

Human Resources Procedures/Guidelines

Renovation Projects Guidelines

Category: **Health and Safety**

Sub-Category: **General**

Purpose

To provide a consistent approach when dealing with renovations in the City of Toronto and to mitigate health and safety concerns associated with this work through enhanced communication, selection of products and recommended work practices.

Background

Renovation projects can introduce a number of contaminants into the work environment, which have the potential to impact indoor air quality (IAQ). These contaminants may be released into the environment through demolition or construction activities or the installation of new building materials, and include but are not limited to dust, volatile organic compounds (VOCs) and biological contaminants (e.g. mould, fungus).

The following information and recommendations are provided to assist in maintaining acceptable indoor air quality in buildings where renovation work will be conducted. Proactive measures, including the use of these guidelines, can successfully eliminate or control contaminant levels, alleviate concerns, and maintain occupant comfort both during and after renovation activities. It is the intent of this document to increase awareness about the health and safety aspects of renovations and to encourage the use of best practice guidelines as a means of addressing concerns.

Definition

Renovation Project:

Any project, work or activity that has the potential to release or introduce contaminants into the work environment, either through demolition or construction of building structures or the installation of new building materials.

Recommended Guidelines for Renovation Projects

Communication Strategy

This communication strategy should involve dissemination of information between the division initiating and scheduling the renovation project, building occupants, Facilities and Real Estate operations, occupational health and safety consultants, joint health and safety committees and the Occupational Health, Safety and Worker's Compensation unit, if needed.

City personnel responsible for scheduling of the work (e.g. project managers) should determine which occupants are likely to be impacted by a renovation project and notify management of the impacted area of the work prior to its commencement. Information provided to management of the impacted areas

should include the location of renovation work, start and anticipated completion date, the nature of the work, areas where work activities may be disrupted and the name of a City contact person responsible for the work. For longer projects, periodic updates should also be given. Management of impacted areas should share this information with their employees and joint health and safety committees that represent these employees.

In addition to the project notification, those City personnel responsible for scheduling of the work should provide information on potential contaminants that can be introduced into the environment during renovation work and the control strategies that will be used throughout the project. It is also important that a strategy be in place to facilitate a timely response to indoor air quality concerns.

Product Selection and Use

- Specify that all products/furnishings used in renovation work must meet low emission criteria, and integrate this into the purchasing process and decision-making process when selecting contractors. The *Canadian Standards Association (CSA-Z204-94) Guidelines for Managing Indoor Air Quality in Office Buildings* recommends the following emission rates for carpets:

Table 1. CSA Standards for Carpet Emission Rates

Chemical Substance	Emission Rate
Total Volatile Organic Compounds (TVOC)	0.6 mg/m ² · h
Styrene	0.4 mg/m ² · h
4 Phenylcyclohexane (4-PC)	0.1 mg/m ² · h
Formaldehyde	0.05 mg/m ² · h

If carpet underpadding is used, the combined emission levels of the underpad and the carpet should not exceed these emission rates. In addition, carpet glue or adhesive should have a total volatile organic compound (TVOC) content of less than 150 g/L.

- Review the general information provided by the product labels and the material safety data sheet (MSDS).
- Ensure that MSDSs for all of the products are at the work site.
- Evaluate product emission rates periodically and incorporate any new

standards into the purchasing process.

Design of the Renovated Area/Work Space

- Review plans that may involve increases in the number of occupants, relocation of walls/partitions, installation of new equipment or changes in the use of space to ensure that:
 - Appropriate ventilation is provided for the use of the space (e.g. photocopier room, kitchenette)
 - Open office space that has been converted to closed offices have adequate air supply/exhaust and temperature control
 - The installation of walls and partitions have not blocked air supply and exhaust ducts or impaired air circulation
 - Office workstations or equipment are not placed on top of air supply or exhaust ducts

Installation of New Furnishings

- Where possible and practical, reduce the emissions and/or the impact of volatile organic contaminants from new carpets and furnishings by:
 - Unwrapping and storing in well-ventilated areas, so that volatile organic compounds can be off-gassed before installation
 - Allowing adequate time for off-gassing before employees are relocated to a newly renovated building or area
 - In addition, inquiries should be made of the supplier to see if there are any other steps to reduce volatile organic compound emissions prior to installation.

Occupied Buildings

- Activities that produce dust, odours, emission or unacceptable levels of noise should be scheduled during off-hours when the building is unoccupied, or should be isolated from occupied areas
- Isolating building occupants from renovation work may involve temporarily re-locating them away from potential problem areas

Isolation of the Work Area

- Where the building system permits, all reasonable measures should be taken to isolate the area where renovation work is being conducted, such as:
 - Install temporary barriers such as floor to ceiling plastic sheets to enclose the work area and any contaminants generated
 - Isolate the ventilation system servicing the work area by closing return registers in occupied spaces or installing adequate filters/barriers. This will prevent air containing dust and contaminants being re-circulated from the renovation site into adjoining areas.
 - Ventilate the work area using both mechanical (Heating Ventilation Air Conditioning (HVAC) unit, local exhausts, portable fans) and natural ventilation (open doors, windows). Ventilation rates should be increased to help dissipate off-gassed contaminants, and the ventilation should remain elevated until the off-gassing of new products is complete.
 - Place the area where renovation work is being done under negative

pressure in relation to other work areas.

Housekeeping/Cleaning Practices

- Increased housekeeping practices may be necessary to eliminate dust generated during renovation work
- General cleaning, including wet wiping of surfaces/equipment and vacuuming (preferably with a HEPA filter), should be done throughout the project and upon completion, in the work area and other areas accessed
- Vacuum new flooring to remove loose matter and particles generated by the installation and renovation work in the area
- Clean and inspect components of the HVAC system servicing the renovation site to ensure it is free from debris/dust, and change the filters once work is complete

Ventilation System Modifications

- If the number of occupants are increased, the ventilation system should be modified according to *American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 62-1989 "Ventilation for Acceptable Indoor Air Quality"*
- Balance the ventilation system, if it has been modified or if areas served by the ventilation system have been altered (e.g. installation of partitions)

Endorsed by	Occupational Health & Safety Co-ordinating Committee (OHSCC), December 11, 2001
Approved by	Executive Management Team (EMT), February 18, 2002
Date Approved	February 18, 2002
Reviewed by OHSCC	November 26, 2008