



TOOLS FOR SCHOOLS

QUICK-START EQ EVALUATION PACKET and DOCUMENT GUIDE

Basic Tools for Schools (TFS) materials have been reorganized and supplemented in this packet to make it easier and faster to get started on conducting an EQ evaluation in your schools buildings. This EQ evaluation is identified as Step 5 (Develop an EQ Profile) in the *8-Step Action Plan*. Some of the forms and checklists in this packet can be found in the TFS kit, some were adapted from documents in the kit, some were borrowed from other IAQ manuals (e.g., *Building Air Quality*), while others have been newly created as supplements for the kit. This Quick-Start packet is only one part of the comprehensive TFS EQ program that includes establishing long-term procedures for maintaining good EQ in the building. The other information and resource materials in the TFS kit are important resources and should be used in developing the overall EQ program and as specific situations arise.

This review should be conducted at the start of the program, and thereafter at regular intervals (once per year is a good target) by persons trained in assessing EQ conditions and hazards in the school environment. It is better to have a routine program of inspection established, so that small EQ problems are less likely to turn into more serious and costly situations. It is recommended in the *8-Step Action Plan* that teachers and staff be informed and notified about the TFS program before beginning the evaluation. Copies of the completed documents should be kept on file, so that if EQ problems occur in the future, the documents will serve as a reference point that may provide valuable insight into the nature of the problem. The information collected here is also used to identify problems that need to be corrected, and, if necessary, used to generate work orders for repairs or replacements.

MEASUREMENTS

Some of the forms have spaces for recording measurement information and results. It is advisable to make these measurements, but they are not required. Remember, the most sophisticated measurement devices in your possession are your eyes, ears, and sense of smell. Be sure to focus on any odors that you detect during the first 30 seconds upon entering a space, try to identify them and then record that information.

FIRE ESCAPE PLAN

In addition to these documents, it is helpful to have copies of an up-to-date fire escape plan while performing the evaluation. These plans are easy to carry and are handy for recording information about the location of observed conditions, that can be cross-referenced to more complete notes on the forms.

CONDUCTING AN EVALUATION

Conducting an EQ evaluation in a school building is a multi-step process as described in Steps 4 and 5 of the *8-Step Action Plan*. It involves not only completing the forms and checklists in this packet, but also meeting with building staff before (including handing out the TFS *Backgrounders*) and after the assessment, problem solution, and follow-up, as described in Steps 6 and 7 of the *8-Step Action Plan*. The following is a typical sequence of activities in an EQ evaluation, but it is easily modified to meet different situations.

1. **Distribute staff checklists**, review returned checklists looking for problems, complaints, patterns in complaints, and making note to check into the situations and possibly discuss or interview respondents.
2. **Review the building plans**, looking for equipment locations, HVAC zones, room partitioning.
3. **Interview** teachers, principal, custodial, and O&M staffs to identify building-wide concerns or problems, and to better understand the operation and activities in the building. If appropriate, use *Occupant Interview* form.
4. **Inspect the exterior of the building**: roof, perimeter, drainage, outdoor air inlets, exhausts, loading areas, waste and garbage. Consider inspecting the ventilation units that are on the roof, or after completing the room walk-throughs. Use *Exterior Walk-Around Checklist* and *Fire Escape Plans*.
5. **Inspect the indoor conditions**: including individual rooms and spaces, such as classrooms, offices, hallways, restrooms, kitchen, lunch room, auditorium, gymnasium locker rooms and showers, vocational and art spaces (using *Room Walk-Through Data Form* and *Fire Escape Plans*); and building-wide activities and equipment, such as pest control, cleaning, and combustion appliances (using *General Building and Maintenance Checklist* and *Fire Escape Plans*).
6. **Inspect the ventilation equipment**, including unit ventilators and central systems on the roof or in the building. Use TFS *Ventilation Log* (p. 13), with reference to TFS *Ventilation Checklist* (p. 1-12).
7. **Meet with school staff** to discuss evaluation.

(The following are not part of the evaluation process, but are essential to assuring that the EQ problems are improved.)

8. **Prioritize problems and perform corrective action.**
9. **Conduct follow-up evaluation** after corrective action.

GUIDE TO CHECKLISTS AND FORMS

Depending on the situation and conditions at the school, all of the forms and questionnaires may not need to be used for every evaluation. In general, the Quick-Start forms and checklists would be used to perform the initial and periodic EQ evaluations. Those documents listed under Problem Solving are more appropriate for identifying the basis of a particular EQ problem after a complaint has been made or a condition has been observed. Note that *Staff Checklists* may be useful for both situations. An added advantage of using the Problem Solving forms is that occupants perceive that positive action is being taken on their behalf. The following lists those documents included in this collection, and provides suggestions for when it is appropriate to use each document.

Quick-Start Documents

Staff Checklists: Teachers, Food Service, Administrative Staff, Health Officer, Food Service

Distribute these checklists to the different staff members to identify any of their concerns or problems, which can be followed-up on during the walk-around and walk-through. By >mapping= reported problems onto the fire escape plan, it is also possible to discern spatial patterns. *From TFS kit.*

Fire Escape Plan

Several copies are useful, often a separate copy for the exterior/roof and interior makes it easier to read.

Exterior Walk-Around Checklist

This checklist covers problems found exterior to the building that may be degrading EQ. Areas covered include loading areas, landscaping, outdoor air inlets, exhaust fans, and rooftop conditions. *Supplemental document.*

Room Walk-Through Data Form

EQ-related conditions and measurements in all rooms of a building can be recorded on this form. With this format, assessments can be conducted quickly and efficiently, and information properly compactly archived. The form should be completed with occupants present, although separate evaluations of the ventilation equipment are best performed in an empty classroom. *Supplemental document.*

Ventilation Log

A brief summary of conditions in the ventilation systems is recorded on this form B it may be necessary to have more comprehensive inspections performed by an HVAC professional. Separate Ventilation Logs should be used for each ventilation unit that is inspected. *This form is part of the TFS kit, 'Ventilation Checklist', and is on page 13.* For more information on completing this form, the entire TFS 'Ventilation Checklist' should be referenced.

General Building and Maintenance Checklist

Other conditions in the building that may impact EQ, such as maintenance supplies, cleaning, combustion appliances, and pest control are covered by this checklist. A more thorough examination of combustion appliances and lead-based paint may require the services of specialists. *Supplemental document.*

Problem Solving Documents

IAQ Problem Solving Checklist

Providing a good overview of the problem-solving process, this form can be used as a guide for resolving complaints by identifying steps to be taken and items that should be inspected. The information requested in this document is similar to that in some of the evaluation forms, but brings it together on a single form to more easily focus on the problem area. *From TFS kit, "IAQ Coordinator's Forms", pages 11-14.*

Environmental Quality Backgrounders and Checklists

Brief, overviews of the major EQ issues in schools including sources, HVAC systems, control strategies, and problem solving. These documents are very useful as hand-outs to school teachers and staff at meeting introducing the TFS program. *From TFS kit and supplemental.*

Occupant Interview

This form assists the investigator in conducting a one-on-one interview with affected occupants, usually staff members. The interview format often is more conducive to gathering specific information on problems and complaints, making it unnecessary to use other information gathering forms, below. *From BAQ guide, page 185-186.*

Occupant Diary

Provided to affected occupants to record their observations of discomfort or ill health by location and time. This information can be used with the *Log of Activities and System Operation* to relate complaints to certain activities or location. *From BAQ guide, page 187.*

Log of Activities and System Operation

Used to record date and time of HVAC system operations, and other activities such as house cleaning, pest control. In conjunction with the *Occupant Interview*, *Occupant Diary*, or the *Staff Checklists* can assist in identifying time-related patterns in EQ problems. *From BAQ guide, page 189.*

Staff Checklists: Teachers, Food Service, Administrative Staff, Health Officer, Food Service

When a problem is reported or a complaint is logged, refer to the appropriate, previously-collected checklists from staff members in the nearby area. They can be used to determine the extent of the problem and if other individuals are affected. *From TFS kit.*