

Assessment, Cleaning and Restoration of HVAC Systems – ACR 2002

cleaning. At minimum, such personnel should have an understanding of HVAC system design, and experience in using accepted indoor environmental sampling practices, current industry HVAC cleaning procedures, and applicable industry standards.

3.5 Conditions Requiring Cleaning

HVAC system cleaning shall be performed when any of the following conditions are found in the cleanliness inspection.

~~3.5.1 HVAC System Contamination~~

HVAC systems should be operated in a clean condition. If significant accumulations of contaminants or debris are visually observed within the HVAC system, then cleaning is necessary. Likewise, if evidence of microbial growth is visually observed or confirmed by analytical methods, then cleaning is required.

if the HVAC system discharges visible particulate into the occupied space, or a significant contribution of airborne particles from the HVAC system into the indoor ambient air is confirmed, then cleaning is necessary.

See the guideline to this standard for discussion of the Aggressive Particle Profiling procedure, which may be used to confirm if non-visible contaminants are being introduced into the indoor environment via the HVAC system.

3.5.2 Compromised Performance

Heat exchange coils, cooling coils, air flow control devices, filtration devices, and air-handling equipment determined to have restrictions, blockages, or contamination deposits that may cause system performance inefficiencies, air flow degradation, or that may significantly affect the design intent of the HVAC system, shall be cleaned.

3.5.3 Indoor Air Quality Management

Indoor air quality management plans that include preventative cleaning and maintenance are recommended to minimize recurring contamination within HVAC systems. Special consideration should also be given to buildings or residences with sensitive populations such as immune-compromised individuals, and specialized environments or buildings with sensitive building contents or critical processes.

4 Project Assessment

A Project Assessment must take place prior to commencing with cleaning work. The Project

Assessment includes three steps: (1) Building Usage Classification; (2) HVAC Contamination Evaluation; and (3) Environmental Impact Assessment.

The HVAC Contamination Evaluation and the Environmental Impact Assessment must include a visual evaluation of representative sections of the HVAC components and the occupied spaces served by the HVAC system. This evaluation serves to assess conditions within the HVAC system and the physical integrity of system components and surfaces.

Information collected from the Project Assessment should be used to define the scope of the cleaning and restoration project, cleaning methods to be employed, the environmental engineering controls required for the workspace, and any unique project requirements.

4.1 Building Use Classification

Classifying the type of building and its uses is an important part of Project Assessment. Cleaning methods, project specifications, environmental engineering controls, and cleanliness verification methods may vary among different buildings. Building classifications are listed in sections 4.1.1 to 4.1.8.

4.1.1 Industrial

Buildings classified as *industrial use* include any facility housing the manufacture, fabrication, processing, handling and storage of materials or products.

4.1.2 Residential

Buildings classified as *residential use* include stand-alone homes, apartment buildings, and condominiums where people reside.

4.1.3 Light Commercial

Buildings classified as *light commercial use* include space with a constant volume HVAC system up to, and including 10 tons cooling or equivalent heating capacity, or 4000 CFM nominal air flow, whichever is greater.

4.1.4 Commercial

Buildings classified as *commercial use* include space with an HVAC system of greater than 10 tons, or equivalent heating capacity, or 4000 CFM nominal air flow, whichever is greater.

4.1.4.1 Restaurants

The patron seating areas and employee workspaces within restaurants are classified as commercial use. Kitchen exhaust systems designed to remove grease-