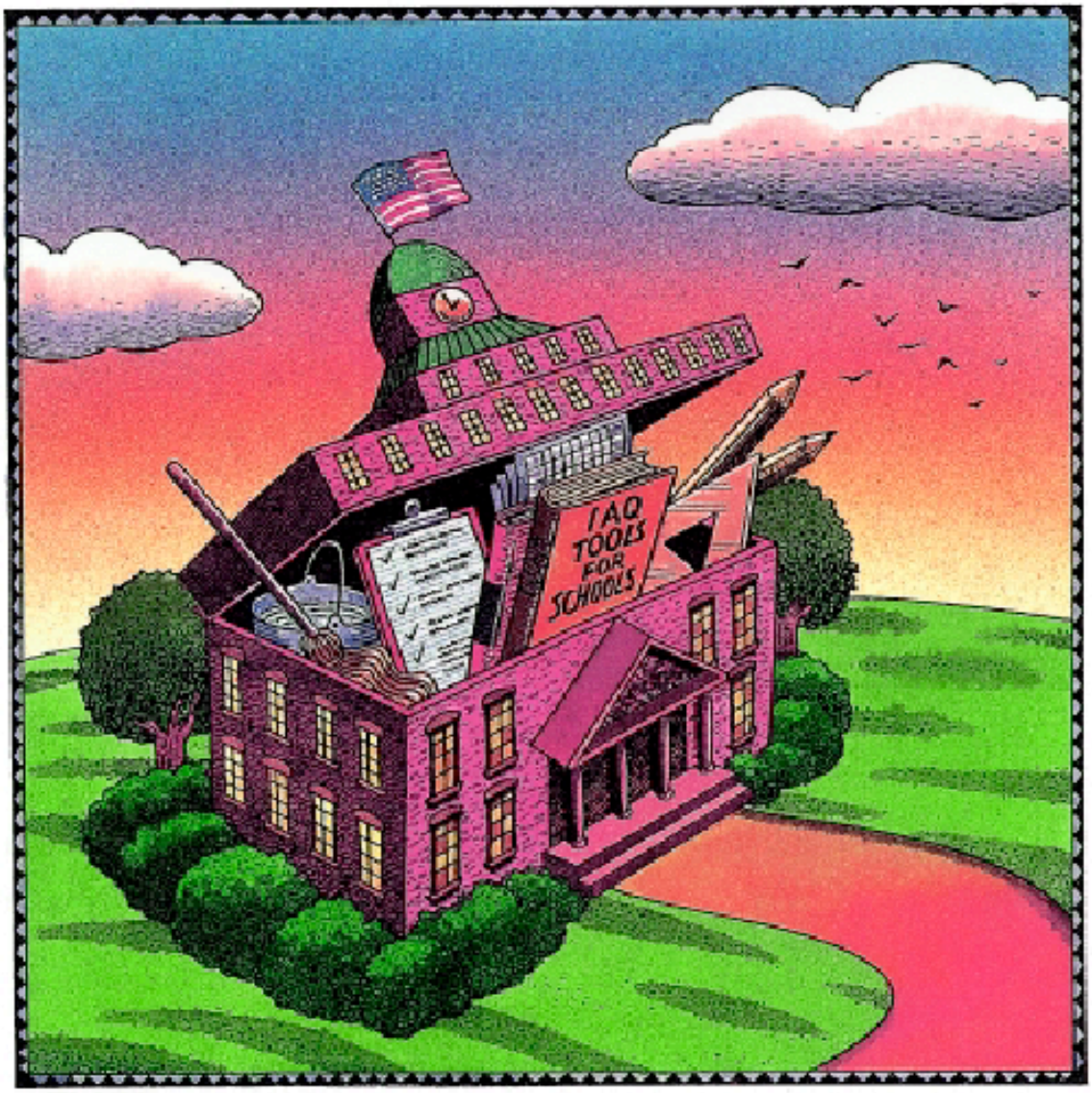
San Benito Consolidated Independent School District

Indoor Air Quality Management Plan



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1. Introduction

The intent of this program is to develop and maintain a healthy indoor environment in District facilities for students, parents and staff. San Benito CISD realizes that providing good indoor air quality for our students and staff contributes to a favorable learning environment.

The primary objective of this plan is to develop and maintain a healthy and safe indoor environment in District facilities for students, parents and staff.

2. Purpose

The management plan is primarily designed to provide guidance on the prevention of IAQ-related problems. However, when problems do arise the management plan will also provide guidance on how to effectively rectify IAQ related problems.

3. IAQ Management Plan Objectives

This management plan has three main objectives.

• To ensure that the indoor air provided for building occupants at all facilities that are operated by the district does not cause harm or discomfort.

• To ensure that all IAQ problems are addressed quickly and remediated thus minimizing the impact on building occupants and facilities.

• To ensure that the District complies with any legal requirements in relation to indoor air quality.

4. Scope and Limitations

The term "indoor air quality" applies to a range of characteristics which include:

• air purity
• air movement
• the ratio of fresh air to recalculated air
• the amount of carbon dioxide and oxygen
• relative humidity

Indoor air quality typically applies to buildings that are occupied by students, teachers and staff. This plan does not apply to buildings not maintained or serviced by the district or buildings that are not normally occupied (storage facilities).

5. District Policy

"Every school building shall be located on grounds that are well-drained and maintained in a sanitary condition. All buildings shall be properly ventilated and provided with an adequate supply of drinking water, an approved sewage disposal system, hand washing facilities, a heating system, and lighting facilities, all of which shall conform with established standards of good public health engineering practices." Board Policy CLB (Legal)

6. Standards/Guidelines

There are various standards/guidelines which specify minimum requirements in terms of ventilation and air quality.

The relevant standards/guidelines are:

- U.S. Environmental Protection Agency - *"Tools for Schools"*
- American Society of Heating Refrigerating and Air-Conditioning Engineers Standard 62-1999
- Department of Labor- *Occupational Safety and Health Administration- 29* CFR Parts 1910, 1915, 1926, and 1928 Indoor Air Quality; Proposed Rule
- "Guidelines on Assessment and Remediation of Fungi in Indoor Environments" New York City Dept. of Health, Bureau of Environmental and Occupational Disease Epidemiology
- Texas Department of Health- *Voluntary Indoor Air Quality Guidelines for Public Schools,* Effective Date: May 10, 1998

7. Organizational Responsibilities

Person/Party	Responsibility
Superintendent of Schools IAQMP	Ensure districtwide compliance with Allocate funding for specific IAQ issues
Executive Assistant to Supt. IAQMP	Ensure districtwide compliance with Administer implementation of IAQMP
Construction Manager Maintenance Director District Architect	Ensure that mechanical plant design, installation and maintenance are consistent with relevant legislation and the requirements of this IAQMP
Maintenance Director and Pesticide Coordinator	Ensure that cleaning practices, pest control waste disposal activities comply with the requirements of this IAQMP
Campus Principal IAQMP IAQ Campus Coordinator	Ensure campus-wide compliance with
Campus Health and Safety Committee	Assist principal in ensuring campus-wide compliance with IAQMP

Head Nurse	Provide expert advice on related health issues and investigate/make recommendations on associated health risks.
Building Occupants	Ensure that individual activities do not contribute to poor indoor air quality and are in accordance with the requirements of this IAQMP.

8. Managing Indoor Air Quality

8.1 Preventative Control Measures-

All building, grounds and equipment management activities will be in compliance with Board Policy CLB (Legal) and Board Policy CLB (Local)

8.1.1 Maintenance of Air Conditioning Plant and Associated Equipment

All maintenance and operation of air conditioning systems and associated equipment is to be carried out in compliance with relevant health and safety legislation and accepted industry guidelines at all District Sites

8.1.2 Compliance Audits

To monitor the performance of staff/contractors in the management of air conditioning plant maintenance, the staff/consultants will carry out audits of maintenance documentation and physical inspection of plants.

8.1.3 Building Design/Commissioning of New Systems

All building design work shall comply with relevant codes and standards and District design standards. Air conditioning plant should be installed so that appropriate maintenance can be carried out.

8.1.4 Cleaning and Waste Disposal

Cleaning and Waste disposal will be generally carried out as per table 9.2 below. Cleaners are to provide Material Safety Data Sheets (MSDS) for cleaning products used. Cleaning products are not to be stored in non-labelled containers.

Table 8.2 Main Areas Cleaned

Area	Details	Frequency
Offices and general space	Empty Trash Cans Vacuumed and dusted Food products not to be stored in these areas. Mop and Wax Tile Floors	Daily Weekly Annually
Classrooms	Empty Trash Cans Dust mop Sweep Mop Food products not to be stored in these areas.	Daily Weekly Daily 6 months
Toilets	Frequency depends on usage Inspect and Clean	Daily/Twice Daily
Teacher lounges	Frequency depends on usage Inspect and clean	Daily/Twice Daily

9.1.5 Pest Control

Where possible, all pest control spraying is to be carried out after hours. Building occupants are to be given advance notice in writing before the spraying takes place. MSDS are required for all chemicals used. All termite treatments shall be carried out in compliance with relevant Texas State Pest Control Board Standards by a licensed exterminator.

9.1.6 Loading Bays

Where possible, delivery vehicles should be turned off while loading and unloading to reduce the risk of exhaust fumes entering the building.

9.1.7 Air Conditioning Plant Rooms

Air conditioning plant rooms should be maintained in a clean and tidy state and should not be used as general storage space.

10. Complaint Resolution

This section describes the process for managing indoor air quality (IAQ) problems in our school district. The intent of this process is to define the reporting line for these types of issues, to ensure a quick response and early management of the problem. “Tools for Schools” problem solving checklists and manual will be used to assist in the documentation of IAQ issues and resolution of IAQ complaints as they are found.

The IAQ investigation is a cycle of information-gathering, hypothesis formation and testing, and feedback to building occupants.

10.2 Notification of problem

An IAQ investigation commences with one or more reasons for concern, usually occupant complaints or problems identified during routine maintenance or inspections. Health related complaints that arise from symptoms (e.g. eye, skin and respiratory tract irritation, headaches, fatigue, infections) or discomfort (e.g.drafts, smells) should be directed to the school nurse where the details are recorded. The building principal or designee is responsible for investigating the complaint, and will discuss the problem with the complainant before taking the investigation further. “Tools for Schools” problem solving checklists will be used by the principal or designee to document IAQ related issues as they are found. A copy of the completed checklist will be forwarded to the district IAQ Coordinator. An IAQ Incident Report Form will also be completed for individual incidents that need attention.

Building related complaints (e.g. temperature control, air flow problems) should be directed to the Energy Management office where the complaint will be recorded and directed to the appropriateperson for action.
Awareness of an IAQ problem may also arise during routine maintenance or inspection of a ventilation system. These problems will usually be identified by Staff or Maintenance personnel.

10.3 Complaint / Incident investigation

Depending on the nature of the problem, the issue will be investigated solely or jointly by district maintenance or energy management personnel. Preliminary investigation should gather information about the factors influencing indoor air quality such as the occupants, HVAC system, pollutant pathways and contaminant sources. This initial investigation may involve discussions with the affected people to determine potential sources of problems (e.g. types of activities conducted, types and timing of symptoms), and walkthrough inspections of the area including inspections of the ventilation system, and/or preliminary monitoring of some indoor air quality parameters (e.g. temperature, relative humidity, carbon dioxide levels, air flow patterns). This stage of the IAQ investigation process may be either very basic or detailed, depending on the complexity of the problem. For complex situations, there may be many explanations for the problem, and further investigation may be required. It is at this stage where external assistance may be required.

10.4 Determining the Cause of the Problem

During the preliminary investigation, the cause of the problem may become apparent immediately. In some cases, the cause of the problem will be obvious, for example a break down of the ventilation system, lack of filter maintenance or the temperature being at an uncomfortable level. If the cause has been identified,the next step requires remediation of the problem by the appropriate party (Maintenance Department, Energy Management Department or contractor)

10.6 Remediation of the problem

The majority of IAQ problems at district facilities can be rectified by maintenance staff. There will be instances, however, where the services of a contractor will be engaged to fix the problem, or alternatively, the problem can be managed at the source by the District, for example through a change in work practice. If the building is still under defects liability, the District Architect and/or the Construction Manager should arrange for the contractor to attend to the problem immediately. If the problem no longer exists after initial complaint e.g. may have been due to a single unrepeatable event such as painting, maintain a record of the event and advise building occupants that problem no longer exists.

11. Assessing Indoor Air Quality

The assessment of indoor air quality is a vital part of the maintenance program in the strategic management of air quality in the indoor environment. Staff members will be responsible for assisting in evaluating their areas. The indoor air quality assessment is designed to be a systematic assessment of a building's indoor environment to gain a profile of its operation and performance. This information can then be used to identify signs and symptoms indicating the presence of either an existing or a potential problem. Staff will be provided with "Tools for Schools"- Action Packets and staff development to assist with the assessment.

Indoor air quality assessments may be undertaken for two main reasons:

1. as a pro-active check on indoor air quality; and
2. to investigate specific problems.

11.1 Indoor Air Quality Audit

The proactive IAQ audit should be undertaken by trained personnel at regular intervals. The audit should involve both a physical inspection of representative items of air conditioning plant and equipment, and measurement of IAQ parameters.

Items of A/C plant and equipment inspected should include:

- air handling units;
- plant rooms;
- fresh air intakes;
- supply air ductwork;
- air filters;
- heating and cooling equipment;
- occupied spaces; and
- maintenance logs.

During the visual inspection of the above items obvious deficiencies and pollutant sources should be recorded using a standard checklist. In addition to visually inspecting representative items of a/c plant and equipment, an inspection of representative occupied spaces should be conducted to identify any obvious problems in the workplace. Whilst inspecting the work space informal discussions

with occupants may provide a good insight into how the indoor environment is perceived. Specific problems are often more easily detected using this approach. As part of the indoor air quality audit it is useful to check a few indoor air quality parameters.

Measurement of the following indoor air quality parameters is recommended as part of the audit:
•temperature;
•relative humidity;
•carbon dioxide; and
• air movement.
Temperature and relative humidity measurements provide a useful check on the thermal comfort within an occupied space.
Carbon dioxide measurements indicate whether the amount of fresh air is sufficient, and airflow measurements indicate whether the volume of air supplied is adequate.

11.2 Indoor Air Quality Investigation

Assessment of indoor air quality in response to a complaint requires a different approach to that used for an indoor air quality audit. The investigation is usually initiated in response to a specific problem that has been raised by an occupant. In this case it is necessary to firstly interview occupants to obtain as much background information as possible. Typically, the interview would identify where the complaints are occurring (widespread or localized) and when the symptoms are appearing (constantly, intermittently, etc). After reviewing the information gained from the interview process, it is then necessary to determine what if any further action is required. Further action may include a physical inspection of the workspace, conditioning plant, external activities, etc. It may also include the measurement of known indoor air quality parameters.
Selection of the appropriate IAQ parameters for testing purposes should be determined by the information obtained from the visual inspection and occupant interviews. The selection process usually requires specialist advice as incorrect selection may produce costly and unhelpful data.
The measurement of some of the above parameters, including temperature, relative humidity, air movement, carbon monoxide and carbon dioxide, are relatively straightforward and require minimal knowledge of sampling procedures. Measurement of many of the remaining parameters however, requires specialized sampling equipment and sound knowledge of occupational hygiene principles. These indoor air quality parameters should be measured by specialists or experienced personnel only.

The results of sampling and testing, in most cases, will require interpretation from specialists and should be considered with all of the other evidence such as occupant interview records and HVAC inspection notes.

Appendix

IAQ Incident Report Form

Date:_____ Time: _____

Campus/ Facility: _____ Room Number/ Location : _____

Description of IAQ issue:

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Name of Person Filing Report: _____
(Please Print)
Signature of Person Filing Report:_____

Name of Campus Principal/ Department Head _____
(Please Print)

Campus Principal Signature: _____

Xc- Campus IAQ Coordinator
District IAQ Coordinator
File

IAQ Management Plan Related Board Policy Links

Building, Grounds, and Equipment Management: Maintenance CLB (Legal)-

Building, Grounds, and Equipment Management: Maintenance CLB (Local)-

Employee Welfare DI (Legal)

Safety Program/Risk Management: Inspections CKA(Legal)

Safety Program/Risk Management CK(Local)

Student Welfare: Student Safety FFF (Local)

Indoor Air Quality Related Links

Environmental Protection Agency Region 6

EPA Region 6 Tools for Schools Program

American Lung Association

Texas Department of Health

MSN Web MD Health Condition Center - Asthma