****

**I1.0a Owner or landlord manages whole building IAQ Template**

**Baseline Practice**: I1.0a– Owner or landlord manages whole building IAQ

|  |
| --- |
|  |
|  ***Instructions to complete the template for your Indoor Air Quality Monitoring Plan****All grey italic text with borders are instructions to help you prepare the required BEST Practice 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. *The intent of this Baseline Practice is to Develop an Indoor Air Quality (IAQ) Management Plan that will act as a foundation for effective procedures to address occupant IAQ concerns and adequate training for the building management team. 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 Monitoring Plan meets the BEST Practice requirements.*
 |
|

|  |
| --- |
|  |
|  ***Checklist****The Indoor Air Quality Monitoring Plan must contain the following elements:* [ ]  *Competency requirements for the person developing the IAQ Monitoring Plan*[ ]  *IAQ goals for the building including targets for air quality parameters* *around carbon dioxide, carbon monoxide, temperature, relative humidity, dust, volatile organic compounds and other known contaminants of concern.*[ ]  *Identification of HVAC system impacted by IAQ goals*[ ]  *Schedule for HVAC inspection and preventative maintenance tasks (may overlap with Energy and Carbon: E6.0 – Preventative Maintenance)*[ ]  *Procedures for responding to occupant IAQ concerns (may overlap with BEST Practice 8: Occupant Service Request Program)*[ ]  Identification of responsible parties and training requirements for property management and building maintenance staff relating to IAQ |
|  |

 |

**INDOOR AIR QUALITY MONITORING PLAN**

[Insert Building Name and / or Address]

[Insert Name of Organization]

[Insert Name of Organization]

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

# Introduction and Purpose

Indoor Air Quality (IAQ) is achieved through the selection of appropriate and achievable air quality goals, regular surveillance and testing to verify HVAC performance and hygiene, efficient and effective procedures for addressing occupant IAQ concerns and adequate training for the building management team.

# 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 Monitoring Plan. [Insert Name], [Insert Title or Role of Specialist] from [Insert Name of Specialist Organization] has been identified to prepare the Indoor Air Quality Monitoring Plan

*Identify a specialist (may be a third-party consultant) to create the Indoor Air Quality Monitoring 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 environmental quality monitoring 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 Monitoring Plan,
	+ Agree on the IAQ management approach implemented at the building, and frequency of executing associated tasks,
	+ Identify the HVAC systems impacted by IAQ,
	+ Define IAQ goals for the building,
	+ Schedule HVAC inspection and preventative maintenance tasks.
	+ Assign responsible parties to execute the IAQ Monitoring Plan’s implementation.
* Establish procedures for timely response to occupant IAQ concerns.
* Oversee the implementation of the IAQ Monitoring Plan, conducting annual reviews of the Plan’s effectivity and executing updates as required.
* Implement training as required by the Indoor Air Quality Management Plan.
* Maintain documents related to the plan including but not limited to maintenance reports, inspect reports, training records, indoor air quality testing reports etc.

## Training

[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 Monitoring 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 monitoring 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.*

# Strategy

## IAQ Management Approach

The building maintenance and operations team will:

[Delete or add bullets as applicable]

* Collect and Review Existing Records
	+ HVAC design data, operating instructions and manuals
	+ HVAC maintenance and calibration records, testing and balancing reports
	+ Inventory of locations where occupancy, equipment, or building use has changed
	+ Inventory of complaint locations

* Conduct Regular Walkthrough Inspections of the building to
	+ Identify areas where positive or negative pressure should be maintained
	+ Record locations that need monitoring or correction
* Collect Detailed Information (as needed)
	+ Inventory of HVAC system components needing repair, adjustment, or replacement
	+ Record of control settings and operating schedules
	+ Plan showing airflow directions or pressure differentials in significant areas
	+ Inventory of significant pollutant sources and their locations
	+ SDSs for supplies and hazardous substances that are stored or used in the building]

*Document the requirements for routine IAQ testing in the building:*

* *What parameters will be examined?*
* *How frequently will the testing be conducted (BOMA Best requires a minimum interval of once every three years with annual testing preferred).*
* *Where will testing be conducted, in all tenant spaces, common areas, based on certain square footage.*
* *Will testing be conducted once over the course of the day or will morning and afternoon samples be required.*
* *Consider who will undertake the testing an external testing company, or internal Property Management staff, tenants*

## IAQ Management Plan

### Indoor Air Quality Testing

The following are possible IAQ performance goals in frequently occupied indoor spaces:

* Carbon dioxide not exceeding 700 ppm above ambient (ASHRAE Technical FAQ ID 35);
* Carbon monoxide not exceeding 9 ppm (ASHRAE 62.1);
* Total volatile organic compound concentrations do not exceed 1000 µg/m3 (440 ppb) (Health Canada);
* PM10 does not exceed 50 µg/m3 (ASHRAE 62.1);
* Temperature in the range of 21 – 27 C°, taking into account seasonal variances, relative humidity (ASHRAE 55);
* Relative humidity in the range of 30-60% (USEPA I-BEAM) or more than 20% (CSA);
* HVAC system interiors are in good general condition, clean, free of standing water and debris, and have no visible suspect mould growth.

During flu season and/or pandemic response:

* Maintain temperature and humidity design set points;
* Maintain equivalent clean air supply required for design occupancy whenever anyone is present in the space served by a system
* When necessary to flush spaces between occupied periods, operate systems for a time required to achieve three air changes of equivalent clean air supply
* Limit re-entry of contaminated air from energy recovery devices, outdoor air and other sources to acceptable levels

*Modify as necessary to suit the building and use case. IAQ standards change from time to time and source material should be referenced.*

### Housekeeping

The policy should specifically consider controls in place to:

1. Prevent dirt from entering the building. Consider cleaning frequency in entrance areas, the use of walk off mats, and other controls to minimize soiling being tracked into the building.
2. Efficacy of Cleaning. Consider specifying the use of specific cleaning equipment such as commercial grade HEPA filtered vacuum cleaners, electrostatic cleaning cloths and wet cleaning methods that capture and remove soiling.
3. Green Cleaning Products. Consider recommending the use of “environmentally friendly” cleaning products where feasible.
4. Frequency of Cleaning. Consider the required frequency for cleaning various building surfaces, carpets, supply air diffusers, return air grilles, high traffic areas etc. The US EPA “Example IAQ Housekeeping Tasks” document referenced as an additional resource provides an example of how this plan might be laid out.

*Discuss any specific housekeeping practices implemented to improve indoor air quality at the facility. This may reference internal cleaning best practices that are included in* ***Baseline Practice P2.0 – Green Cleaning Program****.*

### Pest Control

*Outline the building’s current pest management approach. Reference building’s Integrated Pest Management Program where present.*

### Managing Moisture and Mould Growth

Suggested topics to be addressed specifically in this plan include:

1. Specific actions to prevent mould growth. Consider controls on wet cleaning procedures to ensure building finishes do not remain wet for extended periods. Consider recommendations for mould resistant finished as part of planned renovation work.
2. Response procedures for water damage events such as plumbing leak, toilet overflows etc. Consider identifying insurance contacts, preferred restoration contractors and consultants so that this information is readily available in an emergency.
3. Ensure inspection for moisture and water damage is included as part of the “Building Inspection / Preventative Maintenance” section of this documents.
* *This should align with* ***Baseline Practice W5.0 Mould and Water Damage Management****. Outline procedures in place to effectively manage moisture, water damage and mould growth.*
* *The Mould and Water Damage Management Program can be referenced here and attached as an Appendix.*

### Reducing Impact of Exterior Pollutant Sources

*Discuss any measures in place to mitigate exterior pollution sources. This may include no-idle policies near building entrances and air intakes, HVAC filter selection criteria, outdoor smoking restrictions etc.*

### Renovation and Construction

* *This should align with* ***Baseline Practice I4.0-IAQ Management in Construction****. Either refer to the Construction IAQ Management Plan and include as an Appendix or outline measures required during renovation and construction to mitigate indoor air quality impacts related to construction dust, off gassing from paints and new building materials, noise etc. Refer to Sheet Metal and Air Conditioning Contracts Association (SMACNA) IAQ Guidelines for Occupied Building Under Construction.*
* *Outline base building HVAC specifications for tenant use during fit out to ensure adequate ventilation in newly renovated spaces.*

### Smoking

*Modify the above as applicable for your building. If other local regulations exist for IAQ management, the most stringent will apply.*

*Document smoking policies at the building*

## HVAC Systems impacted by IAQ

* *This should align with Energy and Carbon:* ***E6.0 – Preventative Maintenance*** *if being attempted. If so, refer to the Preventative Maintenance Plan and include as an Appendix*
* *Provide detailed information regarding the steps in place for inspection of building systems and preventative maintenance to minimize the risk of indoor air quality issues. This should include but not be limited to building walkthroughs, HVAC inspections, and exterior reviews.*
* *The US EPA I-BEAM Operations and Maintenance document “B2: Periodic IAQ Maintenance Inspection” referenced as an additional resource at the start of this template offers a good starting point.*

## Responding to Occupant Requests

The Occupant Service Request Program is submitted by [enter method here] and includes the following information:

* Incident log number
* Occupant name, company and department, location in building
* Date complaint was received
* Description of complaint
* Suggested cause
* Summary of problem

Once a request has been received [describe process to address the request]. A log is completed that includes:

* Actions completed
* Date of occupant interview (if applicable)
* Remedial action report
* Date of when occupant was advised about actions taken

*Building management must have in place a documented means for addressing occupant (tenant and building staff) concerns regarding maintenance service requests. Visitors to the building may also log service requests. Such service request logs can provide evidence of occupant dissatisfaction and its causes. Trends in complaint rates over time may indicate occupant reactions to changes in building operation*

## IAQ Assessment

Periodic maintenance inspections are conducted to monitor building IAQ performance.

The IAQ Assessment includes:

* Visual inspection of a representative number of HVAC systems for general cleanliness and maintenance
* Visual inspection of occupied areas of the building for general cleanliness
* At least one round of spot readings with direct reading instrumentation of the temperature, relative humidity, carbon dioxide, carbon monoxide, TVOCs and particulate
* Summary of corrective actions that may be needed

*Indoor air quality testing is conducted at regular intervals as determined by the building management team. Testing should be conducted over a typical workday, taking into account fluctuations in contaminant levels that may occur. IAQ testing should be conducted, at a minimum, in the morning and afternoon.*

# Time Period

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

*Include signature of the team member responsible for overseeing the implementation of IAQ Management Plan. Examples include the Property Manager, Building owner, or Building Operator.*

Signature of [Property Manager] \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: 01-Jan-2025