



Subject: Installing New Systems in Historic Buildings

Applicable Standards:

2. Retention of Historic Character
5. Preservation of Distinctive Features, Finishes, and Craftsmanship
6. Repair/Replacement of Missing or Deteriorated Features



Above: The dropped ceiling has been partially removed, revealing the old ductwork running through the center of the hallway and branching into each office. The ceiling had been lowered from its historic height of 10 feet to just 7 feet.

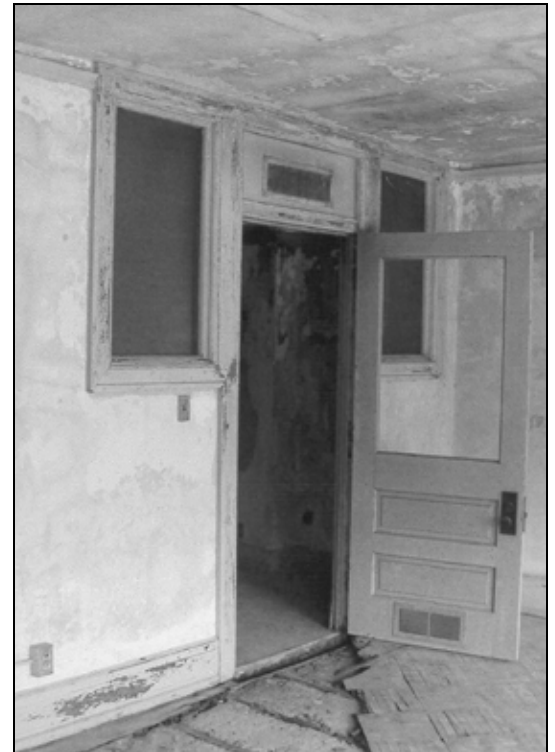
network of ceiling distribution ducts. As a cost-cutting measure, the main distribution ducts were run along the corridors, below the existing ceiling, and branched off into the individual offices. Rather than cutting through the walls to add the necessary room vents, the vents were installed through the transoms above the office doors. The very low suspended ceiling that was added to conceal the ductwork also obscured the transoms and cut across the windows in the corridors. This dropped ceiling dramatically and negatively impacted the historic appearance of the corridors.

In the current rehabilitation, the design team took an alternative and very sensitive approach to provide climate control in the office spaces. The new HVAC ductwork was routed along the building's perimeter walls at floor level

Issue: In rehabilitating historic buildings, HVAC systems often need to be updated. In most old apartment, office, and retail buildings, such mechanical systems historically were installed so that either the distribution network was concealed or designed to appear built in. Later retrofits of forced air-handling systems typically continued in this tradition, concealing new ducts within existing walls or new chases, or placing new ductwork below existing ceilings with a dropped ceiling installed to conceal it.

A dropped ceiling can change the appearance of a historic space. It might obscure a decorative ceiling or cornice, change the proportions of a room, cover door transoms, and/or cut across windows. Such changes can alter a building's historic character and do not meet the Secretary of the Interior's Standards for Rehabilitation.

Application (*Compatible treatment*): Constructed in 1918, this five-story bank building retained many of its historic features and materials despite years of abandonment and water damage. Historically, the ground floor lobby contained the customer service area, while the top four floors were offices. By the early 1970s, the original steam heating system which utilized room radiators was replaced with a central forced-air HVAC system that relied upon a



Above: Prior to rehabilitation the offices had air supplied through vents installed in the original door transoms.

and concealed in a new built-in feature that contained not only the air supply and return, but also included new electrical service and voice and data lines. The design for the new interior built-in feature drew on the appearance of the old window seat-styled radiator covers that were common in buildings of the era and even incorporated the original, historic baseboards in its design. This design provided for an unobtrusive and aesthetically pleasing appearance for the new built-in feature.

This treatment enabled the offices to retain their historic ceiling height. And, by removing the existing ductwork from the corridors, it was possible to significantly raise the corridor ceiling height, even though the corridor ceilings could not be raised to their full original height due to the sprinkler piping and lay-in light fixtures above. Removing the ductwork and raising the ceiling in the corridors also uncovered the door transoms and fully exposed the hallway windows. This HVAC installation not only recaptured the historic character of the corridors but also retained the character of the office spaces and, therefore, meets the Standards for Rehabilitation.



Top left: The rehabilitation raised the ceiling above the door transoms. This not only uncovered the historic, character-defining transoms, but also allows more natural light into the corridors.

Top right: The offices now have heating/cooling vents located in a window seat-like feature which also incorporates the original baseboard. Note the integrated electrical outlets and voice and data jacks on the front of this built-in feature.

Bottom: In this corner office the multiple vents are installed in a single, wrap-around feature that provides a continuity of design and allows for even air distribution.

Dan Bruechert, Technical Preservation Services, National Park Service

These bulletins are issued to explain preservation project decisions made by the U.S. Department of the Interior. The resulting determinations, based on the [Secretary of the Interior's Standards for Rehabilitation](#), are not necessarily applicable beyond the unique facts and circumstances of each particular case.

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