RISKmanager

STORM AND FLOOD PREPAREDNESS

By Jake Ruziecki

According to the National Safety Council and FEMA, floods are the most common natural weather event in the United States. In fact, studies show that around 10% of land in the United Stated is subject to flooding.

Although flooding is more common during the warmer months, floods can occur at any time of the year from weather events including:

- Slow-moving storms producing rain for long durations.
- Flash floods that quickly produce large amounts of precipitation in areas with mountains and steep slopes.
- Catastrophic events such as hurricanes, dam/levee bursts and nor'easters.

In the past, the site selection for school buildings may have included a decision to accept a level of flood risk based on the frequency and probability that a flood may occur in the future. Although this may drive down initial costs by purchasing or accepting a donation of land at risk for flooding, costs related to construction modifications, repairs or increased maintenance can often become significant to adequately protect or even replace the building in the event of flooding.

RISKS

Schools that exist in flood-prone areas can be affected by any number of site-specific flood hazards including site damage, structural damage, saturation damage, utility damage and contents damage.

- **Site damage** can include significant erosion that may threaten permanent structures, debris and sediment damage/removal, damage to playing fields, fences, accessory structures and football stadiums.
- **Structural damage** can occur to upheaving floors and load bearing walls.
- **Saturation damage** occurs from long durations of water saturation, causing wood members to decay, corrosion to metal and damage to other building materials such as drywall, insulation and flooring.
- **Utilities** such as HVAC, gas-fired equipment, plumbing, fuel storage tanks and electrical systems exposed to flooding may need extensive repair/cleaning or complete replacement.
- **Mold growth** from water intrusion can pose serious health risks to building occupants.
- **Building contents** including valuable art, important records/files, computers and servers, lab equipment and buildings/maintenance supplies can become damaged and unrecoverable when subjected to flooding.

BEST PRACTICES/ACTIONABLE ITEMS

Preventing damage to property not constructed to withstand flooding may be difficult; however, with adequate planning and preparation, steps can be taken to reduce the amount of damage caused by flooding.

Routine Maintenance and Building Inspections:
- Routinely clean roof drains and storm drains throughout the property and ensure that parking lots slope away from structures.

- If you notice areas throughout your exterior that frequently develop sheets of ice from standing water over the winter, it is likely these areas also will pool water during the warmer seasons.
- Provide sump pumps for vulnerable areas and backup generators to keep critical systems functional during outages. All emergency systems should be visually inspected and tested on a routine basis to ensure functionality.
- Complete daily building checks during periods of severe weather and continue to monitor emergency systems for flash flood, flood watch and flood warnings in your area.

Utility Modifications:
- Relocate vulnerable utility installations to an area at least 2 feet above the flood protection elevation for your property where possible.
- Elevate HVAC utilities to prevent the inflow of floodwater.
- Elevate electrical panels, backup generators, transformers and electrical control equipment in vulnerable areas. Ensure these control panels can be safely accessed and shutdown before floodwaters can affect the property.
- Boilers, heat pumps and furnaces may also be elevated on platforms to avoid flood damage.
- Install backflow preventers in sewer lines and inspect these devices on an annual basis.

Building Modifications:
- Replace vulnerable interior walls and flooring with flood-resistant construction.
- Relocate valuable artwork, important files, servers and computers to a higher story or secondary location.

Developing and implementing a formal severe weather preparedness program will allow you to better protect your property and employees. During development, or modification of existing programs, consider consulting with your solicitor, local codes office and an engineering firm familiar with applicable building codes.

For more information from FEMA regarding flood preparedness for schools, visit
https://www.fema.gov/pdf/plan/prevent/rms/424/fema424_ch5.pdf

KEEPING UP WITH HOUSEKEEPING:
SAFE WORKPLACE
ORGANIZATION AND STORAGE

By Edgar Boord

Clutter and haphazard organization can be one of the biggest contributors to trips and falls, as well as other incidents, in the workplace. Storage areas, boiler rooms, maintenance areas, walk-in coolers/freezers, and even classrooms can often get to the point where it becomes difficult to navigate safely.

Proper storage has become even more difficult to keep up with during the current COVID-19 pandemic due to classrooms being changed to accommodate social distancing guidelines. The occasional reorganization and cleanup of an area can only go so far to reduce clutter and the incidents that stem from that issue. In this article, we will explore the development of a strong housekeeping program, as well as what you can do to keep your area neat and organized.

The Risks

- **Slip, trip and fall accidents** from clutter and obstructed walkways.
- **Strain injuries** while carrying or moving materials.
- **Cuts/lacerations** from sharp materials not properly stored.
- **Concussions** resulting from a fall or falling materials.
- **Bodily injuries** from being pinched by or caught between falling/shifting materials.
- **Obstructed egress** during a situation requiring emergency evacuation.
- **Obstructed access** to emergency and other equipment (i.e., fire extinguishers, emergency stops, electrical disconnects).

Building an Effective Housekeeping Program

Without a functional program to assure the important aspects of proper housekeeping, informal efforts can easily begin to diminish over time.

The program should include each area of the school building (including exterior) where there is any amount of foot traffic, as well as areas used for storing materials and equipment. This can also include hallways occasionally used for storing excess materials on an as-needed basis. The program should be specific to each area, providing a breakdown on areas to keep clear, where materials should be properly stored, and at what frequencies employees should perform housekeeping duties. The program should not only highlight weekly and/or monthly efforts, but also daily organization to reduce the amount of efforts needed on a weekly or monthly basis.

The program's effectiveness is very much dependent on enforcement from supervisory personnel. These individuals can also be key to developing the program as they may better understand the organization needed for their respective areas. Once the program is developed and ready for implementation, communicate to supervisors the importance of the program and their role in enforcing it.

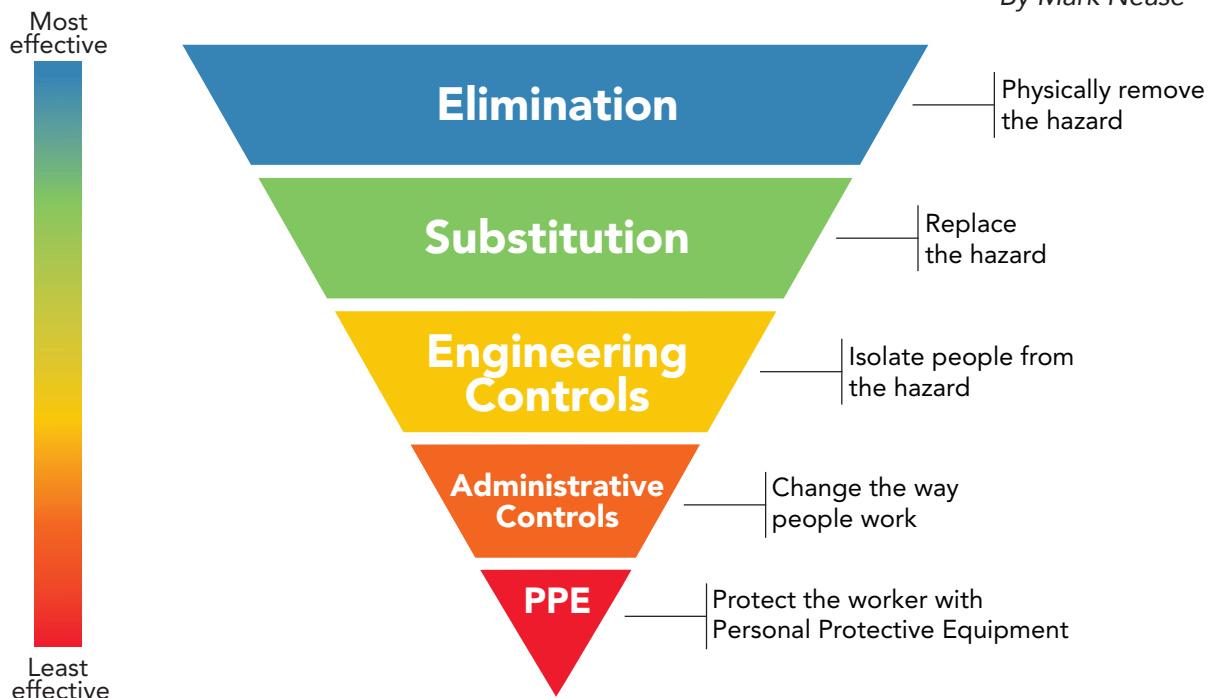## What You Can Do to Keep Your Area Organized and Clutter-Free

The safety of yourself and your co-workers starts with you. Aside from weekly and monthly housekeeping duties, simple daily efforts to keep your workstation and work area neat and tidy can go a long way in reducing potential for an incident. If you notice clutter on or near a high foot traffic or work area, taking the time to neatly stack boxes/materials, pick up trash, or return tools/equipment to their storage location can be incredibly helpful. Taking five or 10 minutes to clean up your work area before leaving for the day can be the difference between you or your co-worker going home safely, or a trip to the emergency room.

- Risks from poor housekeeping can range from a minor incident to a severe and costly injury.
- A formalized housekeeping program can be incredibly helpful in maintaining proper storage and reducing clutter.
- All areas of the workplace should be assessed to understand what housekeeping efforts are needed.
- Supervisory personnel should be consulted while developing the program and play a vital role in implementation and enforcement.
- Encouraging employees to spend a few minutes organizing and cleaning up their workstations and work areas can be incredibly beneficial in reducing clutter and lowering incident potential.

Hierarchy of ^Risk Controls*

By Mark Nease

Most effective

Elimination	—	Physically remove the hazard
Substitution	—	Replace the hazard
Engineering Controls	—	Isolate people from the hazard
Administrative Controls	—	Change the way people work
PPE	—	Protect the worker with Personal Protective Equipment

Least effective

Through your accident investigation, you have revealed root causes that contributed to the accident/illness. Now it's time to come up with controls to help prevent a recurrence.

What controls are best?

A best practice in risk control is to follow the "Hierarchy of Controls" when considering measures to protect the health and safety of staff. See the NIOSH Hierarchy of Controls' pyramid (above). The theory behind the hierarchy of controls is that the controls at the top layers are more effective than those at the bottom layers; and should be considered first. Always resist the temptation to select control methods based only on their ease of implementation, which are usually controls that fall in the bottom layers.

Elimination Controls

As NIOSH indicates in their pyramid, elimination is a method of permanently removing the hazard. Once you eliminate the hazard, you no longer have to rely on people to use their judgment in working safely.

It is good to try to achieve control methods in this category. Here are some examples of elimination controls:

- Exposed metal bars/rebar used in landscaping is an impale hazard, a dangerous condition. Eliminate the hazard by permanently removing all exposed metal bars from your grounds.

- Vacuum cleaner electrical cords can be a trip hazard when in use. Eliminate vacuum cleaner cords by using cordless vacuum cleaners.

- Eliminate the need for custodial staff to use a slippery floor wax stripping chemical by installing flooring that does not require wax coatings.

- Eliminate the risks of slips when mowing slopes by using grading and landscaping techniques so that the grading no longer requires mowing.

- Eliminate fryers in kitchens to prevent grease fires and/or grease burns.

*Source: https://www.cdc.gov/niosh/topics/hierarchy/default.html

Substitution Controls

When a substitution control is implemented, the hazard may still exist, but the risk of injury has been reduced. Here, you will substitute a material or process for a less hazardous one. Here are examples of substitution controls:

- Purchase supplies of rock salt, topsoil, etc., in 30-pound bags instead of 60-pound bags to reduce the risk of strain injuries. Note that you also need to incorporate administrative controls to ensure staff do not lift more than one 30-pound bag at a time.
- Select water-based paints over solvent-based paints to reduce the risk of respiratory and fire hazards.
- Use safer cleaning chemicals (based on Safety Data Sheet information) over the more hazardous cleaning chemicals.
- Replace heavy vacuum cleaners, wet mops, etc., with lighter-weight models to reduce the risk of cumulative trauma disorders to staff.

Engineering Controls

An engineering control isolates the person from the hazard, such as using a barrier/guard between the person and the hazardous source or, if an air contaminant, through implementing local exhaust or general ventilation. Here are examples of engineering controls:

- Install or maintain guarding on work tools and equipment to prevent the operator from making contact with the machine's point of operation.
- Use biohazard sharps' containers for disposal of spent needlesticks to prevent a needlestick injury.
- Install railing at loading docks, storage lofts and bleachers to prevent an accidental fall.
- Install local exhaust ventilation systems at vocational classroom workstations to capture air contaminants before the operators breathe them in.

Administrative Controls

An administrative control focuses on behavioral changes, such as through the implementation of work policies or rules, safety training, use of signage or the scheduling of work tasks. An administrative control can be less effective since people may fail to abide by the implemented policies/rules. Here are examples of Administrative Controls:

- Schedule summertime grounds' maintenance work for early morning when it is cooler to reduce risk of a heat illness.
- Require two persons to perform certain tasks, such as lifting/folding cafeteria tables.
- Designate staff who are permitted to gain access to the school building roof for maintenance work and prohibit non-designated staff from roof access. This rule would require strict enforcement to reduce the risk of a "fall from the roof" accident.
- Implement the use of signs to warn of slippery conditions.
- Have staff trained on bloodborne pathogen exposure prevention.

Personal Protective Equipment (PPE) Controls

Selecting PPE is the last layer in the hierarchy of controls for your consideration of risk control techniques. Although quick and easy to implement, PPE controls can fail for many reasons, such as:

- Improper fitment for each individual.
- Uncomfortable to the employee which can result with non-compliant use.
- Lack of the employee's understanding of its necessity, leading to non-compliant use.
- Can become less effective in protecting the user as it wears out.

The next time that you find yourself thinking of methods to control a risk, always consider the hierarchy of controls' pyramid, beginning with elimination control methods.

Wellness Programs and Potential Workers' Compensation or Liability Exposure

By Kyle Stewart

Many organizations have created wellness programs to provide activities that promote healthy behaviors. Potential benefits of a healthier workforce include reduced risk of work-related injuries which may indirectly be attributed to staff members' general health conditions.

The potential for work-related injuries extends beyond activities attributed to wellness; particularly those activities considered as high impact.

Employers may incentivize participation in wellness program activities through:

- Reduced medical insurance premiums.
- Reduced fitness center memberships.
- Providing a fitness center at the place of employment for use by staff before, during or after work hours.

Risks

Employees who sustain an injury during the course and scope of employment may be entitled to workers' compensation benefits.

If an employer sponsors a team of employees to participate in an activity outside the workplace (i.e., basketball, bowling, softball, etc.) and an employee is injured, the activity may be considered an "Employer-Sponsored" activity in which workers' compensation benefits may be applicable.

Although the employer's intention is to promote a healthier workforce by providing wellness opportunities for staff to participate in during the workday, employers should evaluate these activities and the potential for workers' compensation claim(s) and/or liability exposure due to staff members' participation.

- Employers should use caution in incentivizing wellness programs.
- Courts may interpret that the wellness activities falls within the scope of employment which may increase insurance exposure.

Activities perceived to build comradery between staff members and/or staff and students may also potentially result in work-related injuries. These activities may include:

- "Staff versus Students" activities (basketball, volleyball, dodgeball, etc.).
- Staff chaperoning a student club and participating in an off-site high impact activity (trampoline park, skiing, ice skating, challenge ropes course, etc.).
- Staff members using your school entity's fitness center/equipment during assigned work hours.

Best Practices/Actionable Items

Evaluate any existing or planned extracurricular/wellness activities that pose an increased risk of exposure to sustaining work-related injuries; consider alternate low impact activities.

- Prior to approval or implementing a wellness program, seek guidance from your licensed insurance producer representative on insurance coverage/exemptions under your insurance policies.
- Consult your solicitor/legal counsel prior to drafting and implementing a policy on wellness activities permitted to be conducted by staff members.

  –The policy should delineate approved activities, process to obtain approval of activities and when approved activities are permitted (i.e., outside work hours).

- If staff members are permitted to use your facility's fitness center/equipment, the following practices should be considered:

  –Only permit staff to use the fitness center/equipment before or after their work shift or contracted work hours.

  –Staff members sign acknowledgment (i.e., Hold Harmless Agreement) consenting your educational entity is not responsible for personal injury incurred while using the fitness center/equipment.

  –Require a minimum of two individuals to be present when the fitness center/equipment is in use.

  –Before permitting staff members to use the fitness center, they should receive orientation and training on proper use of fitness center equipment.

Refrain from approving high impact activities that staff members will participate in and/or conduct within the course and scope of their work/contracted hours.

- Take steps to ensure these activities are not endorsed or school sanctioned events.
- Participation in these events should occur outside of work hours and staff members should assume the risk of injury if electing to participate on their own personal time outside of the workday.
- If staff members are permitted to use your entity's fitness center/equipment, consider hiring a credentialed third-party vendor to operate and oversee the fitness center activities.
- If sponsoring a wellness program, consider acquiring a third-party entity to manage the wellness initiative to minimize your liability exposure.

THEATRE RIGGING INSPECTION

By Derek Neubauer

The auditorium is among the most visible locations of each school district. Used for plays, musicals, board meetings and classes, the auditorium is a hub for the community. Most people don't see what is done behind the scenes to keep the auditorium running smoothly. This article will focus on an inspection that is commonly forgotten or that some school districts may not know exists: stage/theatre rigging inspections.

Stage rigging (counterweight rigging) describes the mechanisms used to lower and raise the pipes over the stage. These pipes (battens) carry stage lights, curtains, acoustical shells and sometimes scenery.

Most maintenance issues are obvious in an auditorium (lights, seating, stage housekeeping and prop equipment), but theatre rigging is often neglected because it is only seen by accessing the stage area.

Risks

- Accidents and "near misses" can occur rarely but a resulting injury from falling objects due to neglected stage rigging infrastructure can be catastrophic in actual injuries or property damage.
- An injury that results from theatre rigging maintenance/inspection neglect will most likely put the school district on the front page of the newspaper or at the top of any local TV news program for all the wrong reasons.

Inspection

- Theatre rigging inspections should be performed annually, documented and kept on file. The ongoing frequency of future inspections should be determined, based on age of the rigging and use, by the inspector in accordance with the American National Standards Institute (ANSI E1.4-2014).
- A written post-inspection report should be given by the inspecting agency. All modifications/corrections should be prioritized in accordance with the inspector's recommendations. The most hazardous conditions must be taken care of first.
- Once the modifications and corrections have been completed, a certificate should be received and documented with the written report. The certificate also should be posted on the stage area.
- A preventative maintenance schedule should be established with the conclusion being the annual inspection by the outside inspector.

If a stage/theatre rigging inspection has never been completed or has not occurred for some time, then corrections may prove costly. That's why a schedule for these types of inspections is so crucial, so maintenance can stay current with the corrections that may be needed to pass an inspection.

The ASNI standard can be found for free at https://www.sapsis-rigging.com/Tech/standards/E1-4_2014.pdf

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