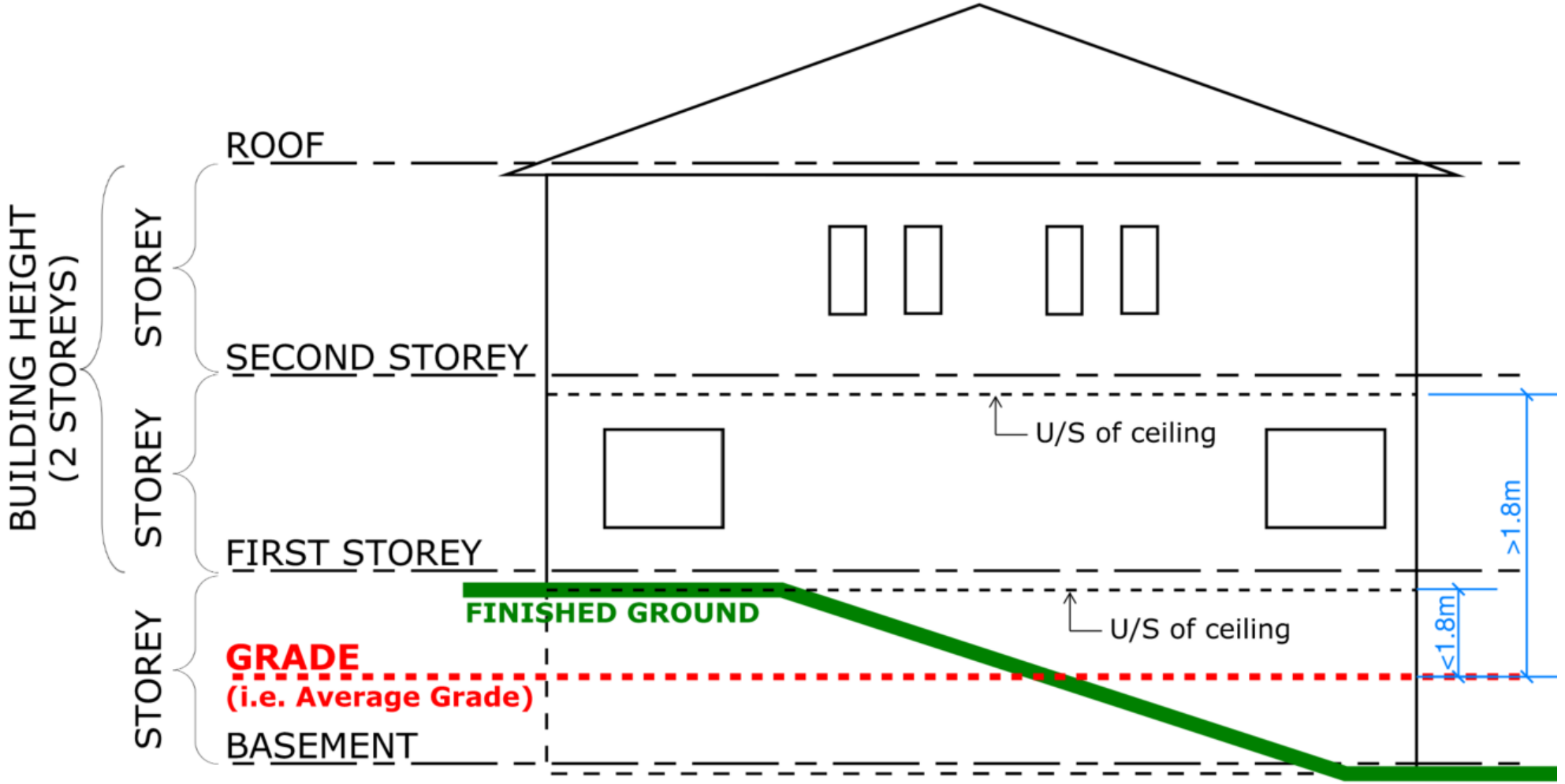
Storey means the portion of a building,

(a) that is situated between the top of any floor and the top of the floor next above it, or
(b) that is situated between the top of the floor and the ceiling above the floor, if there is no floor above it.

First storey means the storey that has its floor closest to *grade* and its ceiling more than 1.8 m above *grade*.

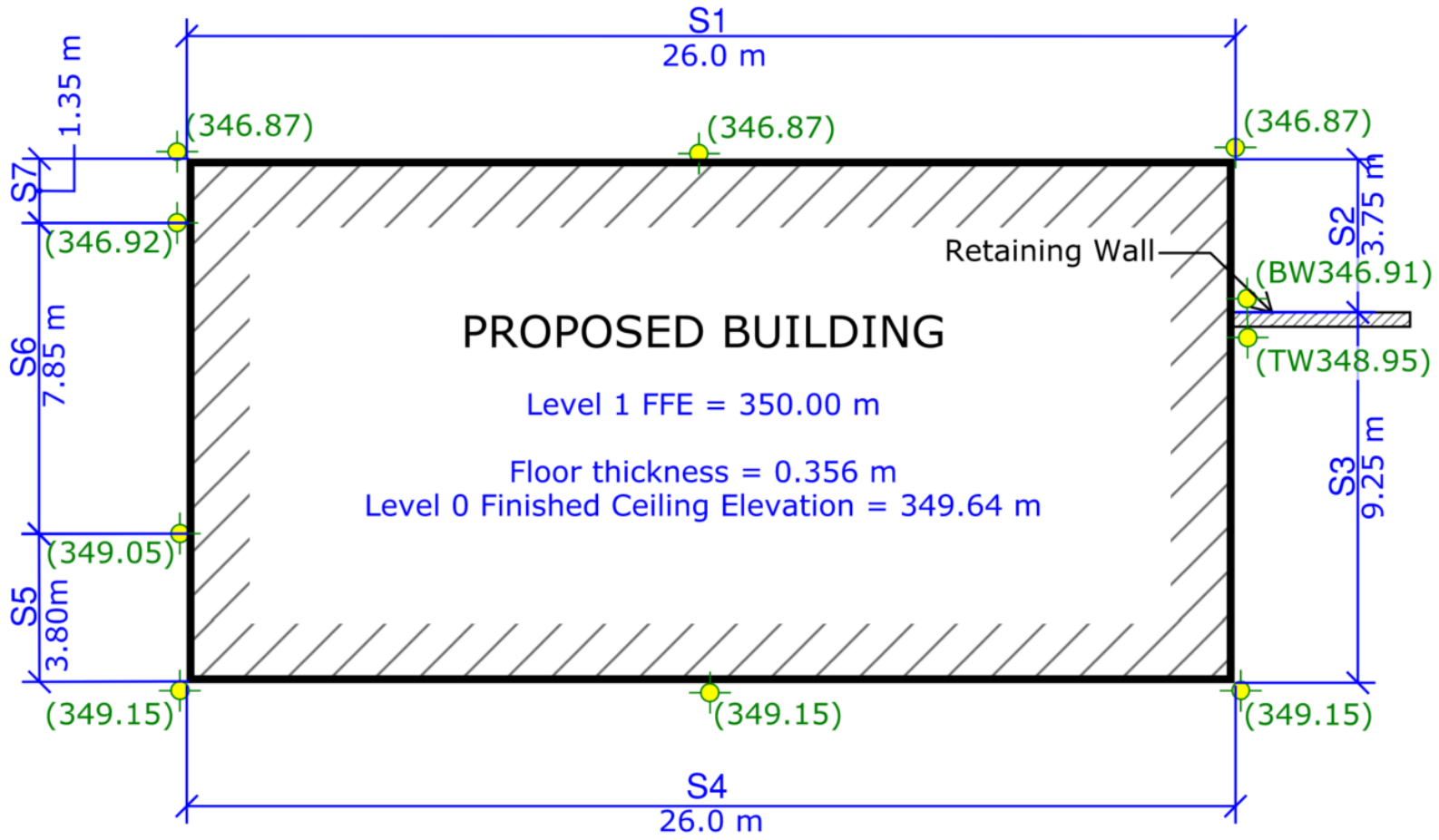
Basement means one or more storeys of a building located below the *first storey*.

Average Grade Guide (4)



Average Grade Guide (5)

$$\text{Average Grade} = \frac{\underbrace{(L \times SA)}_{\text{Segment 1}} + \underbrace{(L \times SA)}_{\text{Segment 2}} + \underbrace{(L \times SA)}_{\text{Segment 3}} + \underbrace{(L \times SA)}_{\text{Segment 4}} + \underbrace{(L \times SA)}_{\text{Segment 5}} + \underbrace{(L \times SA)}_{\text{Segment 6}} + \underbrace{(L \times SA)}_{\text{Segment 7}}}{L^{S1} + L^{S2} + L^{S3} + L^{S4} + L^{S5} + L^{S6} + L^{S7}}$$



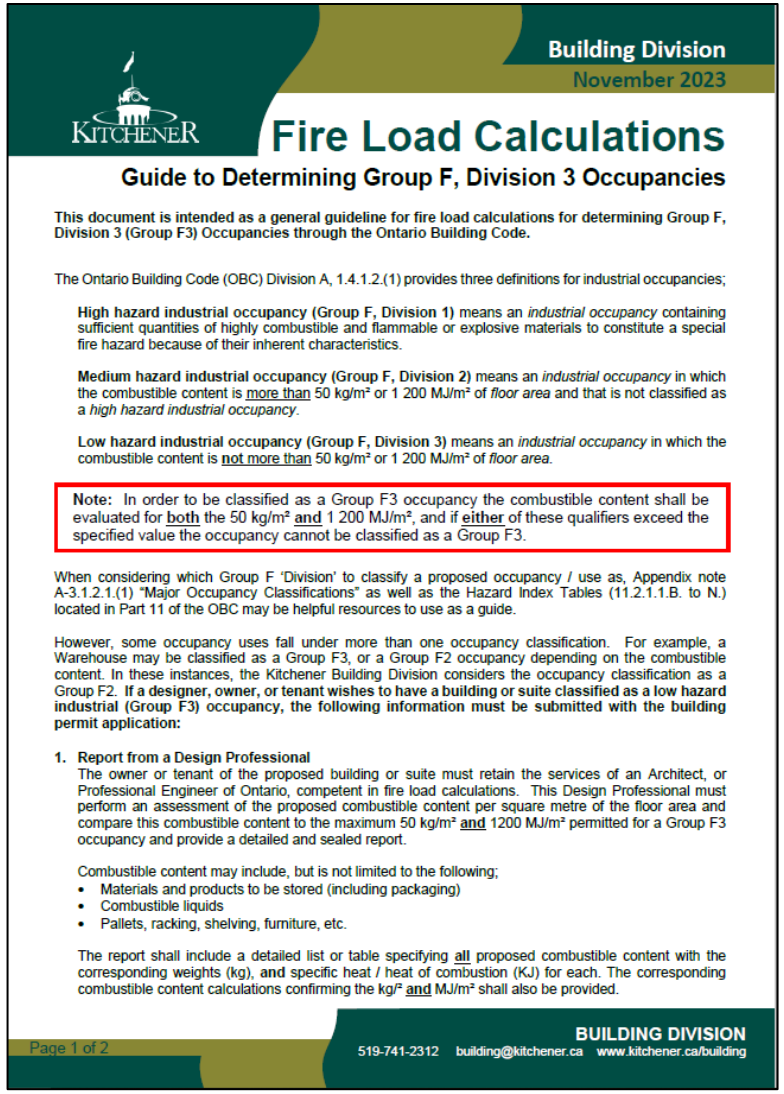
Average Grade Guide (6)

- Average grade calculations may be necessary to determine *grade*, and the *building height*.

- To determine average grade, calculate the average of the finished ground elevation around the entire perimeter of the building at the exterior walls.

- Averaging spot grades (i.e. corners of building only, or averaging the grade points only) is not permitted as this would not represent the true average of the finished ground at exterior walls.

Fire Load Calculations (1)



Building Division
November 2023

KITCHENER

Fire Load Calculations

Guide to Determining Group F, Division 3 Occupancies

This document is intended as a general guideline for fire load calculations for determining Group F, Division 3 (Group F3) Occupancies through the Ontario Building Code.

The Ontario Building Code (OBC) Division A, 1.4.1.2.(1) provides three definitions for industrial occupancies;

High hazard industrial occupancy (Group F, Division 1) means an *industrial occupancy* containing sufficient quantities of highly combustible and flammable or explosive materials to constitute a special fire hazard because of their inherent characteristics.

Medium hazard industrial occupancy (Group F, Division 2) means an *industrial occupancy* in which the combustible content is more than 50 kg/m² or 1 200 MJ/m² of *floor area* and that is not classified as a *high hazard industrial occupancy*.

Low hazard industrial occupancy (Group F, Division 3) means an *industrial occupancy* in which the combustible content is not more than 50 kg/m² or 1 200 MJ/m² of *floor area*.

Note: In order to be classified as a Group F3 occupancy the combustible content shall be evaluated for **both** the 50 kg/m² **and** 1 200 MJ/m², and if **either** of these qualifiers exceed the specified value the occupancy cannot be classified as a Group F3.

When considering which Group F 'Division' to classify a proposed occupancy / use as, Appendix note A-3.1.2.1.(1) "Major Occupancy Classifications" as well as the Hazard Index Tables (11.2.1.1.B. to N.) located in Part 11 of the OBC may be helpful resources to use as a guide.

However, some occupancy uses fall under more than one occupancy classification. For example, a Warehouse may be classified as a Group F3, or a Group F2 occupancy depending on the combustible content. In these instances, the Kitchener Building Division considers the occupancy classification as a Group F2. **If a designer, owner, or tenant wishes to have a building or suite classified as a low hazard industrial (Group F3) occupancy, the following information must be submitted with the building permit application:**

1. **Report from a Design Professional**
   The owner or tenant of the proposed building or suite must retain the services of an Architect, or Professional Engineer of Ontario, competent in fire load calculations. This Design Professional must perform an assessment of the proposed combustible content per square metre of the floor area and compare this combustible content to the maximum 50 kg/m² **and** 1200 MJ/m² permitted for a Group F3 occupancy and provide a detailed and sealed report.

   Combustible content may include, but is not limited to the following;
   - Materials and products to be stored (including packaging)
   - Combustible liquids
   - Pallets, racking, shelving, furniture, etc.

   The report shall include a detailed list or table specifying **all** proposed combustible content with the corresponding weights (kg), **and** specific heat / heat of combustion (KJ) for each. The corresponding combustible content calculations confirming the kg/² **and** MJ/m² shall also be provided.

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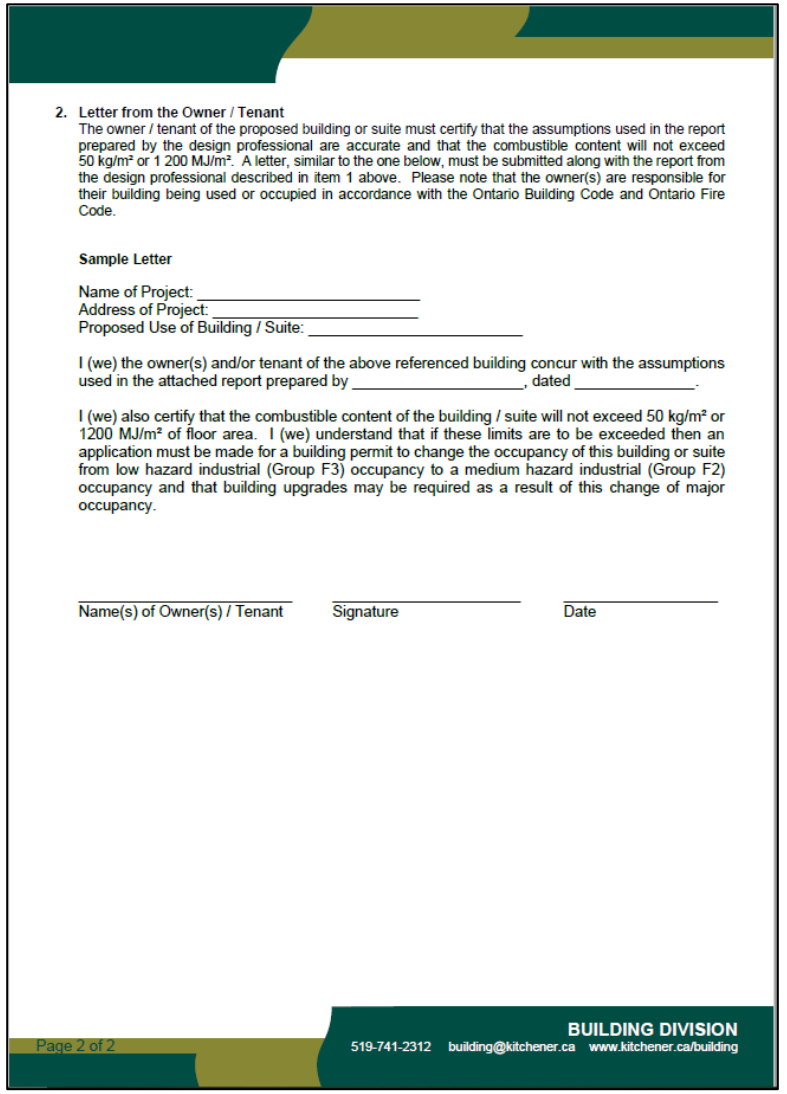

2. **Letter from the Owner / Tenant**
   The owner / tenant of the proposed building or suite must certify that the assumptions used in the report prepared by the design professional are accurate and that the combustible content will not exceed 50 kg/m² or 1 200 MJ/m². A letter, similar to the one below, must be submitted along with the report from the design professional described in item 1 above. Please note that the owner(s) are responsible for their building being used or occupied in accordance with the Ontario Building Code and Ontario Fire Code.

Sample Letter

Name of Project: _____
Address of Project: _____
Proposed Use of Building / Suite: _____

I (we) the owner(s) and/or tenant of the above referenced building concur with the assumptions used in the attached report prepared by _____, dated _____.

I (we) also certify that the combustible content of the building / suite will not exceed 50 kg/m² or 1200 MJ/m² of floor area. I (we) understand that if these limits are to be exceeded then an application must be made for a building permit to change the occupancy of this building or suite from low hazard industrial (Group F3) occupancy to a medium hazard industrial (Group F2) occupancy and that building upgrades may be required as a result of this change of major occupancy.

_____	_____	_____
Name(s) of Owner(s) / Tenant	Signature	Date

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Fire Load Calculations (2)

High hazard industrial occupancy (Group F, Division 1) means an *industrial occupancy* containing sufficient quantities of highly combustible and flammable or explosive materials to constitute a special fire hazard because of their inherent characteristics.

Medium hazard industrial occupancy (Group F, Division 2) means an *industrial occupancy* in which the combustible content is more than 50 kg/m² or 1 200 MJ/m² of *floor area* and that is not classified as a *high hazard industrial occupancy*.

Low hazard industrial occupancy (Group F, Division 3) means an *industrial occupancy* in which the combustible content is **not** more than 50 kg/m² or 1 200 MJ/m² of *floor area.*

Note: In order to be classified as a Group F3 occupancy the combustible content shall be evaluated for **both** the 50 kg/m² **and** 1 200 MJ/m², and if **either** of these qualifiers exceed the specified value the occupancy cannot be classified as a Group F3.

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Fire Load Calculations (3)

Wood

Heat of Combustion

‘Specific Energy’

~ 15 MJ/kg

Gasoline

Heat of Combustion

‘Specific Energy’

~ 47 MJ/kg

Fire Load Calculations (4)

When considering which Group F ‘Division’ to classify a proposed occupancy / use as the following resources may be used as a guide;

- Appendix note A-3.1.2.1.(1) “Major Occupancy Classifications”
- Hazard Index Tables (11.2.1.1.B. to N.) located in Part 11 of the OBC

However, some occupancy uses fall under more than one occupancy classification.

> Example: A Warehouse may be classified as a Group F3, or a Group F2 occupancy depending on the combustible content.

In these instances, the Kitchener Building Division considers the occupancy classification as a Group F2.

Fire Load Calculations (5)

If a designer, owner, or tenant wishes to have a building or suite classified as a low hazard industrial (Group F3) occupancy, the following information must be submitted with the building permit application:

1. **Report from a Design Professional**
   The owner or tenant of the proposed building or suite must retain the services of an Architect, or Professional Engineer of Ontario, competent in fire load calculations. This Design Professional must perform an assessment of the proposed combustible content per square metre of the floor area and compare this combustible content to the maximum 50 kg/m² **and** 1200 MJ/m² permitted for a Group F3 occupancy and provide a detailed and sealed report.

   Combustible content may include, but is not limited to the following;
   - Materials and products to be stored (including packaging)
   - Combustible liquids
   - Pallets, racking, shelving, furniture, etc.

   The report shall include a detailed list or table specifying **all** proposed combustible content with the corresponding weights (kg), **and** specific heat / heat of combustion (KJ) for each. The corresponding combustible content calculations confirming the kg/m² **and** MJ/m² shall also be provided.

Fire Load Calculations (6)

If a designer, owner, or tenant wishes to have a building or suite classified as a low hazard industrial (Group F3) occupancy, the following information must be submitted with the building permit application:

2. **Letter from the Owner / Tenant**

   The owner / tenant of the proposed building or suite must certify that the assumptions used in the report prepared by the design professional are accurate and that the combustible content will not exceed 50 kg/m² or 1 200 MJ/m². A letter, must be submitted along with the report from the design professional described in item 1 above.

   Please note that the owner(s) are responsible for their building being used or occupied in accordance with the Ontario Building Code and Ontario Fire Code.

Updated Building Code Matrix

- New matrixes are ready to use!!
  - https://www.kitchener.ca/en/development-and-construction/building-applications-and-standard-forms.aspx
- Two separate matrixes
  - OBC Data Matrix for **New Buildings**
    - Intended for New Buildings ONLY
  - OBC Data Matrix for **Existing Buildings**
    - Intended for additions, renovations, change of use, etc.
    - Includes a Part 10/11 section
- Both matrixes also have a detailed Guide to Completion

Part 9 – Plans Examination

Leslie Collins

Municipal Building Official II

Engineering

Engineering letters are required to be connected to the drawings. Options to achieve this requirement:

- Stamp the drawings and note the stamp is only for the structural design of the building
- Stamp drawings and indicate that the stamp is for only the structural components marked with an asterisks. Mark all engineered items accordingly
- When only a letter from an Engineer is provided, the letter must indicate the following:
  - who drawings were completed by, the drawing numbers reviewed, and the revision date of the drawing package
  - If drawings are updated or revised, updated engineering report will be required

Residential Conversion – 3+ units (1)

Permit Applications

- Existing floor plans shall be submitted with room names
- Elevations
- Designer for the Building shall have qualifications in Small Buildings
- Zoning Occupancy Certificate required to be complete prior to permit issuance
- Heat loss/gain calculations required when a new heating system is proposed
- Confirmation that the ventilation system in the new unit(s) is reviewed by a designer/engineer and meets the requirements of 9.32.
  - Designer shall have qualification in Building Services
- Our new existing building code matrix to be included
  - www.kitchener.ca/en/development-and-construction/building-applications-and-standard-forms.aspx
- Horizontal and vertical fire separation construction details
  - List SB-2, SB-3 or ULC assemblies

Residential Conversion – 3+ units (2)

Is there an increase in occupant load?

- When bedrooms are being added to a building of residential occupancy, the occupant load will be increased as 9.9.1.3.(1)(a) states that it is based on 2 people per bedroom
- 11.4.2.2.(1) states the performance level of a building is reduced where proposed construction will increase the occupant load of an existing building by more than 15%
- 11.4.2.2.(2) states the performance level of an existing building is reduced where proposed construction will increase the occupant load by 15% or less and the new occupant load will be more than 15% above the occupant load for which a fire alarm system is required under Sentence 3.2.4.1.(2).

Residential Conversion – 3+ units (3)

Is Compensating Construction required due to the Increase in Occupant Load?

- 11.4.3.3.(1) states:
  - if there is a reduction in performance based on 11.4.2.2.(1), (2), or (3), then early warning and evacuation system shall be upgraded based on Table 11.4.3.3.
- 11.4.3.3.(2)(b) states:
  - If 16 people or fewer are in a building (not including boarding houses), 11.4.3.3.(1) does not apply
  - Where the occupant load is between 10-17 people, interconnected system of smoke alarms are required in corridors near stairways

Residential Conversion – 3+ units (4)

Is there a change in major occupancy?

- Yes,11.4.2.3.(1)(b) states that when a Group C occupancy is divided into more suites of Group C it is considered a change in major occupancy and the performance level is reduced

Is Compensating Construction required due to the Change in Major Occupancy?

- Yes, 11.4.2.3.(1)(b) states that when a building has a reduced performance level based on 11.4.2.3.(1)(b), the building needs to conform to Table 11.4.3.4.A.
- When a building is subject to a change of major occupancy, it shall conform to all the requirements of the subsections listed in 11.4.3.4.(2)

Residential Conversion – 3+ units (5)

Table 11.4.3.3. - Evaluation and Upgrading of Early Warning/Evacuation:

- Emergency lighting is required in all common means of egress & public corridors (9.9.12.)
- 9.10.18.2.(2) states fire alarms are **not** required if an exit or public corridor does not serve more than 4 suites or where each suite has direct access to an exit leading to ground level

Residential Conversion – 3+ units (6)

Table 11.4.3.4.A. Additional Upgrading

Forming Part of Sentences 11.2.1.1.(2) and 11.4.3.4.(1)

New Major Occupancy (H.I.) Number[3]	Increase of C.I. to Equal H.I. to Support New Major Occupancy	Additional Required Upgrading OR	Part 11 Alternative Compliance (A.C.)	Comments[1][2]
H.I. 2	C.I. 1 to 2	Comply with Table 11.2.1.1.A. ratings for C.I. of 2	(a) Provide early warning system, or (b) Comply with any A.C.'s in Col. 4.	
H.I. 3	C.I. (1 or 2) to 3	Comply with Table 11.2.1.1.A. ratings for C.I. of 3	(a) Provide early warning system, or (b) Comply with any A.C.'s in Col. 4.	Combustible to Combustible only.
H.I. 4	C.I. (1, 2 or 3) to 4	Comply with Table 11.2.1.1.A. ratings for C.I. of 4 A	Provide sprinklers in locations where assemblies do not comply with Table 11.2.1.1.A. B	Combustible to Combustible. Noncombustible to Noncombustible.

Residential Conversion – 3+ units (7)

Compliance alternatives

- C102 to reduce the ceiling height is **not** appliable as it is only for a house (2 units)
- Means of escape window listed in C136 is **not** permitted to be used as a means of egress in any building larger than a house (2 units)
- Part 11 matrix to list all compliance alternatives used in the design Examples:
  - C107 – 50% reduction in natural light
  - C152 – 30-minute fire separation between residential units
  - C195 – Single furnace serving up to 4 units

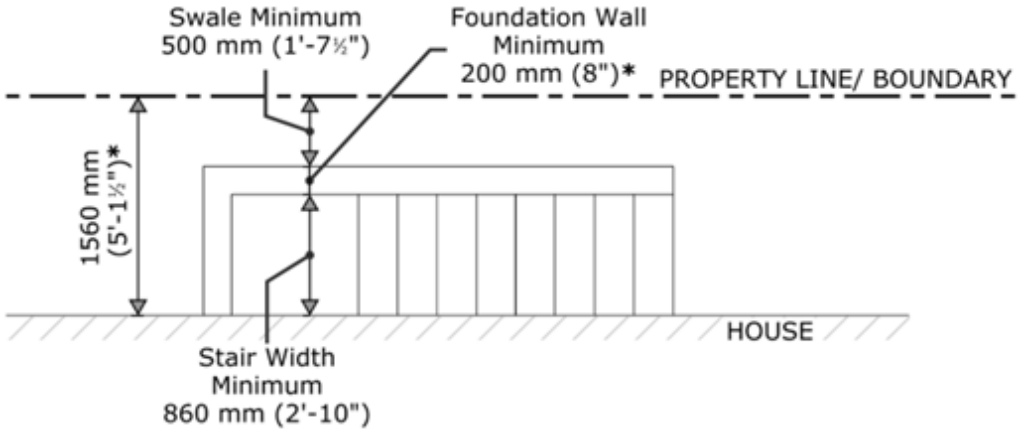
Residential Conversion – 3+ units (8)

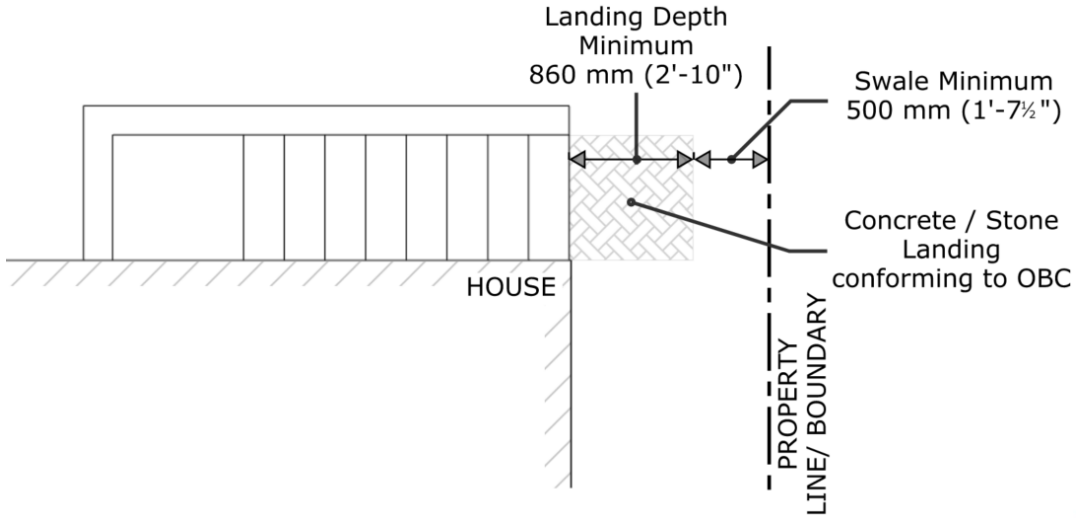
Exiting Requirements

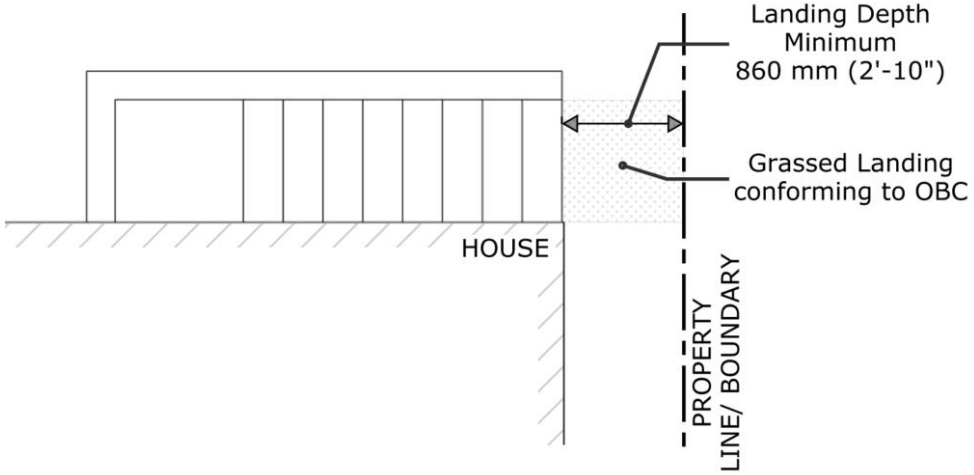
- Exiting from the units are to meet the requirements of Part 9
  - Exits are to be protected in conformance with 9.9.4.4. This may mean that the exterior stair may need to be protected from openings in other units
  - 9.9.9.3 requires a second and separate means of egress when there is a shared means of egress from a unit
  - Window that meet the requirements for bedroom egress in 9.9.10.1 are not considered a second means of egress

New Below Grade Exterior Stair

- Kitchener requires a minimum of 0.5m between the property line and exterior stair to allow for proper grading and drainage.



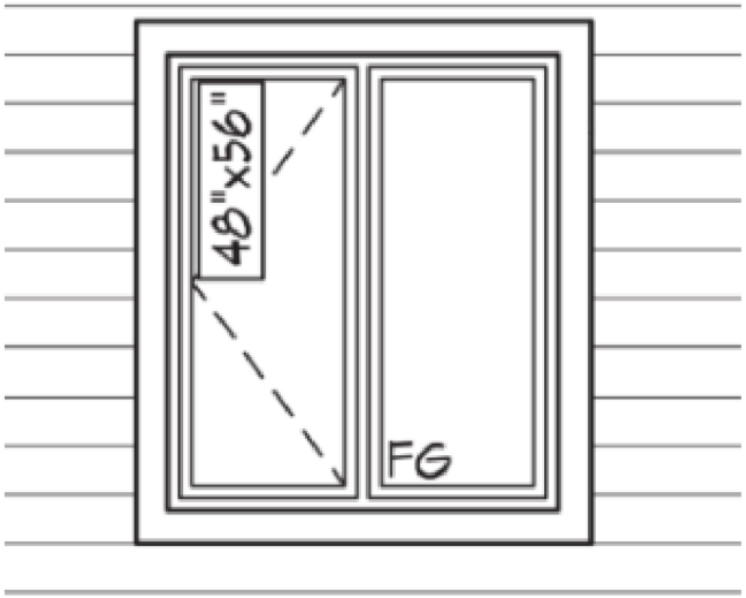




Natural Lighting

Residential Natural Lighting

- Kitchener’s rule of thumb for calculating natural lighting is to use 70% of the Rough Stud Opening
- Window manufacture specs may also be provided for exact area(s)



Example:

- Full window size = 48” x 56” = 2,688 in2 (18.67 ft2)
- Glass area for Natural Light = 18.67 ft2 x 70% (0.7) = 13.07 ft2

ADU's (1)

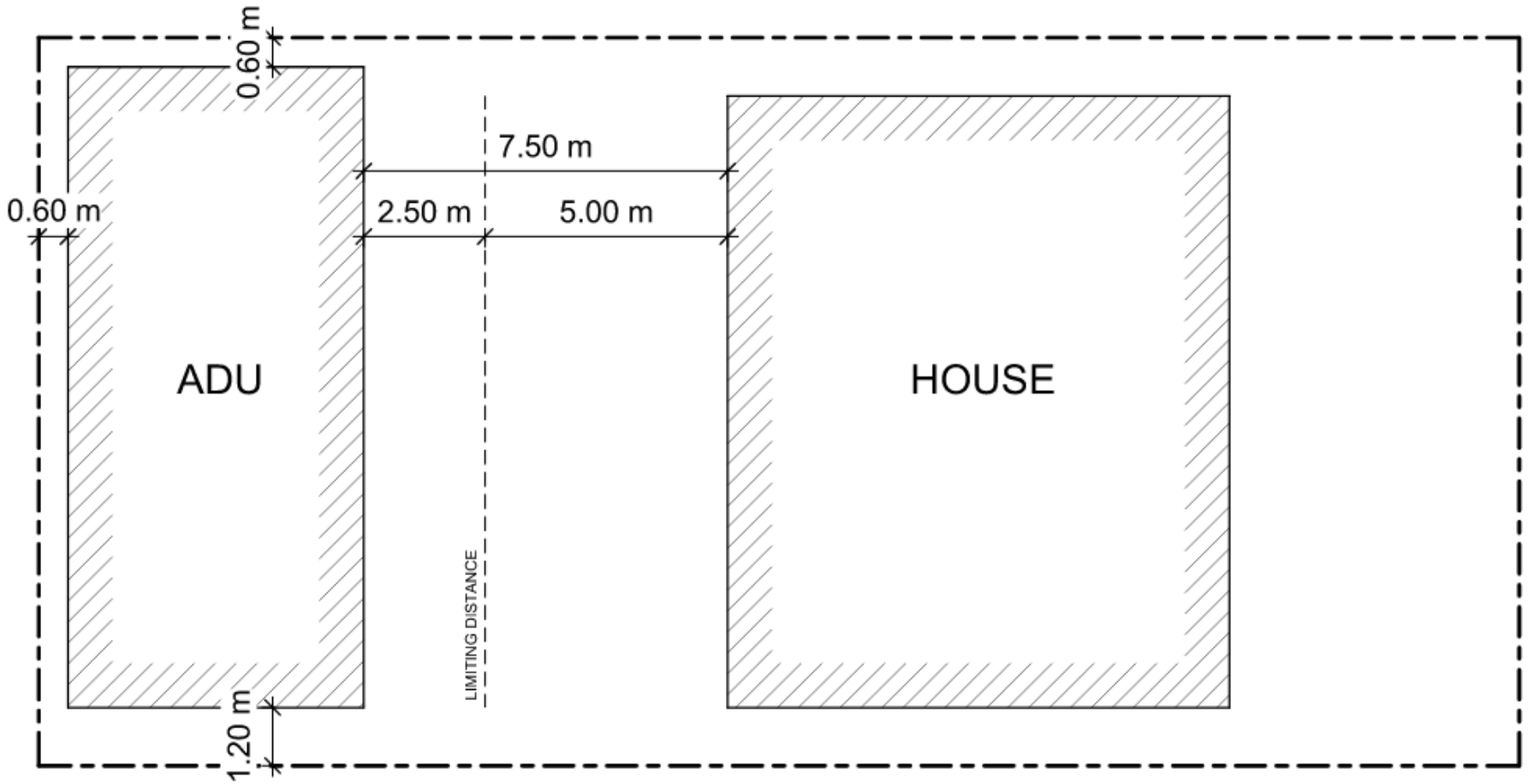
Minimum setbacks:

- 0.6m if no windows or doors on building face
- 1.2m if windows or doors on building face

Common Concerns:

- Room sizes to comply with 9.5.
- Ceiling heights to comply with 9.5.3. (No lofts are permitted as seen on HGTV)
- UPO between ADU and existing house
  - Limiting distance between ADU and house split
  - Provide the rear elevation of existing house including all window sizes and spatial separation calculations

ADU's (2)



Part 9 – Inspections

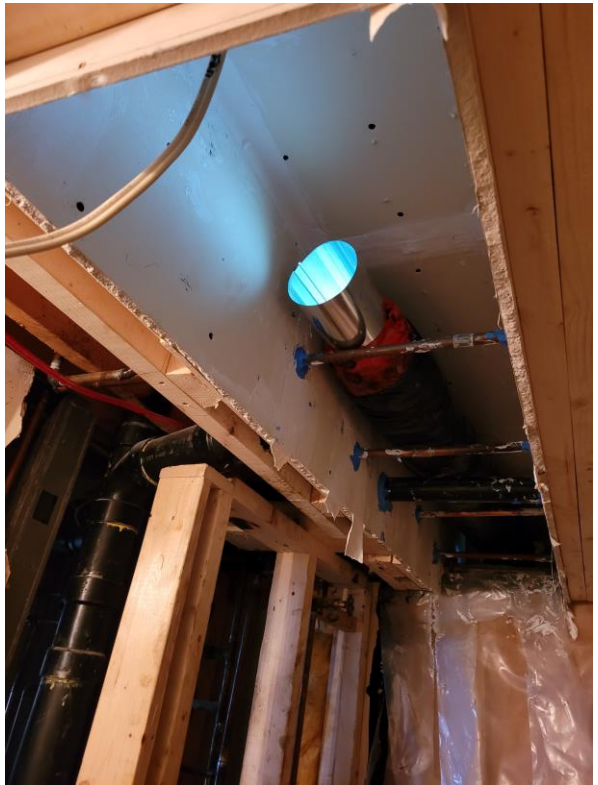
Derek Taylor
Dillon LaRose
Municipal Building Official II

Purpose Built Duplexes (1)

Purpose Built Duplexes (2)

- Where are the services proposed.
  - If the services are proposed in a common space accessible by both units, consideration must be made for fire stopping of all fire separation penetrations, which would include all ducting, plumbing, and electrical as well as gas. This can be challenging, particularly for ducting such as the supply and return air plenums, as well as HRV and ERV ducting.

- Ducting is generally not permitted to penetrate the fire separation to run in the floor joist cavity where it serves the basement unit. However, for the purposes of practical routing (i.e. to get past a beam), or to run an exhaust, it will be permitted to run a short distance provided the joist cavity is protected with fire rated drywall.



- As there are no approved fire dampers currently designed for use in wood framed floor horizontal fire separations, the fire separation must be made at the vertical fire separation location. This typically has led to two supply plenums (1 for the upper floors, and 1 for the basement) with the basement plenum and ducting installed below the ceiling fire separation. The return air can be done in the same method, or with an outlet style damper installed at the low wall location.

- Where it is necessary to provide access through the fire separation (i.e. at an exterior hose bib), a fire rated access panel will be required.

Townhouse and Stacked Townhouses

- At the common walls designed as fire separations, back to back services (i.e. electrical outlets) must be protected using drywall or a fire rated product such as a Putty Pad. Where drywall is used, the drywall must extend the full height of the wall cavity, or be closed off top and bottom.

Occupancy reports for houses

Typical reports required to be submitted for occupancy:

1. ESA
2. Energy star Report (if applicable)
3. Final As-Built Survey
4. HVAC Inspection Report
5. Plumbing Inspection Report
6. Infiltration Gallery Certification (if applicable)
7. Soils report (if applicable)
8. Top of foundation (to be submitted prior to framing)

ADU Civic address sign (Tiny Homes)

2024 - ADU civic address sign will be ordered through the Building Division. Sign fees will be invoiced on the ADU building permit fees.

Servicing for multi unit properties

***Sizing, routing, and metering for multi-unit conversions of existing buildings being discussed, future update to follow**

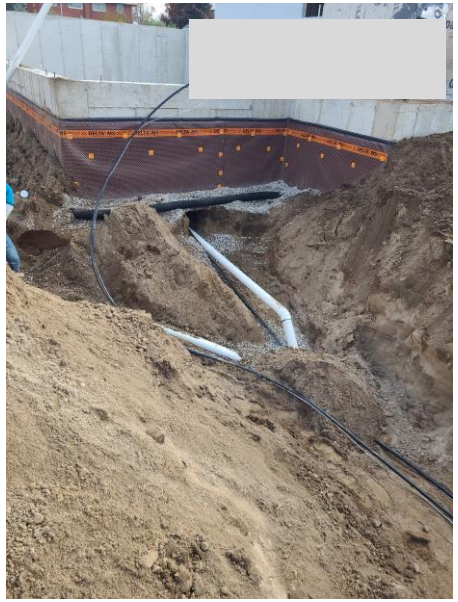
7.1.5.4. Separate Services

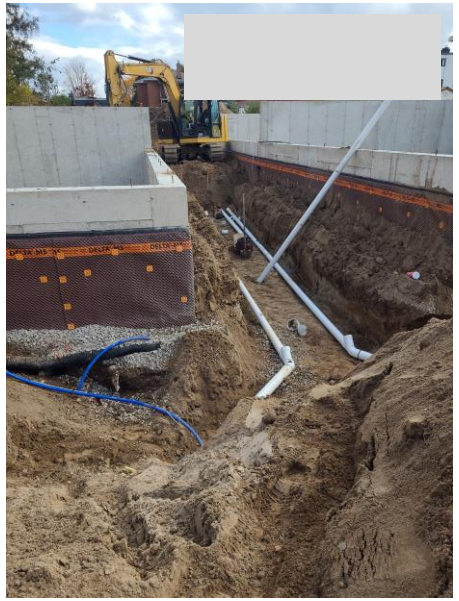
(1) Except as provided in Sentences (2) and (3), piping in any *building* shall be connected to the public services separately from piping of any other *building*. (See Appendix A.)

(2) An ancillary *building* on the same property as the main *building* may be served by the same service.

(3) *Water service pipes* or *building sewers* serving *buildings* located on the same property may connect into a *private water supply* or a *private sewer* conforming to Article 7.1.5.5.

(4) No *plumbing* serving a *dwelling unit* shall be installed in or under another unit of the *building* unless the piping is located in a tunnel, pipe corridor, common *basement* or parking garage, so that the piping is *accessible* for servicing and maintenance throughout its length without encroachment on any private living space, but this Sentence does not prevent *plumbing* serving a unit located above another unit from being installed in or under the lower unit.





Fire Breaks During Construction (1)

5.1 Fire Breaks During Construction (Appendix 10)

a) Each builder is required to submit a plan or policy of designating fire break lots in accordance with 5.1.

b) The fire break lot designation will be noted on the building permit application, in the tracking system and on the building permit.

c) The construction of the building upon the foundation of the fire break lot cannot commence until the roofing and exterior cladding has been completed on the buildings located to the sides and rear (if less than a 7.5m rear yard).

d) It is the responsibility of the Building Inspector to monitor compliance with the fire break lot policy.

e) The Building Inspector has the discretion to alter the designated fire break lot on site; provided the principle of a maximum of six framed singles or semi-detached dwelling units or two townhouse blocks is not compromised.

f) Fire break lots shall be provided so that:

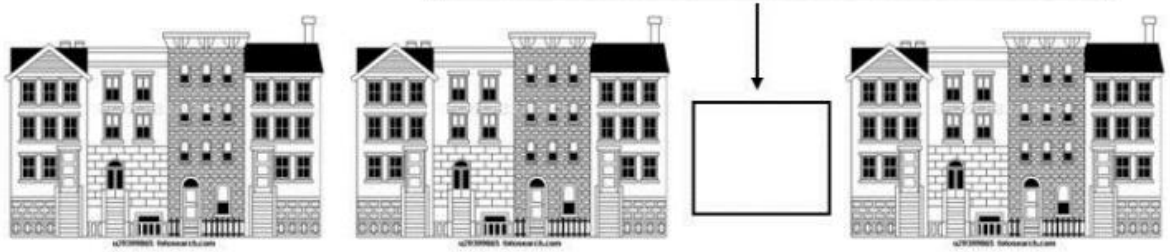
i. for single family homes and semi-detached homes – not more than six buildings are grouped adjacent to each other,
ii. for townhomes – not more than two buildings or townhouse blocks are grouped adjacent to each other.

g) Buildings on properties with side and rear yards greater than 7.5 meters are not required to be provided with fire breaks

Fire Breaks During Construction (2)

Not more than 6 houses or semis under construction.
Empty Lot,
Side or rear yard distance greater than 7.5m,
Capped Foundation, or
Building complete with exterior cladding and roofing.

Not more than 2 townhome blocks under construction.
Empty Lot,
Side or rear yard distance greater than 7.5m,
Capped Foundation, or
Building complete with exterior cladding and roofing.



Fire Breaks During Construction (3)

- 5.2 Fire Breaks For Fire Fighting – Street Fronting Townhomes (Appendix 11)

a) In residential occupancies, it is important to have access between buildings for emergency situations.

b) In street fronting townhomes, designers shall ensure a fire break between townhome blocks is provided every 8 units.

c) Fire breaks between these blocks shall not be less than 3 meters.

d) Firewalls will not be considered as an acceptable solution providing the firebreaks.

Reminder of the emergency services policy (stacked towns)

5.1 Fire Breaks During Construction (Appendix 10)

a) Each builder is required to submit a plan or policy of designating fire break lots in accordance with 5.1.

b) The fire break lot designation will be noted on the building permit application, in the tracking system and on the building permit.

c) The construction of the building upon the foundation of the fire break lot cannot commence until the roofing and exterior cladding has been completed on the buildings located to the sides and rear (if less than a 7.5m rear yard).

d) It is the responsibility of the Building Inspector to monitor compliance with the fire break lot policy.

e) The Building Inspector has the discretion to alter the designated fire break lot on site; provided the principle of a maximum of six framed singles or semi-detached dwelling units or two townhouse blocks is not compromised.

f) Fire break lots shall be provided so that:

i. for single family homes and semi-detached homes – not more than six buildings are grouped adjacent to each other,
ii. for townhomes – not more than two buildings or townhouse blocks are grouped adjacent to each other.

g) Buildings on properties with side and rear yards greater than 7.5 meters are not required to be provided with fire breaks

Water service repairs

7.3.5.7. Spatial Separation (See Appendix A.)

(1) Except as permitted in Sentences (2) and (3), a buried *water service pipe* shall be separated from the *building drain*, *building sewer* and a *private sewage disposal system*, by not less than 2 440 mm measured horizontally, of undisturbed or compacted earth.

(2) The *water service pipe* may be closer than 2 440 mm or be placed in the same trench with the *building drain* or *building sewer* if,

(a) the following conditions are met:

(i) the bottom of the *water service pipe* at all points is at least 500 mm above the top of the *building drain* or *building sewer*, and

(ii) when in a common trench with the *building drain* or *building sewer*, the *water service pipe* is placed on a shelf at one side of the common trench,

(b) the *water service pipe* is constructed of a single run of pipe with no joints or fittings between the street line or source of supply on the property and the inside face of the *building*, or

(c) the *building drain* or *building sewer* is constructed of piping which is pressure tested in accordance with Subsection 7.3.7. at 345 kPa.

(3) A buried *water service pipe* may pass under a *building drain* or *building sewer* if,

(a) a vertical separation of not less than 500 mm is provided between the invert of the *building drain* or *building sewer* and the crown of the *water service pipe*,

(b) adequate structural support is provided for the *building drain* or *building sewer* to prevent excessive deflection of joints and settling, and

(c) the length of the *water service pipe* is located so that there are no joints within 2 440 mm measured horizontally from the intersection with the *building drain* or *building sewer*.

(4) A buried *water service pipe* shall be constructed of a single run of pipe with no joints or fittings between the street line or source of supply on the property and the inside face of the *building* if the *water service pipe* is less than 15 m from,

(a) a *private sewage disposal system*, or

(b) a source of pollution other than a *private sewage disposal system*.

Spatial separation not met

Part 3 – Plans Examination

Nicole Jutzi

Municipal Building Official III

BF Apartment Requirements (1)

3.8.1.1. Application

- Section 3.8 Barrier-Free Design applies to the entire building

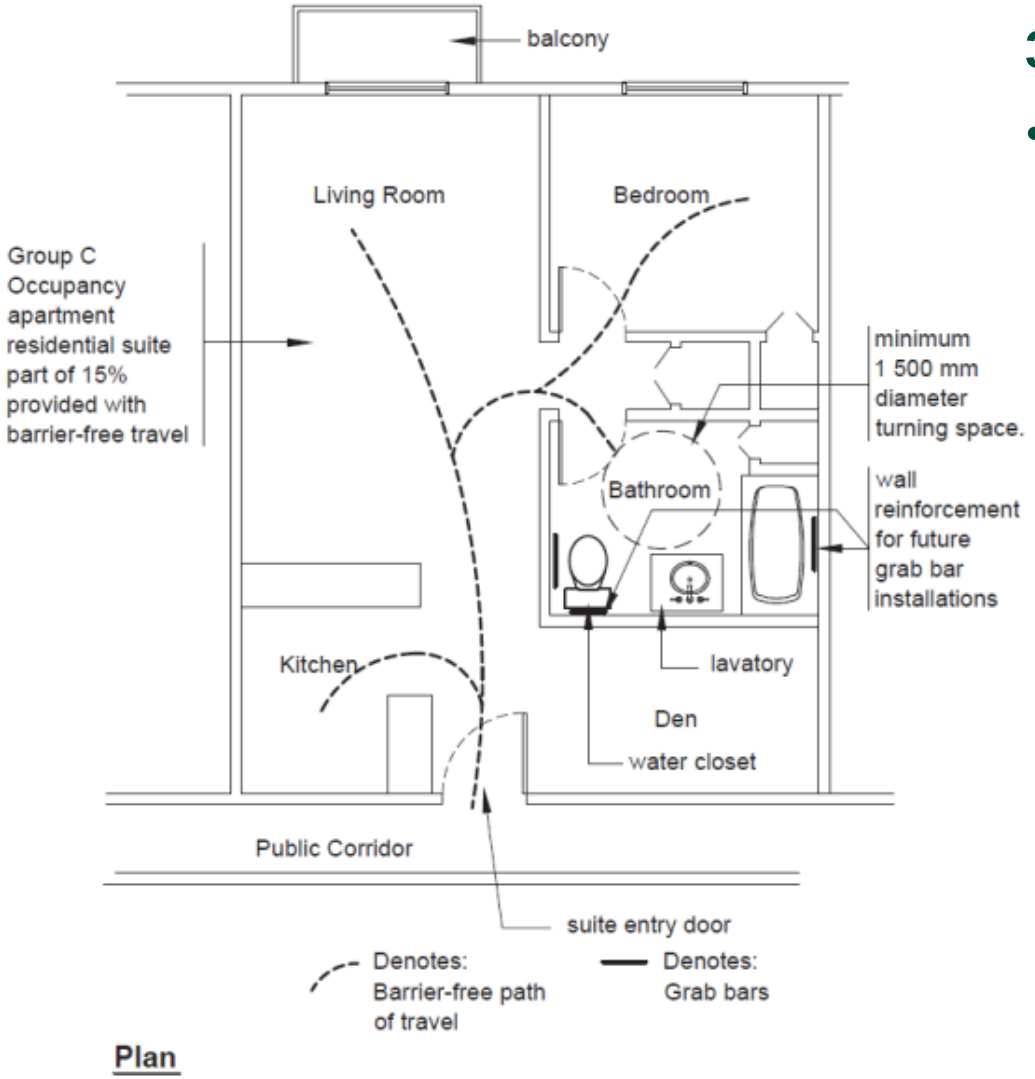
3.8.1.3. Barrier-Free Path of Travel

- Every barrier free path of travel must provide a minimum unobstructed width of at least 1100mm

3.8.2.1. Areas Requiring Barrier-Free Path of Travel

- **Sentence (1)(a) & (b)** A barrier free path of travel ***is*** required to extend throughout the entrance storey and all normally occupied floor areas
- **Sentence (3)(j)** A barrier free path of travel ***is not*** required to extend on the inside of a suite of residential occupancy except as required by 3.8.2.1.(5)

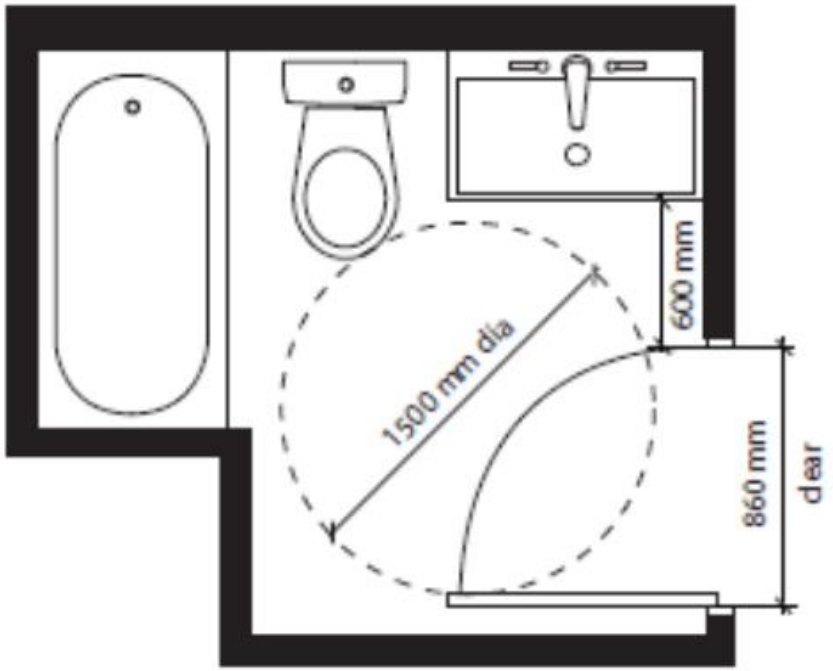
BF Apartment Requirements (2)



3.8.2.1. Areas Requiring Barrier-Free Path of Travel

- **Sentence (5)** not less than 15% of suites of residential occupancies shall be provided with a barrier free path of travel from the suite entrance door into and **out of** at least:
  - 1 bedroom,
  - at least 1 bathroom,
  - a kitchen and
  - a living room.
- All portions of the suite that lead to these areas must have a minimum unobstructed width of at least 1100mm
- The entrance door and all doors in the suite that lead to and from these areas must meet the clear width and latch clearances requirements of 3.8.3.3.

BF Apartment Requirements (3)



3.8.2.1. Areas Requiring Barrier-Free Path of Travel

- **Sentence (6)** bathrooms within the 15% of suites where a barrier free path of travel is required to be provided by sentence (5) shall have:
  - a) a lavatory
  - b) a watercloset
  - c) a bathtub or shower
  - d) wall reinforcement per 3.3.4.9.(1) and
  - e) a 1500mm in diameter turning circle

- The door swing may overlap the turning circle if there is sufficient space for a wheelchair user to clear the door and close the door.

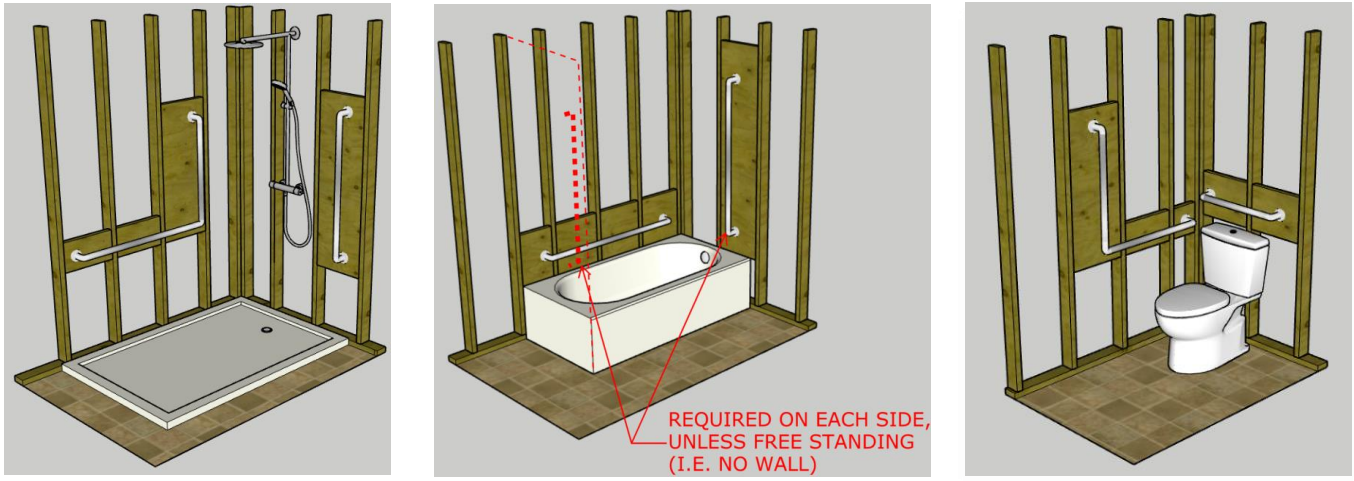
BF Requirements For All Apartments

3.3.4.9. Stud Wall Reinforcement in main bathroom for ***future*** installation of grabs bars:

- For a wc per clauses 3.8.3.8.(3)(a) & 3.8.3.8.(3)(c)
- For a shower per clause 3.8.3.13.(2)(g) and
- For a bathtub per clause 3.8.3.13.(4)(e)

Don't forget to label which bathroom is the main bathroom on plans!

Wall reinforcement ONLY required!



Future Grab Bar Locations

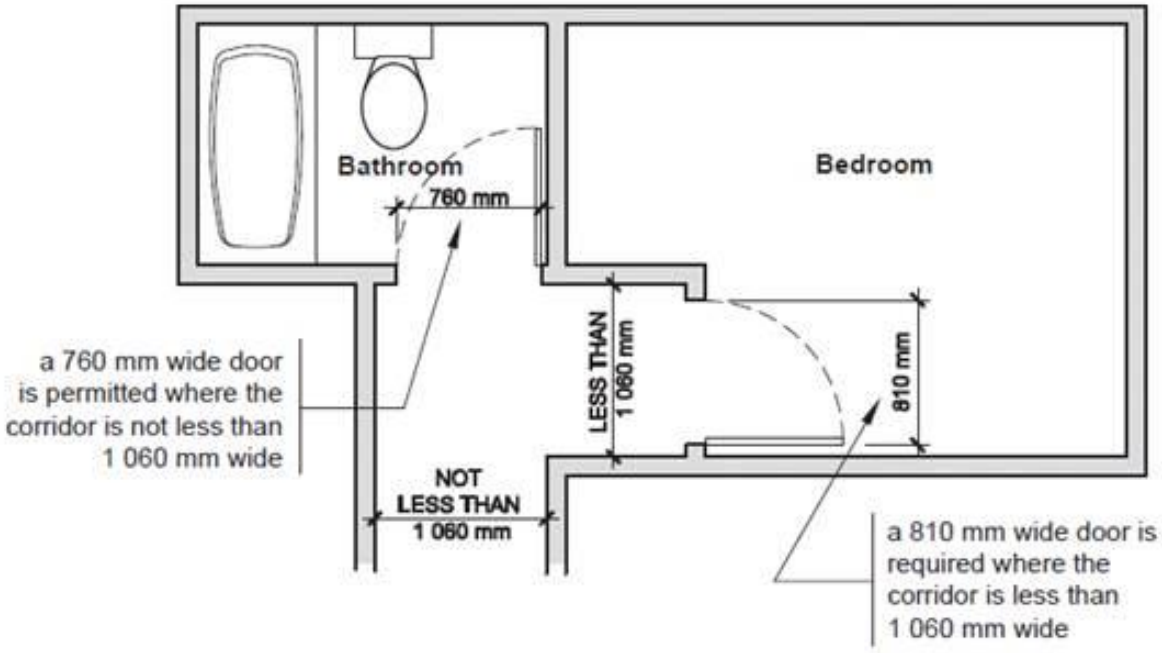
If the layout does not provide a wall beside the wc, reinforcing is only required in the wall behind

Non-BF Apartment Door Requirements

3.8.3.3.(2) Doorways and Doors

- Applies to non-BF apartments that have a bathroom at the same level as the apartment entrance door
- The doorway to at least one bathroom and to each bedroom at the same level as such bathroom shall have, when the door is in the open position, a clear width of not less than:

a) 760 mm where the door is served by a corridor or space not less than 1 060 mm wide, and
b) 810 mm where the door is served by a corridor or space less than 1 060 mm wide.



BF Apartment Requirements

Summary

- BF apartments require:
  - BF path of travel up to and through the entrance door
  - 1100mm wide BF path of travel from the apartment entrance door into at least 1 bedroom, at least 1 bathroom, a kitchen and a living room
  - least 1 bathroom has a 1500mm turning circle
  - door clear widths of 860mm per 3.8.3.3.(1)
- Non-BF apartments require:
  - Door clear width requirements per 3.8.3.3.(2)
- All apartments require stud wall reinforcement per 3.3.4.9. in their main bathroom
- Accessibility standards related to affordable housing grants, CMHC, or AODA that may be applicable to your project, but are not Ontario Building Code barrier-free requirements, are not enforced by Kitchener Building Division

Group E Restaurants

- A restaurant is classified as a Group A2 occupancy under the OBC, which falls under Part 3 of the OBC.
- Article 3.1.2.6. allows some restaurants to be classified as a Group E occupancy, however there is no code compliance path to then move into Part 9 of the OBC, therefore remains in Part 3.
- Restaurants permitted to be classified as Group E are to be designed and reviewed under Part 3 of the OBC.
- Businesses with no patron seating (take-out only) are not defined as a restaurant and therefore are permitted to be classified as Group E and designed and reviewed under Part 9 where the building characteristics fit within Part 9.

Application of Parts 3, 9 and 11

Application of Parts in Division B are listed in Division A, Part 1

1.1.2.2. Application of Parts 3, 4, 5 and 6

(1) Subject to Articles 1.1.2.6. and 1.3.1.2., Parts 3, 5 and 6 of Division B apply to all ***buildings***,

(a) used for ***major occupancies*** classified as,

(i) Group A, ***assembly occupancies***,

(ii) Group B, *care, care and treatment* or ***detention occupancies***, or

(iii) Group F, Division 1, ***high hazard industrial occupancies***, or

(b) exceeding 600 m² in ***building area*** or exceeding three ***storeys*** in ***building height*** and used for ***major occupancies*** classified as,

(i) Group C, ***residential occupancies***,

(ii) Group D, ***business and personal services occupancies***,

(iii) Group E, ***mercantile occupancies***,

(iv) Group F, Divisions 2 and 3, ***medium hazard industrial occupancies*** and ***low hazard industrial occupancies***, or

(c) used for ***retirement homes***.

1.1.2.4. Application of Part 9

(1) Subject to Articles 1.1.2.6. and 1.3.1.2., Part 9 of Division B applies to all ***buildings***,

(a) of three or fewer ***storeys*** in ***building height***,

(b) having a ***building area*** not exceeding 600 m², and

(c) used for ***major occupancies*** classified as,

(i) Group C, ***residential occupancies*** other than ***buildings*** used for ***retirement homes***,

(ii) Group D, ***business and personal services occupancies***,

(iii) Group E, ***mercantile occupancies***, or

(iv) Group F, Divisions 2 and 3, ***medium hazard industrial occupancies*** and ***low hazard industrial occupancies***.

Part 11 applies to the design and construction of existing buildings, or parts of existing buildings, that have been in existence for at least five years.

Application of Parts 3, 9 and 11

- Part 11 may require additional upgrades and construction as per other Parts. In order to determine requirements for additional upgrades, the building needs to be classified as either Part 3 or Part 9.

- If Part 11 applies to your project, you need to submit;
  - Part 11 Matrix and
  - Part 3 or 9 Matrix (whichever applicable)

Sprinkler Drawings

- Must be submitted and approved PRIOR to installation. Allow time to process.
- Do not submit the marked-up version of drawings.
- Commonly overlooked items:
  - Stairways (including exits) are sprinklered per NFPA 13 - 8.15.3., unless exempt.
  - Area under bottom intermediate landing NFPA 13 – 8.15.3.2.1.
  - Where stair shafts are divided by walls or doors, sprinklers shall be provided on each side of the separation NFPA 13 – 8.15.3.2.2.
  - Closely spaced sprinkler heads at openings to interconnected floor spaces.
  - Sprinkler protected glazing. Ensure heads are provided where proposed under Architectural design. Ensure these heads are from a dedicated sprinkler line (cannot be a branch line off the common sprinkler line through the floor area per ULC/ORD-C263.1 – 1999 standard – Appendix A4.2)

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Part 3 - Inspections

Pat Meagher

Municipal Building Official III

Booking Inspections

Request inspections prior to covering.

Pre-Construction inspection – Code #01
- This inspection is highly recommended
- Great opportunity to meet, exchange contact info and discuss the project

Book the correct inspection
- Pre-board for residential suites – Code #33
- Fire Stopping – Code #29
  - slab edge, exterior walls at precast, top of concrete block, etc.
- Fire Separation – Code #30
  - Floors, Demising walls, corridors, etc.
- Fireproofing – Code #32
  - Cementitious fire spray

Co-ordinate bookings with other site reps. Book in the inspections you need.

Inspection Bookings:
Online system (https://onlinepermits.kitchener.ca)
or
Phone line: 519-741-2761

Phased Occupancy

When a **partial occupancy** is proposed, please engage the **Architect** in the conversation and have a plan in place prior to looping the city Building Inspector in.

In certain scenarios, a plan outlining the phased occupancy may be required. The plan is to identify;

- The **area**, floor numbers and suite numbers (if applicable) **intended for occupancy**
- **Exits** as well as address any **temporary exiting** paths for the floor area
- The methods to **prevent access** to parts of the building under **construction**, including any overhead work
- Any other pertinent **occupancy measures** proposed or information regarding **life safety systems**

Occupied areas must be kept clean and clear of storage

Minimum Occupancy Requirements - OBC (1)

Division C, 1.3.3.1.(3)

(a) the **structure** of the building or part of it is completed to the roof,

(b) the **enclosing walls** of the building or part of them are **completed to the roof**,

(c) the **walls enclosing the space** to be occupied are completed, including balcony guards,

(d) all required **fire separations and closures** are completed **on all storeys to be occupied**,

(e) all required **exits are completed**, including all fire separations, doors, door hardware, self-closing devices, guards and handrails, **from the uppermost floor to be occupied down to grade** level and below if an exit connects with lower storeys,

(f) all **shafts** including closures are **completed to the floor-ceiling assembly above the storey to be occupied** and have a temporary fire separation at such assembly,

Minimum Occupancy Requirements - OBC (2)

(g) measures have been taken to **prevent access** to parts of the building and site that are incomplete or still under **construction**,

(h) floors, halls, lobbies and required means of egress are **free of loose materials and other hazards**,

(i) if **service rooms** should be in operation, required fire separations and closures are completed,

(j) all building drains, building sewers, water systems, drainage systems and venting systems are complete and **tested as operational** for the storeys to be occupied,

(k) required **lighting**, heating and electrical supply are provided for the suites, rooms and common areas to be occupied,

(l) required **lighting** in corridors, stairways and exits is completed and operational up to and including all storeys to be occupied,

Minimum Occupancy Requirements - OBC (3)

(m) required **standpipe, sprinkler and fire alarm systems** are complete **and operational up to and including all *storeys* to be occupied**, together with required pumper connections for such standpipes and sprinklers,

(n) required **fire extinguishers** have been installed on all *storeys* to be occupied,

(o) main **garbage rooms, chutes and** ancillary services are completed to all *storeys* to be occupied,

(p) required **firefighting access routes** have been provided and are accessible, **and**

(q) the ***sewage system*** has been completed and is operational.

Occupancy Requirements – Site Expectations

Ensure all inspections are done leading up to occupancy

Examples:
-Everything below grade
-Fire Stopping & Fire Separations
-HVAC rough-in
-Sprinkler
-Insulation
-Structural

Allow for enough time for the required inspections

Typical timelines for general planning. One inspection booking (day) for each item/area;
-1 Floor Level of Suites
-2 Floor Levels of Corridors
-Stairwells
-1 level of Parking garage
-Ground floor exits, service spaces, etc
-Fire Department pre-occupancy inspection

Please keep in mind that deficiencies require additional site inspections. The number of site visits will depend on the number of deficient items, building size and are areas being occupied.

Submit all paperwork in enough time for us to review

- 95% of the paperwork should be submitted **1 week prior to desired occupancy date**
- Submit reports as they become available
  Examples:
  -Soil reports
  -structural signoff

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Occupancy Requirements – Typical Reports (1)

Reports required may include;

- **Consultants final report** and all **site visit reports** arising out of general review for all disciplines (Architectural, Mechanical, Electrical, Structural, Site Services)
- All **formal Site Instructions** that have been completed to date on the project for all disciplines (Architectural, Mechanical, Electrical, Structural, Site Services)
- Final report from the engineer responsible for the design and review of the **glass guards on the balconies** and any other applicable areas
- Engineered **shop drawings** for the glass **guards** on the balconies and any other applicable areas
- **Roof anchor certification** report (roof greater than 8 metres above finished grade)
- Final report from **ESA**
- **Emergency light** verification report
- **Emergency generator** commissioning report
- **TSSA** elevator certificates
- Applicable **3rd party testing/inspection** reports

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Occupancy Requirements – Typical Reports (2)

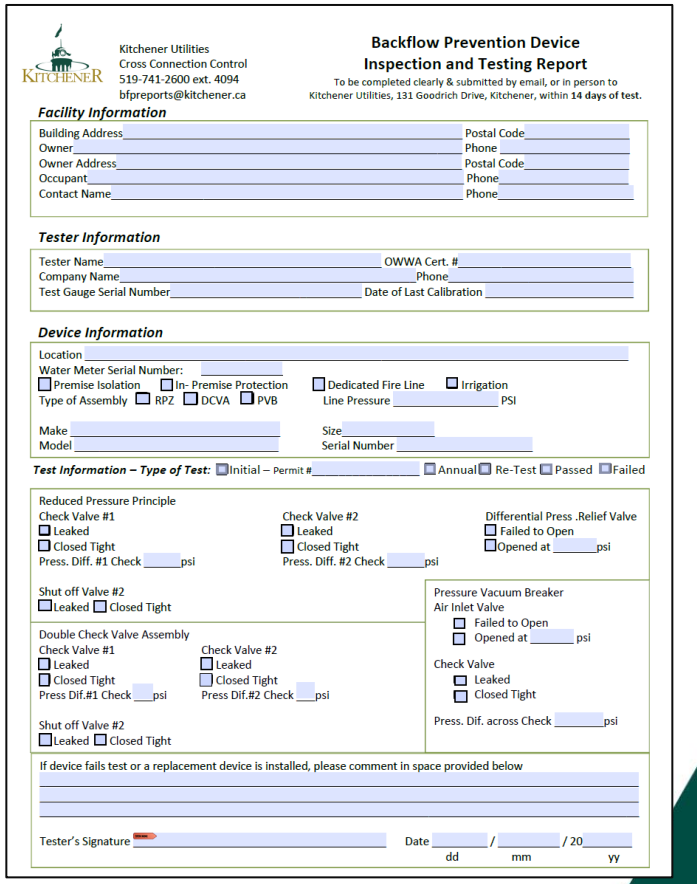
Reports (continued);

- **Fire alarm verification** report
- Fire alarm **ULC fire alarm monitoring** certificate
- **Integrated systems** testing report
- **Sprinkler** engineers final report (NFPA 13) & contractors material and test certificate
- **Standpipe** engineers final report (NFPA 14) & NFPA 14 standpipe contractors material and test certificate
- **Fire pump** commissioning report
- **Carbon monoxide** and nitrogen dioxide monitoring reporting for the monitoring system installed in the parking garage / storage garage.
- **Fire Safety Plan** to be submitted to the Kitchener Fire Department
- **Fire Hydrant** flow test

Occupancy Requirements – Typical Reports (3)

Additional occupancy items;

- Complete inspection from **Kitchener Utilities** for gas installation
- Complete **final plumbing inspection** and submit any plumbing related reports to the plumbing inspector
- **Fire Department** pre-occupancy inspection



Kitchener Utilities
Cross Connection Control
519-741-2600 ext. 4094
bfpreports@kitchener.ca

Backflow Prevention Device
Inspection and Testing Report

To be completed clearly & submitted by email, or in person to Kitchener Utilities, 131 Goodrich Drive, Kitchener, within **14 days of test.**

Facility Information

Building Address _____ Postal Code _____
Owner _____ Phone _____
Owner Address _____ Postal Code _____
Occupant _____ Phone _____
Contact Name _____ Phone _____

Tester Information

Tester Name _____ OWWA Cert. # _____
Company Name _____ Phone _____
Test Gauge Serial Number _____ Date of Last Calibration _____

Device Information

Location _____
Water Meter Serial Number: _____
☐ Premise Isolation ☐ In- Premise Protection ☐ Dedicated Fire Line ☐ Irrigation
Type of Assembly ☐ RPZ ☐ DCVA ☐ PVB Line Pressure _____ PSI

Make _____ Size _____
Model _____ Serial Number _____

Test Information – Type of Test: ☐ Initial – Permit # _____ ☐ Annual ☐ Re-Test ☐ Passed ☐ Failed

Reduced Pressure Principle
Check Valve #1
☐ Leaked
☐ Closed Tight
Press. Diff. #1 Check _____ psi

Check Valve #2
☐ Leaked
☐ Closed Tight
Press. Diff. #2 Check _____ psi

Differential Press .Relief Valve
☐ Failed to Open
☐ Opened at _____ psi

Shut off Valve #2
☐ Leaked ☐ Closed Tight

Double Check Valve Assembly
Check Valve #1
☐ Leaked
☐ Closed Tight
Press Dif.#1 Check ___ psi

Check Valve #2
☐ Leaked
☐ Closed Tight
Press Dif.#2 Check ___ psi

Shut off Valve #2
☐ Leaked ☐ Closed Tight

Pressure Vacuum Breaker
Air Inlet Valve
☐ Failed to Open
☐ Opened at _____ psi

Check Valve
☐ Leaked
☐ Closed Tight

Press. Dif. across Check _____ psi

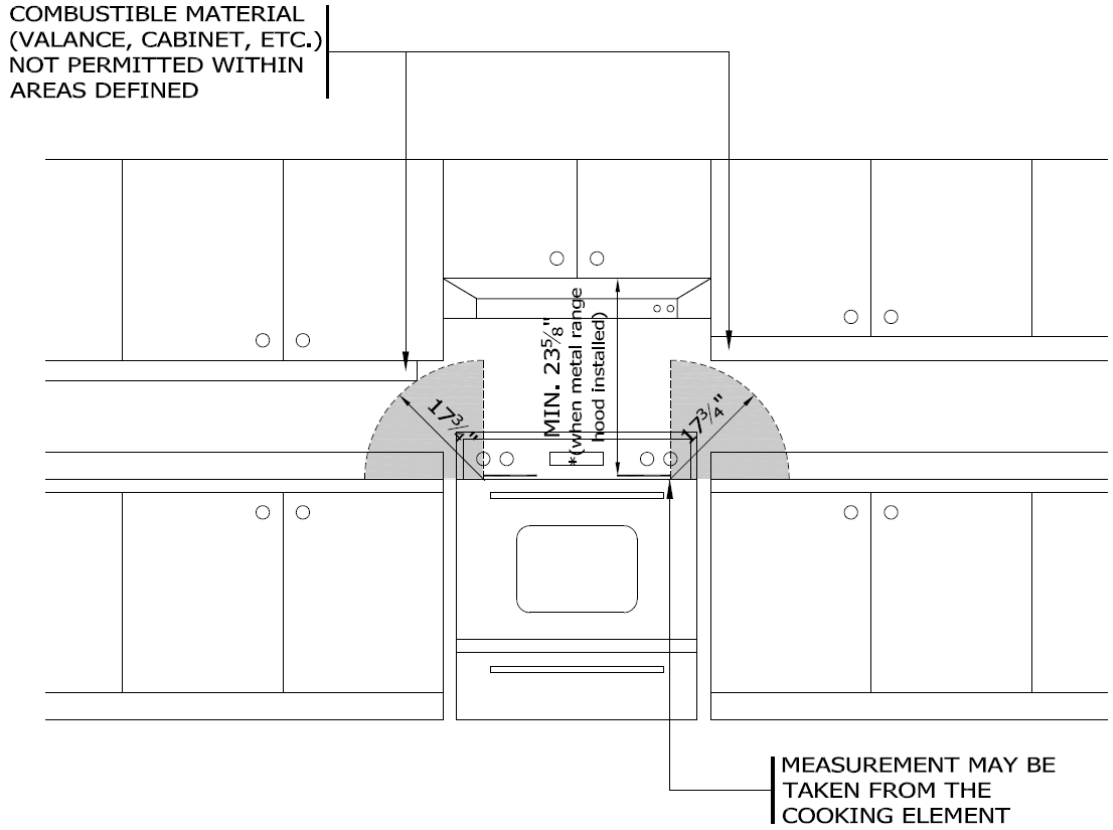
If device fails test or a replacement device is installed, please comment in space provided below

Tester's Signature _____ Date ____ / ____ / 20____
dd mm yy

Clearance to cooktops

9.10.22.2. Vertical Clearances above Cooktops
Framing, finishes and cabinetry installed directly above the location of the cooktop shall be not less than 2'-6" above the level of cooktop burners or elements. The vertical clearance directly above the location of the cooktop is permitted to be reduced to 23%" above the level of the elements or burners provided the framing, finishes and cabinets are protected by a metal hood with a 4½" projection beyond the framing, finishes and cabinets.

9.10.22.3. Protection Around Cooktops
17¾" clearance from the heating elements or burners to combustible wall framing, finishes or cabinets.
Maintain clearance to cabinets, light valance etc.



Portable Fire Extinguishers

Guide to Installing and Locating Portable Fire Extinguishers

This document is intended as a general guideline for installing and locating portable fire extinguishers in buildings in accordance with the Ontario Building Code (OBC) and Ontario Fire Code (OFC). For full details refer to the current OBC and OFC.

The Ontario Building Code Division B, 3.2.5.17.(1) prescribes that portable fire extinguishers shall be installed in all buildings, except within dwelling units, in conformance with the provisions of Part 6 of Division B of the Fire Code.

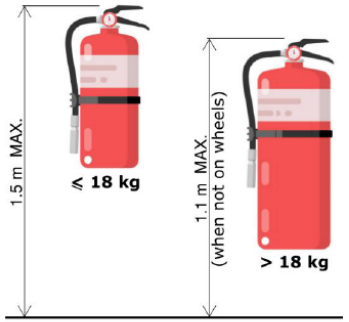
In accordance with the Ontario Fire Code Portable extinguishers shall be provided to protect every building, each hazardous occupancy inside the building and each hazardous process or operation located outside.

Occupancy Classification

In order to properly place fire extinguishers, the classification of the hazard in the occupancy must be determined. See Table below for examples;

Light Hazard Occupancy (small fire size expected based on quantity of combustible material)	Ordinary Hazard Occupancy (moderate fire size expected based on quantity of combustible material)	Extra Hazard Occupancy (severe fire size expected based on quantity of combustible material)
• Offices • Residential • Schoolrooms • Churches • Assembly Halls • Telephone exchanges	• Parking garages • Mercantile (except storage areas) • Warehouses (not classified as extra hazard) • Light manufacturing • Display rooms • Auto showrooms • School shop areas	• Mercantile storage areas • Warehouses with high-piled combustibles • Woodworking • Auto repair • Aircraft servicing • Processes incorporating flammable or combustible liquids

Distance above floor / Mounting Heights



Signage

The location of portable extinguishers shall be prominently indicated by signs or markings in large floor areas and in locations where visual obstructions cannot be avoided.

Test labels

A label shall be fixed to the extinguisher after testing that indicates the month and year the hydrostatic pressure test was performed, the test pressure used and the name of the person or agency performing the test.

BUILDING DIVISION
519-741-2312 building@kitchener.ca www.kitchener.ca/building

Required Extinguisher Types and Locations

Portable extinguishers shall be located;

- adjacent to corridors or aisles that provide access to exits
- so that they are easily seen and shall be accessible at all times, except where in;
  - a lockable, break-front glazed cabinet may be used for security purposes
  - a detention occupancy

  (see OFC for full requirements)

Portable extinguishers shall be suitable for the following fire classes;

Class A fire = a fire involving combustible materials such as wood, cloth and paper.

- Class A extinguisher - required for all buildings.
- Class A Extinguisher locations shall be in accordance with Table 6.2.6.A.

Table 6.2.6.A.

Basic Minimum Extinguisher Rating for Area Specified	Maximum Travel distance to Extinguisher (m)	Maximum Area to be Protected per Extinguisher for Class A Fires (m^2)		
		Light Hazard Occupancy	Ordinary Hazard Occupancy	Extra Hazard Occupancy
2A	25	600	300	Not Acceptable
3A	25	900	400	300
4A	25	1100	600	400
6A	25	1100	900	600
10A	25	1100	1100	900
20A	25	1100	1100	1100
40A	25	1100	1100	1100

Class B fire = a fire involving a flammable or combustible liquid, fat or grease.

- Class B extinguisher - required for occupancies where flammable or combustible liquid, fat or grease are present.
- Class B extinguisher locations shall conform to Subsection 6.2.6. of the Ontario Fire Code, see regulation for full requirements.

Class C fire = a fire involving energized electrical equipment.

- Class C extinguisher – required In or near service rooms containing electrical equipment.
- Class C extinguisher locations shall conform to the distribution provisions for Class A or Class B in the vicinity of the electrical equipment.

Class D fire = a fire involving a combustible metal.

- Class D extinguisher – required for occupancies with combustible metals
- Extinguishers shall be located not more than 25 m from the Class D fire hazard.

Class K fire = a fire involving combustible cooking media such as vegetable oils, animal oils and animal fats.

- Class K extinguisher – required for commercial cooking operations
- Extinguishers shall be located to protect the cooking operations.

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Integrated Testing

3.2.10. Testing in accordance with CAN/ULC-S1001
(1) Where fire protection and life safety systems, and systems with fire protection and life safety functions, are integrated with each other, the systems shall be tested as a whole in accordance with CAN/ULC-S1001, “Integrated Systems Testing of Fire Protection and Life Safety Systems”, to verify that the systems have been properly integrated.

When is system integration testing required?

- **All new buildings** and additions with systems integrated to the Fire Alarm
- **Certain renovations** with new systems integrated to the Fire Alarm (we are currently reviewing our policy to provide more clear direction on when required or not)
- **Ongoing testing** 1 year after construction and every 5 years. Currently required by standard, but not linked to the Building Code or Fire Code. Future Fire Code updates are proposed to reference this requirement for enforcement of ongoing testing

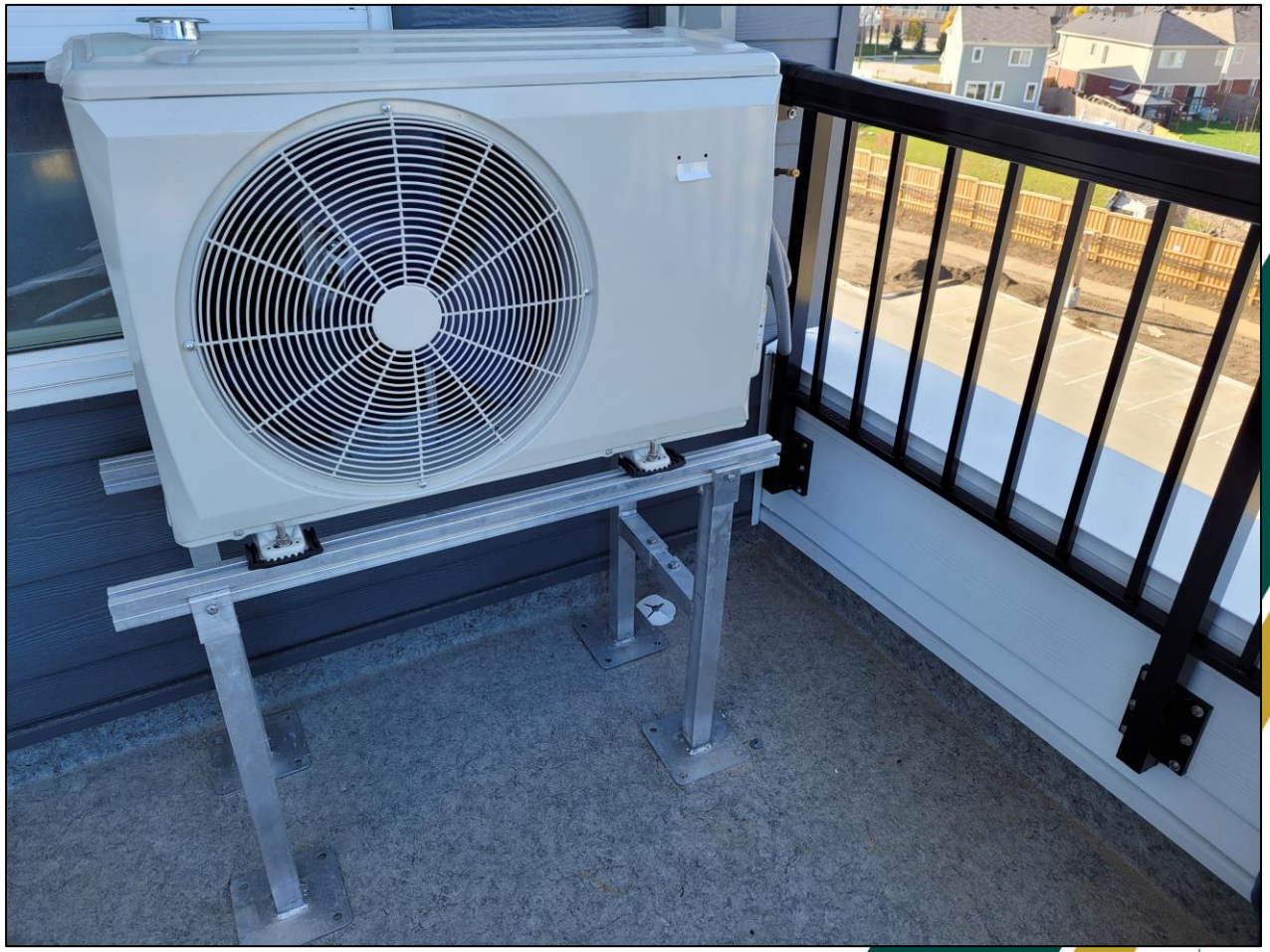
Who is required to perform the testing?

The integrated testing coordinator shall be knowledgeable and experienced in the design, installation, and operation of fire protection and life safety functions of building systems. The person or firm must be a Professional Engineer or UL Certified individual.

Climbable features adjacent to guards

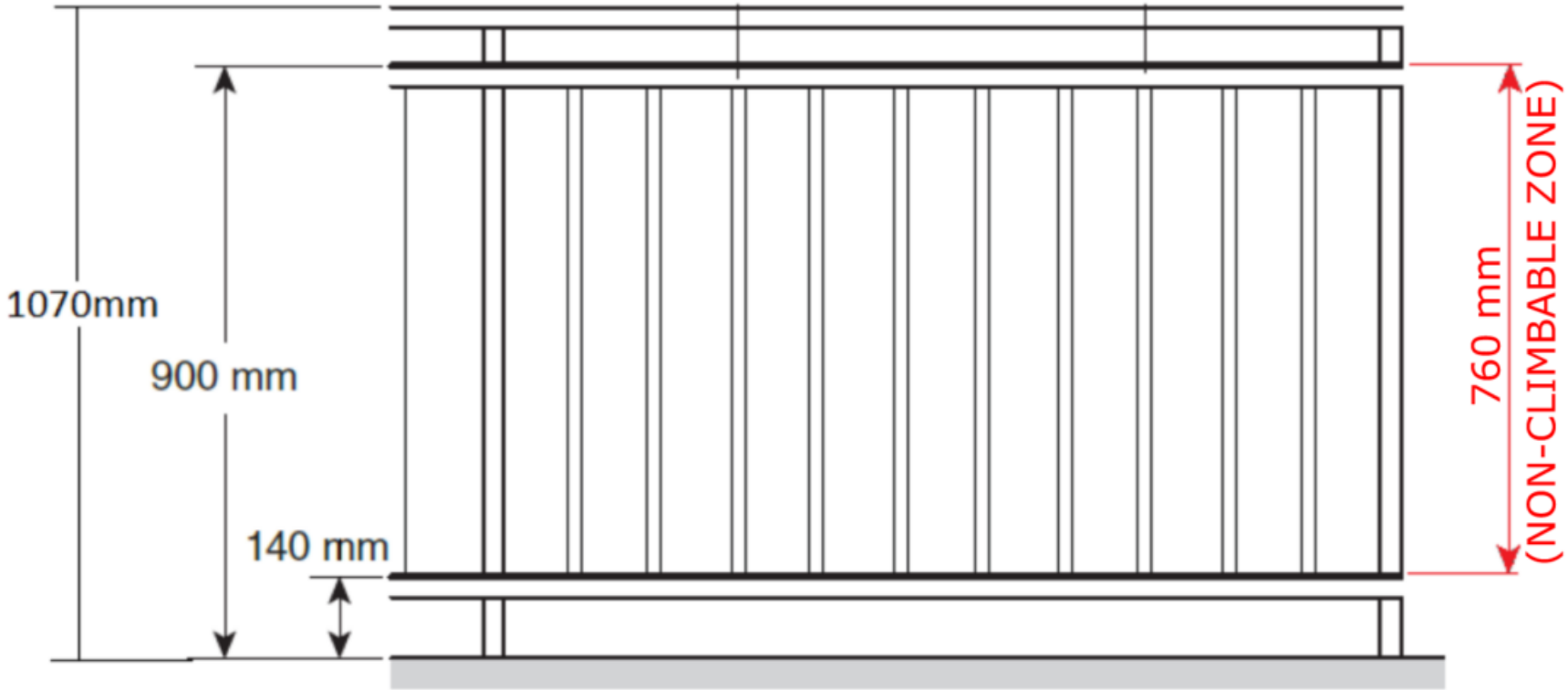
Common climbability concerns on balconies:

- Equipment such as AC units adjacent guards
- Lower parapets behind railings
- Elements creating a step, such as adjacent receptacles or window sills



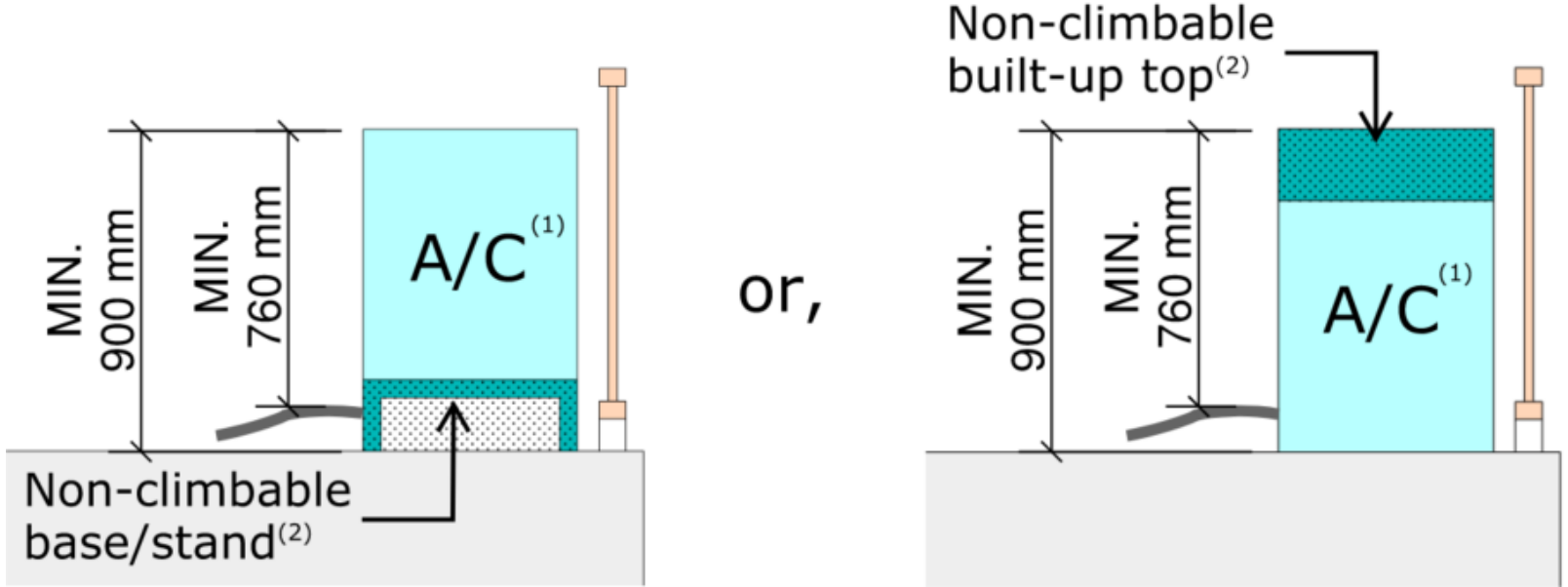
Code Interpretation

- OBC prescribes a guard shall not facilitate climbing by restricting the elements of the guard located between 140 mm and 900 mm above the floor or walking surface. This results in a distance of 760 mm non-climbable zone.



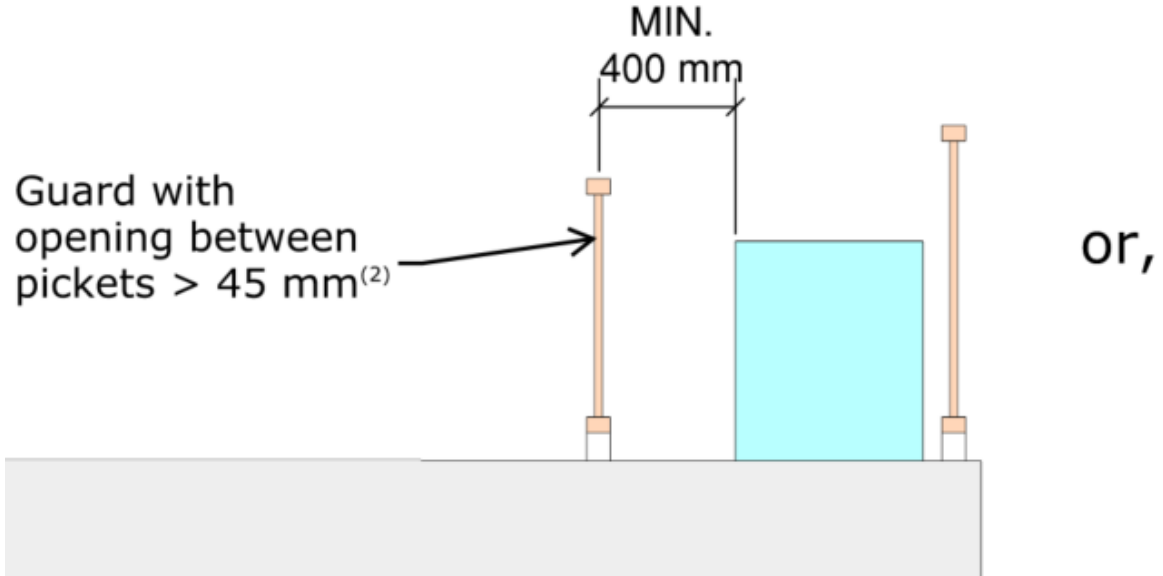
Adjacent equipment/features

- Raise the height of the equipment or feature so the top is at least 900 mm above the adjacent walking surface and shall have a non-climbable zone of 760 mm with consideration to elements which may aid in the climbability.



Adjacent equipment/features (cont.)

- Install additional non-climbable guard at least 900 mm high around the equipment, be located at least 400 mm away from the climbable feature where the guard has openings between pickets (or other similar elements) greater than 45mm



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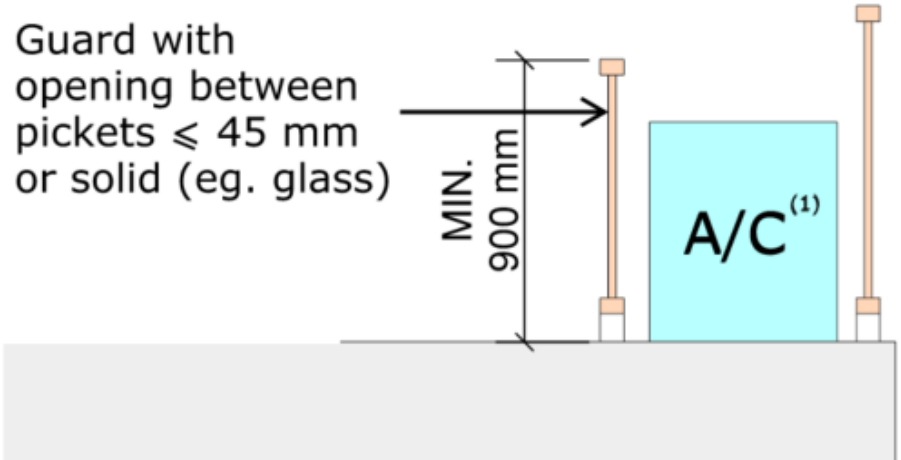
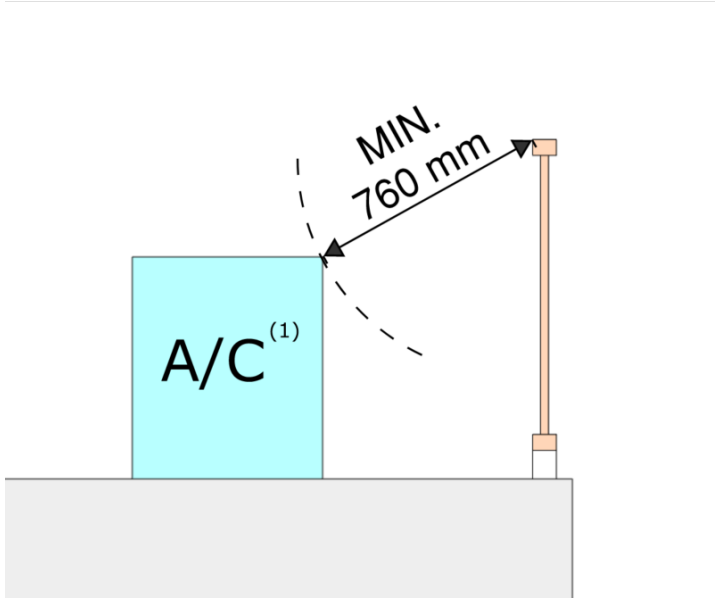
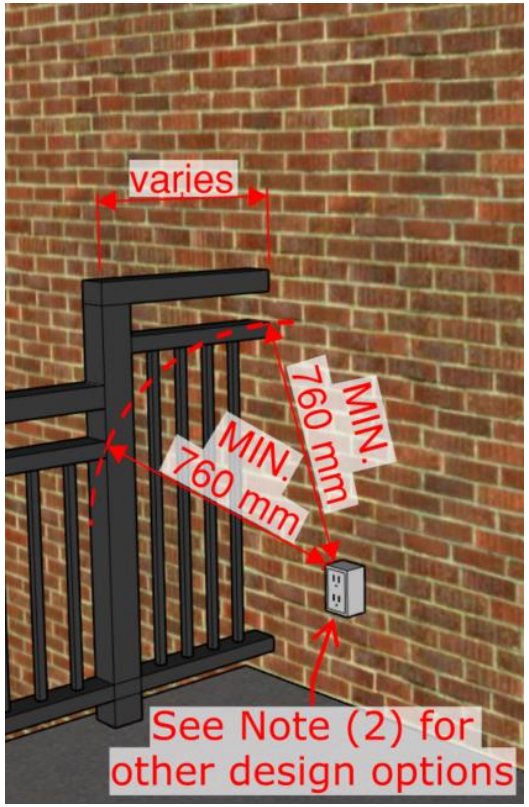
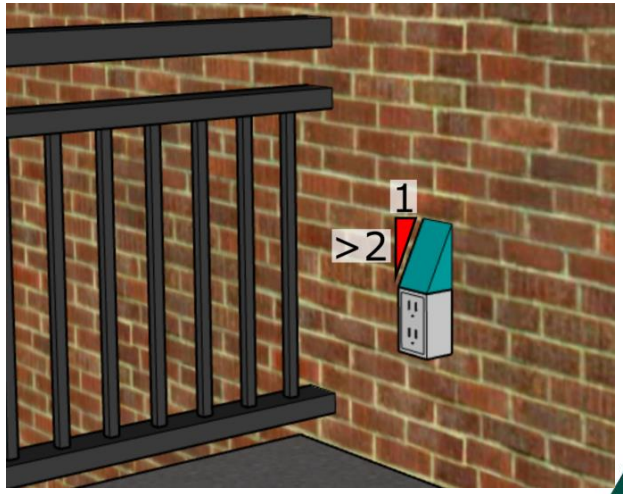


Adjacent equipment/features (cont.)

- Equipment or feature is located at least 760 mm in all directions away from climbable features of the adjacent guard. Measures may be considered eliminate foothold to be not considered climbable

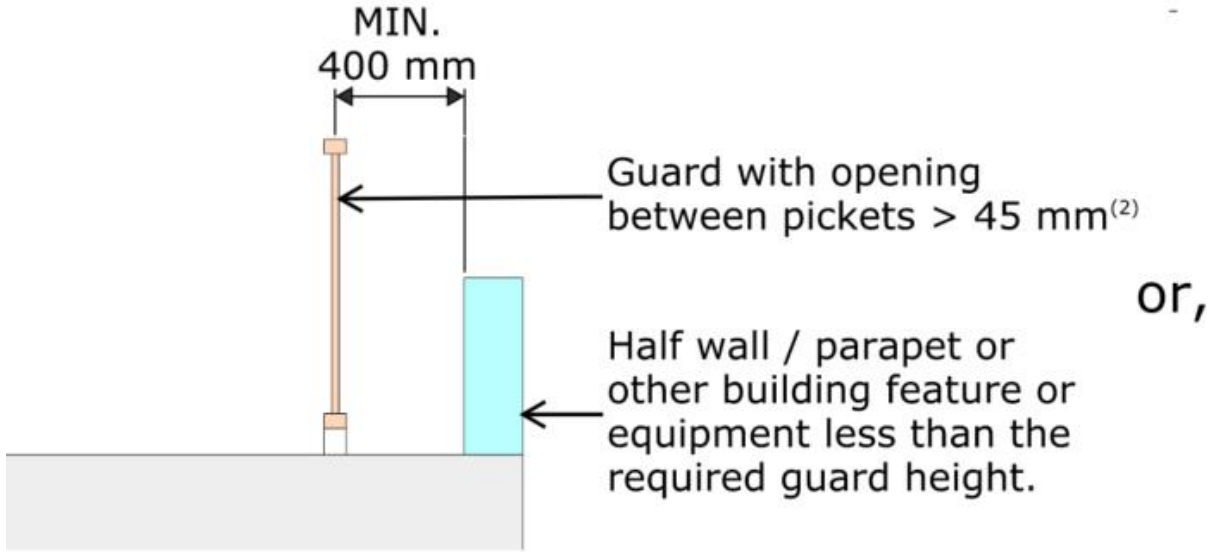






Adjacent equipment/features (cont.)

- Where a climbable feature exists on the un-occupied side of a guard the guard:



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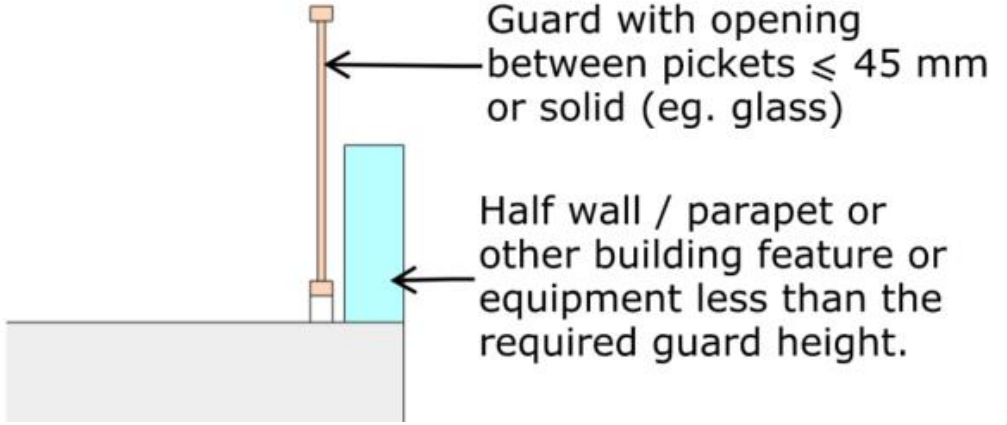

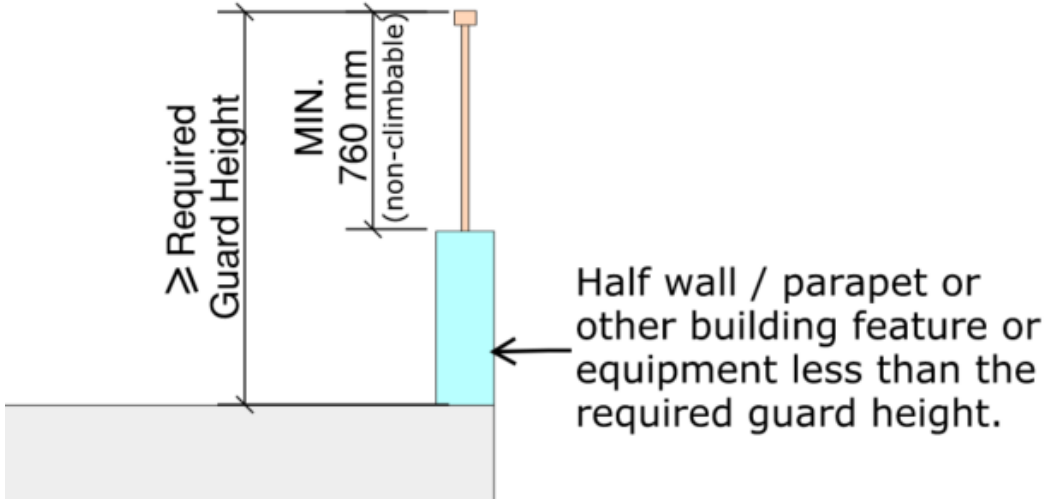

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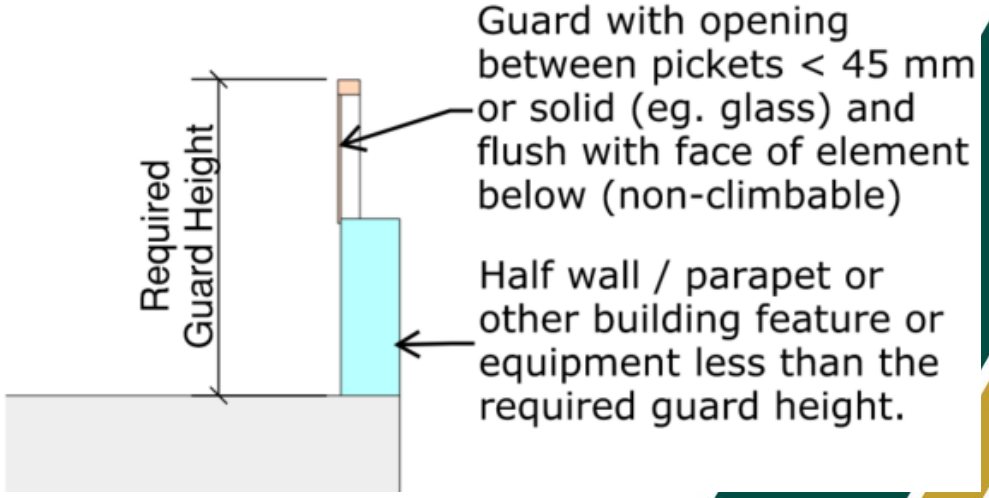

Closing Remarks

Matt Ruetz

MBO – Technical Specialist

In the Works…

Update On – In The Works From 2023

- 2024 Ontario Building Code
  - Expected to be finalized and will be working through all the changes
- Alternative Solutions
  - Updated Forms, and internal processes
- ~~Possible Part 11/Change of use~~
  - ~~Seminar~~
- Pre-Engineered Guard System Review
- New Public Portal in the works

In The Works For 2024

- 2024 Ontario Building Code
  - Expected to be finalized and will be working through all the changes
- Alternative Solutions
  - Updated Forms, and internal processes
- Pre-Engineered Guard System Review
- New Public Portal in the works

In The Works For 2024 (cont'd)

- Guide for Partial Occupancies and Occupancy and Phasing and Exiting / Partial Occupancy Guide

- High Building 3.2.6. / SB-4 Design Checklist

Disclaimers

This Presentation has been based on the 2012 Ontario Building Code (O.Reg 332/12) as amended May 12, 2023 (O.Reg 89/23). Any content should be verified against any subsequent amendments to the Code.

The information provided in this presentation was general in nature. If and when any building permit is applied for a project, all pertinent code requirements will be reviewed at that time.

Under the Building Code Act, the local municipality is the authority having jurisdiction (AHJ) for enforcing the Act and its Regulations, and permit applicants should contact the appropriate official/AHJ with respect to any specific proposal.

Presented By:

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