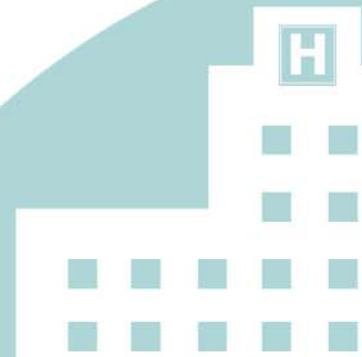


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Working in the Healthcare Environment

Engineering Department



A Partnership between the Construction, Design and Healthcare Community.

Healthcare, What is it all about?

● People

- Patients
- Visitors
- Doctors
- Nurses
- Technicians
- Engineers
- Security
- Housekeeping
- Information Technology
- Directors
- Hospital CEO (he doesn't want phone calls about construction)



Understanding Their Job

- **Care for sick patients (new born to terminally ill)**
 - Testing & Evaluating
 - Births
 - Operations
 - Recovery
 - Therapy
 - Emergency Cases
 - Treatments
 - Families
 - Deaths
 - Keeping the facility running
 - Cleaning
 - Pressure from every side



Things You Might Hear

AHCA
JACHO
CDC
NFPA
AIA Guidelines
ICRA
ILSM
Negative Air
Construction Barrier
Disposable Clothing
Too Much Noise
Fire Watch

Hot Work Permit
Daily Survey
Tacky Mat
99% Filter
Off Limits
Red Bag
MRI
CT
Shutdown Request
Sterile Corridor

Can You Do It Later?

Contractor Issues

- Experience
- Noise
- Education
- Infection Control Orientation
- Mop and Broom Guy
- Clean, Clean, Clean
- Planning



Rules of Holy Cross Hospital

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- Badges must be worn and visibly displayed at all times
- Restroom locations
- Lunch and Break areas
- No offensive language
- Shutdowns
- Hot Work Permit
- ILSM
- MSDS
- Follow the ICRA document
- Above Ceiling Work Permit
- Lock Out Tag Out
- ZERO TOLERANCE FOR OFFENSES

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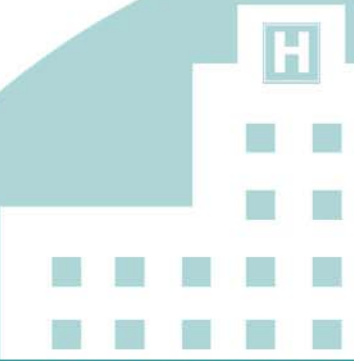
Parking

7th Floor Parking
Garage



FPL Parking
Lot

Parking
South



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Shutdowns

 **Holy Cross
Hospital**

REQUEST FOR: SHUTDOWN, TIE IN, DISCONNECT, AFTER HOURS WORK, WORK IN AN OCCUPIED AREA

Request for Shutdown # _____

This form must be completed and delivered to the Hospital Engineer Department five (5) days prior to any requested shut down. The Engineering Department will notify you within three (3) days of any possible delays or problems.

Type:

<input type="checkbox"/>	Chill Water	<input type="checkbox"/>	Medical Air
<input type="checkbox"/>	Domestic Water	<input type="checkbox"/>	Nitrous Oxide
<input type="checkbox"/>	Electric	<input type="checkbox"/>	Oxygen
<input type="checkbox"/>	Fire Alarm	<input type="checkbox"/>	Sewer
<input type="checkbox"/>	HVAC	<input type="checkbox"/>	Steam
<input type="checkbox"/>	Domestic Hot Water	<input type="checkbox"/>	Vacuum
<input type="checkbox"/>	Other	<input type="checkbox"/>	Fire Sprinkler System

Location: _____

Area Affected: _____

Proposed Date of Work: _____

Time of Work: Start: _____ Completion: _____

Possibility of Work after 3:30pm: Yes: _____ No: _____

Requested by: _____ Title: _____ Emergency Contact #: _____

Received By: _____ Title: _____ Date: _____

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Hot Work Permit

HOT WORK PERMIT

Cutting, Welding, Soldering

Date: _____ Building; Dept. _____

Work to be done: _____

Time Start _____ Completed: _____

The precautions listed below have been completed. Permission therefore is granted for this work. Instructions for supervisors or Engineer on duty.

1. Confirm the precautions listed below.
2. Complete and issue copy to person(s) doing job.

Signed: _____ Title: _____

DO NOT CUT, WELD, OR USE OTHER OPEN-FLAME OR SPARK-PRODUCING EQUIPMENT UNTIL THE FOLLOWING PRECAUTIONS HAVE BEEN CHECKED:

1. Flame or spark-producing equipment to be used has been inspected and found in good repair. _____
2. Sprinklers, where provided, are in commission and will not be taken out of service while this work is being done. _____
3. There are no combustible fibers, dust, vapors, gases or liquids in the area. Tanks and equipment previously containing such materials have been purged. The absence of gases or vapors has been verified by a combustible gas detection instrument. _____
4. The work will be confined to the area of equipment specified in this permit. _____
5. Surrounding floors have been swept clean and, if combustible, wet down. _____
6. Ample portable extinguishing equipment such as hand hose or extinguishers have been provided. _____
7. All combustibles have been relocated 35 feet from the operations and have been properly protected from spark or flame. _____
8. Responsible personnel have been assigned to watch for dangerous sparks in the work area, as well as on floors above and below. _____
9. Arrangements have been made for a patrol of the area, including floors above and below, during any lunch or rest period and for at least one-half hour after work has been completed. _____

TO REPORT A FIRE, SHOULD ONE OCCUR,
PHONE _____

OR
USE ALARM BOX LOCATED AT

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ISLM

I= Interim
L= Life
S= Safety
M= Measures

ILSM Construction Area Inspection Log

Date: _____ Day: Sun - Mon - Tue - Wed - Thu - Fri - Sat Area Surveyed _____

CRITERIA	0:00	4:00	8:00	12:00	16:00	20:00
	Midnight	4:00 AM	8:00 AM	Noon	4:00 PM	8:00 PM
5.1 Exit path unobstructed and properly illuminated						
5.2 Emergency services access free and unobstructed						
5.3 & 5.5 Fire Extinguishers present and serviceable						
5.4 Temporary construction partitions smoke tight and non combustible						
5.6 No Smoking signs prominently posted No signs of smoking or smoking materials Area clean, storage appropriate, and debris minimized (Defined In ICRA)						
5.7 Areas secured when not attended (Security has key for emergency access) ILSM sign posted at site Exit Signs prominently posted Confirm there is Negative Air (Defined In ICRA)						
INITIALS OF INDIVIDUALS COMPLETING						
Notes/Explanations:						

Legend:
(N/A) Not applicable at this time or no this project
(Y) Yes, Criteria met (N) No, criteria not met, explanation required

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- [Follow the ICRA document](#)
- Above Ceiling Work Permit
- Lock Out Tag Out
- ZERO TOLERANCE FOR OFFENSES

ICRA

I = Infection
C = Control
R = Risk
A = Assessment

Infection Control Risk Assessment Matrix of Precautions for Construction & Renovation

Step One:

Using the following table, identify the Type of Construction Project Activity (Type A-D)

TYPE A	Inspection and Non-Invasive Activities. Includes, but is not limited to: <ul style="list-style-type: none">removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feetpainting (but not sanding)wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
TYPE B	Small scale, short duration activities which create minimal dust Includes, but is not limited to: <ul style="list-style-type: none">installation of telephone and computer cablingaccess to chase spacescutting of walls or ceiling where dust migration can be controlled.
TYPE C	Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies Includes, but is not limited to: <ul style="list-style-type: none">sanding of walls for painting or wall coveringremoval of floorcoverings, ceiling tiles and caseworknew wall constructionminor duct work or electrical work above ceilingsmajor cabling activitiesany activity which cannot be completed within a single workshift.
TYPE D	Major demolition and construction projects Includes, but is not limited to: <ul style="list-style-type: none">activities which require consecutive work shiftsrequires heavy demolition or removal of a complete cabling systemnew construction.

STEP 1: _____

Steps 1-3 Adapted with permission V Kennedy, B Barnard, St Luke Episcopal Hospital, Houston TX; C Fine, CA
Steps 4-14 Adapted with permission Fairview University Medical Center, Minneapolis MN
Forms modified and provided courtesy of J Bartley, ECSI Inc 2002

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- MSDS
- Follow the ICRA document
- [Above Ceiling Work Permit](#)
- Lock Out Tag Out
- ZERO TOLERANCE FOR OFFENSES



Above Ceiling Work Permit

Holy Cross Hospital
Engineering Department

Policy Number: _____ Section: 1
Page 3 of 3 Prepared By: George Spadafora
Effective Date: 7/09 Approval:
Revision Date: _____
Review Date: _____
TITLE: Fire & Smoke Barrier Penetration Policy

ABOVE THE CEILING WORK PERMIT

Date: _____ Person Requesting Permit: _____
Department / Company: _____
Department Number (if applicable): _____
Phone: _____ Fax: _____
Location of Work: _____
Description of Work: _____
Date: _____

HCH Representative Plan Review approval: _____
Will Fire or Smoke Barriers be penetrated Yes No
If Yes Requestor must describe materials & methods for which penetration will be sealed: _____
(Attach Manufacture's supporting documentation, Installer's certification, etc.)

Wiring to be installed / modified:

<input type="checkbox"/> Communication	<input type="checkbox"/> Door Control
<input type="checkbox"/> Telephone	<input type="checkbox"/> Fiber optic
<input type="checkbox"/> Electric low or high voltage	<input type="checkbox"/> Security
<input type="checkbox"/> HVAC	<input type="checkbox"/> Fire Alarm
<input type="checkbox"/> Television / Cable	<input type="checkbox"/> Other: _____
	<input type="checkbox"/> Conduit

How will work be supported?
 Cable Tray
 Other - specify _____

Representative Final Inspection Request: _____ Date: _____
HCH Representative Final/Completion approval: _____ Date: _____

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- ILSM
- MSDS
- Follow the ICRA document
- Above Ceiling Work Permit
- [Lock Out Tag Out](#)
- ZERO TOLERANCE FOR OFFENSES

Lock Out Tag Out



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- ILSM
- MSDS
- Follow the ICRA document
- Above Ceiling Work Permit
- Lock Out Tag Out
- RACE
- ZERO TOLERANCE FOR OFFENSES

RACE

R = Rescue

A = Alarm

C = Confine

E = Escape

Dial 5555 to report a fire

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- MSDS
- Follow the ICRA document
- Above Ceiling Work Permit
- Lock Out Tag Out
- **ZERO TOLERANCE FOR OFFENSES**

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Contact Info

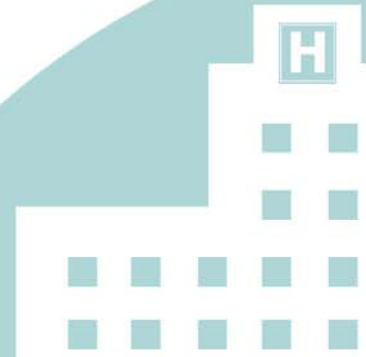
Joe Barbera

954 776 3160

954 654 3967 Mobile

Cindy DiPaolo

954 776 3298



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How many people died in hospitals during 2004-2008 as a result of fires?



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5 people per year

[Source: NFPA]

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How many people die in hospitals each year as a result of hospital-acquired infections?



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90,000 people
[Source: CDC]



JCAHO EC.3.2.1

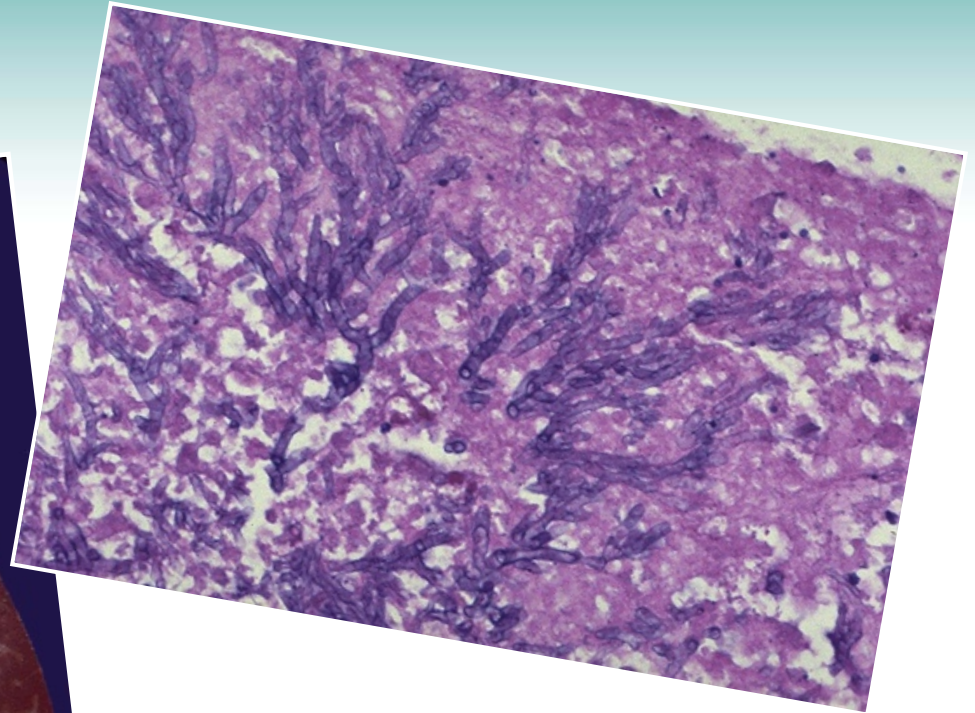
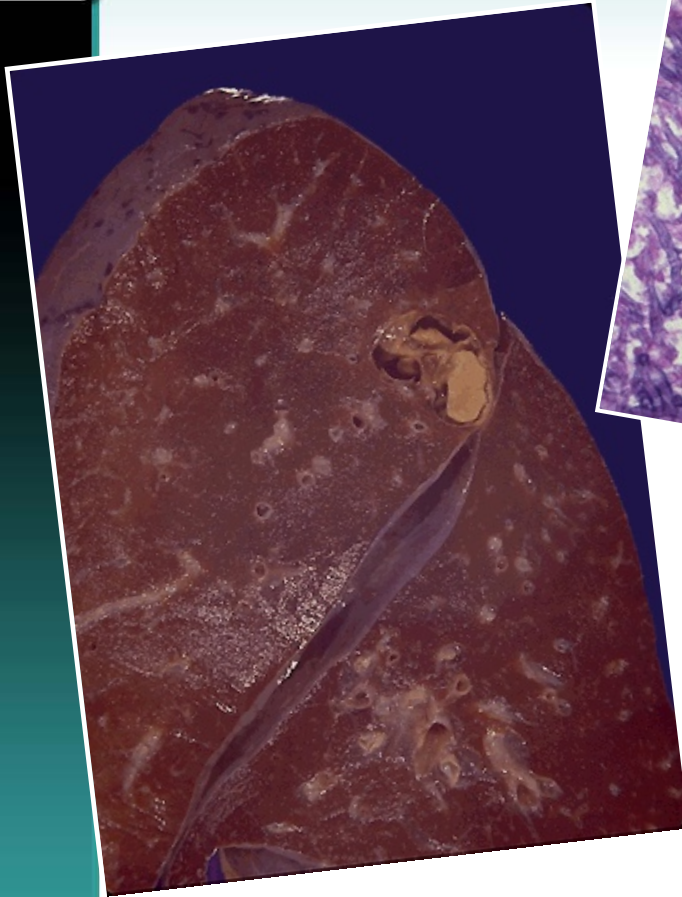
- AIA Guidelines or state regs
- Proactive risk assessment of construction, renovation, or demolition:
 - Air quality
 - Infection control
 - Utilities
 - Noise/vibration
 - Emergency procedures



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Aspergillus Is The Killer



Source: University of Utah



Infection Control for Construction Policy

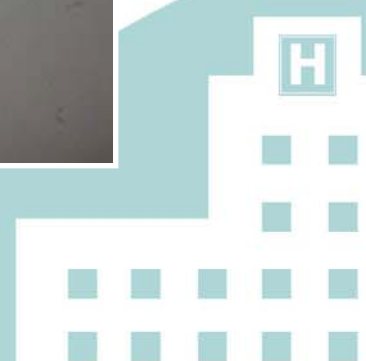
- Risk determination/level of risk
- IC permit
- ICRA documentation (detailed and project-specific)
- Communication between IC and Facilities
- Emergency work stoppages



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Permanent Separation Walls



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Penetrations at Separation Walls



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Negative Air



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Negative Air Equipment

Never unplug or turn off
(Notify Your Superintendent, if not working)



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This *Never* Happens...



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Temporary Partition



Using A Tacky Mat

Add the tacky mat on
the construction side
of the wall not the
outside area



The Happy Staff

- No Noise
- No Dirt
- Everything Running As Usual
- No Construction People
- You Are *Not* Here



The Unhappy Staff

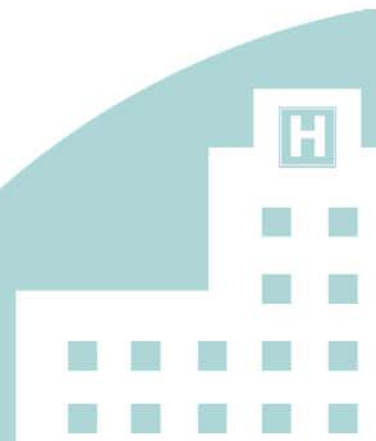
- Chipping Hammer Running
- Footprints Down the Hall
- Power Just Went Out
- The Fire Alarm Just Went Off
- CEO Just Got a Call



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The Nurse Is Looking for You



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So, what does it take to work here?

Ask yourself: “Before I do this, how will it effect Staff & Patients?”

- Attitude
- Preparation before doing
- Know it is 24/7
- Understand Why
- CLEAN, CLEAN, CLEAN
- Remember you are around sick people
- Know the Director
- Keep all clients happy
- Paperwork
- Fix it - Don't Ignore It
- Remember 90,000 deaths per year from infections

Orientation & Ongoing Education Requirements

2010 - Orientation & Ongoing Education Requirements			
Topic	Standard	Orientation & Ongoing Education	Required Personnel
Accreditation Participation Requirements			
Reporting safety/quality concerns to TJC	APR.09.02.01 EP 1	Orientation & Ongoing Education	All hospital employees
Emergency Preparedness			
Emergency Preparedness Training	EM.02.02.07 EP 2, 7	Orientation & Ongoing Education	Staff, students, volunteers
Environment of Care			
Education about risks within the hospital's environment	EC.03.01.01 EP 1-3	Orientation & Ongoing Education	Staff, students, volunteers
Procedures to follow			
Reporting Processes for problems, failures and user errors in regard to safety, security, etc.			
Human Resources			
Key safety content prior to providing care	HR.01.04.01 EP 2	Orientation	Staff, students, volunteers
Assessing & managing pain	HR.01.04.01 EP 4	Orientation	All patient care providers
Infection control & prevention	HR.01.04.01 EP 4	Orientation	Staff, students, volunteers
Cultural diversity / sensitivity based on job duties	HR.01.04.01 EP 5	Orientation	Staff (based on job duties), students, volunteers
Patient rights, ethical aspects / ethical issues based on job duties	HR.01.04.01 EP 6	Orientation & Ongoing Education	Staff (based on job duties), students.
Team Communication training that incorporates the skills of team communication, collaboration, and coordination of care.	HR.01.05.03 EP 6	Orientation & Ongoing Education	Staff (based on job duties), students.
Information about the need to report unanticipated adverse events and how to report these events.	HR.01.05.03 EP 7	Orientation	All staff
Fall Reduction Program	HR.01.05.03 EP 8	Orientation & Ongoing Education	All patient care providers
How to identify early warning signs of a change in a patient's condition and how to respond to a deteriorating patient, including how and when to contact responsible clinicians.	HR.01.05.03 EP 16	Orientation	All applicable staff
Infection Control			
Orientation, training, and competency of health care workers who are processing medical equipment, devices, and supplies	IC.02.02.01	Orientation	All applicable staff
Responsibilities about preventing and controlling infections	IC.01.05.01 EP 6	Orientation & Ongoing Education	Staff, students, volunteers
Influenza Vaccination Program	IC.02.04.01 EP 1, 2, & 3 (HR.01.04.01, EP 4)	Orientation & Ongoing Education	Staff, students, volunteers
Information Management			
Training for staff and licensed independent practitioners on alternative procedures to follow when electronic information systems are unavailable	IM.01.01.03 EP 3	Orientation & Ongoing Education	Staff & Physicians
Leadership			
Mission, vision, and goals	LD.02.01.01 EP 3	Orientation & Ongoing Education	Staff, students, volunteers

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Thank You!



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