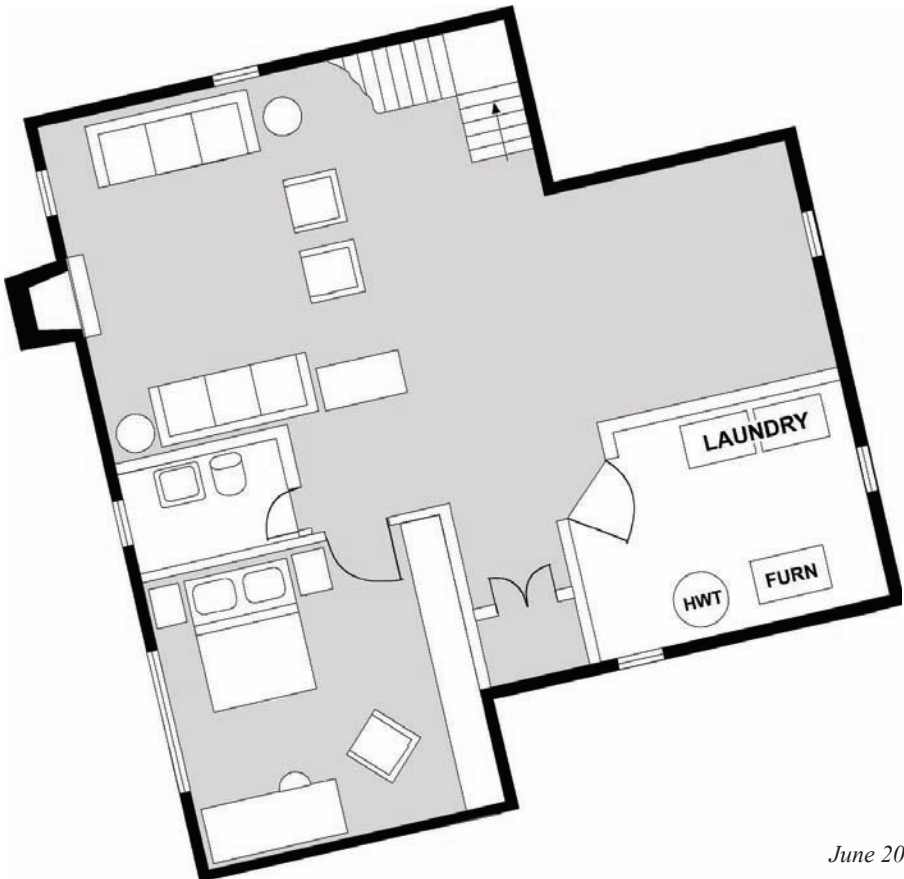


Basement Development

***Construction requirements for the
development of basements in
residential dwellings.***



GENERAL INFORMATION	3
BUILDING CODE REQUIREMENTS	4
Room and Space Dimensions	4
Doors	4
Bedroom Windows	4
Stair Guards and Handrails	6
Smoke Alarms	8
Partition Walls	9
Insulation and Vapour Barriers	9
Ventilation	10
ELECTRICAL	12
PLUMBING	15
INSPECTION	17

Every effort has been made to ensure the accuracy of information contained in this booklet. However, in the event of a discrepancy between this booklet and the governing City of Winnipeg By-law, the By-law will take precedence.

Is a building permit required to develop a previously unfinished basement into a recreation room or family room etc.?

Yes! A building permit is required. This permit may be obtained at the Planning, Property and Development Department, Unit 31 - 30 Fort Street.

Does a building permit include any electrical and/or plumbing alterations?

No! If any electrical and/or plumbing alterations are planned then separate electrical and plumbing permits will be required. Electrical and plumbing information regarding permits, plans required and installation details can be found on pages 12 to 16 in this booklet.

Are plans required for a building permit for basement development?

Yes, a floor plan layout indicating use of rooms is acceptable. However, if major structural alterations are anticipated such as the altering or moving of beams or teleposts then these plans must be reviewed by a Professional Engineer registered in the Province of Manitoba and a report must be submitted at the time of permit application.

Is a permit required to install a wood burning appliance such as a stove or a fireplace?

Yes! The installation of a wood burning appliance will require a building permit. If you are applying for a building permit to develop your basement at the same time as your wood burning appliance is being installed then both will be included on the same permit.

Are there requirements for ceiling heights?

Yes. The minimum room heights are shown in TABLE 1. The heights of rooms or spaces are measured from the finished floor to the ceiling surface.

What are the requirements for doors?

Required doors: A door must be provided at each entrance to a dwelling and to each room containing a toilet.

Doorway sizes: Doorway openings must be designed to accommodate not less than the door sizes shown in TABLE 2 for both swing type doors and folding doors.

TABLE 1 - Room Heights

Room or Space	Minimum Heights	Minimum Area Over Which Minimum Height Must Be Provided ⁽¹⁾⁽²⁾
Bedroom (other than master) or sleeping spaces	2.1 m (6 ft. 11 in.)	Lesser of the area of the space or 3.5 sq. m. (38 sq. ft.)
Unfinished basement including laundry area therein	2 m (6 ft. 7 in.)	Area under beams in laundry areas and in any location that would normally be used for passage to laundry and storage areas.
Bathroom, water-closet room	2.1 m (6 ft. 11 in.)	Lesser of the area of the space or 2.2 sq. m. (24 sq. ft.)
Passage, hall ⁽³⁾ and finished rooms not specifically mentioned above	2.1 m (6 ft 11 in.)	Area of the space

Note to TABLE 1:

- 1) Areas in rooms or spaces over which ceiling height is not less than the minimum specified in Table 1 must be contiguous with the entry or entries to those rooms or spaces.
- 2) Area of the space must be measured at floor level.
- 3) Hallways must have a width of at least 860 mm (34 in.)

TABLE 2 - Minimum Size of Doors

At Entrance to	Width	Height
Stairs to a floor level that contains a finished space	810 mm (32 in.)	1980 mm (6 ft. 6 in.)
Utility rooms	810 mm (32 in.)	1980 mm (6 ft. 6 in.)
Walk-in closet	610 mm (24 in.)	1980 mm (6 ft. 6 in.)
Bathroom or room containing a toilet*	610 mm (24 in.)	1980 mm (6 ft. 6 in.)
Rooms not mentioned above	760 mm (30 in.)	1980 mm (6 ft. 6 in.)

Note to TABLE 2:

*A doorway to at least one bathroom in a dwelling must accommodate a door of not less than 760 mm (30 in.) wide. This means that if an existing bathroom is provided with a door of not less than 760 mm (30 in.) wide then the minimum door width in any other bathroom can be 600 mm (24 in.).

What are the requirements for windows for bedrooms in basements?

Purpose: Windows must furnish occupants with natural light, provide an exit in an emergency from the bedroom area and supply natural ventilation.

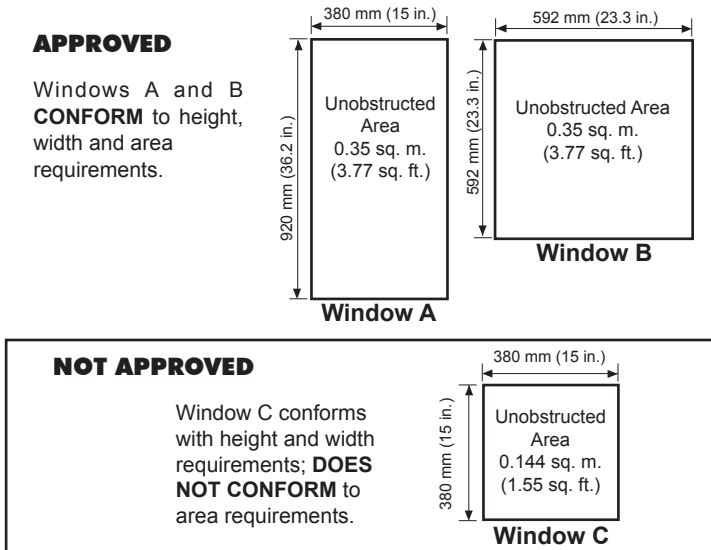
Ability to open: Each bedroom must have at least one outside window. This window must be openable from the inside without the use of tools or special knowledge (except where a door provides direct access to the exterior).

Unobstructed area when open: The window must provide an unobstructed opening with a minimum area of 0.35 sq. m. (3.77 sq. ft.) with no dimension less than 380 mm (15 in.).

NOTE: Although the minimum dimensions required for height and width are 380 mm (15 in.), a window that is 380 mm by 380 mm (15 in. by 15 in.) would not comply with the minimum area requirements. See FIGURE 1.

Window opening into a window-well: Where a window required for a bedroom opens into a window-well, a clearance of at least 550 mm (22 in.) must be provided in front of the window. Where the sash swings toward the window-well, the operation of the sash must not reduce the clearance in a manner that would restrict escape in an emergency.

FIGURE 1 - Bedroom window area and dimensions.



What if my existing basement windows do not meet the above dimensions and area requirements for bedrooms?

A bedroom would not be permitted in the basement!

What are the requirements for guards on stairs to basements?

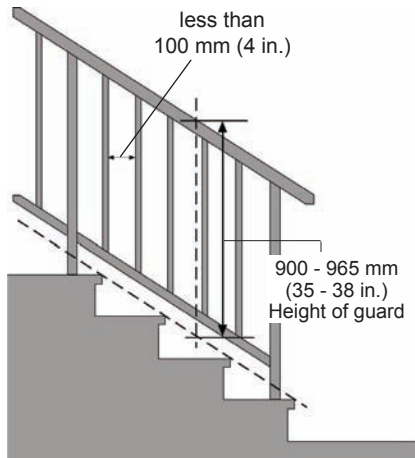
Purpose: Guards are intended to act as barriers to prevent people from falling over the edge of stairs onto the floor below.

Required guards: When an interior stair has more than 2 risers, the sides of the stair and the landing or floor level around the stairwell must be enclosed by walls or be protected by guards.

Height of guards: Guards for stairs within dwellings must be not less than 900 mm (35 in.) in height measured vertically above a line drawn through the outside edges of stair nosings, and not less than 900 mm (35 in.) in height above landings. See FIGURE 2.

Openings in guards: Openings through a guard must be of a size as to prevent the passage of a spherical object having a diameter of 100 mm (4 in.) unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. See FIGURE 2.

FIGURE 2 - Guard/Handrail



What are the requirements for handrails on stairs to basements?

Purpose: Handrails are intended to provide people climbing stairs with guidance and a means of support.

Required Handrails: When a stair has more than 2 risers a handrail must be provided on:

- 1) at least one side of the stair if it is less than 1100 mm (43 in.) in width; and
- 2) on two sides of the stair if it is 1100 mm (43 in.) in width or greater.

Height of handrails: Handrails on stairs must be not less than 800 mm (32 in.) and not more than 965 mm (38 in.) in height, measured vertically from a line drawn through the outside edges of the stair nosing.

NOTE: *In those cases where a stair requires both a guard and a handrail, a reasonable solution is to provide a guard which also acts as a handrail. See FIGURE 2.*

Handrail Clearance: A clearance of not less than 40 mm (1.6 in.) must be provided between each handrail and the wall to which it is fastened.

Handrail projection: Handrails and stair stringers must not project more than 100 mm (4 in.) into the required width of the stairway.

Design: Required handrails must be constructed so as to be continually graspable along their entire length with no obstruction on or above them to break a handhold, except when the handrail is interrupted by newels at changes in direction.

Attachment of handrails:

- 1) Handrails must be attached to wood studs, wood blocking, steel studs or masonry at points spaced not more than 1.2 m (4 ft.) apart.
- 2) Attachment to wood studs and blocking required in Sentence (1) must consist of not less than 2 wood screws at each point, penetrating not less than 32 mm (1.25 in.) into solid wood.

What are the requirements for smoke alarms?

Purpose: A smoke alarm detects smoke from a fire and warns the occupants with an audible alarm.

Required Smoke Alarms: Smoke alarms conforming to CAN/ULC-S531, “Smoke Alarms” must be installed in each dwelling.

Location of Smoke Alarms: Smoke alarms must be installed on or near the ceiling. Sufficient smoke alarms must be in-

stalled so that;

- 1) There is at least one smoke alarm on each floor level, including basements, that is 900 (3 ft.) or more above or below an adjacent floor level.
- 2) Each bedroom is protected by a smoke alarm either inside the bedroom or, if outside, within 5 m (16 ft.), measured following corridors and doorways, of the bedroom door, and
- 3) The distance, measured following corridors and doorways, from any point on a floor level to a smoke alarm on the same level does not exceed 15 m (49 ft.)

Power Supply: Smoke alarms must be permanently connected to an electrical circuit and must have no disconnect switch between the overcurrent device (breaker or fuse) and the smoke alarm.

Interconnection of Smoke Alarms: Where more than one smoke alarm is required in a dwelling, the smoke alarms must be wired so that the activation of one alarm will cause all alarms within the dwelling to sound.

What are the requirements for carbon monoxide alarms?

Purpose: A carbon monoxide alarm detects accumulating levels of carbon monoxide gas and warns building occupants with an audible alarm.

Required Carbon Monoxide Alarms: Carbon monoxide alarms conforming to CAN/CSA-6.19, “Residential Carbon Monoxide Alarming Devices” must be installed in every dwelling that also contains any fuel burning appliance, or a storage garage.

Location of Carbon Monoxide Alarms: Sufficient carbon monoxide alarms must be installed:

- 1) So that each bedroom is protected by a carbon monoxide alarm mechanically fixed at a height recommended by the manufacturer either inside the bedroom or, if outside, within 5 m (16 ft.), measured following corridors and doorways, of the bedroom door and,
- 2) In each room containing a solid fuel-burning appliance, where it shall be mechanically fixed on or near the ceiling.

Power Supply: Carbon monoxide alarms may be powered by batteries or by the dwelling unit’s electrical system. Where powered by the dwelling unit’s electrical system there shall be no disconnect switch between the overcurrent device and the carbon monoxide alarm. Carbon monoxide alarms shall be supplied from a lighting circuit or a circuit with a mix of lighting and receptacles and shall not be installed on a circuit that is protected by a GFCI or an AFCI.

Is there a recommended construction method for partition walls?

Yes! All **non-loadbearing** partition walls in the basement should be constructed as “floating” partitions. In this type of construction it is recommended that a small space of 19 mm (0.75 in.) or more be left at the top or the bottom of each partition wall. The reason for constructing partitions as “floating” is that concrete basement floors can move upward when there is an increase in the moisture content of the soil. The small spaces at the top or bottom of the partition walls will help to absorb any upward movements of the concrete floor. This could prevent any walls constructed above the concrete floor from being pushed up against the floor joists of the main floor.

Are there minimum stud specifications for partition walls?

Yes. The minimum size and spacing of studs for a **non-load-bearing** partition wall are 38 x 38 mm (2 x 2 in.) at 400 mm (16 in.) spacing. The maximum height permitted for this size of stud is 2.4 m (7 ft. 10 in.) It is recommended that a larger stud size be used in order to allow the installation of insulation or electrical wiring in the wall.

What are the purposes of insulation and vapour barriers?

Insulation and vapour barriers are the principal building components which manage the flow of heat, air, and water vapour.

What are the minimum insulation requirements for exterior basement walls?

Areas to be insulated: Foundation wall enclosing a heated space must have their insulation placed from the underside of the subfloor to a minimum of 2.4 m (7 ft. 10 in.) below the exterior ground level or to the floor of the space, whichever is less.

Thermal resistance value: The minimum thermal resistance of insulation for basement walls is “RSI-3.5 (R-20) or RSI-2.1 (R-12) on the inside wall with RSI-0.88 (R-5) on the outside wall.”

What are the requirements for the installation of vapour barriers?

Installation: Vapour barrier protection must be installed to protect the entire surface of insulated exterior walls. Vapour barriers must be installed on the warm side of the insulation.

Materials: Polyethylene sheet vapour barriers must conform to the standard CAN/CGSB-51.34-M “Vapour Barrier, Polyethylene Sheet for Use in Building Construction”. The polyethylene must be at least 0.15 mm (6 mil) thick. Type 2 vapour barriers may be used for this type of application.

The standard requires that each roll of material must be identified by a clearly visible label that is inserted in or attached to each roll, or its container. The label should identify the contents in a manner similar to the following.

(trade name)
SHEET VAPOUR BARRIER
6 Mil
CAN/CGSB 51.34-M

NOTE: Polyethylene sheet that is specified as “light”, “medium”, or “heavy duty” is not acceptable unless it is also identified in some manner as meeting the above standard.

Can foamed plastics used as an insulation on a basement wall be left exposed?

No! The Building Code expressly denies the use of foamed plastics for interior finishes. This is because the material is considered to be a fire hazard when left exposed. Where foamed plastic is used on interior walls it must be covered by any of the approved interior finishes listed in the Building Code, i.e. drywall, plastering, plywood, hardboard, particle board, waferboard, strandboard, or wall tile (plastic or ceramic).

What are the requirements for exhaust ventilation for bathrooms?

Ventilation in bathrooms or any rooms containing a toilet must be provided by a mechanical exhaust system (fan) to the outdoors with a minimum capacity of 25 L/s (50 cfm).

NOTE: Natural ventilation (i.e. an openable window) is considered to be suitable only for summer use and tends not to be used in winter, thus resulting in unacceptable indoor air quality.

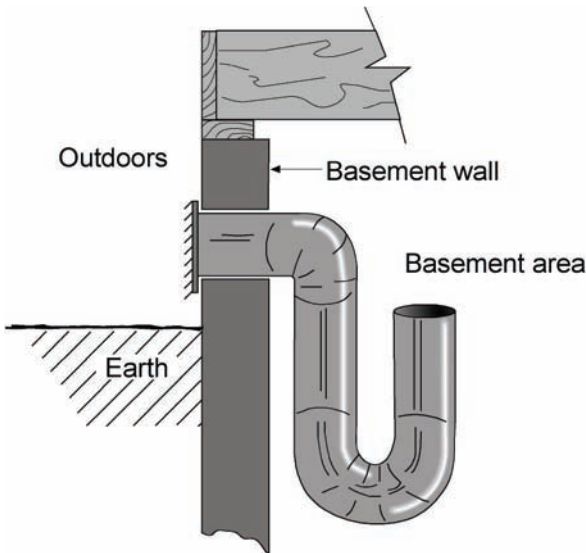
Does my house require ventilation?

Yes! All dwelling units require a source of fresh outside air to provide:

- 1) Replacement (makeup) air for all systems that exhaust air to the outdoors (such as bathroom exhaust fans and clothes dryers, etc.); and
- 2) Combustion and dilution air for fuel fired appliances (such as wood stoves, gas furnaces and hot water tanks, etc.).

This air must be provided through an opening to the outside of the building. This opening is usually provided with a hooded inlet and duct work. (For a typical design see FIGURE 3.) The duct should be insulated to prevent frosting.

Since many different factors affect ventilation conditions it is strongly recommended that a qualified heating contractor be contacted before making any changes to assist in the correct design and installation of the system.

FIGURE 3 - Fresh Air Duct

Are there electrical requirements for developed basements?

Yes. The Electrical Code requires that where basement walls are being finished with drywall, wood panelling or like material to within 450 mm (18 in.) of the floor, receptacles must be installed in these walls. In addition the Building Code requires that a lighting outlet be provided in each room.

When is an electrical permit required?

An electrical permit must be obtained from the City of Winnipeg Planning, Property and Development Department, Unit 31 - 30 Fort Street, prior to the construction, alteration, repair, or extension of any electrical installation.

Who may obtain an electrical permit for wiring in a residence?

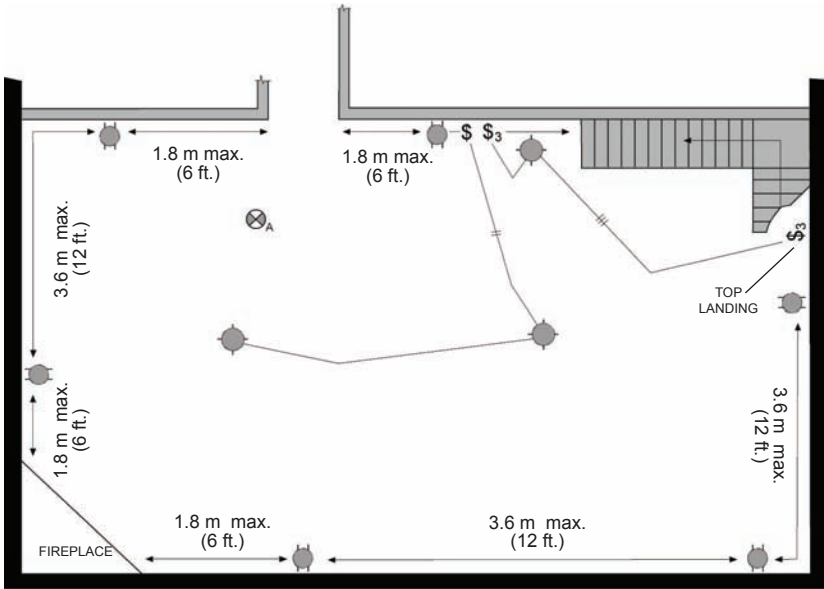
An electrical permit can be issued only to:

- 1) a person who holds an Electrical Contractor's License from the City of Winnipeg authorizing that person to carry out business or trade in the City of Winnipeg: **OR**
- 2) the owner of the detached single family dwelling who is also the **occupant**. The owner **personally** must do the work. The permit would be issued to the owner provided the Manager of Development and Inspections is confident the work will be performed competently.








What information is required to make the application for an electrical permit?

To obtain an electrical permit, the applicant must present a wiring diagram for the proposed installation indicating the location of receptacles, lights, switches, and all other equipment to be installed. An example of a typical electrical diagram for wiring in a recreation room is shown in FIGURE 4.

FIGURE 4 - Wiring Diagram for Typical Rec-Room



SYMBOL LEGEND

- | | | | | | |
|---|-----------------------------|--|--------------------|--|-----------------|
|  | Lighting Outlet |  | Single Pole Switch |  | Three Conductor |
|  | Tamper Resistant Receptacle |  | 3-Way Switch |  | Two Conductor |
|  | 120V Smoke Alarm | | | | |

NOTE TO FIGURE 4: All electrical wiring must be inspected *prior* to covering with insulation or wallboard.

Is there other information available on the regulations for electrical installations?

Yes! A booklet with information for homeowners called “*Electrical Installations*” has been written to provide homeowners with an outline of some of the electrical regulations applying to finished rooms and additions. The booklet also provides information on the extent to which the electrical work must be completed prior to requesting an inspection. It is recommended that the applicable sections of the booklet be reviewed prior to commencing the project.

When is a plumbing permit required?

A plumbing permit must be obtained from the City of Winnipeg Planning, Property and Development Department, Unit 31 - 30 Fort Street, whenever:

- 1) a plumbing system is constructed, extended, altered, renewed or repaired, and
- 2) when water supply lines within a building are replaced.

Note: Lead free solder is required for all drinking water supply lines.

Who may obtain a plumbing permit?

A plumbing permit can be issued only to:

- 1) a person who holds a Plumbing Contractor's License from the City of Winnipeg authorizing that person to carry out business or trade in the City of Winnipeg: **OR**
- 2) the owner of the detached single family dwelling who is also the **occupant**. The owner **personally** must do the work. The permit would be issued to the owner provided the Manager of Development and Inspections is confident the work will be performed competently.

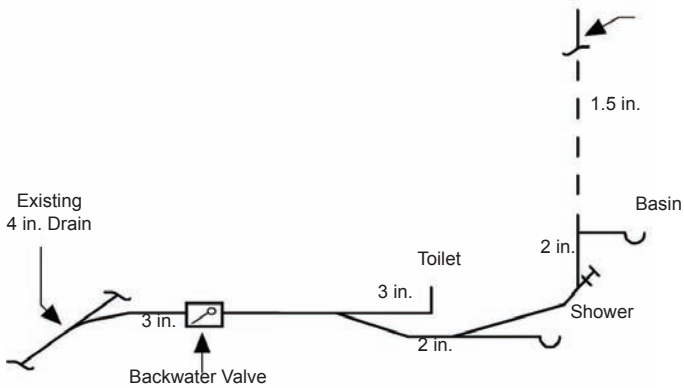
What information is required to make the application for a plumbing permit?

To obtain a plumbing permit, the homeowner must present a plumbing diagram for the proposed installation with the following details:

- 1) the diagram must have a view from the side;
- 2) be drawn as single line;
- 3) show the drain and vent pipe sizes;
- 4) show the location of each fixture.

An example of a typical plumbing diagram is shown in FIGURE 5.

FIGURE 5 - Plumbing Installation in Basement



NOTES TO FIGURE 5:

- 1) *An approved back-water valve must be installed to protect all new plumbing that is installed below grade.*
- 2) *A sump pit and pump should be installed in conjunction with the back-water valve.*

Is there other information available on the regulations for plumbing installations?

Yes! A booklet with information for homeowners called ***“Plumbing Installations”*** has been written to provide homeowners with some of the more common plumbing regulations and to provide information on the extent to which the plumbing work must be completed prior to requesting an inspection. It is recommended that the booklet be reviewed prior to commencing the project.

Who enforces all of these requirements?

The Housing Inspections Branch of the City of Winnipeg Planning, Property and Development Department is assigned the responsibility of monitoring construction for compliance with the various Building Codes and By-laws. This monitoring is carried out by means of the permit approval process and periodic site inspections.

The ultimate responsibility for compliance rests with the owner and/or contractor.

When do I contact someone for inspection of the work?

You should notify your inspector upon completion of the work but prior to covering with drywall or other interior finishes.

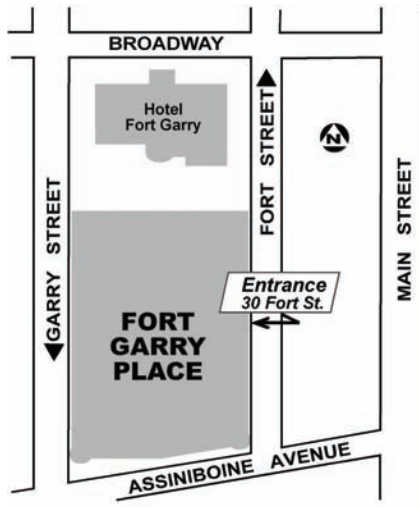
Contact the inspector on the day that you require an inspection. The telephone number for the inspectors is 204-986-5300. Call between 8:30 a.m. to 9:30 a.m. Monday to Friday.

notes

In-Person Customer Service Hours are:

Tuesday to Friday 8:30 am to 4:30 pm - All Zoning, Permits and Plan Examination services are available at Unit 31 – 30 Fort Street.

Mondays 8:30 am to 4:30 pm are reserved for telephone inquiries and completed application drop-offs. This enables Zoning and Permits staff to process building and development applications received throughout the week.





For more information regarding this booklet please contact:

The Zoning and Permit Branch

PH: 204-986-5140

FAX: 204-986-6347

or



Winnipeg
at your service.

City of Winnipeg
Planning, Property and Development Department
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