

School Renovation: Protecting Staff and Students

School districts are in a race to modernize antiquated schools. As a result, there is now a “boom” of school renovation and construction that will last well into the 21st century. Most of us are enthusiastic about the prospect of safer and healthier schools for our students; however when renovation is performed when school is in session, precautions should be taken to avoid the nightmare of students and staff being overcome by roofing fumes, dust, paint and adhesive vapors among others. There are now established industry standards for protecting occupants during school renovations; there is no reason why these standards should not be applied to every school renovation.

The United Federation of Teachers (UFT) has successfully negotiated an excellent “renovation protocol” that these standards are put in place for every project. A model protocol based on the UFT’s is attached for your review.

Below, is an outline of good practice standards for maintaining indoor environmental quality recommended by specialists and the National Institute for Occupational Safety and Health. Any renovation anticipated in your school district should include these elements.

In the Beginning: Guidelines for Planning

The school district, contractor and union need to be involved to develop a site and activity specific plan to control contaminants. The plan should:

- ❑ identify all key personnel responsible for renovation activities and airborne contaminant control. The concept of a **site job committee** of the responsible school district official, the contractor, principal, building engineer, custodial staff, union representative, parents and students should be established in the plan
- ❑ develop a construction or renovation impact assessment describing anticipated work activities and associated contaminants as well as areas (classrooms) most likely to be affected by the release of contaminants
- ❑ contain a detailed budget for the contaminant control methods to be utilized

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Bid Specifications

It is important that all control measures be spelled out in the bid specifications. At a minimum bid specifications should contain:

- the specific controls needed for the construction or renovation project along with methods for monitoring the effectiveness of the controls (esp. air monitoring etc.)
- requirements to minimize noise levels so that teaching and classroom activities will not be disrupted and to perform any work that causes excessive noise after normal operating hours.
- requirements that the general contractor designate a representative to handle indoor environment or air quality issues and establish appropriate channels of communication with sub-contractors
- specific renovation conditions that would require an emergency response (such as a release of roofing fumes into occupied classrooms)

Control Options

Here are some examples of control methods and strategies that can help minimize or prevent exposures to students and staff:

- Scheduling renovation work during periods of low building occupancy or low occupancy adjacent to the work areas
- Isolation of work areas from occupied areas using critical barriers, negative and positive pressurization, and high-efficiency particulate air (HEPA) filtration as necessary
- Negative pressurization of work areas (air not allowed to leak or migrate into occupied classrooms and offices) so that air contaminants will not migrate into occupied areas
- Modifying heating, ventilation and air conditioning (HVAC) operations such as increasing the HVAC outdoor air intake filtration efficiency and temporarily relocating the

HVAC outdoor air intakes serving the occupied area. The HVAC system serving the work area should be shut down. Return air grilles should be blocked or sealed in the work area.

- Maintenance of an adequate unoccupied buffer zone around the work areas. This could require temporarily relocating classrooms and offices in the immediate vicinity of the work areas.
- Increasing housekeeping activities in adjacent occupied areas during the renovation project
- Specification of low-emitting materials for use in construction and renovation such as local volatile organic compound (VOC) carpet adhesives and paints

Good Work Practices:

- Local exhaust ventilation with HEPA filtration where dust generation is anticipated. If local exhaust is not feasible, portable air cleaning devices could be used.
- Using work practices that generate little or no dust such as wet methods
- Establishing routes for renovation workers through unoccupied areas and away from building openings to occupied areas
- Using HEPA vacuums and damp mop regularly to clean floors and ledges during construction
- Removal of all construction debris through demolition chutes on the exterior of the building
- Location of dumpsters away from operating HVAC outdoor air intakes and exterior doors to occupied areas

Implementation of Project Control Specifications

- The general contractor's IEQ designee must demonstrate adequate training and or expertise in controlling contaminant exposure. In addition the designee must have the authority to immediately correct problems affecting IEQ as they arise.

- ❑ There must be regularly scheduled meetings of the **site job committee** (see planning section above) to ensure that the occupants are being protected. Prior to work beginning, the contractor should inform the committee of the scope of the work and the precautions that will be used to control the release of contaminants. During the project, the contractor or contractor designee should update building occupants on the progress of the renovation
- ❑ Routine monitoring for air borne contaminants in the occupied areas to ensure acceptable air quality
- ❑ The contractor or contractor designee should respond to complaints from school occupants immediately

Commission the Classroom or Area

Many times, the proper steps are not taken to insure that a classroom or other school area is adequate for occupancy. Contractors should be responsible for “commissioning” the area; some important methods include:

- ❑ Ventilating the newly renovated area with 100% outdoor air before and during initial occupancy of students and staff
- ❑ Ensuring that the HVAC system in the classroom or other area is tested and balanced *before* occupancy
- ❑ Performing “clearance” monitoring for airborne contaminants before initial occupancy