

Bulletin

Heat Pump Retrofits for Larger Buildings

Effective July 1, 2022

Authority: Director of Planning

Regulatory References

- Climate Emergency Action Plan
- Zoning & Development By-law
- Building By-law
- Noise Control By-law

Background and Context

This bulletin provides guidance on applications for permits to install air-source heat pumps in existing larger buildings, including buildings with five or more residential units, commercial buildings, and mixed-use buildings.

This bulletin covers central or distributed installations located on the ground, in parkades, or on roofs; and installations serving a single dwelling unit located on residential balconies or decks. For heat pumps located on the ground that serve individual ground-oriented residential units such as houses or townhouse units, see the bulletin [Heat Pumps for Existing Ground-Oriented Dwellings](#).

It is the responsibility of the owner and the licensed contractor to ensure heat pumps are sited to minimize the sound level transmission along property lines as required by the [Noise Control By-Law](#).

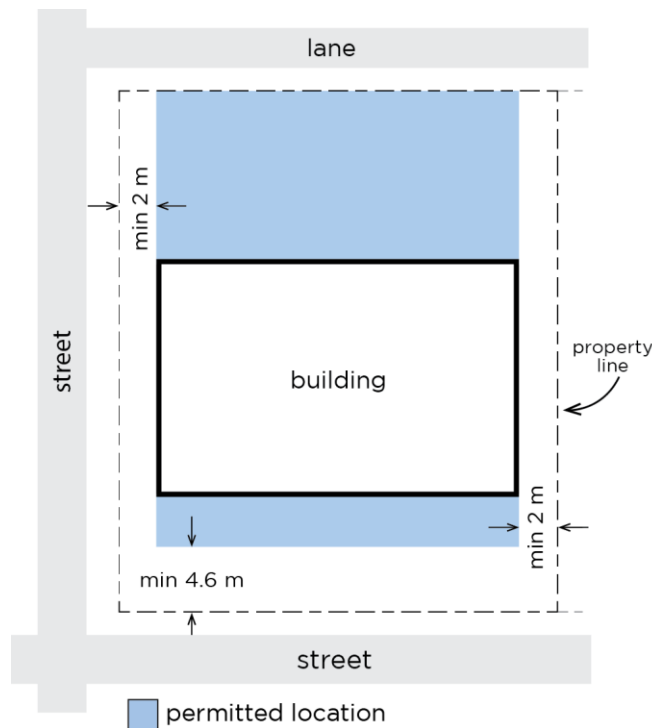
For general information about heat pumps, please visit the [heat pump webpage](#). To apply for a heat pump permit, see the [mechanical permit](#) web page.

1 Ground-Mounted Heat Pumps

Simple Option

Air-source heat pump installation in this location can be considered as outright development, meaning it does not require a development permit application, provided the outdoor unit meets the following criteria:

- (a) The mechanical unit must be electric-based and ground-mounted;
- (b) The installation does not obstruct a required exit path or access to a suite;
- (c) The installation does not affect any trees governed by applicable by-laws;
- (d) The installation does not reduce the number of accessible parking spaces, EV charging spaces, or loading spaces that are required to be provided by the Parking By-law;
- (e) The installation does not reduce the number of regular parking spaces that are required by the Parking By-law;
- (f) The mechanical unit is located in the front or rear yard and at least 2 m (6.6 ft.) from a shared property line; and
- (g) If located in the front yard of a residential building, the units are positioned at least 4.6 m (15 ft.) from the front property line, are no more than 1.25 m (4.1 ft.) in height, and are provided with appropriate landscape screening.



If the above criteria are met, a licensed contractor can:

- Apply directly for mechanical and electrical permits online; and
- Apply online for a gas and/or plumbing permit online if altering, adding or decommissioning gas or plumbing appliances are within the scope of work.

Review Option

Proposals that do not meet criteria (e) to (g) can apply for a mechanical permit online, but are not considered to be outright and may require additional time and review to process.

For information on heat pump retrofits and parking spaces, see the bulletin on [Parking, Off-Street - Reduction for Zero Emission Retrofits](#).

2 Heat Pumps in Structured Parking

Simple Option

Installation in this location can be considered as outright development, meaning it does not require a development permit application, provided the open-air mechanical unit meets the following criteria:

- The mechanical unit must be (1) electric-based and (2) installed on a horizontal surface within the parking structure;
- Does not obstruct a required exit path or access to a suite;
- The installation does not reduce the number of spaces that are required to be provided for accessible parking, EV charging, or loading; and

- (d) The installation does not reduce the number of standard spaces that are required by the Parking By-law;

If the above criteria are met, a licensed contractor can:

- Apply directly for mechanical and electrical permits online; and
- Apply online for a gas and/or plumbing permit online if altering, adding or decommissioning gas or plumbing appliances are within the scope of work.

Review Option

Proposals that do not meet criterion (d) can apply for a mechanical permit online, but are not considered to be outright and may require additional time and review to process.

For information on requesting a parking relaxation for heat pump retrofits in parking areas, see the bulletin on “Parking, Off-Street – Reduction for Zero Emission Retrofits.”

3 Heat Pumps on Private Decks or Balconies

Installation of a heat pump serving a single residential dwelling unit can be considered as outright development, meaning it does not require a development permit application, provided the outdoor mechanical unit meets the following criteria:

- (a) The outdoor mechanical unit is electric-based, and an inverter driven variable speed model;
- (b) The installation of the mechanical unit does not require penetrations through any horizontal surface or additional suites; and
- (c) The top of the mechanical unit is at least 1.07 m (42 in.) above the floor, or if lower is located at least 1.07 m (42 in.) away from the top of a guard, and the unit does not facilitate climbing as noted in the Building By-law;

If the above criteria are met, a licensed contractor can:

- Apply directly for mechanical and electrical permits online; and
- Apply online for a gas and/or plumbing permit if altering, adding or decommissioning gas or plumbing appliances are within the scope of work.

To reduce the risk of noise issues, a heat pump with a sound power level of 55 dBA or less is recommended.

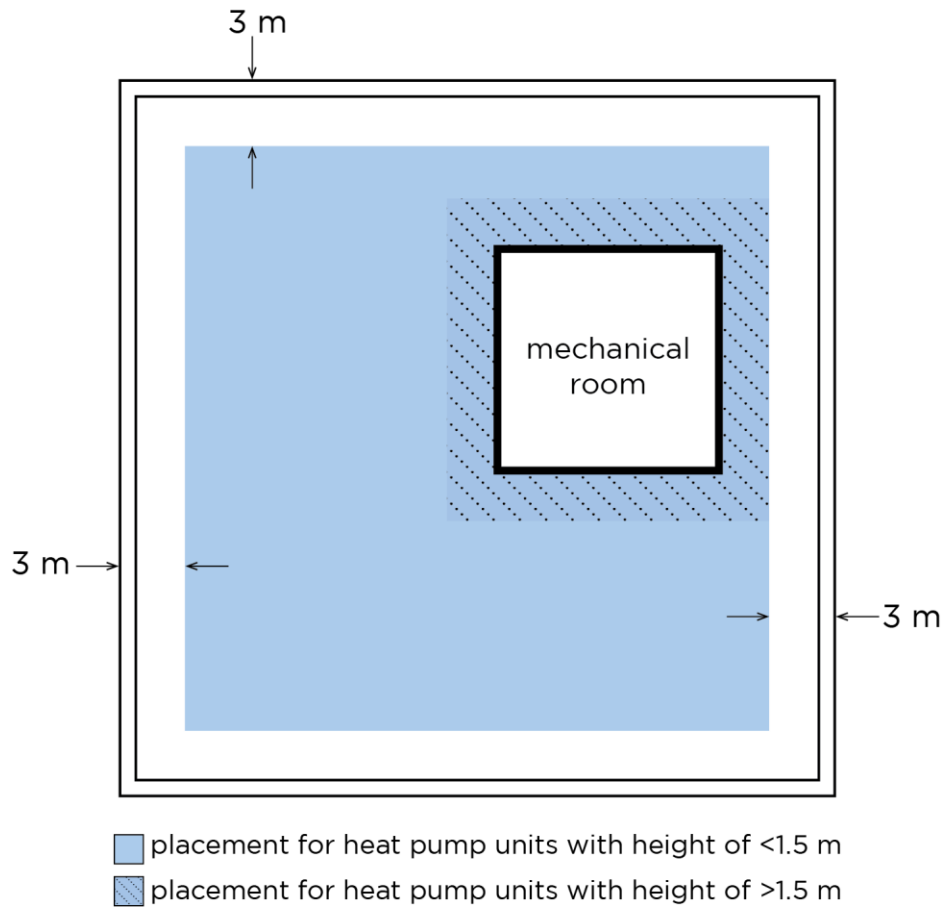
4 Heat Pumps on Rooftops

Simple Option

Installation of a heat pump in this location can be considered as outright development, meaning it does not require a development permit application, provided the outdoor unit meets the following criteria:

- (a) The mechanical unit must be electric-based and installed on the horizontal surface of the roof;
- (b) The installation must be a replacement of existing mechanical equipment on the roof; and

- (c) The unit must be no more than 1.5 m (4.9 ft.) in height and located at least 3 m (10 ft.) from the edge of the rooftop, or if taller than 1.5 m be located within 0.6 m (2 ft.) of an existing rooftop mechanical room, as illustrated below. Alternately, replacement equipment that is not taller than existing equipment will be accepted in the same location.



If the above criteria are met, a licensed contractor can:

- Apply directly for mechanical and electrical permits online; and
- Apply online for a gas and/or plumbing permit online if altering, adding or decommissioning gas or plumbing appliances are within the scope of work.

Review Option

Proposals that do not meet criterion (b) or (c) can apply for a mechanical permit online, but are not considered to be outright and may require additional time and review to process.

5 Installation

Adding mechanical equipment to existing buildings requires additional care. Installers must:

- (a) Ensure that the mechanical unit is installed as per the manufacturer's instructions;
- (b) Ensure that the mechanical unit is installed to meet climbability requirements;

- (c) Ensure that condensation outlets do not drain onto pathways or vertical surfaces;
- (d) Verify sufficient service capacity using a load calculation provided by the licensed electrical contractor; and
- (e) Ensure the installation complies with the [Noise Control By-law](#).

The applicant should obtain advice from a registered professional as needed, which may include structural or building envelope considerations.

6 Other Applications

Installations that do not meet the criteria in this bulletin may require a development or building permit, in addition to trade permits.

Installation on a building listed on the Vancouver Heritage Register may require conditional review.

Heat pumps that extract heat from water (water-source) or from underground (ground-source) will require additional review.

For questions about the permit process for installing a heat pump that is not covered in this bulletin, please e-mail cleanenergy@vancouver.ca.

7 Notes

If, at any point, the installation does not meet the requirements as outlined in this bulletin, the owner may be required to obtain a development permit or building permit.

For strata buildings, written permission for the installation shall be obtained before work commences.

For work that affects non-market housing, written permission must be obtained from the housing operator.