

Basement Finishing Guide

for

Single Residential Dwelling Units



When applying for a building permit to finish a basement in a single residential dwelling unit, you must submit certain basic information about the construction for the application to be complete and accepted by the Building Services Division. **If you do not have all this information, your application is not complete, and a building permit cannot be issued.**

This guide is for informational purposes only. It does not cover all requirements referenced in the O.B.C. and is provided to assist in clarifying the most critical health and safety requirements that apply to finishing a basement in a single residential dwelling unit. It is the responsibility of the applicant to ensure that all information is complete, accurate and up to date. For all other types of projects, consult the Ontario Building Code (O.B.C.) for specific requirements.

Homes that are less than five years old must conform to O.B.C. Part 9. However, any home that is five years or older may conform to O.B.C. Part 11. Part 11 provides provisions for alternative compliance in a renovation to achieve minimum health and life safety standards. This guide only explains some of these code requirements.

You may also visit the City of Peterborough's website to find further information on applying for a building permit, or to obtain the required forms: www.peterborough.ca



Q: When do I require a building permit to finish my basement?

A: A building permit is required for any construction in your basement. This includes, but is not limited to drywall work, moving plumbing fixtures, installing new plumbing fixtures (even in a roughed in bathroom), creating rooms or adding insulation. It does not include painting and decorating.

Q: Why do I require a building permit to finish my basement?

A: A building permit is required by provincial law to ensure that health and safety standards as set out in the O.B.C. are met. These are minimum requirements that the Ministry of Municipal Affairs and Housing has established to ensure the health and safety of everyone who may occupy the basement. Building permits are also used to confirm that the building conforms to the Zoning By-laws and other applicable regulations.

Q: How do I get a building permit to finish my basement, and how long does the process take?

A: A building permit may be obtained from the Building Services Division at City Hall by submitting a complete application. **Please refer to the last page of this guide for a checklist of the documentation required for a complete building permit application.** A permit will be issued within the prescribed time frame, if a complete building permit application which complies with the O.B.C. and all other applicable law is submitted.

Q: Who is permitted to design/prepare drawings for the proposed work?

A: The homeowner (person on title) is permitted to prepare the drawings. If the homeowner is not preparing the drawings, the proposed work must be designed by a ministry qualified designer with a minimum qualification of **B.C.I.N. House**. A form called Schedule 1: Designer Information, must be completed.

Depending on the scope of the work, the following may be required as part of the permit application documents.

- H.V.A.C. (heating, ventilation, and air conditioning) drawings.
- Professional Engineer (P.Eng) for any structural related components that do not meet Part 9 design (ex: pre-engineered beams, lintels, or joists, or for spans that are not found in the O.B.C.

Q: Who is permitted to complete the construction?

A: Once a building permit has been obtained, any competent party is permitted to complete the work, except for plumbing. If a plumber is hired to complete the work, they must be licensed with the City of Peterborough. Building Services staff can verify if your plumber is licensed if you ask.

It is the responsibility of the homeowner to ensure that:

- A building permit has been obtained.
- The prescribed building inspections are requested during construction.
- That the work complies with the Ontario Building Code and that the prescribed building inspections have been passed by the building inspector.
- That the building permit has been closed.

If the homeowner is not the applicant on the building permit application, an Authorization to Act as Agent form is required to be completed. The form is available at the Building Services Division, or on the City of Peterborough website.

Always remember to call for a final inspection to ensure that your building permit can be closed.

Q: How are Building Permit Applications Processed?

A: The Building Services Division staff review your application in terms of completeness and compliance. These requirements are set out by:

- The Ministry of Municipal Affairs (provincial government) and are stated in the (O.B.C).
- The local zoning by-Law (municipal government, in this case The City of Peterborough).
- All other applicable laws as referenced in the O.B.C.

Depending on the location of your property, you may need to request approvals from other agencies or City Departments. Building Services Division staff may assist you in determining whether this is required for your property. If any approvals are required for your proposed construction, these will need to be obtained from the agency or City Department prior to submitting your application to Building Services.

Q: Is it okay to start framing while you review my plans?

A: No, it is against the law to begin construction without the authority of a building permit. If the Chief Building Official chooses to, fines under the Building Code Act (B.C.A.) may be issued. Beginning work prior to obtaining your building permit may also lead to problems during inspections. Often work that has commenced is required to be undone, which may be costly.

Q: What drawings are required as part of the building permit application?

A: When applying for a building permit to finish your basement, a floor plan will be required. A floor plan is a drawing of the structure as seen as if it is cut horizontally a few feet above the floor line. It shows the layout of the basement as well as providing the structural framing information for the floor or roof above. An example drawing, showing some required information is located on a following page.

The floor plan is permitted to be either hand drawn, or computer drawn and **must be to scale and dimensions must be provided**. The Floor Plan will be accepted in either metric or imperial units of measurement.

Floor plans must include the following applicable items:

- Room names and areas
- Door sizes (width and height)
- Window sizes (width and height) and operation type (casement, awning, slider etc.)
- Walls (no single line drawings are permitted).
- All proposed wall construction (interior partitions, structural walls, framing of an interior wall of around foundation walls to receive insulation).
- Bathroom layout (if applicable)
- Existing stair location
- Ceiling height (including areas where the ceiling height changes, such as under bulkheads or beams)
- Any new beams, lintels, or other structural supports (include size, material & location dimensions)
- Location of existing (or relocated) mechanical equipment, such as furnace, H.R.V. (heat recovery ventilator), water heater, clothes washer/dryer
- Location and sizes of existing duct work (including supply and cold air returns)
- Structural components (lintels, beams, columns, bearing walls) indicating size, spacing, material, and showing support details at bearing points
- Existing and new items are to be clearly differentiated on the plan. (This is commonly achieved by shading in existing walls or labelling all existing items and proposed elements (rooms, walls, ductwork, etc.).
- Include the existing square footage of the area, and square footage of the finished area.

Remember to:

- Ensure that the plans are dimensioned.
- Show all construction elements on the drawings and clearly label what they are.
- Clearly label all rooms, indicating which are new proposed and which are existing (example: “Existing Bathroom” or “New Bathroom”).
- Clearly differentiate between any new proposed and existing building elements (example: shade in existing wall construction but leave new proposed walls unshaded).

General Requirements

Fire Safety:

Single Residential Dwelling Units are required to contain both smoke alarms (O.B.C. 9.10.19.) and carbon monoxide alarms (O.B.C. 9.33.4.) as a fire safety measure.

Smoke alarms are required to be located so that,

- there is at least one smoke alarm installed on each storey, including basements,
- any storey containing a sleeping room (ex: bedrooms),
- within each sleeping room (ex: bedrooms), and
- in a location between the sleeping rooms and the remainder of the storey (ex: hallway).

Smoke alarms shall:

- be installed with permanent connections to an electrical circuit with no disconnect switch,
- include a battery back-up,
- include a visual signaling component,
- include an audio signaling component,
- be installed on or near the ceiling, and
- be wired so that they are interconnected, so that if one smoke alarm is activated it will cause the activation of all smoke alarms within the dwelling unit.

Carbon Monoxide Alarms are required to be:

- located adjacent to each sleeping area,
- mechanically fixed at the manufacturer's recommended height, or in the absence of specific instructions, on or near the ceiling,
- permanently connected to an electrical circuit with no disconnect switch,
- wired so that its activation will activate all carbon monoxide alarms, and
- equipped with an alarm that is audible within bedrooms when the doors are closed.

Safe Exiting:

The Ontario Building Code sets out minimum sizes for doorways (O.B.C. 9.5.11.) and hallways (O.B.C. 9.5.10.) to facilitate a safe path towards an exit in the event of an emergency.

Doors in the path between the basement and the exterior must be a minimum width of 810mm (32") wide. This includes doors at the top or bottom of stairs.

Other door sizes (O.B.C. 9.5.11) are required to meet specific minimum size requirements to facilitate safe exiting, as well as general movability within the space.

- Utility room doors must be 810mm (32") wide
- Bathroom doors are permitted to be 610mm (24") wide
- Rooms located off hallways that are permitted to be 710mm (28") wide
- All other doors must be a minimum width of 760mm (30") wide

The unobstructed width of a hallway is required to be a minimum of 860mm (34") wide.

Hallways may have a reduced width of 710mm (28") wide, when there are only bedrooms and bathrooms at the end of the hallway furthest from the living area, and a second *exit* is provided to accommodate.

Ceiling Height:

As a health and safety matter, the Ontario Building Code regulates a minimum ceiling height (O.B.C. 9.5.3.) in all finished spaces.

Room or Space	Minimum Ceiling Height
Living Room or space Dining Room Kitchen or Kitchen Space	2300mm (7'-6 1/2") over at least 75% of the required floor area, with a clear height of 2100mm (6'-11") at any point of the required floor area.
Bedroom or bedroom spaces	2300mm (7'-6 1/2") over at least 50% of the required floor area or 2100mm (6'-11") over all the required floor area.
Bathroom, Water closet room	2100mm (6'-11") in any location where a person would be in the standing position
Passage Finished rooms not specifically mentioned above	2100mm (6'-11")

The minimum ceiling height under beams, duct work or any other projections is required to be 1950mm (6'-5").

Windows:

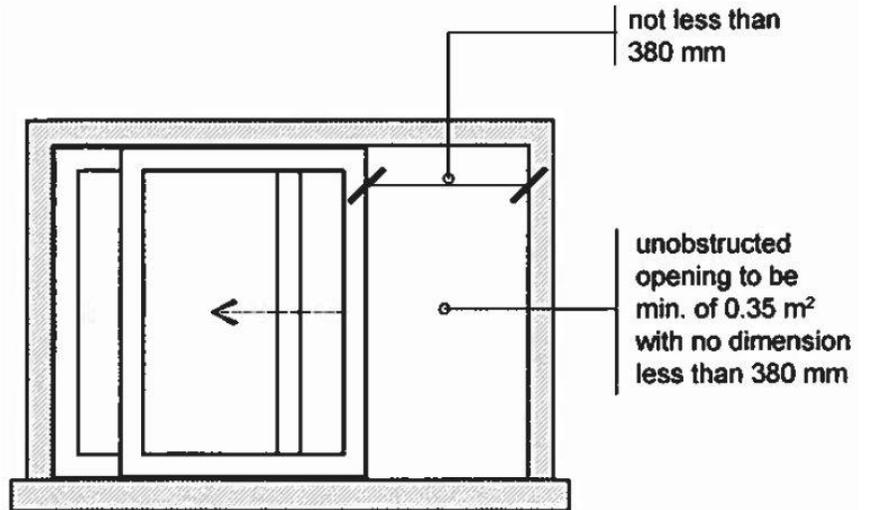
In rooms that contain electric lighting minimum, unobstructed glass areas are required to be provided. This is actual glass area, not the overall window size (do not include frames in area calculations). For example, an 11m² (120 ft²) bedroom would require a minimum window glass area of 0.55m² (6 ft²). The table below provides the minimum requirements (O.B.C. 9.7.2.3.)

Location	Minimum Unobstructed Glass Area (house less than 5 years old)	Minimum Unobstructed Glass Area (house more than 5 years old)
Laundry Basement Recreation Room Unfinished Basement	Window not required	Window not required
Kitchen Space Kitchen Alcove	Window not required	Window not required
Living Rooms Dining Rooms	10% of area served	5% of area served
Bedrooms Other Finished Rooms not mentioned above	5% of area served	2.5% of area served

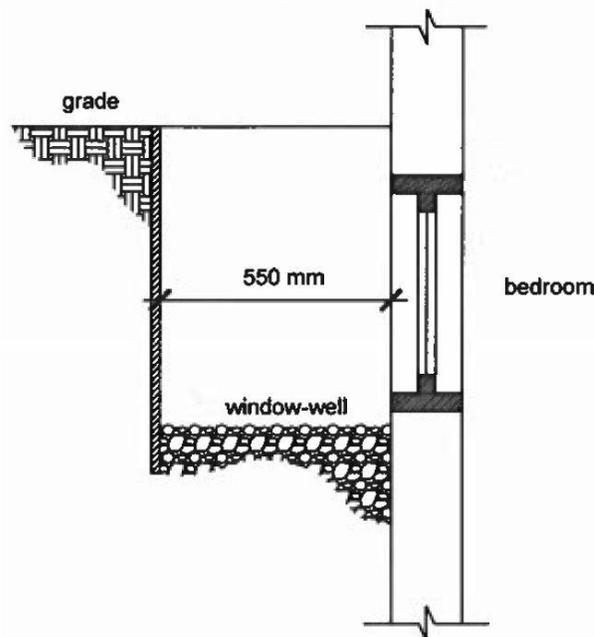
Every basement level that contains a bedroom must be provided with a way to safely get outside. If the basement does not have a door that leads directly to the exterior grade, an egress window is required (O.B.C. 9.9.10.1.) to be provided. The egress window must be located where it is always accessible to everyone who may be sleeping in the basement.

The Egress Window must:

- be operable from the inside without the use of tools or special knowledge,
- provide an individual, unobstructed open portion having a minimum area of 0.35m² (3.8sqft) with no dimension less than 380mm (15”), and
- provide the required opening without the use of tools or special knowledge.

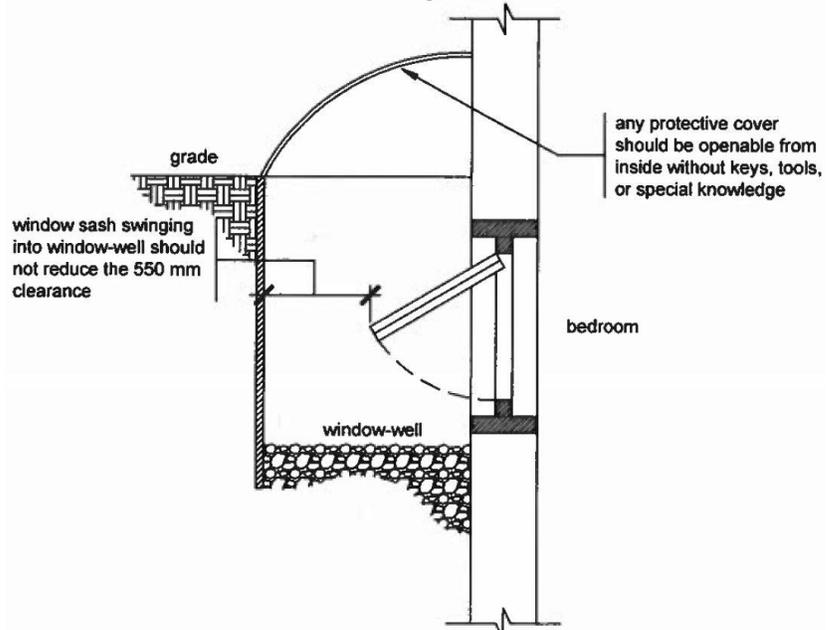


Egress windows that open into a window well, must have a clearance of not less than 550mm, provided in front of the window.



Where the sash of an egress window swings towards the window well, the operation of the sash shall not reduce the clearance in a manner that would restrict escape in an emergency.

Where a protective enclosure is installed over an egress window well, such enclosure shall be operable from the inside without the use of keys, tools, or special knowledge of the opening mechanism.



Stairs:



Stairs are required to have uniform riser heights within the flight of stairs (O.B.C. 9.8.). If you intend to raise the height of the finished floor, or if you intend to finish the stairs with flooring, uneven riser heights must be avoided throughout the entire stair run for safety reasons. Stairs must also contain a code compliant guard and handrail.

For new stair construction, please see the City of Peterborough Stair Changes handout.

Stairs are required to be provided with adequate lighting (O.B.C. 9.34.2.3.). Stairs that serve finished spaces are required to have a 3-way wall switch located at the top and bottom of each flight of stairs.

Plumbing for Bathrooms and Other Locations:

If there is a bathroom roughed in, or if you intend to add bathroom fixtures the work must meet the plumbing requirements of the Ontario Building Code. This also applies to all plumbing work that is proposed. Some common examples include bar sinks, washing machine hook-ups, laundry tubs, sump pits.

Reminder: Bathrooms require ventilation/exhaust to the exterior. This information is provided in following pages under H.V.A.C.



Heating/Ventilation and Air-Conditioning (H.V.A.C.):



All homes have Heating, Ventilating and Air-Conditioning (H.V.A.C.) system. In older homes it may just be a furnace and windows that open to allow air circulation. Newer homes have more complicated systems.

H.V.A.C. design (9.32. & 9.33.) in most homes (especially new homes), the ventilation and heating systems are combined, but the requirements for ventilation need to be looked at separately from the heating/cooling. An adequate amount of supply and return air ducts are required to be provided for the basement space. If you are unsure of the requirements, speak with a qualified mechanical contractor who is H.R.A.I. registered (Heating, Refrigeration and Air Conditioning Institute of Canada) to ensure the system is properly designed and installed. A poor design will cause discomfort and lead to poor energy efficiency as well as higher operating costs.

In many newer houses a Heat Recovery Ventilator (H.R.V.) was installed when the house was built. If you wish to reuse the H.R.V. for the exhaust of the bathroom, a new H.R.V. balancing report will need to be submitted after the installation. Many older homes do not contain an H.R.V. system.

The age of your house, scope of the proposed work, and type of existing H.V.A.C. that your house has will determine what requirements will need to be met. In general terms, each room in a basement is required to be provided with a heat source. Depending on the use of a room, it will be required to have adequate fresh air supply and air circulation. These are all key to ensuring the health and safety of anyone who may be enjoying the use of the basement.

For newer homes, H.R.A.I. explains that there are three options for heating a habitable (finished) basement.

- Option 1: is to provide a secondary heat source for the basement that will supplement 20% of the heat loss in conjunction to the use of the primary heat source. With this option, the heat ducts are permitted to remain at the ceiling level and must deliver 100% of the required heat load of the basement. This method is thermostatically controlled.
- Option 2: is to create a separate system or zone of a system which is controlled by a thermostat that is located in the area that it serves. This separate system or zone of a system must deliver 100% of the required heat load to the area that it serves.
- Option 3: applies to basements that are fully insulated (full height of exposed walls). Supply heat is to be located at the exterior walls, or in immediately adjacent walls. The supply heat is to be within 6" of the basement floor and the circulation fan on the furnace shall be set to run continuously.

All bathrooms require mechanical ventilation by way of exhaust equipment. If the bathroom is not being exhausted through an H.R.V. unit, it is usually done with an exhaust fan. The exhaust equipment being used must be approved by Home Ventilating Institute (H.V.I.) and must be vented directly to the exterior with properly sized duct work. The minimum capacity required to be met is 25 L/s (50cfm).

Ontario Building Code (O.B.C.)

You may also visit elaws/ontario.ca for a PDF version of the O.B.C. for reference.

Don't Forget!

- Contact the Electrical Safety Authority (E.S.A.) to obtain an electrical permit for any electrical work to be completed.
- A qualified gas technician is required for:
 - Gas fireplace installations.
 - Relocating or changing fuel fired appliances.
- Carbon monoxide alarms are required to be installed adjacent to sleeping areas when a fuel fired appliance is used.
- Egress is required if sleeping areas are provided (ex: egress windows).
- To provide sufficient supply and return air ducts for the new layout.

Things to know once Building Permit is granted:

- If any changes are proposed from the approved building permit drawings, contact Building Services Division to speak with the Plans Reviewer prior to proceeding with any work. Revised drawings may be required.
- Building Services will provide the contact information of the inspectors assigned to your building permit at the time of building permit issuance.
- Whenever possible it is recommended to have the builder present during inspection to assist the Building Inspector in relaying important information. This will help eliminate delays during the process.
- Ensure that each inspection is passed before proceeding with the next phase of work. Failure to notify the appropriate inspector of readiness for a mandated inspection may result in removal of finishes to the satisfaction of the inspector to ensure inspection may take place.

Remember to provide your inspector with minimum 48 hours notice of inspections.

Common inspection deficiencies include:

- What is constructed does not match the floor layout of the approved plans.
- The top or bottom rise of stairs is not uniform due to change in floor or tread finishes.
- Ceiling height does not meet requirements.
- Door size to the utility room is too small.
- Make-up air is not provided to fuel burning furnace.
- Improper dryer ducting.
- Improper washroom ventilation.
- Improperly vented plumbing pipes.
- Moisture protection of bottom plates of walls is not provided.
- 3-way switch missing or improperly located to serve stairs.
- Supply and return air ducts are not provided to all rooms.

Checklist for a Complete Building Permit Application

When applying for a building permit to finish a basement, the following items must be included for the application to be complete and accepted by the Building Services Division. **If you do not have all required information, your application is incomplete and cannot be processed.**

Please ensure that the following items are provided at time of building permit application:

- A completed Building Permit Application form.
- Any approvals that are required from City departments or Agencies.
- Schedule 1: Designer Information (The person that prepares the drawings must either be the homeowner, or a qualified and/or registered designer as per the O.B.C. requirements). This form may be found with the Building Permit Application form.
- Payment ready.
- Two (2) complete sets of drawings (one set is returned to you as your approved building set and must be available on site during the construction). Or if making application online, submit to residentialpermits@peterborough.ca.

Remember that the more time spent pre-planning your project will help minimize confusion during the building permit application review process. It will also reduce any frustration on site, once you have obtained building permit and have commenced construction.

The following is a list of common code references. For a more comprehensive list refer to the O.B.C.

	O.B.C. Reference		O.B.C. Reference
Design of Areas, Spaces and Doorways	9.5.	Wood-framed Construction	9.23.
Minimum Window Areas	9.7.2.3.	Beams to Support Floors	9.23.8.
Stairs, Ramps, Handrails and Guards	9.8	Plumbing Facilities	9.31.
Handrails	9.8.7.	Water Supply and Distribution	9.31.3.
Guards	9.8.8.	Required Facilities	9.31.4.
Egress from Bedrooms	9.9.10.	Ventilation	9.32.
Smoke Alarms	9.10.19.	Heating and Air-Conditioning	9.33.
Columns	9.17.	Required heating Systems	9.33.2.
Fireplaces	9.22.	Carbon Monoxide Alarms	9.33.4.
		Electrical Facilities	9.34.
		Lighting Outlets	9.34.2.

Notes, Questions, Sketches:

NO CONSTRUCTION IS TO COMMENCE BEFORE A PERMIT IS ISSUED

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