

IAQ COMPLAINTS: RESPONSE PROCEDURES

I. POLICY

It is the policy of 816 Congress to take a proactive approach towards the management of building indoor air quality at 816 Congress. It is the responsibility of the property's Chief Engineer to assume a leadership role in the development and implementation of property specific procedures. In the event of an alleged or verified indoor air quality problem should be reported to the management office immediately via the maintenance request system in the Electronic Tenant Handbook site or via phone.

II. PROCEDURE

A. RESPONDING TO TENANT COMPLAINT

I. Procedure

A. Responding to Tenant Complaint

1. General Information

In the event a tenant indoor air quality complaint is received, the Engineering Team shall implement an action plan to determine the source of the problem, if any. Investigation will include interviews with the tenant to identify the nature of the complaint; an analysis of the building's HVAC system, especially the system serving the specific areas where the complaint originated; and an overall building survey.

Interviews with those tenants complaining of indoor air quality related symptoms shall be conducted to reveal the extent of an individual's symptoms and to possibly pinpoint if a pollutant or group of pollutants might be the cause of the problem.

For example, is the problem localized in one portion of the building, or well dispersed? Do the symptoms appear in an episodic manner; i.e., only on Mondays, after the HVAC system has been turned off, etc? A standard questionnaire is used (see Exhibit 1) to provide consistency in the interview process. Since human emotion can play a significant role in the interview, the interviewing process should be tailored in such a way that undue concern within the work place does not occur.

Once the interview process is complete, an "identifiable pattern" search commences in which the extent of the problem can be determined. Symptoms of indoor air quality problems generally can be sub-divided into the following categories.

- Eye irritation (scratchiness or watering)
- Nose irritation
- Soreness or dryness of the throat
- Headaches with fatigue or drowsiness
- Headaches with shortness of breath
- Skin irritations and/or rashes
- Coughing
- Fever

This abbreviated list should be used only as a guideline. For additional resources, please refer to I-BEAM software. Although the categories are broad in scope, the classification of symptoms can often aid in the identification of an indoor air pollutant.

Once the magnitude and the nature of the symptoms have been pinpointed, or at least narrowed, the next stage of the investigation is a review of the HVAC system operation, and an investigation of tenant space utilization and chemicals used by housekeeping (See Exhibit 2).

HVAC systems can impact indoor air quality by three primary methods:

- By being the source of the pollutant itself because of conditions within the ductwork, air handler, cooling coils, or condensate drain pans that induce the growth of bacteria and fungi (especially molds);
- By circulating contaminants through the system and, subsequently, the tenant space; and,
- By circulating insufficient amounts of outside air through the system, thereby not diluting any contaminants.

A well-maintained HVAC system can eliminate or minimize many types of indoor air quality concerns. The performance of monitoring and replacement activities at specified time intervals (preventive maintenance) throughout the life of the system by the maintenance staff is mandatory. Specific maintenance conditions that might influence indoor air quality, and should therefore be closely monitored, include:

- Air Filters.
- Proper operation and balancing of the outside air system.
- Proper operation of humidifier systems located inside the air handling unit or downstream in supply duct.
- Cleanliness of air handling unit interior including unit condensate drain pans, cooling and heating coils, thermal insulation, etc.
- Absence of microbial growth in piping systems, especially open piping systems for cooling towers.
- Optimum operation of exhaust air systems, as well as air handling unit systems in general.

2. **Communicating with the Tenant**

- a. The responding engineer shall let the tenant know that the reported complaint is being thoroughly investigated. The tenant shall be given a reasonable time for response and action.
- b. All reports, records, or surveys written or collected during the investigation of an indoor air quality complaint are confidential.
- c. All tenant communication regarding indoor air quality complaint issues shall be documented in writing.

3. **Indoor Air Quality Complaint Action Plan**

The responding engineer and/or the Chief Engineer shall complete the indoor air quality tenant interview questionnaire with the appropriate tenant employees (see Exhibit 1).

The Chief Engineer shall conduct the indoor air quality audit (see Exhibit 2).

If the above noted interviews and audits yield no evidence of indoor air quality problems, the Senior Property Manager or Property Manager should contact the tenant and propose that a certified industrial hygienist, specializing in building indoor air quality problems, be retained to conduct an analysis of the air within the tenant space and possibly other tenant spaces within the building.

If the tenant decides to pursue this action, he should be notified that he will be responsible for the associated costs, unless the air sample analysis reveals contaminants in excess of regulatory standards in effect at the time of the test.

Landlord shall pay for the analysis if contaminants are traced to a building system.

If the analysis reveals no contaminants or reveals contaminants generated by tenant furnishings or tenant operation, the cost for the analysis shall be borne by the tenant.

B. Surveying Buildings for Potential Indoor Air Quality Problems

A building survey is an effective tool for identifying potential sources of indoor air pollutants.

The HVAC system shall be inspected to determine the existing conditions and ensure proper operation. The survey shall include, but not be limited to, the following:

1. A review of construction documents that detail the types of materials used in the building's construction
2. A review of the site and adjacent sites, taking special note of potential sources of toxic emissions from the surrounding environment that could enter through outside air intakes or other components of the building's systems.
3. Take note of the location of all outside air intakes. No emissions (cooling tower exhaust, kitchen exhaust, toilet exhaust, etc.) should be present within twenty-five feet of the outside air intake.
4. A review and record of the location of office equipment that may adversely affect indoor air quality. Rooms that contain copy machines, FAX machines, or other office equipment should be well ventilated to dilute gaseous and vapor emissions.
5. A measurement of the HVAC system's ventilation rates (fresh air and exhaust) with comparison of this measurement to building design requirements. All systems should provide the capacities required by the code in effect at the time the building was permitted, and systems should be fully operational and verified to be properly balanced.

EXHIBIT 1

INDOOR AIR QUALITY TENANT INTERVIEW QUESTIONS

Tenant Name: _____
Suite & Floor: _____
Date: _____
Time: _____
Interviewer: _____

1. When did you first notice the problem?
2. What health problems, if any, have you experienced?
3. Has the routine, décor or events in the office changed recently? For example, new carpet, drapes, desks, office equipment, or physical office reorganization?
4. How often do the symptoms occur?
5. How long do they last?
6. Do the symptoms occur in the: (Circle all that apply)

Morning
Afternoon
All Day
No Noticeable Trend
Daily
Specific Days of the Week (if so, which days?)
7. Do the symptoms clear up within one hour after leaving the work place?
8. Do you have any health problems or allergies that might account for any of the symptoms you have described?
9. Do you smoke?
10. Do others in your area smoke?
11. Do the symptoms occur in a particular area of the building?
12. Are there any unusual circumstances that accompany the problem?
 - a. Temperature too hot?
 - b. Temperature too cold?
 - c. Lack of air circulation?
 - d. Noticeable odors?
 - e. Dust in the air?
 - f. Disturbing noises?
13. Additional information or comments:

EXHIBIT 2

INDOOR AIR QUALITY AUDIT

Tenant Name: _____

Suite & Floor: _____

Date: _____

Time: _____

Auditor: _____

- 1. Are there any recent events that could be effecting this situation?
- 2. Is the HVAC equipment operating properly? (Check appropriate answer)

	YES	NO
Automatic Temperature Controls	_____	_____
Air Handling Unit	_____	_____
VAV System	_____	_____
Coils Cleaned?	_____	_____
Drain Pan Maintained?	_____	_____
Any mold, fungus or mildew growing within the system?	_____	_____
Fresh Air Intake Clear?	_____	_____
Possibilities of other contaminants entering through the fresh air system?	_____	_____

If possible, determine the direction and velocity of the wind during the times of air quality complaint.

- 3. Are any new cleaning methods or compounds (floor wax) being used?
- 4. Has any sprayed or foam insulation been used recently?
- 5. Have any modifications to the HVAC system been made recently?
- 6. Is there any cross ventilation between floors or zones that could affect this situation?
- 7. Is the quality of fresh air balanced and operational?
- 8. Is the exhaust system air balanced and operational?
- 9. Is the troubled area being utilized consistent with design intent?
- 10. Are the occupants of the space conducting any type of activities that could cause the problems?
- 11. Are there any areas (carpet, behind walls, pipe chase, or ceiling tile) that are wet, possibly allowing fungi to grow?
- 12. Are there any events in the surrounding areas likely to produce air contaminates?
- 13. In the affected space, does there appear to be adequate circulation? Is the humidity excessively high or low?
- 14. Does this situation occur only after a weekend? What are the time period(s) when the problem occurs?