SISC Safety and Loss
Risk Management Bulletin

SCHOOL ENVIRONMENTS

August 2008

Students, as well as staff, spend a great deal of their time in the classroom and school setting. It is important that the environment is safe for its intended use and conducive to learning. With that in mind, the following information is offered to assist instructors and site administrators with creating and maintaining safe and healthful learning environments.

Air Fresheners and Candles

Classrooms are subject to unusual, and sometimes unwelcome, odors. Classroom odors are often responsible for prompting instructors to install air freshening devices in order to mask the unwanted odor. Air freshening devices consist of plug-in devices, passive emitters, candles, and/or the use of aerosol sprays. SISC does not recommend the use of such items in the classroom.

Air fresheners are chemically based, therefore, it is hard to predict whether a person will have a respiratory sensitivity or other physical reaction, such as headaches. If air fresheners are being used in an attempt to control odors or mask "stale air", consideration should be given to adjusting the ventilation system. When operating properly, the system should bring in enough outside air to keep odors under control.

The use of candles as air fresheners is dangerous and should never be allowed. The use of candles for this purpose, as well as other purposes, is a violation of both the California Building Code (Title 24) and the regulations of the State Fire Marshal (Title 19).

The best strategy in maintaining comfortable indoor air is not by introducing more "chemicals" but by providing properly functioning and operating ventilation systems.

Live Animals Brought Onto Campus

According to the National Science Teachers Association, "Observation and experimentation with living organisms give students unique perspectives of life processes that are not provided by other modes of instruction. Studying animals in the classroom enables students to develop skills of observation and comparison, a sense of stewardship, and an appreciation for the unity, interrelationships, and complexity of life." Beyond that – kids just like animals.

Although housing animals in classrooms is popular, care should be taken in the selection of such animals as well as the ongoing maintenance and handling of the animals.

Districts should discourage the practice of students or teachers bringing household pets onto campus. Such "pets" pose an unknown risk of disease, scratching, and/or biting injury.

Whenever feasible, animals that are brought into the classroom should be cleared by a veterinarian before entering the class.

Good housekeeping and safety practices are essential in providing a safe environment for both students and animals. Pens and cages should be cleaned regularly and the classroom should be free from animal debris and droppings. Classroom animals are a common cause of indoor-air-quality problems. However, diligence in good housekeeping will help prevent such problems.

Although it is common for students to take class animals home during weekends or over school breaks, such practices should be carefully planned and controlled.

For more complete information regarding animals in classrooms, please refer to the SISC RMB *Advisory Regarding Animals in Schools*. http://sisc.kern.org/safetyandlosscontrol/riskmanagementbulletins.html

Chemicals

Many chemicals, such as cleaners and pesticides, are provided with a label that states, "Keep out of reach of children." In addition to this warning, they are labeled with the words Danger, Warning, or Caution. Although consumer products used in the home are not specifically regulated, they are subject to various regulations if they are brought into the workplace. Specifically, the regulations require training for the use of the product and there are provisions specific to wearing personal protective equipment (PPE). In addition, the district must have a material safety data sheet (MSDS) for every product in use and must train employees on how to read and understand a MSDS.

The practice of employees bringing household chemicals into the classroom places the district at risk of noncompliance with several regulations and could leave the district open for citations and/or fines. There is also potential adverse liability to the district if a child should accidentally come in contact with an unapproved and/or possibly hazardous chemical in the classroom.

Chemicals should not be brought from home into the classroom. Some chemicals provide a greater hazard than usefulness; therefore, it is strongly recommended that all chemicals be thoroughly reviewed by district administration for safety prior to use. All products stored in classrooms should be in locked cabinets or containers inaccessible to students.

Decorative and Display Materials

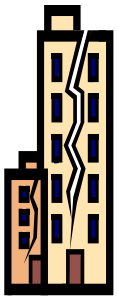
Classroom displays provide important visual learning opportunities in classrooms and also make the classroom environment more enjoyable. However, display materials can also provide increased flame-spread, fire loading, and become evacuation barriers. Fire regulations provide that nonflame retardant materials (such as paper displays) may be used so long as no more than 25% percent of the wall surface is covered with such materials. Display materials must also be located four feet from room exits and corners and nothing should be located overhead or hang from the ceiling.

School administrators and teaching staff should be mindful of introducing flammable materials into the classroom.

Title 19, California Code of Regulations, requires that decorative materials such as curtains, drapes, hangings, Christmas trees, or any other combustible decorative material shall be flame retardant and shall not block or conceal any exit door, exit light, fire alarm, or fire exginguishers.

Flame retardant materials may be either constructed of a nonflammable material or may be treated with a flame-retardant solution. All treated materials shall have proof of treatment affixed to it in accordance with regulations of the State Fire Marshal.

Earthquake Preparedness

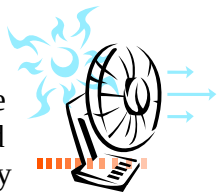


It should come as no surprise to hear that California is the highest earthquake risk area in the contiguous United States. This is due to several large, active faults that run through the state. These faults have been the cause of destructive earthquakes in the past and will be the source of future earthquakes. California sustains an earthquake with a magnitude greater than 6.5 on average every four years.

Since the passage of the Field Act, California public schools are required to meet strict construction standards that now make our schools as safe as possible. In general, there is little cause to worry about the structural integrity of buildings that meet the Field Act standard. But what about the contents and components inside the building? Any component of a building that is not part of the structure (i.e., light fixtures, furniture, cabinets, computers, TVs and stands, bookshelves, etc.) is considered a "nonstructural component".

Just as buckling an automobile seat belt provides greater safety for the occupants of the auto, securing nonstructural components promotes greater safety for the occupants of a building. The classroom instructor plays a key role in maintaining a safe classroom. Loose storage can create a hazard if not properly secured. Instructors should be mindful of the conditions they create and strive to maintain a secure environment.

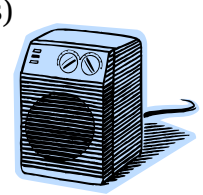
Electrical Appliances



The use of coffee pots, hotplates, and similar appliances can be appropriate in classrooms and office areas that were properly designed to accommodate them (i.e., home economic classrooms, lunch rooms, and break rooms). All electrical appliances used in these rooms should have an appropriate Underwriters Laboratory (UL) label or an equivalent certification. However, due to the potential for personal injury and property damage, SISC does not recommend the use of these appliances in areas other than the above mentioned. The main concern is for the safety of the occupants. These types of appliances have the potential to cause burns and electrocution—fires can also result from improper use. Rooms that were designed without these types of appliances in mind may lack appropriate ventilation and electrical wiring to service these devices.

In recent years due to energy costs and supply, thermostat settings have been closely scrutinized. PG&E recommends thermostats be set at 78 degrees or higher in the summer and 68 degrees or lower in the winter. While this measure conserves energy, the thermal comfort of some occupants may not be met.

Because of individual thermal preferences, district employees may elect to place household fans and/or space heaters in their work area. The use of some of these appliances may be appropriate (i.e., small desk fans) provided they have been approved and display the Underwriters Laboratory (UL) label or equivalent certification. However, due to the potential for personal injury and property damage, SISC does not recommend the use of space heaters or other electric or gas heating devices. Space heaters have the potential to cause burns; electrocution and fire can also result from improper use.



Electrical Extension Cords

The use of extension cords in classrooms and offices is common and can be safe if used properly. However, extension cords can pose a significant fire risk if the fire codes/regulations are not followed.

Requirements for extension cord use, both single and multiple outlets, include the following:

- The current capacity must not be less than the rated capacity of the appliance or fixture.
- Cords must be in good working condition.
- Cords must be the grounded type when servicing grounded appliances or fixtures (three prong).
- Extension cords may not be used as a source for permanent wiring.
- Cords must not be affixed to structures; extended through walls, ceiling, floors, under doors, or under floor coverings; or be subject to environmental damage or physical impact. Extension cords that cross a pedestrian traffic area must be covered with a traffic pad.
- Cords must not be run in a series (cords plugged together).
- Multiple outlet adapters are designed to serve more than one appliance or fixture and must be grounded—have an on/off switch—and have a breaker or fuse.

Food

Snacks, treats, and lunches are common items found in most classrooms. Although food items are rarely prohibited in classrooms, care must be taken to avoid causing insect infestations. Open food containers and long-term storage of snack items are irresistible to ants and roaches. Once an infestation occurs, gaining control can be quite difficult. Regulations and best practices limit the application and use of pesticides; therefore, prevention is critical. Long-term storage of food should be limited and such food should be in sealed (airtight) containers. Student lunches should be kept in a centralized area, preferably in a plastic storage tub. If eating in the classroom is allowed, diligence should be taken to clean up thoroughly after the meal or special event.

Humidifiers

In addition to posing the same issues as other electrical appliances, humidifiers also pose their own unique risks. Humidifiers distribute moisture in the air by pulling water through a filter which is subject to air movement by an internal fan. The maintenance requirements of such units are very high in order to prevent microbial growth from accumulating onto the filter. If the unit is not kept in a sanitary condition, the fan will force microbial growth or other contaminants into the surrounding air. This risk is wholly unnecessary given the overall ineffectiveness of such units in commercial environments (such as classrooms). Building codes require that a specified amount of outside air be brought into a space continuously while the space is occupied. Unlike a household environment where the air is continually re-circulated, a classroom environment is continually flushing out air and bringing in "new" air. This continual flushing makes any residential humidifier ineffective.

Indoor Air Quality (IAQ)

Indoor-air problems can be subtle and do not always produce easily recognized impacts on the health and well-being of the occupants. Children are especially susceptible to air pollution. Air quality in schools is of particular concern. Proper maintenance of indoor air is more than a "quality" issue, it includes safety and good management of our investment in the students, staff, and facilities.

Building occupants in schools include the staff, students, and other people who spend extended periods of time in the school. The effects of IAQ problems on occupants are often vague symptoms rather than clearly defined illnesses. Symptoms commonly attributed to IAQ problems include:

- Headache, fatigue, and shortness of breath.
- Sinus congestion, cough, and sneezing.

- Eye, nose, throat, and skin irritation.
- Dizziness and nausea.

All of these symptoms, however, may also be caused by other factors and are not necessarily due to air-quality problems. Environmental stressors such as improper lighting, noise, vibration, overcrowding, and psychosocial problems (such as job or home stress) can produce symptoms that are similar to those associated with poor air quality but require different solutions.

Some groups that may be particularly susceptible to effects of indoor-air contaminants include:

- Allergic or asthmatic individuals or people with sensitivity to chemicals.
- People with respiratory disease.
- People whose immune systems are suppressed due to radiation or chemotherapy, or disease.
- Contact lens wearers.

There are several basic methods for lowering concentrations of indoor-air pollutants.

Source management is the most effective control method when it can be practically applied. The best prevention method is to not bring unnecessary pollutants into the school building. Examples of source removal include not allowing buses to idle near outdoor-air intakes, not placing garbage in rooms where HVAC equipment is located, and banning smoking within the school. Source substitution includes actions such as selecting less toxic art materials or interior paint than the products which are currently in use.

Local exhaust is very effective in removing sources of pollutants before they can be dispersed into the indoor air, exhausting the contaminated air outside. Well known examples include restrooms, kitchens, science lab fume hoods, and vocational/industrial areas such as welding booths.

Ventilation uses cleaner (i.e. outdoor) air to dilute the contaminated (i.e. indoor) air that people are breathing. The California Building Code requires 15 cfm (cubic feet per minute) of outdoor air per occupant be continuously supplied to an occupied space. It is not uncommon for an instructor to operate the HVAC system in the "auto" mode rather than the "on" mode. Systems should be operated in the "on" mode so as to provide a continual supply of outside air to the space, keeping the area flushed, and keeping odors at bay.

Good indoor air quality contributes to a favorable learning environment for students, productivity for teachers and staff, and a sense of comfort, health, and well-being for school occupants. These combine to assist a school in its core mission—educating children.

Television/Audiovisual Equipment

The use of televisions and audiovisual equipment in the classroom can provide excellent support for the instructional curriculum. However, as more districts take advantage of the benefits audiovisual equipment can contribute, the hazards and risk of injury posed by the units are often overlooked. In some classrooms, the risk is substantial.

There are three methods currently used to install televisions/audiovisual (TV/AV) equipment in classrooms: moveable carts, wall-mounted brackets, and permanent built-in cabinets/shelves. If the necessary safeguards are met, any of the three methods are appropriate. Items for consideration include the following:

- Televisions or other audiovisual equipment should not be installed directly over or within close proximity to staff or students.
- Whether on a shelf, cart, or wall mounted, TV/AV units should not be larger or heavier than what the location can support.
- For wall-mounted units, installation must be according to the manufacturer's specifications. Installation should be conducted by qualified personnel.
- It is critical that support straps are used and used properly. In an assessment of member district sites, it was noted that such straps are overwhelmingly either not in use, improperly installed, or out of adjustment. Straps should be used to secure the equipment whether it is on a cart, shelf, or wall-mounted bracket.
- Students should never be allowed to handle or relocate mobile TV/AV carts. It is important to plan ahead when a TV or other audiovisual equipment is needed so it can be moved by an adult before and after class.
- Do not let students play near TV/AV equipment carts.
- All TV/AV carts should be secured to the wall when not in use.
- TV/AV carts with large casters capable of being locked are recommended.
- All TV/AV carts, mounting brackets and shelving units should be inspected periodically.

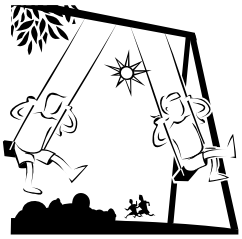
By observing the items previously mentioned, a district can enjoy the benefits televisions and other audiovisual equipment can bring to the curriculum without putting the safety of staff and students at risk.

Playgrounds

The preceding information is intended to guide instructors and administrators in establishing and maintaining safe and healthful classroom environments. However, once the bell rings, the students proceed to the area on campus where injuries commonly occur—the playgrounds.

The supervision of a playground directly affects the overall safety of the playground. A play area should be designed so that it is easy to observe the children at play. Young children are constantly challenging their own abilities, very often not being able to recognize potential hazards. It is estimated that over 40% of all playground injuries are directly related to lack of appropriate supervision.

Surfacing material is the primary concern as it relates to the physical elements of the playground. Instructors should be mindful to note any areas of concern, which would include: debris, standing water, overly compacted material, and overly displaced material. Concerns should be reported immediately and instructors should exercise good judgment whether to allow play until the concern is addressed.



Please contact the SISC Risk Management Services department at (661) 636-4604 for more information or guidance on any of the items discussed in this bulletin.