

Construction Compliance: Orientation, Management, and Oversight

Jeff Solvang
Construction Compliance Specialist

Swedish History

- Fire Life Safety Specialist
- Facilities Director
- Condition Level findings
- Board support
- Construction Compliance Specialist
- Safety Officers

Managing Construction Projects

- Facilities “white board”
- Internal projects
- External projects
- Minor to Major
- Databases
- Construction meetings
- Walk bys

Time to Get Organized and Formal

- Redesign formal construction project manager orientation program
- Campus/system Committees to review status and discuss issues
- Individual construction project meetings
- 1:1

Objectives



At the completion of this program you will be able to:

- Discuss the requirements for safely conducting construction, remodel/repair and maintenance projects
- Discuss procedures, permits, forms, processes, and communication methods required for construction and maintenance projects
- Describe how and when to utilize a preconstruction risk assessment (PCRA)/infection control risk assessment (ICRA)/interim life safety measures (ILSM)
- Discuss related procedures such as water intrusion mitigation and response
- Discuss resources and responsibilities for project management and compliance oversight

Contractor Check-In & ID

Always check in with Facilities Engineering. Temporary badges, keys, and radios are available at Engineering and require a driver's license to be left at checkout.

Swedish Badges **MUST** be worn at all times when on Swedish property – clearly visible and above the waist.



Two Levels of Contractor Badging -

- Patient Populated areas: Individuals working in the patient populated environment are required to have a Swedish photo ID badge. This requires Immunization and passing a background check.
- Non Patient Populated areas: Individuals working in sequestered areas are only required to have a temporary Swedish badge which can be acquired upon check-in at Facilities Engineering.

General Safety

Swedish requires that **all** local code, including L&I and OSHA mandated safety practices, be followed on jobsites by all contractors. These include, but are not limited to, the following...

- Proper PPE
- Lock Out, Tag Out (LO/TO)
- Fall Protection
- Confined Space (Protocol / Permits)
- Keep tools secured
- Asbestos & Lead Abatement Protocol
- Eyewash Stations



General Safety Continued...

- No hazardous chemicals unless pre-approved
- Clean and professional attire
- Keep tools secure and covered
- Practice noise mitigation
- No smoking or vaping
- Be polite and respectful to staff and visitors
- Keep all tools and materials in approved storage locations
- Practice HIPAA



Environmental Safety & Infection Prevention

- Keep it clean
- Only use HEPA vacuums
- Practice hand hygiene
- No food on jobsites
- Always keep construction materials and trash covered
- Only use assigned restrooms
- Never enter a patient room without an escort
- Don't come to work if you are sick!



Emergency Codes You Need To Know

Code RED - Fire or smoke

Code PURPLE - Missing adult patient

Code AMBER ALERT - Missing infant – 17 yr old patient

Code ORANGE - Hazardous material spill or exposure

Code TRIAGE – Disaster declaration

Code BLUE - Cardiac arrest

Code GRAY - Disorderly or threatening **patient**

Code SILVER - Actively harming/intent to do harm with a gun OR a hostage situation

Dial 911/3000

If you ever have any safety questions, concerns, or need direction then please ask for help.

We must all work together as a multidisciplinary team to reach our project goals safely and efficiently.



Shutdown Requests

Are required whenever there may be an impact to Fire Life Safety and/or Facilities Support Services.

Shutdown Requests:

- Can be acquired at Facilities Engineering
- Requires advanced notice (See form for details)
- Requires review and approval by Engineering Management



DO NOT proceed with shutdown until you have received written approval from Engineering Services.

**SWEDISH MEDICAL CENTER/FIRST HILL
ENGINEERING SERVICES SHUTDOWN REQUEST**

Complete form with all information. Deliver completed form to Engineering Dispatch Center (North Wing A lvl) 7 days in advance for approval. **DO NOT PROCEED WITH SHUTDOWN UNTIL YOU RECEIVE WRITTEN APPROVAL FROM ENGINEERING SERVICES.** Engineering Dispatch Center 386-2698.

Date Request Submitted: _____
System to be Shutdown: _____
Location of Shutdown: _____
Project: _____

Subcontractor: _____
Point of Contact: _____
Phone and Pager Number: _____
General Contractor: _____
General Contractor POC: _____
Swedish Hospital POC: _____

Date of Shutdown: _____
Time of Shutdown: _____
Time of Shutdown Completion: _____
Details of Shutdown: _____

Engineering Services Approval: YES _____ NO _____
Name: _____ Date: _____
Engineer: _____ Date: _____ Work Order # _____
Special Instructions: _____

Shutdown service

Shutdown Request
forms are available from
Facilities Engineering

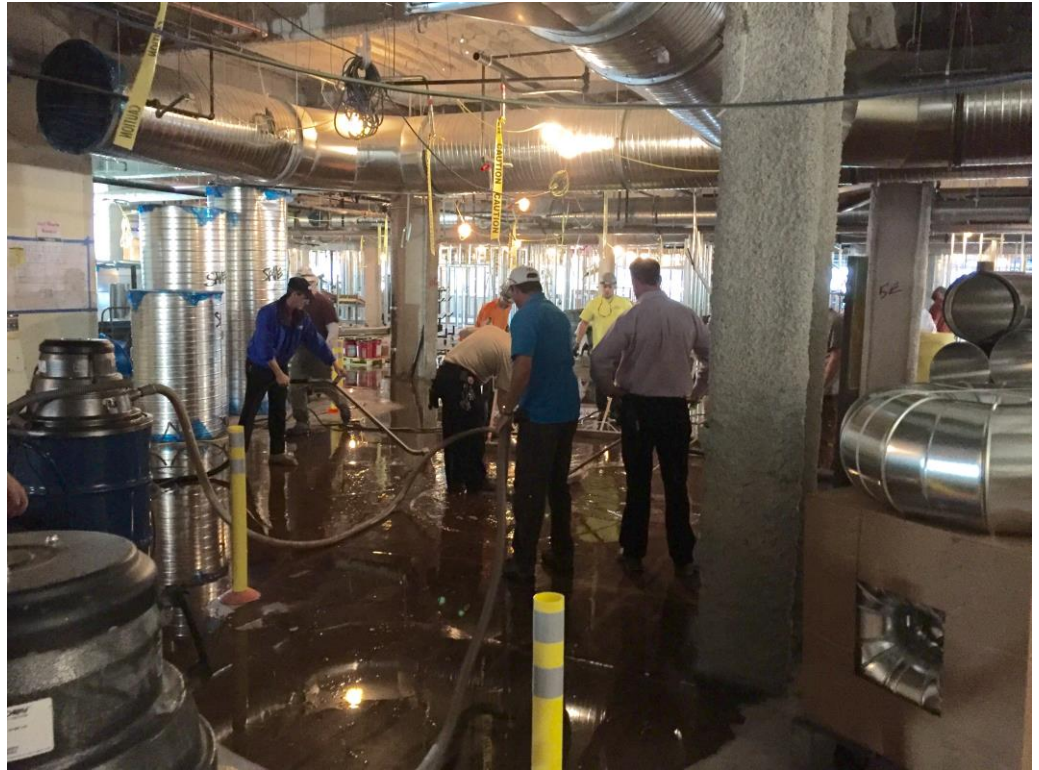
Hot Work Permit

HOT WORK PERMIT	
<p>STOP!</p> <p>Avoid hot work or seek an alternative/safer method, if possible.</p> <p>This Hot Work Permit is required for any temporary operation involving open flames or producing heat and/or sparks. This includes, but is not limited to: brazing, cutting, grinding, soldering, torch-applied roofing and welding.</p>	
<p>Instructions for Fire Safety Supervisor:</p> <p>A. Specify the precautions to take.</p> <p>B. Fill out and keep Part 1 during the hot work process.</p> <p>C. Issue Part 2 to the person doing the job.</p> <p>D. Keep Part 2 on file for future reference, including signed confirmation that the one-hour fire watch and three-hour monitoring have been taken.</p> <p>E. Final signoff is on Part 2.</p>	<p>Part 1</p> <p>Required Precautions Checklist</p> <p>Y NA</p> <p><input type="checkbox"/> The fire pump is in operation and switched to automatic.</p> <p><input type="checkbox"/> Control valves to water supply for sprinkler system are open.</p> <p><input type="checkbox"/> Hose streams and extinguishers are in service/operable.</p> <p><input type="checkbox"/> Hot work equipment is in good working condition.</p> <p>Requirements within 35 ft. (11 m) of hot work:</p> <p><input type="checkbox"/> Ignitable liquid, dust, lint and oily deposits removed.</p> <p><input type="checkbox"/> Explosive atmosphere in area eliminated.</p> <p><input type="checkbox"/> Floors swept clean.</p> <p><input type="checkbox"/> Combustible floors wet down, covered with damp sand or fire-resistant sheaths.</p> <p><input type="checkbox"/> Remove other combustible material where possible. Otherwise, protect with FM Approved welding pads, blankets and curtains, fire-resistant tarpaulin or metal shields.</p> <p><input type="checkbox"/> All wall and floor openings covered.</p> <p><input type="checkbox"/> FM Approved welding pads, blankets and curtains installed under and around work.</p> <p><input type="checkbox"/> Protect or shut down ducts and conveyors that might carry sparks to distant combustible material.</p> <p>Hot work on walls, ceilings or roofs</p> <p><input type="checkbox"/> Construction is noncombustible and without combustible covering or insulation.</p> <p><input type="checkbox"/> Combustible material on other side of walls, ceilings or roofs is moved away.</p> <p>Hot work on enclosed equipment</p> <p><input type="checkbox"/> Enclosed equipment cleaned of all combustible material.</p> <p><input type="checkbox"/> Containers purged of ignitable liquid/vapor.</p> <p><input type="checkbox"/> Pressurized vessels, piping and equipment removed from service, isolated and vented.</p> <p>Fire watch/hot work area monitoring</p> <p><input type="checkbox"/> Fire watch will be provided during and for one (1) hour after work, including any break activity.</p> <p><input type="checkbox"/> Fire watch is supplied with suitable extinguishers, and where practical, a charged small hose.</p> <p><input type="checkbox"/> Fire watch is trained in use of equipment and in sounding alarm.</p> <p><input type="checkbox"/> Fire watch may be required in adjoining areas, above and below.</p> <p><input type="checkbox"/> Monitor hot work area for up to an additional three (3) hours after the one (1) hour fire watch.</p> <p><input type="checkbox"/> Other precautions taken:</p>
<p>HOT WORK BY</p> <p><input type="checkbox"/> Employee</p> <p><input type="checkbox"/> Contractor</p>	<p>3298199</p>
DATE	JOB NUMBER
SPECIFIC LOCATION/BUILDING AND FLOOR	
NATURE OF JOB	
NAME (PRINT) AND SIGNATURE OF PERSON PERFORMING HOT WORK	
NAME (PRINT) AND SIGNATURE OF PERSON PERFORMING FIRE WATCH	
I verify the above location has been examined, the precautions checked on the Required Precautions Checklist have been taken to prevent fire, and permission is authorized for this work.	
NAME (PRINT) AND SIGNATURE OF FIRE SAFETY SUPERVISOR/OPERATIONS SUPERVISOR	
TIME STARTED:	TIME FINISHED:
A.M. P.M.	A.M. P.M.
DATE	TIME
Permit Expires	
<p>Note: Emergency notification on back of form. Use as appropriate for your facility.</p> <p>To order additional hot work permits or other FM Global resources, order online 24 hours a day, seven days a week, at fmglobalcatalog.com.</p>	
<p>FM Global</p> <p>F2630 © 2013 FM Global. (Rev. 02/2014)</p> <p>All rights reserved.</p>	

Red Tag Permit



Water Intrusion



Flood Control Kits

Flood Control Kits are required on every construction project at Swedish unless a risk rating is performed to prove one is not needed based on scope of work.



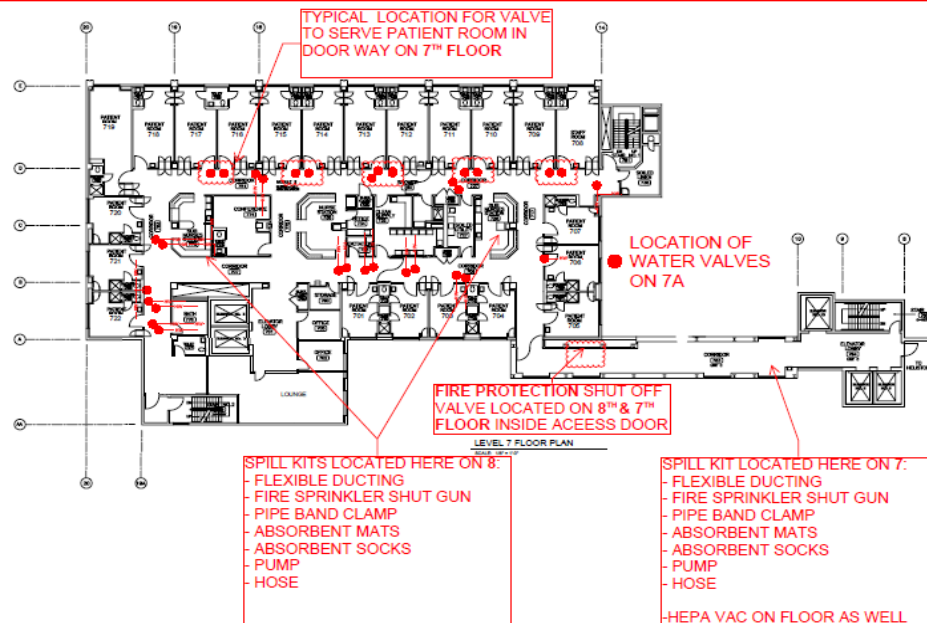
Shutoff Valve Mapping

Plumbing and sprinkler shutoff valves, along with locations of flood kits, are required to be marked on Swedish Life Safety prints and clearly posted at every construction project at Swedish, unless a risk rating is performed to prove one is not needed based on scope of work.

A dedicated ladder and sprinkler stop tools must also accompany these maps.



7th & 8th Floor Valve & Shutoff Location



Contacts

George Schuemann, Mortenson: (360) 708-6102
 Greg Goebel, Mortenson: (360) 929-0982
 John Welch, Mortenson: (425) 299-2183
 Lead Engineer: (425) 261-3700
 Pete Smeltz, Facilities: (425) 261-3746
 Chris Britton, Facilities: (425) 512-7516
 Bianca Gordon, Charge Nurse: (425) 261-3166

What to do if **SPRINKLER** line is struck

1. SEND PERSON TO SHUT OFF MAIN @ C WING HALLWAY
2. SET SPILL KIT UNDER HEAD TO COLLECT WATER
3. PLUG LEAK WITH SHUT GUN DEVICE
4. CALL GEORGE SCHUEMANN - (360) 708-6102 OR GREG GOEBEL - (360) 929-0982
5. SET ABSORBENT PADS TO BEGIN COLLECTING SPILLED WATER. USE SOCKS TO STOP SPREAD
6. CALL PROVIDENCE LEAD ENGINEER (425) 261-3700 AND NOTIFY OF LEAK
8. NOTIFY 7A CHARGE NURSE BIANCA GORDON OF LEAK AND AREA OCCURED (425) 261-3166

What to do if **WATER** line is struck

1. IDENTIFY ROOM & LOCATION WHERE LEAK OCCURED
2. SEND PERSON TO IDENTIFY VALVE LOCATION ABOVE ON 7A AND HAVE THEM HEAD TO SHUT OFF VALVE ON 7
3. LADDER AND SPILL KIT LOCATED ON 7A IN C WING HALLWAY
4. SET SPILL KIT AND DIRECT LEAK INTO CONTAINER WITH FLEXIBLE DUCTING
5. IF POSSIBLE USE PIPE BAND CLAME TO STOP LEAK ON 8A
6. CALL GEORGE SCHUEMANN - (360) 708-6102 OR GREG GOEBEL - (360) 929-0982
7. SET ABSORBENT PADS TO BEGIN COLLECTING SPILLED WATER. USE SOCKS TO STOP SPREAD
8. CALL PROVIDENCE LEAD ENGINEER (425) 261-3700 AND NOTIFY OF LEAK
9. NOTIFY BIANCA GORDON OF LEAK (425)261-3166

Firestopping


Only Hilti firestopping products are to be used when repairing penetrations in smoke or fire rated assemblies. Anyone performing firestopping on Swedish properties are required to be Hilti certified. Hilti offers free firestop training and certification classes - contact your local distributor.

All firestopping must be inspected prior to cover - or if you wanna get paid!



Above Ceiling/In Wall Work Permit

“All construction, maintenance, repair, installation, utility and telecommunications work performed inside the finished ceilings or walls in any SMC owned or occupied facility will be completed and installed such that all building components (i.e. walls, floors, slabs, interstitial space, decking, etc.) are restored to the appropriate smoke or fire rated condition as required by State and City codes.”

 **SWEDISH**

AUTHORIZED WORK IN PROGRESS

THIS TAG MUST BE CHECKED OUT AND RETURNED TO FACILITIES AT THE BEGINNING AND END OF EACH WORK DAY

☐ **HOT WORK**
☐ **MECHANICAL**
☐ **ELECTRICAL**
☐ **COMMUNICATIONS**
☐ _____

DATE _____

WORK / HOT WORK / PENETRATIONS PERFORMED BY:
NAME _____
SIG. _____

LOCATION / BUILDING / FLOOR: _____

TO BE COMPLETED BY FACILITIES MANAGER OR DESIGNEE

PRE-WORK INSPECTION

I verify that the location above has been examined and all life safety precautions are acceptable and in place prior to the commencement of the job outlined on the Work Permit.

Signature _____ Date _____

FINAL INSPECTION

I verify that the location and the work have been inspected and that all life safety devices are fully functional and the work was performed to an acceptable level of completion.

Signature _____ Date _____

Work Permit Continued...

To monitor and control this type of work, no such work will be performed in Swedish owned or occupied buildings until a Swedish Facilities Work Permit is issued to the person(s) coordinating the work activity.

Appropriately trained staff may be issued a blank work permit by the Facility Manager. This permit may be used to perform work above ceilings as long as that work does not penetrate smoke or fire rated structures or pass material such as cable or pipe through those structures. If it does, the regulator work permit process will be followed.

Fire Watch



A Fire Watch is required whenever Fire Sprinkler or Fire Alarm System is impaired or whenever a Hot Work Permit is issued.

When a dedicated Fire Watch is required to be performed, it will be managed by Facilities Engineering, executed by Swedish Security, or a contractor hired by Swedish.

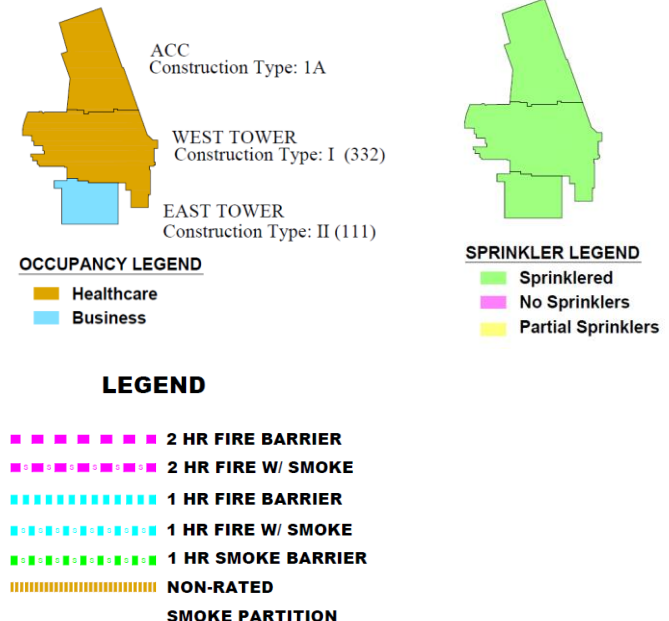
Fire Watch Forms are available from Facilities Engineering.

Two Types of Fire Watch

- **Non Dedicated Fire Watch:** Personnel performing the work or working in the environment where the impairment or hot work is being performed are aware of the same and knowledgeable on the task of extinguishing a fire or initiating notification to first responders.
- **Dedicated Fire Watch:** The sole duty of individuals is to constantly be monitoring all environments impacted by Impairment or Hot Work. No additional job description shall be allocated to these individuals during a dedicated fire watch.



Life Safety Plans are to be referenced and used for PCRA's and way-finding during any projects which will impact or change structural features, egress, or any smoke or fire barriers, including ceiling tiles.



Life Safety Prints Include...

- A legend clearly identifying fire safety features
- Fire-rated barrier locations
- Smoke barrier/smoke compartment locations
- Hazardous area locations
- Sleeping and non-sleeping suite boundaries and sizes
- Linen and Waste Chute locations
- Shaft locations
- Approved occupancies and equivalencies
- If the building is partially sprinkler protected, a means of identifying which portions of the facility are fully sprinkler protected

Remember...



‘Defending in Place’ means that you stay in the hospital (instead of automatic evacuation outside), but move beyond a set of fire or smoke doors for protection. These are the set of self-closing, positively latching double doors in hallways. Keep moving to the next smoke or fire compartment, if the threat of smoke/fire continues.

PCRA/ICRA/ILSM

PCRA: Pre-Construction Risk Assessment

ICRA: Infection Control Risk Assessment

ILSM: Interim Life Safety Measure



PCRA's & ICRA's are always required unless performing investigatory inspection. Always verify that a PCRA / ICRA has been performed and is in place on your jobsite.

An ILSM is required any time Life Safety code deficiencies are identified and need to be addressed.

Pre-Construction Risk Assessment

The Pre-Construction Risk Assessment (PCRA) is used to allow those managing a project to assess all risks and hazards associated with construction, demolition, renovation, and maintenance activities to mitigate risks including:

- Air quality impacts,
- Infection control
- Utility requirements
- Fire/Life Safety
- Noise
- Emergency procedures
- Vibration
- Security



PCRA PM Responsibility

The PCRA is initiated and managed by the Project Manager (PM). This person is to be a Swedish employee trained in this risk assessment/mitigation process or working in collaboration with a Swedish person who is trained. Providence Real Estate and Construction (REC) may assign a PM; or the Physical Plant/Facilities Manager or a designated Facilities employee may fill that role.

The fully completed PCRA and daily sign-off sheets must be posted at the work site, along with any other critical safety information, for compliance inspection and the general safety awareness of any patients or staff that may be impacted by the work.

Infection Control Risk Assessment (ICRA)

Prior to commencement of a project, an Infection Control Risk Assessment (ICRA) is used to identify infection control risks associated with construction or renovation in a healthcare facility. The assessment determines which, if any, risk controls need to be implemented. The risks are broken down into four easy to identify steps on the ICRA Matrix.

ICRA: Considerations for Contractors

Now that an ICRA has been developed by key hospital team members to ensure that patients, staff, visitors, and contractors are kept safe during the project, what should you be mindful of while working in a Swedish facility?

Anytime you come on-site to work on a project, no matter how small or easy the project, the dust that the work creates must be properly contained and all debris at your job site must be properly discarded. This next section describes the areas of ICRA focus and steps you must take to protect our patients, staff, and visitors during construction.

ICRA: Considerations for Contractors

Swedish uses the APIC Infection Prevention Manual for Construction & Renovation. A copy of the Handbook For Construction Workers On Infection Prevention is used to educate on...

- Containment of Jobsite
- Entry & Exit From Jobsite
- Containment & Transport of Materials
- Cleanup of Jobsite

ICRA: Negative is a Big Positive!

Swedish requires tight barriers and carefully engineered airflow at our construction jobsites to achieve negative pressurization to surrounding areas. Don't ever settle for close enough on barriers or neutral air pressures! Exhausting HEPA filtered air directly outside is always preferred, but there are other safe ways to achieve negative airflow.

Attention to detail is critical, don't be like this guy...

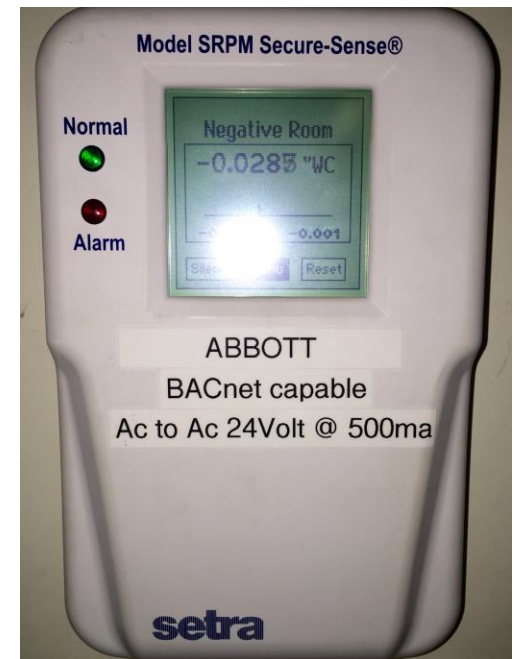


ICRA: Pressure Monitoring

Swedish requires calibrated Setra manometers, tied to Building Automation Systems (BAS), to monitor negative pressurization on all construction jobsites.

Required Pressure Differential

- -0.01" w.g. minimum
- -0.03" w.g. in critical areas



Resources at Swedish

- Safety Officer
- Facilities
- Security
- Construction Compliance Specialist
- Regulatory Compliance Specialist

Sustainability

- Orientation of PMs and Contractors
- Annual refresher
- Review of program and associated policies/procedures
- Consequences for non-compliance: is there a hammer?



Major Barriers

- Cutting Corners
- Unknowledgeable PMs
- Untrained / Unmanaged Contractors
- Budget Restraints
- Lack of Resources
- Timeline Pressure
- Operational / Service Line Conflicts

Biggest Rewards

- Assuring Safety
- Averting Disaster
- Contingency Planning
- Averting Immediate Jeopardy
- Teamwork



Questions/Comments

