

DRAFT Renovation and Repair Checklist

Excerpted from Tools for Schools Action Kit, Health Canada.

Date: _____

To be completed by:

- Facilities maintenance staff
- School Custodial staff
- Contract service providers

Read Health Canada's Tools for schools Action Kit's **Introduction, Backgrounder and pages 14-3 to 14-17.**

Basics: When planning and conducting renovations in schools. It is important to remember some potential causes of poor indoor air quality:

- workers entering non-work areas to use washrooms, telephones, or other services;
- demolition that releases toxic materials;
- construction dust and fumes;
- designs that interfere with ventilation or create potential areas for concealed condensation;
- off-gassing from building materials and new products;
- providing access for inspection and maintenance; and
- masking/deodorizing products used to cover up the odour from mould, sewage, or fire.

These problems can be minimized by making good indoor air quality one of the criteria during project planning. See page 14-4 for more

This checklist is intended for use before and during renovation projects. Depending on who is performing the work, it may be necessary to give certain sections of this checklist to in-house staff or contractors. Instruct those who receive a portion of the checklist to return it to the IAQ coordinator.

Design

Careful planning can eliminate existing IAQ problems and prevent new ones. Adding carpet to a poorly insulated floor, which was previously covered in tile, may encourage the growth of microorganisms and prevent effective cleaning. Bookshelves and cabinets added to the interior of exterior walls can change the thermal conditions and cause condensation and mould growth within the wall and millwork.

Key questions to ask include:

- Will the work cause a change in air movement or thermal conditions within the building envelope?
- Will the work allow adequate access for inspection and maintenance?
- Are the materials and systems appropriate for this application?
- Who is responsible for the design and inspection of the work?

General Activities

- Do not disturb asbestos during demolition. Schools that have asbestos-containing materials should have a management plan on file. Use an asbestos professional to consult and assist with such renovation work. Be sure to update the asbestos management plan to reflect any abatement activities.
- Test for lead-based paint before removing old paint. Use a certified inspector or a reputable testing firm for areas to be demolished, sanded, or stripped. Use appropriate personnel and precautions when removing and disposing of lead based paint.
- Avoid exposure to fungi and bacteria. If the renovation is likely to expose large areas of growing microorganisms such as mould and mildew (for example, while repairing water damage), consult with an environmental professional about adequate protective measures to ensure both worker and occupant safety. Refer to the reference documents listed in the IAA Action Kit - Introduction for more information.
- Plan to isolate students and staff from any dust or fumes generated during renovation work. Use plastic sheeting, portable fans, and a mechanical ventilation strategy (where applicable) to prevent dust and fumes from reaching school occupants through hallways, doors, windows, and the ventilation system. Consider conducting renovation work during times when the school is unoccupied.
- Provide alternate washrooms, showers, eating areas, and telephones so that workers do not enter non-work

- areas in the school.
- Consider the effect of the renovation on ventilation and the mixing of air in rooms. Beware of cutting off a room from its supply of outdoor air, enclosing a pollutant source (like photocopiers) in a room with inadequate exhaust or supply air, or erecting barriers that prevent the adequate movement of air throughout the occupied area of a room.
 - Consider the long-term maintenance and custodial requirements of materials and systems. For example, flooring systems require a range of maintenance, and some maintenance systems generate more air contaminants than the original product.
 - Minimize and provide engineering controls for off-gassing from new products. New products contain volatile components, such as resins, solvents, and binders, which off-gas volatile organic compounds for a period of time. Whenever possible, obtain information on the emissions of potential new products to be installed in the school, and select lower-emitting products when available. Be sure that the information is specific for the actual product being considered. Generic information or information on a similar product is not reliable when making specific material choices. Whenever new products with the potential for off-gassing are installed, allow adequate time for offgassing before reoccupying the area, and increase ventilation with outdoor air until off-gassing odours and any irritation symptoms no longer occur.
 - The emissions from building products vary greatly, both within a class of products (e.g., types of paneling) and between classes or products (e.g., carpet vs. sheet vinyl flooring). For many materials, the chemical emissions can last for long periods of time (months or years), so the building should be designed accordingly. Examples of products that will potentially off-gas include:
 - wall-paneling and wallpaper
 - draperies
 - furniture and cabinets
 - cubicle dividers
 - carpet and vinyl flooring
 - paints and finishes
 - adhesives
 - manufactured and solid wood products
 - Repairs to smoke, fire, mould, or sewage-damaged buildings should focus on the removal or cleaning of contaminated materials. The use of masking agents or deodorizers will add additional chemicals to the building. Many of these products can cause additional IAQ problems.

Painting

Read page 14-7

- Confirm that the painted surface is lead-free before preparing a surface for repainting
 - Check painting records or old paint cans to determine whether the paint contains lead.
 - Conduct an initial screen using a trained lead paint inspector.
 - If there is lead in the existing paint, contact a trained lead-based paint contractor.
- ___ No lead found in existing paint
 ___ Paint contains lead or testing is needed to determine if lead is present in existing paint.

Select a low-VOC emitting paint that is free of lead and mercury

- Evaluate existing stocks of paint (properly dispose of paints containing lead or mercury, or that have higher VOC emissions than new paints).
 - Evaluate new paint before you purchase it. Express your indoor air quality concerns to paint suppliers and use their technical personnel as a resource. Not all paint suppliers have information on pollutant emissions; consult other sources (e.g., manufacturers) if your paint supplier cannot provide adequate information.
- ___ Selected an appropriate paint.
 ___ Need to discuss which paint to use with an IAQ specialist.

During exterior painting, minimize occupants' exposure to odours and contaminants

- Schedule exterior painting to occur when the building is unoccupied (e.g., weekends or vacation periods).
- Keep nearby windows and doors closed as much as possible.
- Occupants' exposure is minimized.
- Need help to minimize occupants' exposure.

During interior painting, minimize occupants' exposure to odours and pollutants

- Schedule painting to occur when the area is unoccupied (for example, on weekends or during vacation periods), and allow time for paint odours to dissipate before occupants return to the area. If the area being painted has a heating, cooling, and ventilation system that is shared with other areas, those areas should also be unoccupied. Special consideration should be given to exam periods and other times when sensitive individuals may be less able to modify their activities to avoid contaminants.
- Use supply and exhaust fans to remove paint fumes from the building. Operate supply fans continuously (24 hours/day, 7 days/week), at the highest possible outdoor air supply setting, from the beginning of the painting work until several days after painting has been completed.
- Block return openings to prevent air circulating from the work area to occupied areas.
- Consult your local fire department for more on fire regulations and prevention.
- Keep records on IAQ outcomes resulting from painting activities. Consider testing air at various times to characterize the airborne concentration of VOCs. This will help to determine what ventilation rates and times are required to ensure acceptable IAQ for occupants. Air testing is not a regular requirement but may provide valuable general information for planning and executing future painting projects.
- Occupants' exposure is minimized.
- Need help to minimize occupants' exposure.

Use appropriate storage and disposal practices for paints, solvents, clean up materials, and asbestos-containing materials

- Seal containers carefully after use.
- Keep paint containers in designated storage areas equipped with exhaust ventilation. Do not store materials in heating, ventilation, and air conditioning equipment rooms.
- Use an appropriate waste disposal method to dispose of any paints containing lead or mercury.
- Follow appropriate provincial or federal requirements for the disposal of asbestos-containing materials.
- No problem found with storage and disposal.
- Need help with storage and disposal.

Problem Summary

- All activities on this checklist have been completed and no help is required.
- OR
- A list of problems and/or assistance required is attached.

Flooring

Read page 14-11

Determine whether resilient tile flooring scheduled for removal contains asbestos fibres.

- Previous asbestos surveys may have identified asbestos-containing floor tiles. Refer to the inspection report and management plan on file at the school.
- Follow notification and handling procedures defined by provincial or federal regulations if renovations will disturb asbestos-containing tile flooring.
- No asbestos-containing flooring will be disturbed.
- Renovation may/will disturb asbestos-containing flooring.

Select low-emitting adhesive when installing glue-down flooring

- Use low-emitting adhesives.

- Follow manufacturer's recommendations for ventilating the work area.
- Selected a low-emitting adhesive.
- Need additional information for selecting low-emitting adhesive.

Select low-emitting flooring materials

- Ask manufacturers to submit information about product constituents and emissions that may adversely impact IAQ. Many manufacturers and suppliers can provide this information.
 - The Canadian Carpet Institute (CCI) has a carpet testing and labelling program. If the school's carpet supplier cannot provide information on any carpets being considered, this information may be obtained by contacting the CCI (1-819-684-8444).
- Selected a low-emitting flooring system.
- Need additional information to select a low-emitting flooring system.

Air out new products before installation

- If practical, unwrap and unroll flooring products and cushion them in a wellventilated location prior to installation, preferably in a location other than the school.
- Flooring products will be aired out before installation.
- Need help airing out of flooring products.

Air out the space during and after flooring installation

- Install carpet, vinyl, and related flooring materials only when the school building is not in use, except for small installations or repairs where air can be exhausted directly to the outdoors and the room can be maintained under negative pressure relative to the surrounding rooms and hallways.
 - Try to continuously operate the building ventilation system at normal temperature and maximum outdoor air from the start of installation until at least 72 hours after the installation is completed. Please contact the Canadian Carpet Institute for airing and other installation procedures for carpets.
 - Avoid recirculating air from the installation area, through the heating, ventilation, and air conditioning system, and into occupied areas. Seal return air grilles, open door ways and stairways, and use exhaust fans to remove airborne contaminants.
- Space will be aired out as prescribed.
- Need help airing out space during and after installation.

Require the installer to clean flooring with a high efficiency particulate air (HEPA) filtration vacuum

- Vacuum the old carpet that is being removed and subfloor surfaces (once the carpet is removed) to reduce the release of particles such as dirt, dust, and biological materials into the air and onto the new carpet.
 - Consider cutting flooring (especially carpet) into strips and sealing it in polyethylene bags or sheets before removing it from the work area.
 - Vacuum new flooring after installation to remove loose matter and particles generated by the installation process as well as general construction in the area.
- Surfaces are vacuumed before removal and/or after installation.
- Need help vacuuming the work site.

Do not install carpet near water sources (or avoid carpet entirely)

- In areas where there is a perpetual moisture problem, do not install carpet, (e.g., beside drinking fountains, classroom sinks, or concrete floors with leaks or frequent condensation).
 - Do not install carpet in areas where it will be in contact with cool surfaces, (e.g., slabs on grade, near poorly insulated exterior walls) since high relative humidity or condensation can occur.
 - Do not install carpet in areas where food or beverages will be consumed, or near other sources of moisture or nutrients.
 - To reduce the potential for microorganisms growing in the joints of hard surfaces or porous flooring installed near water sources, make sure to seal the entire surface.
- No carpet will be installed near water sources.

- Seams near water sources are sealed.
- Need help, carpet installation is planned near water sources or porous hard surface flooring is unsealed.

Problem Summary

- All activities on this checklist have been completed and no help is required.
- OR
- A list of problems and/or assistance required is attached. Consider lightly spraying friable or fibrous materials with water to minimize the generation of dust.

Roofing

read page 14-15

Schedule pollutant-producing activities for unoccupied periods

- Check to ensure that pollutant-producing activities occur during unoccupied periods.
- Work is scheduled for an unoccupied period
 - Work is scheduled for an occupied period; need help rescheduling or planning to minimize occupant exposure.

Locate “hot-spots” of tar and other pollutant-producing materials away from outdoor air intakes, windows that open, or frequently used doors.

- Consider wind patterns for equipment, trash disposal, material storage.
 - Contain any debris and remove debris from the worksite on a regular basis.
 - Consider lightly spraying friable or fibrous materials with water to minimize the generation of dust.
- Pollutant-producing materials are away from and downwind of outdoor air intakes.
 - Need help identifying a location for pollutant-producing materials.

Modify ventilation to avoid introducing odours and contaminants

- Advise staff and students to keep doors and windows closed until the roofing work is finished.
 - Consider temporarily close the outdoor air intakes of air handlers, particularly rooftop units in the vicinity of (and downwind from) the work area. (Note: to avoid creating IA2 problems from underventilation, provide a temporary means (fans and/or ducts) to supply unaffected outdoor air, or relocate classes to other areas.)
- Ventilation is arranged to avoid the entry of pollutants.
 - Need help to modify ventilation.

Problem Summary

- All activities on this checklist have been completed and no help is required.
- OR
- A list of problems and/or assistance required is attached.