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UMASS Amherst

Physical Plant Division

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To: Deans, Directors, Department Heads, Building Coordinators

Subject: Window Air Conditioning Installation Policy

The overarching purpose of a window A/C policy and standard is to provide a safe, durable installation that does not create additional facility problems in the short and long term. If it should be determined that the use of window A/C units is the appropriate climate control solution for a specific purpose, consideration must be given to the size of unit, how they are mounted, and how power is provided.

All window A/C unit installations will be performed by Physical Plant, unless otherwise approved, and will be performed in accordance with standards established by the Physical Plant which conform to the enclosed policy. Currently, the Policy on the Funding Responsibilities for Facilities requires the requesting unit to pay for the initial installation of window A/C units and all-subsequent maintenance, operating, and replacement costs. As a means to encourage proper installation, units installed will be maintained, repaired and replaced by the Physical Plant as part of their ongoing responsibility.

This policy has been extensively reviewed and incorporates comments received from customers over the past year. It was submitted to CEAC for comment. If you have any questions, please contact Earl Smith at 5-0601.

Thank you,

Earl L. Smith, Jr. PE
Director, Physical Plant Division

Encl:

cc: Jim Cahill
Physical Plant Department Heads

POLICY ON WINDOW AIR-CONDITIONER (A/C)
INSTALLATION

Concerns are frequently expressed about the process, constraints, and costs associated with the installation of window air conditioning units on campus. This document attempts to provide background and rationale for a well-articulated policy on this matter.

RATIONALE

The overarching purpose of a window A/C policy and standard is to provide a safe, durable installation that does not create additional facility problems in the short and long term.

It is important that consideration be given to the appropriateness of window A/Cs to provide climate control, the size of unit, how they are mounted, and how power is provided. In addition, it should be determined that the use of window A/C units be appropriate for the purpose intended, and if permanent, not interfere with use of the facility; not compromise the building's weather envelope; not overload existing circuits; not cause power transients; be structurally code compliant for our business use; and not be an architectural eyesore.

Proper installation insures that:

1. Windows seat properly and prohibit the infiltration of air in the cooling and heating seasons. Poor window seating causes drafts that result in service calls to the Physical Plant and increases heating and cooling costs. Most existing installations prevent the full use of the windows as designed, keeping them from being used for natural ventilation when weather permits.

2. Window A/C unit installations do not cause a permanent overlapping of the window sashes. Over time the space between these sashes become repositories for plants and debris, while the glass becomes caked with dirt which cannot be cleaned through normal maintenance routines.

3. Installations are not "temporary" in their construction and appearance. Unfinished plywood or plexiglas should not be used as space fillers around units. Untreated plywood panels discolor and delaminate when weathered, and Plexiglas become unsightly and brittle over time. When not properly caulked, they contribute to outside air infiltration and drafts. Uncoated support frames rust, which creates running rust stains on the sides of buildings.

4. Installations are structurally sound, meet commercial standards, and comply with building codes. What is typically accepted in a home is usually not appropriate to meet standards required in a public state facility.

5. Adequate electrical service is available. Many older campus facilities have limited electrical service by today's standards and expectations. This limited service may cause chronic breaker trips and power transients that can effect sensitive research equipment and computers within the facility if overloaded by an air conditioner.

6. The optimal installation method is utilized. The most preferred installation is through the wall so that the use of windows would not be affected. When installed in a window, the preferred location is at the top of a window. Additionally, it is the most effective location from a thermodynamic efficiency perspective. Cold air, thrown into the room from the top of a window, displaces rising hot air improving circulation and energy efficiency throughout the room for any particular size of unit. This location also allows for routine monitoring and adjustment of the air temperature by the A/C unit's thermostat minimizing large temperature shifts typical of manual adjustment.

Currently, the Policy on the Funding Responsibilities for Facilities requires the requesting unit to pay for the initial installation of window A/C units and all subsequent maintenance, operating, and replacement costs. The installation cost includes provisions to reduce energy costs as well as avoidable heating and power trouble calls in the future. Physical Plant has been criticized for both the cost of window A/C unit installation and for the unsightly appearance resulting for the unregulated installation of these same units. It is felt that the long term benefits in operating and cost avoidance and the improved appearance of the campus facilities far outweigh the increase in installation cost.

As a means to encourage proper installation, units installed will be maintained, repaired and replaced by the Physical Plant as part of their ongoing responsibility.

POLICY

All Window A/C unit installations will be performed by Physical Plant, unless otherwise approved, and will be performed to in accordance with standards established by the Physical Plant which conform to the following policy.

1. Physical Plant, in consultation with Facilities Planning, will determine when it's necessary that a window A/C unit installation is appropriate for the purpose requested.

2. The A/C units will be "sized" by Physical Plant to insure that a unit of proper capacity is installed.

3. Window A/C unit will be installed as a permanent facility equipment. They will be installed in accordance standards developed by Physical Plant to ensure that the installation is structurally sound, will preserve to the fullest extent possible the full operation of the window, uses materials that are durable, and presents an uniform appearance from the exterior of the building. The units will be mounted to provide the best operating efficiency. This will normally be at the top of the window.

4. New or additional electrical service will be installed to prevent power failures or transients from adversely effecting the operation of sensitive equipment. Existing circuits will be used wherever possible if load and sensitivity makes it possible.

5. Units installed in accordance with this policy using new window A/C equipment will be considered to be a part of the basic facility and will become the maintenance and repair responsibility of Physical Plant.