

A GROWING EPIDEMIC

Part V: “Sick Building Syndrome” (SBS) — Mitigation and Prevention Strategies

The search for indoor pollutants takes us to every area in a building, to every process, and to every occupant. “We have found the enemy; now what do we do!”

Throughout this series we have identified some of the causes and sources of “Sick Building Syndrome” and “Building Related Illness.” We have explored many of the infinite ways that various pollutants affect our lives. This article will provide for you 16 strategies which will help guide you to effectively controlling the overwhelming array of pollutants that are a real factor in the health of your building facilities.

As stated in previous articles, pollutant control begins with their identification, potential sources, and their pathways to unsuspecting occupants. Following these three stages, mitigation and prevention strategies can be defined and implemented. Pollutants are everywhere and the distinction between tolerable and intolerable levels is very important. Absolute control is not a practical goal. Due to this fact, the ALARA principal (As Low As Reasonably Achievable) is a commonly used and accepted guideline.

As preceding articles have discussed, bacteria, fungi, mold, mildew, yeast, and other one-celled organisms are the most potent pollutants in the indoor environment. Although microbes represent biologicals as pollutants, they are in fact representative of all of the classes of pollutants. This allows us to use these potent pollutants as an example for typical pollutant control strategies.

Depending on the pollutant, mitigation and prevention can be very difficult, time consuming, and expensive. In earlier articles we have acknowledged the importance of the full range of pollutants on the integrity of the building materials, the operating systems, the furnishings, productivity, and the health of the occupants. Knowing your building and your occupants is part of the needed defensive strategy but only part of what needs to be done to avoid occupant and “press event” problems.

The following are a few of the 16 Defensive Strategies. These strategies provide some perspective on the countless “solutions” to the SBS/BRI problem.

Architectural design of a building is critical. Everything from the climate to the relationship with other buildings must be considered. This strategy has a direct affect on the sources and pathways that pollutants take. Another area is the materials used in construction are primary sites for microbial growth and contamination. Once these materials are contaminated, remediation can be costly and very time consuming. Also the slightest swing in temperature has dramatic effects on IEQ. Therefore, heating and cooling along with humidity control should be closely monitored and kept in balance.

Other strategies include having baseline audits of your building. This way when emergencies do occur you have something to reference to. This can be a simple audit of the building materials, operating systems, furnishings, and the processes used in the building. Or, it can include actual measurement of suspect particulates, VOC's, and microorganisms. Under certain circumstances it can also be valuable to have an audit of the occupants and staff. The forms and formats for such audits are too complex for this article, but they are available from some government authorities and some service companies.

The importance of having a pollutant control contingency plan for emergency situations and a basic knowledge of your building is essential. One extremely important safeguard, that is often overlooked, is that all buildings should have a clearly written policy designed to respond to building problems. Included in this policy should be a clear scheme of response to environmental issues. Occupant complaints of temperature, air flow, lighting, noise, humidity, and the like should not only have an organized reporting system, but key response people dedicating to handling these issues. Suspected medical problems should also have clear channels for reporting and response.

Understanding the strengths and weaknesses of each strategic component is absolutely essential and often takes outside expertise. Accurate records, good common sense, compliance with regulations and standards, and involving all of the people on a prevention and solutions team will clearly help with and minimize problems associated with indoor environmental quality.

The role of microbes is paramount and their control must be a major target for anyone trying to eliminate the real and potential indoor environmental problems in our buildings. In our next article will cover the unique problems associated with the mitigation and control of microbial pollutants.

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