662 Massachusetts Ave Apt.1, Boston MA 02118

APPLICATION

Applicant/Owner: Monique Yaptenco

September 2024

PROPOSAL:
Install a ductless, mini-split system composed of two parts. The part with an inverter-driven heat pump would be located in the front garden hidden with plantings of evergreen shrubs. Refrigerant and electrical lines would connect the outdoor unit through the exterior wall to an indoor wall-mounted cooling unit.

BACKGROUND AND CONTEXT:
During the hottest, most humid months, condensation built up and mold started to grow creating unhealthy conditions. I do not have air conditioning and use only electric fans. I borrowed a dehumidifier but had to run it constantly. That drove up the indoor temperature and kept it at unsafe and unhealthy levels. The temperature stayed between 80-90 degrees Fahrenheit. It was so uncomfortable that I could not work from home as my employer allows. I lost a lot of sleep because even at night when outdoor temperatures had already cooled down, it was still very warm indoors. I had to stay with family for a few days but that is not a sustainable solution.

Wall-mounting would not take up valuable floor and storage space in the small 345 square foot apartment. The interior unit would be installed so the connecting lines would come out of the same section of the outer wall next to the current sump pump pipe (limiting changes to the appearance of the exterior wall).

I request an exception to the Commission's Standards and Criteria guidance:

N. UTILITY/MECHANICAL EQUIPMENT
1. Mechanical Equipment, such as compressor units, should not be visible from any public way within the district. Such equipment should be located either on the roof of the building, in a non- visible location, or at the rear of the building. Front yard placement is not appropriate.

1. I live in Unit 1 which is at the lowest level aka the garden level. I am too far to away from the roof.

2. My unit is at the front of the building facing the street and there is another unit (Unit 2) at the back. I do not have access to the rear of the building as it belongs to Unit 2.

3. I have two windows facing the garden and the street, both with security bars. I cannot put a portable, window AC in either one. One window is my emergency egress and the other is right next to and would block the front gate, which opens outwards and is the primary entrance to the garden level apartments. Even if I could find a window unit small enough, I'd still have to remove the security bars because they are set tight to the window. It would be unsafe not to have security bars. I live near Boston Medical Center and the Cass and Mass area. There are many incidents of substance abusers and the homeless using the steps right outside my window as a place to shoot up and drink alcohol. I have reported finding needles to Boston 311.

Pictures of the main entrance to the garden level apartments - black gate which opens outwards and would be blocked by a window-mounted AC.

The Three Options Considered

I have considered three different appliances. *Option 1* is a portable air conditioner (see picture below) but decided against it because it takes up valuable floor space during use and scarce storage space when not and would have to be vented from one of my two windows.

Option 2 is a window-mounted air conditioner and would block the main entrance (the black gate opens outward) and require removal of the security bars (see picture above).

I prefer *Option 3, the* ductless, mini-split system

Option 1: Portable Air Conditioner

Portable ACs sit on the floor, would have to be vented, and have a drain pan that would have to be emptied.

Pros:

- Least complicated solution to install and doesn't need a contractor - only needs window venting.
- Least costly solution.
- Tested solution with many review.

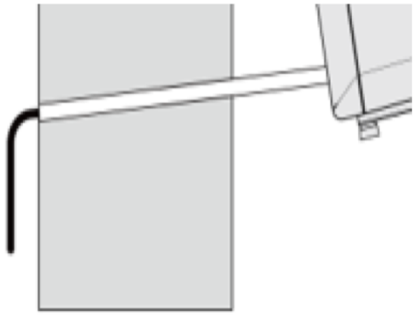
Cons:

- Takes up floor space when in use.
- Takes up storage space when not in use.
- Venting blocks one of two windows.
- Water vapor and heat generated are not completely vented.
- Not all heat generated is vented.
- Not all water vapor is vented.
- Requires drain pan be emptied.

Option 2: Window-mounted Air Conditioner

Proüall 10000 BTU Wi-Fi Connected Through The Wall Air Conditioner with Heater Dehumidifier. To install this unit, three holes would have to be drilled through the building envelope for the air intake/exhaust holes and the water drainage pipe. It would only work to mount it in the middle of the wall.

What would show on the outside of the building: two 182 mm diameter vent covers and a 25 mm diameter hole for the water drain.



The hole for the drainage pipe must be drilled using a 25mm bit.Drill
Ensure the hole is at a downward angle (min 5 degrees) so that the water will drain correctly

Option 2: Proüall 10000 BTU Wi-Fi Connected Through The Wall Air Conditioner with Heater Dehumidifier

Pros:

- Lower cost compared to mini-split
- No compressor

Cons

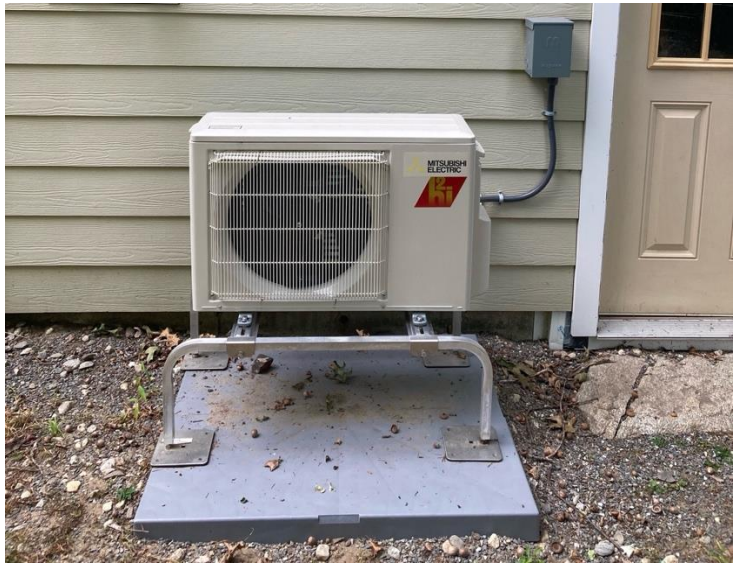
- Heating and cooling specialist-companies don't offer this as an option. Installation would have to be handled by a general contractor.
- Performance and durability not proven. Not a commonly used solution.
- Indoor unit has to be mounted in the middle, between two windows.
- Must be vented through the outer wall and will add three holes.

Option 3: Ductless, Mini-split System

I have estimates from two different HVAC specialists that service the South End and both recommend the Mitsubishi Heat Pump (Mini-Split), Model MSZ-GS15NA-U1, 14,844 BTUs Cooling, 13,997 BTUs Heating. I have stayed at apartments/homes that have similar units and experienced first-hand how well they function. They are very quiet and efficient.

The indoor, wall-mounted unit would be connected to a compressor outside the building.

The compressor is the smallest capacity and measures 21.5” high and will be kept off the ground on top of a 12” stand for a total of 33.5”. It is 31.5” wide and 11.25” deep.



The condenser would be positioned on one side of the garden and would be hidden, year-round, by evergreen shrubs. The connections would go through the outer wall where there already is a sump pump pipe. Picture above is not of existing condition but to show the refrigerant and electrical connectors.

Option 3: Ductless, Mini-split System

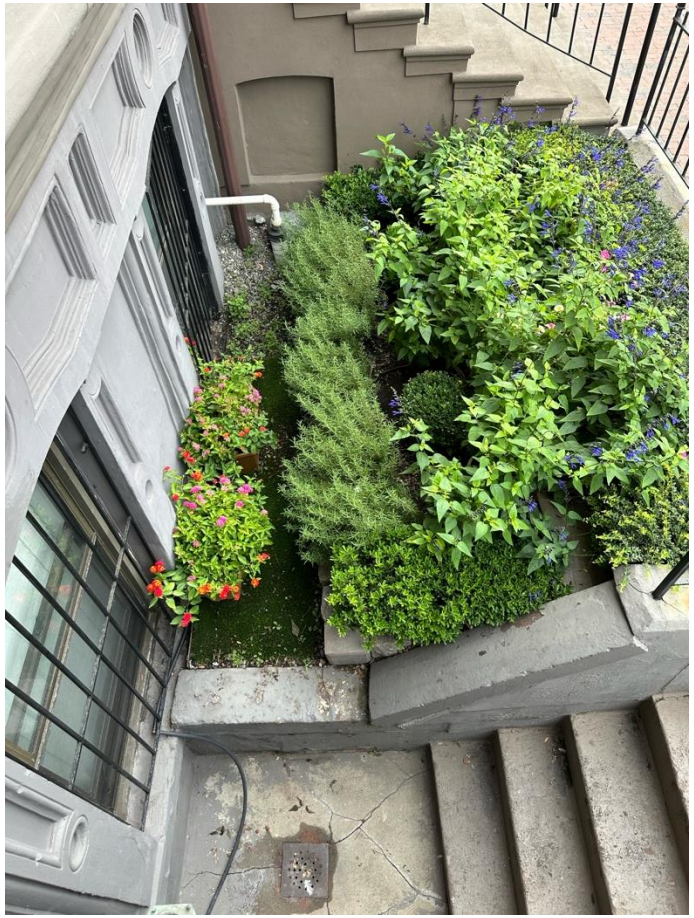
Pros:

- The connections between the indoor unit and the compressor and to the power source can be made on the right side of the building (when viewing from the sidewalk facing the building) as close to the edge of the garden as possible where there is already an existing pipe for the sump pump on that side.
- Installation would be from a contractor that specializes in heating and cooling and have 0% financing
- Purchase qualifies for an energy-saving rebate.
- Performance and durability proven. The system has been tested by many homeowners.
- More powerful appliance - 14,844 BTUs Cooling, 13,997 BTUs Heating. Will provide a more energy-efficient means to cool, dehumidify, and heat (only baseboard currently).
- Wall-mounted. Does not take up valuable floor or storage space.

Cons:

- Outdoor compressor
- Most expensive option

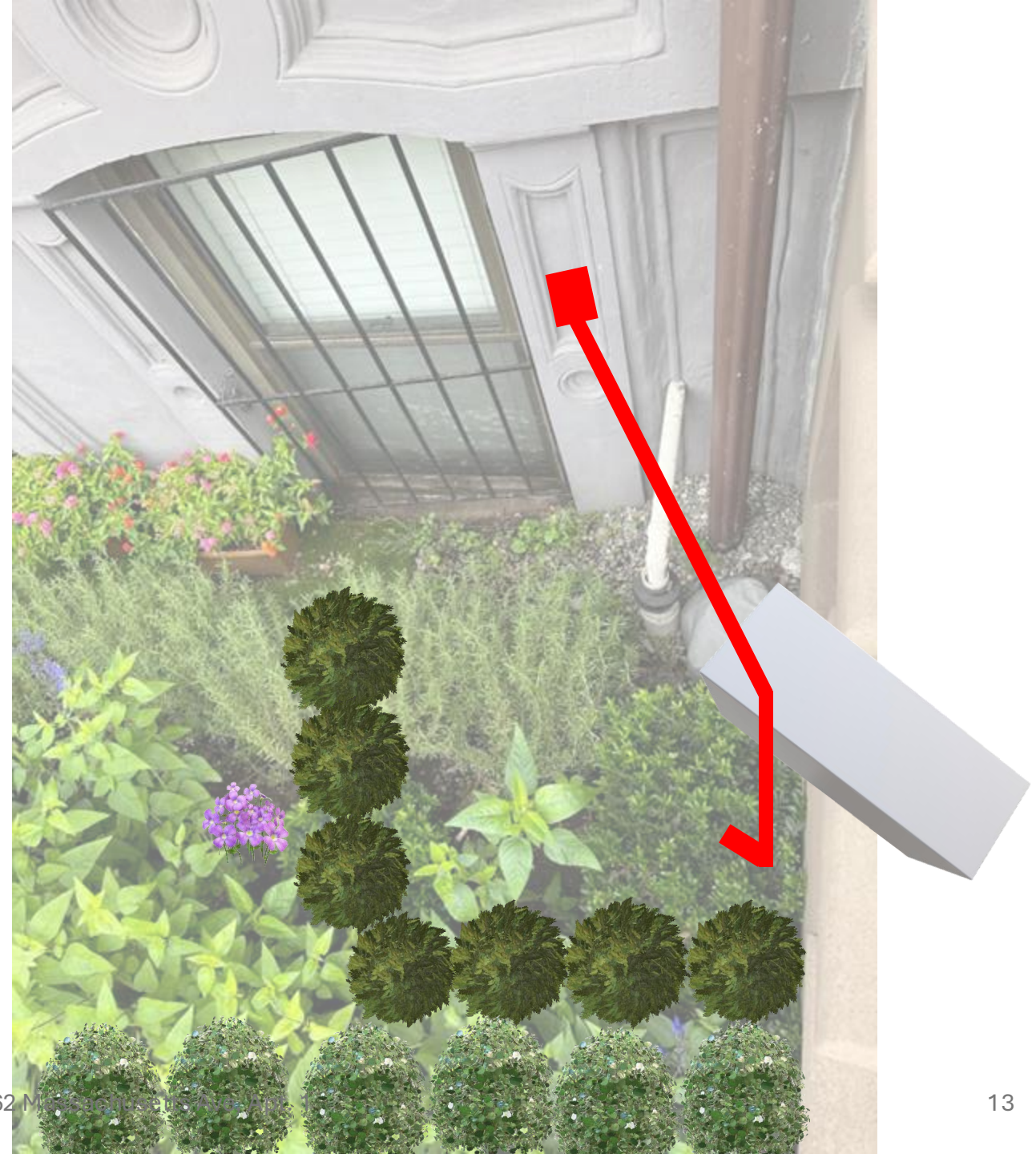
Existing Condition of Garden



Compressor positioned at an angle

Compressor positioned at an angle

Small electrical power box and line drawn in red on the right but comes in a dark grey as pictured below.



Compressor positioned at an angle

Small electrical power box and line drawn in red on the right but comes in a dark grey as pictured below.

Compressor positioned parallel to window

Small electrical power box and line drawn in red on the right but comes in a dark grey as pictured below.