 **I4.0 IAQ Management in Construction Temp****late**

**Baseline Practice**: I4.0 – IAQ Management in Construction

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| ***Instructions to complete the template for your Indoor Air Quality Management During Construction Plan***  *All grey italic text with borders are instructions to help you prepare the required Baseline requirements for your building.*   1. *Replace all* [blue text in brackets] *in the document with building specific information.* 2. *Where required, complete the necessary tasks, or engage a third-party consultant to complete the tasks so that you are able to fill the relevant sections of the template with building specific information.* 3. *Additional Resources can be found here:*  * [*Indoor Air Quality Guideline for Non-Industrial Workplaces*](https://www.eaccanada.ca/guidelines/guideline-eacc-indoor-air-quality-form/) *(Environmental Abatement Council of Canada).* * [*IAQ Checklist*](https://www.epa.gov/sites/production/files/2014-08/documents/mgmtlist.pdf) *(US EPA)* * *Example of* [*IAQ Housekeeping Activities*](https://www.epa.gov/sites/production/files/2014-08/documents/housekeeping_tasks.pdf) *(US EPA)* * [*IAQ Maintenance Inspection Form*](https://www.epa.gov/sites/production/files/2014-08/documents/om_periodic_inspections.pdf) *(US EPA)* * [*Indoor Air Quality Guide*](https://www.ashrae.org/technical-resources/bookstore/indoor-air-quality-guide) *(ASHRAE)* * [*IAQ Management During Construction*](https://smacna-ab.ca/product/indoor-air-quality-guidelines-for-occupied-buildings-under-construction/) *(SMACNA)* * [*Recommendations for Reducing Airborne Infectious Aerosol Exposure*](https://www.ashrae.org/file%20library/technical%20resources/covid-19/core-recommendations-for-reducing-airborne-infectious-aerosol-exposure.pdf) *(ASHRAE)*  1. *Delete all grey italic text when you have filled all relevant sections with building specific information.* 2. *Complete the Checklist below to confirm your Indoor Air Quality Management During Construction Plan meets the Baseline requirements.* |

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| ***Checklist***  *The Indoor Air Quality Management During Construction Plan must contain the following elements:*  *Competency requirements for the person developing the IAQ During Construction Plan*  *Guidance during renovation and construction projects to reduce IAQ impacts considering the following from SMACNA IAQ Guidelines: HVAC protection, source control, pathway interruption, housekeeping, and scheduling*  *Procedures for responding to occupant IAQ concerns (may overlap with Accessibility and Wellness: A4.1 – Occupant Service Requests and/or Indoor Air Quality Management Program: I1.0a)*  *Identification of responsible parties and training requirements for property management and building maintenance staff relating to IAQ management during construction* | |
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**INDOOR AIR QUALITY MANAGEMENT DURING CONSTRUCTION PLAN**

[Insert Building Name and / or Address]

[Insert Name of Organization]

[Insert Building Description – number of floors, tenants, parking spaces (underground or surface) and other distinguishing features]

[Insert date Plan was created / most recent date it was reviewed]

1. Introduction and Purpose

Managing indoor air quality during construction and renovation projects is important to reduce impacts to occupants and the spread of dust and contaminants throughout occupied buildings.

The program is intended to meet the following objectives:

* To minimize disruption by implementing measures to control and mitigate the spread of construction pollutants.
* To protect occupant health and maintain occupant satisfaction with the office indoor air quality during renovation projects.
* To ensure compliance with any applicable regulations during renovation projects.
* Prevent damage to building systems during renovation projects.

[Include any other goals or objectives specific to your organization.]

1. Responsibilities

[Insert Name], Property Manager ([Insert Name of Organization])of [Insert Building Name], is responsible for the following:

* Identify appropriate person to prepare the Indoor Air Quality Management during Construction Plan. [Insert Name], [Insert Title or Role of Specialist] from [Insert Name of Specialist Organization] has been identified to prepare the Indoor Air Quality Management during Construction Plan.

*Identify a specialist (may be a third-party consultant) to create the Indoor Air Quality Management during Construction Plan. The following competencies are required at a minimum:*

* *Adequate qualifications: the person has a good working knowledge and understanding of the legislation surrounding indoor environmental quality (i.e., training certificates or educational background in hygiene, occupational health and safety, environmental engineering, building science or similar);*
* *Suitable training: the person must have training that is appropriate to implementing an indoor air quality management during construction program and which comply with regional minimum safety training requirements; and*
* *Sufficient experience: the person must have enough experience to safely perform the work without supervision or with only a minimal degree of supervision.*
* Work with the appointed IAQ manager and building maintenance and operations staff to:
  + Prepare the IAQ Management during Construction Plan,
  + Agree on the IAQ control measures implemented at the building during construction/renovation projects, and frequency of executing associated tasks,
  + Assign responsible parties to execute the IAQ Management during Construction Plan’s implementation
* Establish procedures for timely response to occupant IAQ concerns especially in relation to renovation projects (see **Accessibility and Wellness: A4.1 – Occupant Service Requests**)
* Oversee the implementation of the IAQ Management during Construction Plan, conducting annual reviews of the Plan’s effectivity and executing updates as required.
* Track evidence of training received and maintain training records.

1. IAQ Management During Construction

# Pre-Construction Assessment

[Delete or add bullets as applicable]

* Ensure all construction/renovation projects in the building will consider the following before commencement by having the Project Manager present a detailed plan:
  + Hazardous materials management (refer to I6.1 – Hazardous Materials Management). Has a pre-renovation hazardous building materials assessment been completed and has report been shared with contractors.
  + Review potential risks and occupant impacts associated with the upcoming construction project.
  + Consider pre-IAQ testing prior to commencement of construction.

# Control Measures

[Delete or add bullets as applicable. These are examples only and should be modified for your specific building and anticipated renovation projects.]

* [The HVAC system can help construction pollutants migrate through a building. Ensure that the HVAC system in construction areas is sealed off to prevent migration of contaminants. Consider including the requirement to cut and cap duct work serving construction areas. Consider control measures to isolate HVAC systems from construction areas on small, short-term projects. This may include installing temporary seals over supply and return ducts in the vicinity of the work. Consider requiring filter inspections / changes following renovation projects. Consider installation of filters on return air systems in the vicinity of construction.]
* [Source control is important in construction projects to prevent the spread of contaminants throughout buildings. Consider using low-odour or environmentally friendly products where possible. Consider modifying the types of equipment in operation and when the equipment is operated. Determine if local exhaust ventilation is required to expel contaminants from the building. Will air cleaners/scrubbers be useful to reduce contaminant levels. Consider covering and sealing new construction materials to prevent contamination with construction dust and absorption of odours. Store volatile and odourous materials in well-ventilated areas and ensure sealants and paints are kept closed when not in use.]
* [Consider pathway interruption strategies such as erecting barriers to contain the work area and depressurizing the work area or pressurizing occupied space or both. Consider re-locating pollutant sources or temporarily sealing part of the building.]
* [Housekeeping plans during construction and renovation projects are important to prevent the spread of dust. Consider what type of cleaning and frequency of cleaning depending on the project scope. Consider the use of HEPA filtered vacuums. Plan transfer routes for construction waste to be least impactful on building occupants.]
* [Scheduling can be one of the most important aspects of any renovation project to minimize disruption to building occupants. Consider noisy, dusty and other impactful renovation work will be completed after hours]
* [Consider if any areas will require re-location of occupants to accommodate the work and how this will be managed.]

# Monitoring and Testing

* Conduct Inspections of the construction and renovation areas of the building to ensure:
  + Construction/renovation areas are properly maintained/separated from occupied areas and the following points have been considered:
    - Hazardous materials management
    - Dust control
    - Isolation of HVAC zones and/or enhanced ventilation
    - HVAC filter replacement
    - VOC emission/absorption and odour management
    - Noise, vibration control monitoring
    - IAQ testing in adjacent occupied areas
    - De-pressurization of construction zones as needed
  + Record locations that need monitoring or correction and report that to the Project Manager in charge of the construction project

1. Responding to Occupant Requests

# Responding to Urgent IAQ Concerns

Urgent concerns occur when limited time is available to avert or deal with potentially serious health problems or property damage. Examples include:

* Leaks of dust or fumes from construction areas
* Odour complaints specifically related to construction work
* Noise related to construction activities
* Spills of hazardous materials.
* Flooding on porous materials that could support mould growth.
* Flooding with water containing significant pathogenic micro-organisms or chemical contaminants (e.g., sewage).
* Natural gas leak.
* Carbon monoxide infiltration (combustion exhaust).
* Sudden onset of headaches, dizziness, drowsiness, nausea, and/or combustion odours.
* Widespread breathing difficulties, chest tightness, or respiratory irritation, indicating a possible serious infectious or allergenic agent.

[Documents how building staff will respond to these concerns and maintain documentation outlining the issue and resolution. Consider the need to involve emergency personnel and sub-contractors (flood restoration contractors, spill response company, insurance company etc). IAQ Complaint Management Procedures for responding to occupant IAQ concerns may overlap with / support **Accessibility and Wellness: A4.1 – Occupant Service Requests**. Refer to this document where applicable.]

# Training and Awareness

[Insert Name], Property Manager ([Insert Name of Organization]) of [Insert Building Name] will identify training requirements for property management and building maintenance staff relating to the development and implementation of the IAQ Management during Construction Plan.

[Briefly outline applicable staff training required / delivered.]

*Discuss with your building operations and maintenance team the type of training that may benefit staff members as it applies to the IAQ construction management of building equipment and systems.*

*Check your staff’s current competencies in this area and identify additional training required and determine when it will need to be completed.*

*Consider if tenant training will be required and how tenants will be notified of the IAQ Management During Construction Plan. Will tenant renovation projects be included under this plan.*

1. Time Period

This plan was implemented on [Insert Date] and will be reviewed and updated at least annually.

Appendix: Example IAQ Inspection Checklist During Construction

*Edit as applicable to your building*

Project:

Status:

Date:       Inspector:

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Odour** | **Dust** | **Wet** | **Daily Cleaning** | **HVAC Protection** | **Pressurization** |
| **Work Areas** |  |  |  |  |  |  |
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| **Occupied Areas** |  |  |  |  |  |  |
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| **Status of Control Measures** | | **Location** | **Procedure** | | **Effectiveness** | |
|  | |  | **Local Exhaust** | |  | |
|  | |  | **Pressurization** | |  | |
|  | |  | **Batteries and Seals** | |  | |
|  | |  | **Containers Covered** | |  | |
|  | |  | **Other** | |  | |