

# **Houghton College**

## **Fire Safety Plan**

### **Introduction**

Fire safety is an important area of concern for Houghton College. The potential for loss of life or injury from a fire-related incident is a serious risk. In addition, few occurrences on campus represent a greater potential for property loss than a serious fire or explosion. This plan takes a proactive approach to recognizing and evaluating fire safety risks and instituting appropriate steps to remove or reduce them.

An effective fire safety program requires sufficient resources to attain code compliance, education of the campus community in fire safety practices, and enforcement to correct fire safety violations. Beyond basic life safety code compliance, fire safety should be a primary component in the design and construction of new or renovated campus buildings. Equally important are the inspection, testing and maintenance of alarm systems, sprinkler systems, emergency signs and lighting, inspection of smoke detectors, and maintenance of fire suppression equipment. Fire risk analysis and fire prevention programs are also key components of a comprehensive fire safety program.

This plan is designed to provide guidelines for identifying, monitoring, and addressing fire safety issues at Houghton College. The plan describes emergency procedures, fire safety equipment, drills, inspections, training and procedures that reduce the possibility of fires. This plan is evaluated annually and revised as needed by the Director of Facilities and the Director of Safety and Security.

The rules, regulations, and recommendations in this manual are in conformity with codes established by the National Fire Prevention Association (NFPA), The New York State Office of Fire Prevention and Control (OFPC), the New York State Education Code, and the Occupational Safety and Health Administration (OSHA).

### **Reporting**

All building fires will be reported to both the New York State Department of Fire Prevention and Control and included in the annual report with the Federal crime and fire registry.

### **Fire Detection and Warning Equipment**

#### **Fire alarms**

Manual pull-stations are located along the means of egress, usually at exit doors, to provide a means to alert occupants to a hazardous condition. All alarms in academic buildings and auxiliary buildings are connected to the Safety and Security Office. To reduce malicious alarms, some stations may be equipped with covers (STOPPERS) that sound an internal alarm when the cover is removed.

**Testing.** Fire alarm systems are installed, repaired, and tested by Houghton College Department of Facilities as well as some outside contractors. All horns are checked for operation. In accordance with NFPA regulations, an outside contractor tests the alarms in the Residential Halls annually. Problems are corrected as quickly as possible. Records are maintained in the maintenance office concerning all tests.

**False Alarms.** Persons who knowingly cause a false fire alarm endanger the lives of others and may cause damage to the persons and equipment responding to the false alarm. This is a violation of New York State law and could result in fines and/or jail terms. Persons maliciously activating fire alarms or fire detection equipment will be severely disciplined which may include dismissal from student residence, expulsion from school, and/or criminal prosecution.

**Investigations.** The Department of Safety and Security and a Houghton Volunteer Fire Department Line Officer will investigate all fire alarms to determine the cause and to prevent recurrence. A fire incidence report is completed by the Resident Director in Residence Halls and forwarded to the Safety and Security Office for review. In buildings with safety coordinators, those individuals are responsible for assisting the Safety and Security Office in preparing those reports.

**Smoke Detectors**

Smoke detectors respond to both visible and invisible products of combustion and sense fire at the earliest practical detection stage. Smoke detectors are used for numerous fire alarm functions ranging from warning occupants to automatically closing doors.

**Residential buildings** have detection/suppression equipment as follows:

<b>Building</b>	<b>System in common areas</b>	<b>Building/HVFD alerted</b>	<b>System in sleeping areas</b>	<b>Building/HV FD alerted</b>
Gillette	Hard wired smoke	Yes	Battery operated	No
Lambein	Hard wired smoke	Yes	Hard wired smoke	Yes
Roth	Hard wired smoke heat w/ sprinkler	Yes	Hard wired smoke heat w/ sprinkler	Yes
Shen	Hard wired smoke	Yes	Battery operated	No
Brown	Battery operated	No	Battery operated	No
Equestrian	Battery operated	No	Battery operated	No
Flats	Hard wired smoke heat w/ sprinkler	Yes	Battery operated	No
Hazlett	Hard wired smoke	Yes	Battery operated	No
LH	Hard wired smoke	Yes	Battery operated	No
Perkins	Hard wired smoke	Yes	Battery operated	No
Randal	Hard wired smoke	Yes	Battery operated	No

Battery powered and hardwired smoke detectors are also located in certain academic buildings and off-campus buildings. Some smoke detectors are connected to the fire alarm system and provide many functions such as shutting down air handler units, elevator recall, and release of magnetic door holders. These detectors are powered by the building fire alarm power source.

**Inspections.** Battery powered smoke detectors in student rooms should be tested weekly to ensure proper operation. Students are responsible for checking their own smoke detector. Any problems should be reported to the RD as soon as possible. The Resident Director inspects all room smoke detectors during school closings (Thanksgiving, Winter Break, Spring, Summer). Inspections are documented and sent to the Safety Office for review. The Department of Facilities is notified of problems and will correct deficiencies. An outside contractor inspects Hardwired smoke detectors in the Residence Halls annually.

**Maintenance.** In order for smoke detectors to function properly they must be periodically cleaned and tested. Resident Directors change batteries as needed. The Department of Facilities routinely changes batteries twice a year. Dust accumulates in detectors over time and reduces the ability of the detector to detect smoke. Simple vacuuming on a regular cycle increases life expectancy and reliability. Hardwired smoke detectors in the Residence Halls are cleaned and tested by an outside contractor annually to ensure the sensing chamber and alarm circuits function properly.

**Abuse.** Misuse, deactivation or tampering with smoke or heat detectors is prohibited. Smoke detectors must not be covered or blocked. Nothing may be attached to the wiring of hardwired detectors.

### **Heat Detectors**

Heat detectors typically operate when a preset temperature has been reached or a rapid temperature change occurs. Heat detectors are the least expensive fire detectors and have the lowest false alarm rate. They are also the slowest in detecting fires.

**Locations.** Heat detectors are frequently found in mechanical rooms, storage rooms, attics, and other normally unoccupied areas. These devices are also found in kitchen areas and bathrooms where smoke and steam could cause smoke detectors to give false alarms.

**Inspection and Maintenance.** An outside contractor tests heat detectors annually.

### **Fire Suppression Equipment**

Houghton College maintains appropriate fire suppression systems in each building to include: fire extinguishers, sprinkler systems, standpipes and interior hose packs. The various fire suppression systems are inspected on a routine basis by the maintenance personnel and by external contractors. Deficiencies noted during the inspections are reported and appropriate repair or replacement is made.

## **Portable Fire Extinguishers**

Portable fire extinguishers are the first line of defense against a fire. They are designed to extinguish or contain a small fire or open an escape route. Portable fire extinguishers are not designed to fight a large or spreading fire. Fire extinguishers should be used after the evacuation plan has started. If you know how to use an extinguisher, locate and identify the ones in your area - before you need them.

**Operation.** Fire extinguishers should only be used by persons trained in their proper use. If you have the slightest doubt, get out and call the fire department.

- Never fight a fire if:  
The fire could block your escape route.  
You are unsure of the proper operation of the extinguisher.  
You are in doubt that the extinguisher is designed for the type of fire or is large enough.
- Fight the fire only if all of the following are true:  
The fire department has been notified.  
The area has been evacuated.  
The fire is small and confined to its immediate area of origin (wastebasket, sofa, small appliance).  
You have a way out and can fight the fire with your back to an exit.  
You have the proper extinguisher and know how to use it.  
You use careful judgment and get out fast if the fire starts to spread.
- To operate a fire extinguisher, recall the word **PASS**:  
**PULL** the pin by grasping the extinguisher neck in one hand and removing the pin with the other.  
**AIM** the nozzle, hose, or horn at the base of the fire.  
**SQUEEZE** the handle to release the extinguishing agent.  
**SWEEP** from side to side at the base of the fire until it is out.

**Responsibilities.** Approximately 375 portable fire extinguishers are located throughout the campus. Houghton College Department of Facilities is responsible for inspecting, testing, and refilling fire extinguishers. The Safety and Security Office is responsible for the training of their proper use.

**Types of fire extinguishers.** Fire extinguishers vary in type based upon the extinguishing agent they contain. Every extinguisher must be clearly labeled to show the classification of the fires it is effective against. Water fire extinguishers must be labeled to indicate that they cannot be used on electrical fires. Pictograms show in blue the type of fire the extinguisher should be used against. Fires on which the extinguisher should not be used are shown in black with a red slash through the pictogram. Extinguishers may carry labels, pictograms or both.

Class A. Class A fire extinguishers are used to extinguish fires in ordinary combustibles such as wood, paper, cloth, rubber, and plastics. These extinguishers should not be used on electrical, flammable liquid or combustible metal fires. Extinguishers effective against type A fires contain water or a special dry chemical agent.

Class B. Class B fire extinguishers are effective against flammable liquids and gas fires such as solvents, oil, gasoline, and grease. Dry chemical agents, carbon dioxide, and halogenated agents are typically used. Water will only spread a flammable liquid fire and should not be used as an extinguishing agent for Class B fires.

Class C. Class C fire extinguishers are used to extinguish fires involving energized electrical equipment. Non-conducting agents such as dry chemical, carbon dioxide, or halogen compounds are used. Water should never be used to extinguish an electrical fire.

Class D. Class D fire extinguishers contain a special granular formulation that is effective against combustible metal fires such as sodium, potassium, magnesium, and lithium. Normal extinguishing agents must not be used against combustible metal fires because they may increase the intensity of the fire.

Class ABC. Class ABC fire extinguishers will put out most types of fires that could start on campus- wood, paper, flammable liquids, and electrical fire. These extinguishers are also known as multi-purpose extinguishers. Most extinguishers on campus are classified as ABC.

**Location.** Fire extinguishers are installed according to guidelines established by NYSOFPD and NFPA. Laboratories, workshops and other areas in which flammable solvents are used must have an appropriate fire extinguisher. Travel distances should normally be less than 75 feet for ordinary combustibles and 50 feet for flammable liquids.

**Access.** Fire extinguishers should be readily accessible and the location of the extinguisher should be clearly identified. Fire extinguishers must be mounted off the floor and no higher than five feet. Extinguishers weighing more than 40 lbs. should be mounted no higher than 3 ft.

**Inspections.** All portable fire extinguishers should be visually inspected each month. The Department of Facilities replaces missing, discharged or damaged fire extinguishers usually within one week in low hazard areas. Fire extinguishers are replaced within one day in high hazards areas and areas with overnight accommodations. RD's/RA's will report broken glass in fire extinguisher boxes in the Residence Halls to the Maintenance Department.

**Training.** The Safety and Security Office offers training on the proper use of portable fire extinguishers for faculty, staff, and students. Classes can be scheduled by calling the Safety and Security Office on campus at ext. 3330 or 567-9333.

**Maintenance.** Every fire extinguisher is numbered and a record kept showing the inspection date, maintenance date, type of extinguisher, and name of the person performing the maintenance. Upon completion of the routine yearly maintenance the fire extinguisher tag is initialed. Maintenance procedures include a thorough examination of mechanical parts, extinguishing agent and expelling means. Hydrostatic testing is performed within the time specified by the manufacturer according to NFPA 10. An outside contractor does hydrostatic testing.

**Records.** The Department of Facilities is responsible for maintenance of all fire extinguishers, updating hydrostatic testing records and maintaining an inventory of all fire extinguishers. Hydrostatic testing and maintenance records are placed on the fire extinguisher.

**Misuse.** Misuse of fire extinguishers is prohibited. Fire extinguishers are not to be removed from their proper locations or discharged unless there is a true fire emergency. Anyone found tampering with a fire extinguisher will be subject to disciplinary action. Report vandalism and/or discharged fire extinguishers to the Office of Safety and Security.

### **Overhead Fire Extinguishing Equipment**

#### **Kitchen Fire Protection Systems.**

Kitchen systems consist of cylinders of dry or wet extinguishing agent connected by piping to discharge nozzles. The nozzles are located in the kitchen hoods over cooking appliances such as grills and deep fat fryers. The extinguishing agent is activated by manual activation of a pull station or discharge button, or automatic activation of heat activated fusible links in the hood. Systems in the Pioneer kitchen area and Big Al's snack shop are wet systems and will activate the building alarm. Wet chemical systems use a foamy material similar to soap that smothers and cools the fire. The wet extinguishing agent stays in the hood area and does not spread throughout the room.

Fire suppression systems in the kitchens are inspected and cleaned by an outside contractor. Hoods and ducts are cleaned quarterly. Filters are inspected and cleaned quarterly or as needed. Fusible links are replaced every six months. Pioneer College Caterers management conducts periodic inspections to oversee the work of the contractors.

#### **Standpipes and Hose Systems**

The purpose of a standpipe system is to provide hose connections inside the building, usually located in or near stairwells. .

**Use.** Only trained personnel should use the hoses. Standpipe systems should be used with caution because the pressure may be difficult to control. Unless occupants are properly trained, it is best to leave hose lines to fire fighters. Hose connections should be in readily accessible locations, clearly visible, and in good working order.

**Inspections.** An outside contractor inspects standpipes annually for water flow. Inspection records are kept on file in the Department of Facilities office.

### **Automatic Sprinkler Systems**

Automatic sprinkler systems are located in several of the college's buildings. Automatic sprinkler systems consist of a series of pipes and nozzles that distribute water when heat activates the sprinkler heads. Most sprinkler heads activate at 165 F. Only the heads exposed to this heat will discharge. They are typically connected to the building fire alarm systems. Automatic sprinkler systems are extremely effective at preventing fire spread. In terms of life safety there have been no reported cases of multiple deaths occurring in fully sprinkled buildings where the system was operating properly.

**Inspections.** An outside contractor inspects all automatic sprinkler systems annually. Documentation is maintained in the Department of Facilities Office.

**Precautions.** Storage shall be maintained at least 18 inches below the sprinkler head. Sprinkler heads must be kept clean and not painted. Ensure that all heads are pointed down. Do not cover or block sprinkler heads. Piping shall not be used to support ladders, equipment or other materials.

### **Fire Safety Inspections**

**Buildings.** The Department of Facilities and the Office of Safety and Security will conduct a comprehensive inspection of all university buildings annually to ensure compliance with applicable fire codes. Deficiency reports are sent to affected departments for correction.

**Code Compliance.** The NYS Office of Fire Prevention and Control conducts annual inspections in Residence Halls. Corrections are made in a timely manner. If needed, follow-up inspections are made on a monthly basis.

**Equipment.** An outside contractor inspects all pressure-vessel heating units on an annual basis. An inspection certificate will be placed near each piece of equipment. The Department of Facilities inspects all electrical panels, large motors, and air-conditioning equipment annually.

**Fire Protection Equipment.** To ensure safe operation, the Department of Facilities, or an outside contractor, periodically inspects all fire suppression and detection equipment not specifically addressed above.

**Residence Halls.** Resident Directors perform a monthly fire safety inspection using a form provided by the Safety and Security Office. This includes an inspection of all fire extinguishers, storage rooms for combustible materials, hallways for obstructions, exit lights, fire doors, and to ensure that fire evacuation procedures are conspicuously posted. The form is signed and retained in the Residence Life Office. The Safety and Security

Office is notified if the inspections identify fire hazards. The Safety and Security Office may also conduct random inspections of the Residence Halls.

**Building Plans.** Building plans for new and renovated campus construction projects are reviewed by the Local Code Enforcement Officer for compliance with life safety codes and applicable fire safety standards.

### **Fire Hazards in Academic and Residential Buildings**

Fire hazards on a college campus can range from popcorn in a microwave oven to flammable liquids stored in a laboratory. Usually most fires are small and are quickly extinguished. Fires on college campuses are especially worrisome because students are concentrated in classrooms, places of assembly, and dormitories. The practices and procedures discussed below are designed to reduce the potential for fires in academic and residential buildings by controlling combustible materials, reducing ignition sources, and ensuring that means of egress are properly maintained.

### **Prohibited Items**

- Firearm ammunition and explosives (including firecrackers) are not permitted in college buildings.
- Motorized vehicles (motorbikes, mopeds, or motorcycles) may not be stored or parked inside buildings under any circumstances.
- Flammable or combustible liquids such as gasoline, kerosene, charcoal lighter, turpentine, or similar substance may not be stored in any college housing unit. Gasoline is not allowed in any college building.
- The storage of excessive amounts of paper is prohibited in college housing.
- Open or enclosed flame devices including kerosene lamps, stoves, candles, or similar items are not permitted in college housing units.

### **Appliances**

- In the residence halls, several student rooms are wired into the same circuit. To prevent overheating of circuits and possible fires no more than two appliances may be plugged into a single electrical outlet.
- Extension cords are for temporary service only and cannot be used in place of permanent hardwiring. Cords must be routed safely (under carpet, etc.). Spliced, taped, frayed, or undersized cords must not be used. Unsafe extension cords may be confiscated and disconnected. Only approved power strip cords with fusible links are allowed in Residence Halls. Guidance on the use of extension cords is provided to students prior to their arrival on campus.
- Refrigerators are permitted in student rooms if they do not exceed a capacity of 2.5 cubic feet and use less than two amps.
- Halogen lamps, air conditioners, microwave ovens, popcorn poppers, hot plates, heating coils, coffee makers, bread makers, and toaster ovens are prohibited in residence hall rooms. Other appliances may be banned at the discretion of the residence hall staff, Fire Department official, or a Safety and Security officer.
- Irons, coffee pots, popcorn poppers, and hotpots may be permitted in kitchen areas only, if constantly monitored while in use.

- Multiple plug adapters must be U.L. approved and have a built-in breaker that has a maximum load of 15 amps. Cube taps are not permissible.
- Appliances must be unplugged when unattended.
- Appliances should only be used for their intended purposes.
- Any appliance with a damaged cord or plug may not be used in a resident hall and may be confiscated by the residence hall staff or a Fire Department official.
- The air openings of an appliance must remain unblocked.
- No appliances may be used where flammable liquid vapors, or aerosol products are also being used.
- Coffee pots should have an automatic shut off. Coffee pots should be near a door so they can be seen as people walk out of the door.
- Dimmer switches and ceiling fixtures may not be installed.

### **Space Heaters**

- Space heaters must be electric powered. Fuel- powered space heaters (e.g. propane or kerosene) are not permitted.
- Space heaters must be UL (Underwriters Laboratory) approved and have a tip-over shutdown switch.
- Space heaters must be at least three feet from combustible materials.
- Space heaters must be turned-of when unattended.
- Space heaters are not permitted in sleeping units of student residences, laboratories, areas used primarily for storage, and in areas where flammable liquids are present.
- Space heaters must have a thermostat that automatically shuts off when a certain temperature is reached.
- Space heaters must be plugged directly into the wall receptacle.
- The use of extension cords is not allowed with space heaters since they could easily get overheated and cause a fire.
- Place heaters on the floor. Never place on cabinets, tables, or furniture.
- Beware of creating a tripping hazard. Do not place heaters in exits or walkways.
- Do not use hot plates or toaster ovens for space heating.

### **Holiday Decorations**

For personal protection faculty, staff, and students are urged to use good judgment in decorating offices and classrooms so that furniture, posters, fishnets, mobiles, etc., do not create potential fire hazards.

The use of combustible materials for decorations and displays can lead to serious fire hazards. Combustible materials include paper and cloth of all varieties, plastics, and all vegetation. It does not include lumber, peg-board, or paper mache. In order to reduce the potential for fires the following procedures should be adhered to:

- All decorations using combustible materials shall be treated with a flame retardant solution. The label on commercial decorations will indicate if the item has been flame proofed.

- Paper napkins, facial tissue, waxed paper, dried vegetation, wrapping paper, corrugated cardboard, asphalt, tar impregnated paper, and light plastics such as polyethylene film shall not be used inside residence halls because they cannot be effectively flame proofed. No more than 50% of either side of the door may be decorated.
- Paper or other materials must be kept at least 12 inches away from any incandescent or fluorescent bulb. Improvised paper shades for lights are not to be used.
- All electrical equipment (such as lights, wires, plugs, connectors, sockets, etc.) must be UL (Underwriter's Laboratory) approved and in good condition. The use of cube taps and improvised wiring is prohibited. Extension cords are strictly prohibited.
- Open or enclosed flame devices (i.e., candles, kerosene or gasoline lanterns, torches, oil lamps, etc.) are not permitted in residence halls.
- No decorations or displays shall be erected in a way that blocks or obstructs an exit, exit lights, fire suppression equipment, or fire detection equipment. Decorations are prohibited in a means of egress. Do not hang decorations from the ceiling.
- The narrow corridor within the student room that leads to the doorway shall not be obstructed in any way. Furniture and other items shall not be placed near the doorway or impede exit from the room.
- To reduce fuel sources all materials should be promptly and properly disposed after the celebration is over or before leaving on holiday break.

### **Housekeeping.**

Good housekeeping practices can prevent fires, control the spread of fires in case of ignition, and avert injury during evacuation. The following are basic housekeeping requirements:

- Provide sufficient waste receptacles and empty on a daily basis.
- Keep oily rags in a covered metal container.
- Remove litter from hallways, stairways and floors on a daily basis.
- Keep the accumulation of paper and flammables to a minimum.
- Store combustible materials away from heating devices.
- Combustible materials should not be stored in attics.
- Provide sufficient ashtrays in smoking areas.
- Ensure that flammable liquids are stored properly.
- Keep passageways clear of obstacles.
- Do not store materials closer than 18 inches from a sprinkler head.
- Keep fire doors unblocked and do not prop open.
- Do not store materials in stairwells.
- Materials should never block fire extinguishers, sprinklers, and standpipe controls.
- Keep materials at least 36 inches away from electrical panels.

- If no sprinklers are present, piled materials must be kept at least two feet from the ceiling to permit use of hose streams.

### **Exit ways.**

The following procedures are designed to ensure that halls and exits do not present a fire hazard and are maintained according to OSHA and State Fire Code Regulations:

- No obstructions of any kind shall be placed in front of, or upon, any fire escape, balcony, or other exit intended for egress from a fire.
- No aisle, exit access, or stairway in a place of occupancy shall be obstructed with tables, showcases, filing cabinets, coat racks, or other obstructions to reduce its required width as an exit way during the hours the facility is open to employees and the public.
- All exit doors shall be unlocked when the building or a portion of the building, served by the exit, is occupied. Exit doors shall swing in the direction of exit travel.
- Storage of any kind, or use of office or laboratory equipment in hallways is not permitted.
- Permanently attached lockers, display cabinets, etc. may be permitted in some hallways, subject to the approval of the Safety and Security Office.
- Transparent covers on display cabinets must be made of safety glass or other non-splintering material.
- Storage of materials on stairs, landings, or under stairs is strictly prohibited.
- Fire doors separating stairwells from hallways, or smoke partition doors are to be equipped with self-closing mechanisms or automatic release hold-open devices and must be maintained in working order. They are never to be blocked, wedged or tied open.
- Stairways, hallways, and other exit ways including the exterior open spaces to or through which exits lead, shall be kept adequately lighted at all times when the building is occupied.
- Lighting shall provide at least one-foot candles of illumination on walking surfaces.
- The area immediately outside building exits shall be maintained free of material at all times.
- Bicycles and gasoline-operated vehicles are not permitted in hallways, stairwells, or on sidewalks immediately next to exits.
- All exits shall be marked with a readily visible sign. Doors, passages, or stairs that could be mistaken for an exit must be marked with a sign stating "Not an Exit."
- Emergency lighting should be provided for exit floor illumination in case of failure of normal lighting.

### **Public Assemblies.**

These procedures apply to all buildings or portions of buildings used for gatherings of 50 or more persons for such activities as entertainment, dining, amusement, lectures, seminars, etc.

- Employees at places of assembly should be trained in emergency evacuation procedures and know the location of fire exits and portable fire extinguishers.
- If evacuation is necessary in lecture halls or auditoriums, an announcement should be made from the podium. The wording of the announcement should be established before the event and a specific person should be designated to make the announcement.
- In lecture halls or auditoriums an announcement shall be made 10 minutes before the start of the program concerning the location of fire exits. Instead of an announcement the location of fire exits may be provided in the program literature, if approved by the Safety and Security office.
- Enclosed flame devices may be used for ceremonies, theatrical performances, and the like, if approved by the Safety and Security Office. Open flames are not allowed.
- Candles may be used on tables for food service events if securely supported on substantial noncombustible bases located in a way that avoids a danger of ignition of combustible materials. Candles must be continuously monitored.
- The storage or use of flammable liquids in assembly areas is prohibited.
- Stage settings made of combustible materials must be treated with flame retardant materials.

### **Bonfires**

Permission must be obtained from the Safety and Security Office at least 5 working days before starting a bonfire on college property. Methods of extinguishing the fire, such as a shovel with dirt, sand, or some source of adequate water, must be located near by and must be accessible at all times. Only seasoned dry firewood may be used. The fire must be ignited by paper. Hydrocarbon fuels are prohibited. The fire must be put out before leaving. The bonfire's dimensions should be limited in size to 5 ft X 5 ft X 5 feet (before ignition) and must be at least 200 feet from any structure. Only the Safety and Security Office may approve larger bonfires. The Safety and Security Office will notify the Houghton Volunteer Fire Department in advance of the event.

### **Pyrotechnical Devices.**

The Safety and Security Office and the Town of Caneadea must approve the use of any pyrotechnical device. This includes pyrotechnical devices provided by vendors licensed by other states. The vendor or operator of the venue are required to submit appropriate permits and insurance documentation to the Town of Caneadea a minimum of fifteen (15) workdays in advance of the date the pyrotechnical devices are to be used. The Town of Caneadea will determine whether an on-site inspection is required before issuing approval. Specific guidance on the type of documentation required may be obtained from the Safety and Security Office. The Safety and Security Office will also assist in coordinating the approval process. Violation of the requirements can result in a fine and/or imprisonment.

### **Recreational Fires (Cooking and Other Open Burning)**

Open burning is not allowed without prior approval from the Safety and Security Office or Wilderness Adventure Office, depending on its intended location. Generally, approval

can be granted if the following requirements are met. However, restrictions may apply when periods of drought, high wind, low humidity, or other adverse conditions exist.

- Fires are strictly limited in size. Flames may not reach higher than three feet.
- Fires must be confined to approved areas or receptacles.
- Fires must be at least 15 feet from structures and vehicles.
- Methods of extinguishing the fire, such as a shovel with dirt, sand, or some source of adequate water, must be located near by and must be accessible at all times.

Requests for recreational fires in the ropes course/lean-to area may be made to the Wilderness Adventure Office at ext. 4970 or by emailing Sharon Hibbard at [sharon.hibbard@houghton.edu](mailto:sharon.hibbard@houghton.edu). Approval for all other areas must be submitted to the Safety and Security Office a minimum of five working days in advance of the open burning. The request can either be submitted via e-mail to [ray.parlett@houghton.edu](mailto:ray.parlett@houghton.edu) or in writing and sent intra-campus to Safety and Security.

### **Electrical & Mechanical Equipment**

Electrical defects, generally due to poor maintenance, mostly in wiring, motors, switches, lamps and hot elements are the number one cause of fires in industry. Fires in mechanical equipment are usually due to friction and contact with hot surfaces. By adhering to the following guidelines electrical and mechanical fires can be prevented.

- Use only UL or FM approved equipment.
- Install and maintain electrical equipment according to the National Electric Code.
- Establish regular maintenance on equipment.
- Ensure that extension cords and power strips are UL listed, suitable for the application, and only used as a temporary measure.
- Use proper size and type of fuses. Do not by-pass fuses.
- Ensure that terminal connections are clean and tight.
- Use only approved equipment in hazardous locations where flammable vapors, liquids, gases, and combustible dust are present.
- Do not store materials within three feet of an electrical panel.
- Check your work area for frayed wires, ensure that electrical equipment is working properly.
- When an electrical malfunction occurs always have it repaired as soon as possible.
- Do not use temporary or makeshift wiring unless absolutely necessary.
- Properly lubricate machinery.
- Properly adjust and/or align machinery.
- Ensure that hot pipes are clear of combustible materials.
- Provide ample clearance around boilers, furnaces, and heaters.
- Keep soldering irons off combustible surfaces.
- Remove combustible dust and lint from bearings and shafting.
- Keep oil holes for bearings covered.
- Ensure that penetrations through fire walls, floors, or ceilings are fire stopped.
- Do not store combustible materials in mechanical storage rooms.

## **Smoking**

Smoking is prohibited in all college buildings.

## **Flammable Liquids**

Flammable liquids are among the most common occupational hazards found in the work place. Flammable liquids can easily vaporize and form flammable and explosive mixtures in air. The flammability properties of a chemical should be checked before it is used. The danger of fire and explosions can be eliminated or reduced by strict handling, dispensing, and storage procedures.

**Ventilation.** Ventilation is essential to prevent a buildup of vapors that could lead to fire and explosion. Vapors must be controlled by confinement, local exhaust, or general room ventilation. Ventilation systems should be designed to keep the vapor concentration below 25% of the lower flammability level. Room ventilation is normally adequate to prevent the accumulation of dangerous concentrations of vapors if only very small quantities are released.

**Ignition sources.** Flammable liquids should never be heated with an open flame. Containers should always be kept closed to reduce the possibility of flammable vapors contacting an ignition source. When flammable liquids are used, all unnecessary ignition sources should be removed. Ignition sources include open flames, electrical equipment, hot surfaces, and static sparks.

**Smoking.** Smoking is prohibited in areas where flammable liquids are used or stored.

**Warning signs.** "No Smoking" and "Flammable Liquids" signs shall be prominently posted in areas where flammable liquids are used or stored.

**Fire extinguishers.** Appropriate fire extinguishers must be located in work areas using flammable liquids

**General storage.** Flammable liquids should not be stored near heat, ignition sources, powerful oxidizing agents, or other reactive chemicals. Flammable liquids should not be stored near an exit, stairway, or any area normally used for the safe egress of people. Storage in glass bottles should be avoided if possible. If glass must be used, the bottle should be protected against breakage. The quantity of flammable liquids should be limited to what is immediately needed. As much as possible, working quantities should be stored in safety cans. Flammable liquids should not be stored above eye level. Store solvent soaked rags in closed metal containers and empty frequently.

**Flammable Storage Cabinets.** Quantities of flammable liquids greater than 10 gallons must be stored in flammable storage cabinets, approved safety cans, or a properly designed flammable storage room. Approved storage cabinets are designed to protect flammable liquids from involvement in an external fire for 10 minutes. All cabinets must comply with OSHA and NFPA requirements. Metal or wooden cabinets may be used if

they comply with thickness and construction specifications. Maximum storage limits for flammable liquids in approved storage cabinets are 120 gallons. Of this total, only 60 gallons of Class I and Class II liquids are allowed. No more than three such cabinets may be stored in a fire area. Storage cabinets are not required to be vented. Venting a cabinet may defeat the cabinet's purpose of protecting the contents from involvement in a fire for 10 minutes. Cabinets must be labeled in conspicuous lettering "Flammable-Keep Fire Away."

**Safety Cans.** Portable approved safety cans may be used to safely store, carry, and pour flammable and combustible liquids. The main purpose of the safety can is to prevent an explosion of the container when it is heated. Safety cans must be UL listed and FM approved, and properly labeled to identify contents. All approved cans must have a lid that is spring loaded to close automatically after filling or pouring. The lid also acts as a relief valve when pressure builds up in the can. A flame arrestor screen must be inside the cap spout to prevent fire flashback into the can.

**Refrigerators.** Flammable solvents must not be stored in standard refrigerators; explosions may result from the ignition of confined vapors by sparking electrical contacts. These refrigerators should be posted as unsafe for storage of flammable liquids. Only explosion-safe or explosion-proof refrigerators may be used. Explosion-safe or flammable storage refrigerators have been modified to eliminate the spark producing mechanisms. Explosion-proof refrigerators not only protect against flammable vapors inside the unit, but may also be used in rooms that have an explosive atmosphere. These units must be permanently wired to the electrical system.

**Container size.** Flammable and combustible liquids must be stored in appropriate containers according to their classification. Containers of flammable and combustible liquids are limited to the following sizes:

<u>Class</u>	<u>Glass or Plastic</u>	<u>Metal (non DOT)</u>	<u>Metal (DOT)</u>	<u>Safety Cans</u>
Class IA	1 pt	1 gal	60 gal	2 gal
Class IB	1 qt	5 gal	60 gal	5 gal
Class IC	1 gal	5 gal	60 gal	5 gal
Class II	1 gal	5 gal	60 gal	5 gal
Class III	1 gal	5 gal	60 gal	5 gal

**Inside storage rooms.** Bulk quantities of flammable liquids, such as 30 or 55-gallon drums, must be stored in properly designed indoor storage rooms or outside storage areas. Indoor storage rooms containing flammable and combustible liquids must meet the requirements of OSHA Standard 1910-106(d). These standards include spill control measures, spark-proof electrical fixtures, fire suppression equipment, and ventilation requirements.

**Electrical grounding.** Transferring liquids from one metal container to another may produce static electricity sparks capable of igniting the flammable vapors. To discharge

the static electricity, dispensing drums should be adequately grounded and bonded to the receiving container before pouring. Bonding between containers may be made by means of a conductive hose or by placing the nozzle of the dispensing container in contact with the mouth of the receiving container. If the container cannot be grounded, then the liquid should be poured slowly to allow the charge time to disperse.

**Spills.** Appropriate spill kits should be available in work areas using flammable liquids. Materials should absorb the solvent and reduce the vapor pressure so that ignition is impossible.

**Transportation.** Flammable solvents should be transported in metal or other protective containers.

### **Flammable Gas Cylinders**

Compressed gas cylinders are especially dangerous because they possess both mechanical and chemical hazards. Due to the large amount of potential energy resulting from compression of the cylinder, gas cylinders should be handled as high-energy sources and as a potential explosive. In addition, the gases contained in the cylinders are hazardous because of flammable, toxic or corrosive properties. The most common hazard associated with gas cylinders is leakage from regulators that can allow the gas to diffuse throughout the room. Flammable gases can mix with the air and present fire and explosion risks.

**Identification.** The contents of compressed gas cylinders must be clearly identified and bear the appropriate DOT hazard label. Labels should not be removed or defaced. If the labeling on a cylinder becomes defaced, the cylinder should be marked "contents unknown" and returned to the manufacturer.

**Transportation.** Manual transportation of cylinders should always be done with a hand truck. Cylinders should be securely fastened with a strap or rope. The valve cap must be in place. Cylinders should never be lifted by the valve cap or dragged, rolled, dropped, or permitted to strike hard objects or another cylinder.

**Training.** Persons who handle flammable gas cylinders should be adequately trained in the physical and chemical properties of the gas and the proper methods to use the cylinders.

**Storage.** Cylinders shall be stored upright where they are unlikely to be knocked over, or secured by a heavy chain, strap, or base support. Cylinders cannot be stored in stairwells or within a required exit corridor. The valve protection cap must always be in place when the cylinder is not being used. Cylinders should never be stored on their sides or near a heat or ignition source. Storage areas shall be posted with the name of the gases stored, well ventilated and dry. Storage rooms should be of fire resistive construction. Temperatures shall not exceed 130 degrees F. Containers shall not be stored near readily ignitable substances such as gasoline, waste, or bulk combustibles.

Flammable gas cylinders stored inside occupied buildings shall be separated from flammable liquids, highly combustible materials, and oxidizing cylinder by at least 20 ft. or a 5 ft. high wall with a 2-hour fire rating. Flammable gas cylinder both in storage and in use should be kept away from arcing electrical equipment, open flames, or other sources of ignition. Adequate portable fire extinguishers shall be located in storage and use areas and "No Smoking" signs posted. Hydrogen gas systems shall not exceed 400 cubic feet unless the Fire Safety Engineer has approved the system.

**Outdoor storage.** Cylinders may be stored outdoors if adequately protected from the weather and direct sunlight. It is recommended that cylinders be stored under a non-combustible canopy and protected from the ground by a concrete pad.

### **Welding and Cutting**

Because cutting and welding equipment is portable, it brings fire hazards into areas not designated for, or protected against, fire hazards. Often the area near the operation has not been inspected for fuel load. Fires can be started with the generation of high temperatures from the torch and flying hot metal. To eliminate these concerns the college has a "Hot Work" permit system administered by the Department of Facilities. The purpose of the "Hot Work" permit system is to limit fire hazards by establishing safe working procedures. The following procedures pertain to all cutting, welding, or other use of flame or spark producing equipment.

- A hot work permit has been completed and given to supervision.
- An appropriate fire extinguisher is readily available.
- Floor, walls, and ceiling are clear of flammable and combustible materials within 35 feet of the work area or the surface has been covered with a fire retardant cover.
- Floor openings within 35 feet are tightly covered.
- All equipment has been inspected and is in good working order.
- The sprinkler system, where provided, is in service.
- Smoke detectors have been prevented from alarming.
- The nearest manual pull station has been located.
- A responsible fire watch has been assigned to watch for dangerous sparks in the area and the fire watch will remain on the job site for 30 minutes after completion of the job.
- For confined spaces, ensure that appropriate monitoring has been done before entry, mechanical ventilation has been provided, and rescue equipment is available.
- Gas tanks are not taken into a confined space.

### **Fire Drills and Evacuations**

Fire evacuation procedures are a vital part of a comprehensive campus fire safety program. Fire drills are held to familiarize occupants with drill procedures and to make the drill a matter of established routine. Providing well-marked exits does not ensure life safety during a fire or emergency. Exit drills are needed so that occupants will know how to make an efficient and orderly escape. Before a fire, occupants should:

- Know the location of the fire alarm pull stations and how to activate them.
- Know the location of two exits.
- Know the location of and how to use fire extinguishers.
- Post the phone numbers of Safety and Security near their phone.
- Report any tampering or malfunction of fire protection equipment to the Resident Director or the Safety and Security Office.
- Know the location of the predetermined assembly point.
- Keep fire doors closed.

### **Residence Halls**

**Education/Training.** During the Fall Residence Life staff training session, each Resident Director will meet with the Resident Assistants about Fire Safety Officer duties in their particular hall. The Fire Safety Officers duties and responsibilities, and evacuation routes for that particular hall will be explained. The Residence Hall Staff will undergo a series of fire alert training sessions conducted by Residence Life during the fall workshop. Students will be informed of proper fire safety measures and hall evacuation procedures at hall meetings during the first week of Fall Semester.

**Drills.** The Safety and Security Office, in cooperation with the Houghton Volunteer Fire Department, conducts fire drills in the residence halls at least three times per year in accordance with N.Y.S. Education Law § 807 and State Fire Code § SF408.3. The Director of Safety and Security coordinates the fire drills with the Fire Safety Officer of each residence hall and the Houghton Volunteer Fire Department. The Director of Safety and Security will notify the Office of Residential Life at least one day before the fire drill. Personnel will be assigned to check exits, search for stragglers, count occupants once they are outside, and to control reentry into the building. Drills will be conducted under varying conditions (e.g., blocking a fire exit) and unexpected times to help simulate the actual conditions that may occur in a fire. Emphasis will be placed upon orderly evacuation with proper discipline rather than speed. Any person who fails to immediately evacuate the Residence Halls during an alarm will be judicially charged with failure to vacate. The Director of Safety and Security will issue a report to the Residential Life Office after the drill is completed. After the drill, a meeting will be held to evaluate the drill and to solve any problems.

**Evacuation Plans.** Evacuation plans shall be posted on all floors of a Residential Building. The plans will show the locations of fire extinguishers, fire alarm pull stations, and fire exit doors. The plans are conspicuously located and updated as needed by the Safety and Security Office.

### **Procedures for Reporting a Fire**

The person who first discovers a fire should do the following:

- Pull the nearest fire alarm station to alert residents. An alarm will automatically sound in the building affected and in the Safety and Security Office.
- Remove any person in immediate danger.
- Call 911. Give the location and description of the fire.

- If the fire is small, and if you have had training, use the proper type of fire extinguisher to extinguish the fire. Do this only after the evacuation has started and the Fire Department and Safety and Security have been called.
- If you cannot put out the fire, close all doors and exit by the nearest safe exit. Go to the assigned assembly point.
- Do not use elevators.

### **Procedures for Exiting**

- Exit the building as calmly and quickly as possible using the nearest safe exit. Do not use the elevator.
- Alert all persons in your area.
- Close windows and doors, leave the door unlocked, wear a coat and shoes, and take a towel to place over your face in case of smoke.
- Proceed to the assigned assembly area. Remain outside until the appropriate signal is given to re-enter.
- If all exits are blocked go back to your room, close the door and call 911 to report your location.
- If your clothing should catch on fire, DO NOT RUN. Drop and roll to smother the flames.
- Feel the doorknob with the back of your hand before opening any door. If it is hot do not open the door. If the door is warm, brace yourself behind the door, crouch low, and open the door slightly. If heat or heavy smoke is present, close the door and stay in your room. Stay low to the floor.
- R.D.'s and R.A.'s will assist in the evacuation of the floor, close all doors, keep all persons at a safe distance from the building, and direct the fire department to the scene of the fire.
- If the Fire Department responds, they will assume control of the building. Students and staff must give full cooperation to the Fire Department.
- The Resident Director will submit a report of the fire to the Director of Residence Life and the Safety and Security Office within 24 hours of the fire.

### **Emergency Procedures.**

- If you cannot safely leave the room, seal the cracks around the door with wet towels. Call 911 to report your location.
- Open the window a few inches for fresh air and hang a brightly colored cloth or bed sheet out the window to alert the Fire Department of your location. If you have a flashlight use it to signal with at night.
- If smoke gets in your room, keep low and dampen a cloth with water, place it over your nose and breath lightly through it.
- Stay calm. Do not jump from windows above the second floor. Rescue personnel have the proper equipment to get to you quickly.

### **Non Residential Buildings**

**Training.** The Safety and Security Office will train floor monitors, fire safety officers and housekeeping personnel in fire evacuation procedures for academic buildings.

**Drills.** Fire drills in academic buildings are conducted three times annually in accordance with NYS Fire Code § SF408.3.1, § SF408.3.2, and § SF401 through SF406. At least one drill shall be held between September 1 and December 1. At least one of such drills shall use fire escapes, where provided and at least one of such drills shall use alternate routes of egress.

#### **Procedures in the Event of a Fire**

- Pull the nearest fire alarm station to alert occupants. An alarm will automatically sound in the building affected and in the Safety and Security Office.
- Remove any person in immediate danger.
- Call 911. Give the location and description of the fire.
- If the fire is small, and if you have had training, use the proper type of fire extinguisher to extinguish the fire. Do this only after the evacuation has started and the Fire Department and Safety and Security have been called.
- If you cannot put out the fire, close all doors and exit by the nearest safe exit. Go to the assigned assembly point.
- Do not use elevators.
- If the fire involves a laboratory or hazardous waste storage area, report this to Fire Department officials when they arrive and Safety and Security.

#### **Evacuation Plans**

Evacuation plans for non-residential buildings will be posted in all classrooms and hallways. The plans show the locations of fire extinguishers, fire alarm pull stations, and fire exit doors. The plans are conspicuously located and updated as necessary by the Safety and Security Office. At the beginning of each semester, it is the responsibility of instructors to go over the floor plans with each class and direct occupants to the nearest safe exit in case of an actual alarm.