Environment of Care *Lite*

Patrick Dee Williams

Industrial Hygienist

Cedars-Sinai Medical Center

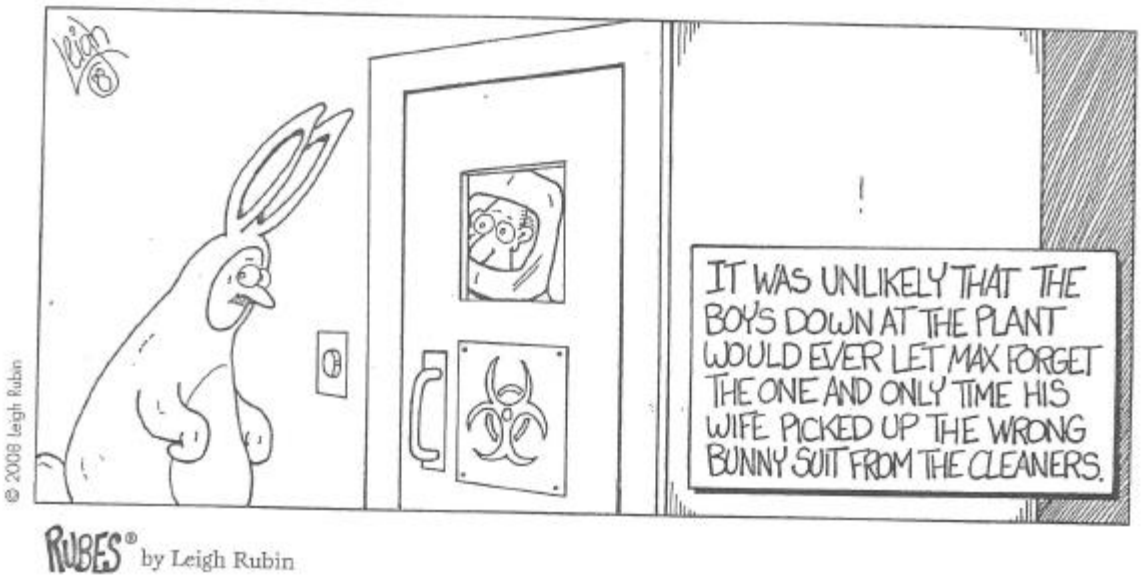
Los Angeles, CA

CONTRACTORS RESPONSIBILITY CLASS

Table of Contents

Infection Control

Can I Make A Suggestion:
Please stop calling them
"bunny suits"
How about:
Full body coveralls

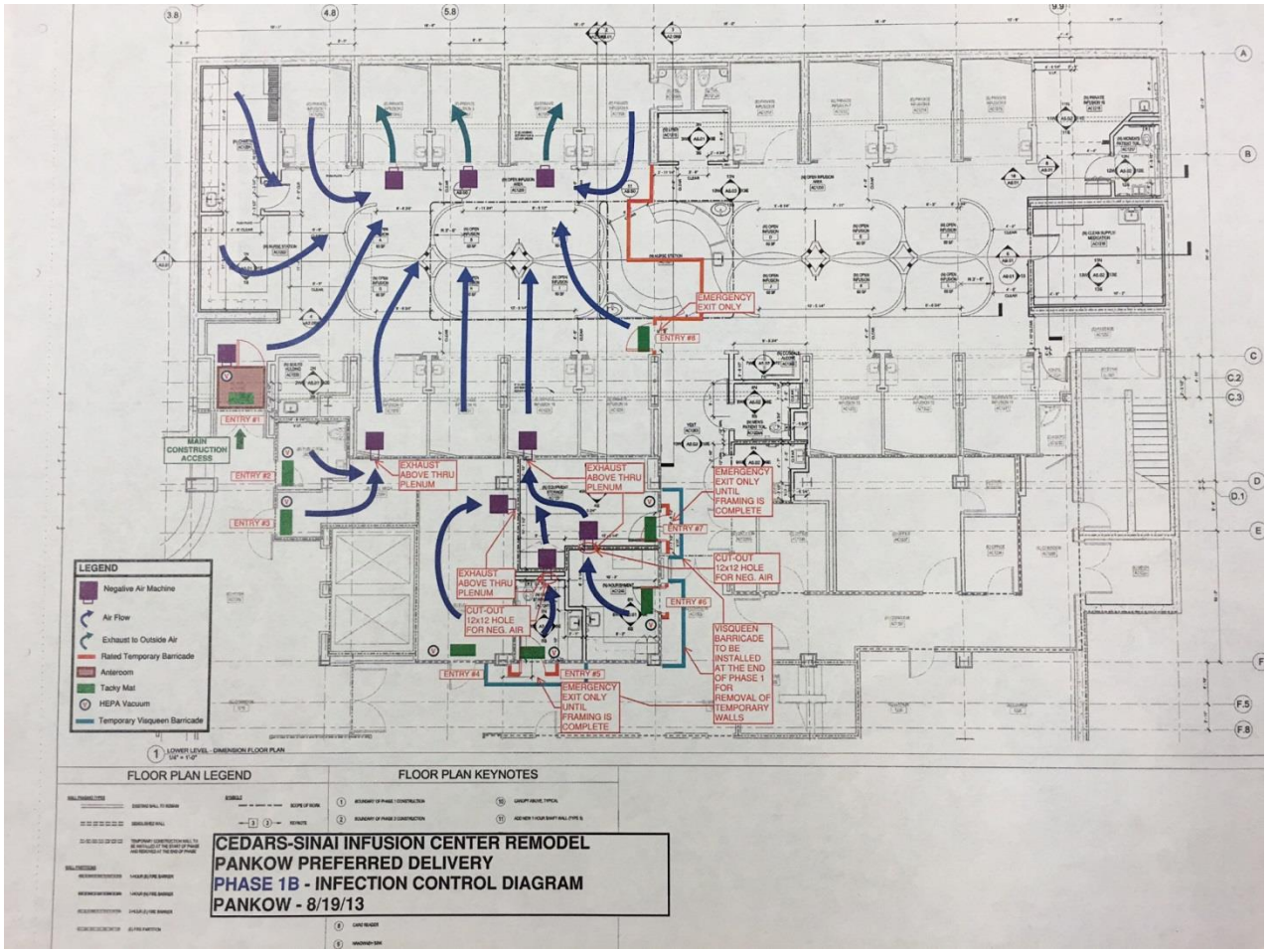


EC 02.06.05

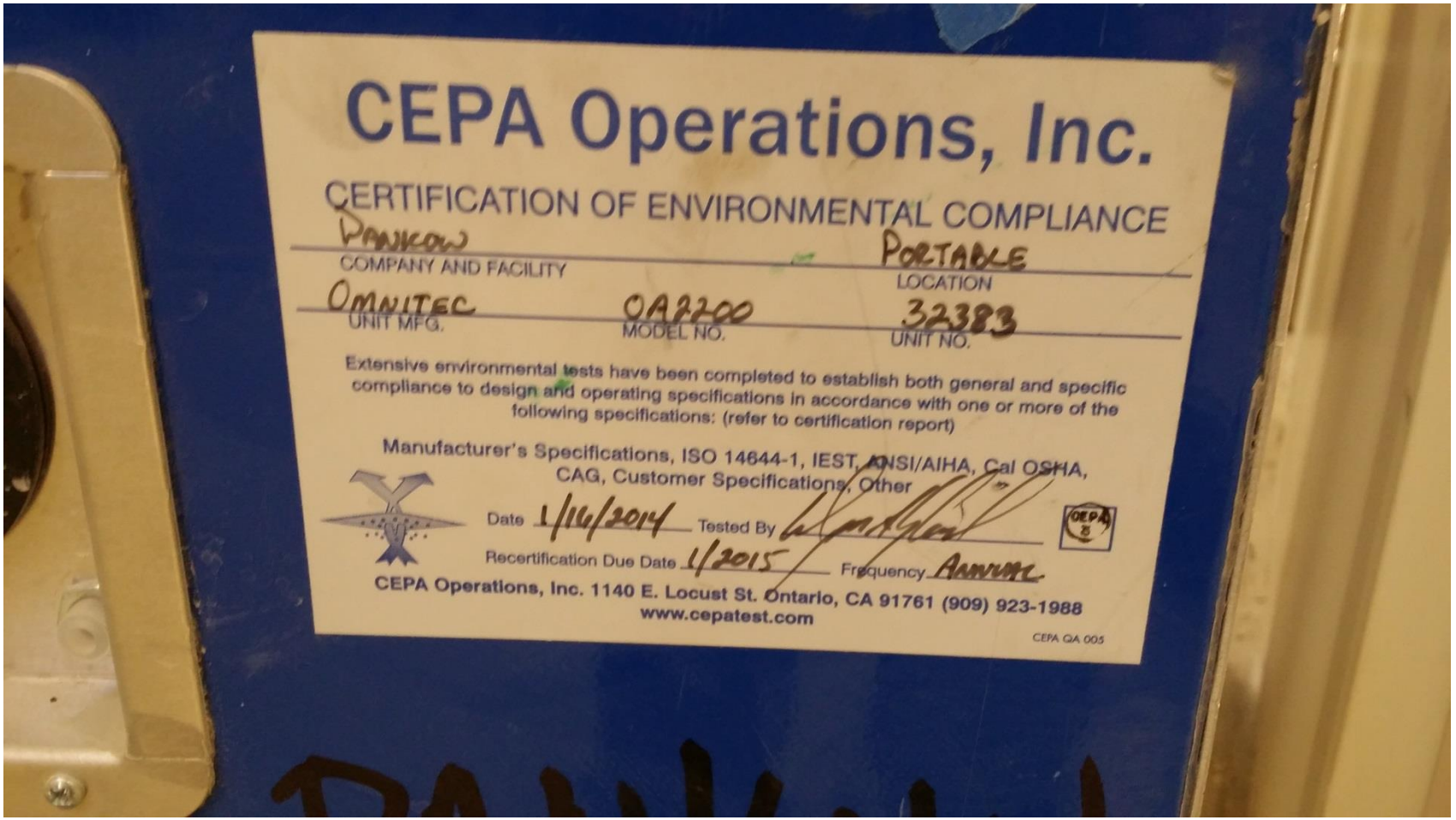
1. When planning for new, altered, or renovated space, the hospital uses one of the following design criteria: - State rules and regulations - Guidelines for Design and Construction of Health Care Facilities, 2010 edition, administered by the Facility Guidelines Institute and published by the American Society for Healthcare Engineering (ASHE) When the above rules, regulations, and guidelines do not meet specific design needs, use other reputable standards and guidelines that provide equivalent design criteria. (See also EC.02.05.01, EP 1)
2. When planning for demolition, construction, or renovation, the hospital conducts a preconstruction risk assessment for air quality requirements, infection control, utility requirements, noise, vibration, and other hazards that affect care, treatment, and services. Note: See LS.01.02.01 for information on fire safety procedures to implement during construction or renovation.
3. The hospital takes action based on its assessment to minimize risks during demolition, construction, or renovation

Maintain Negative Pressure

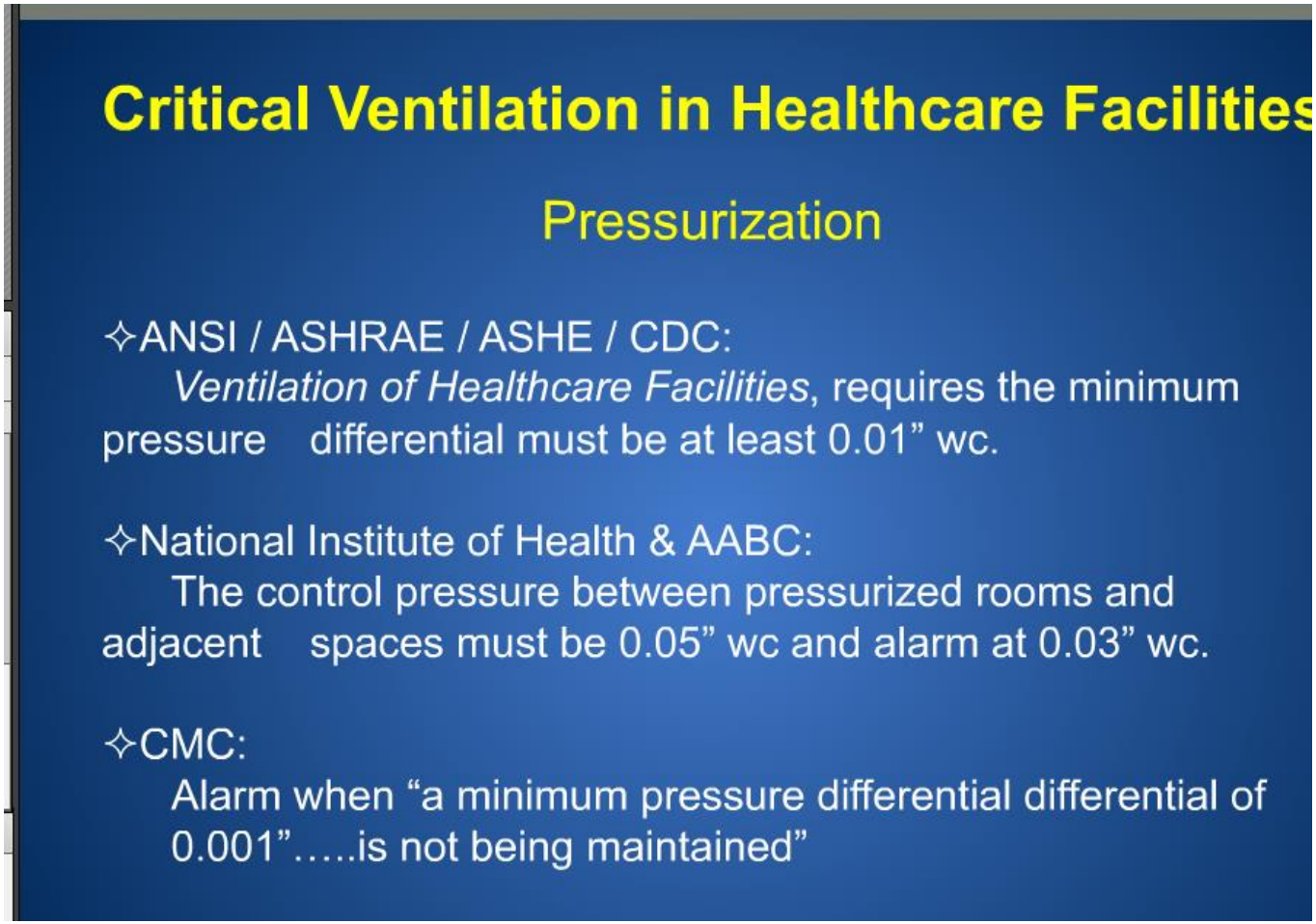
Infection Control Can Ask For Drawings Like This



Maintain Negative Pressure



Maintain Negative Pressure



Maintain Negative Pressure

Infection Control Risk Assessment (ICRA)

MANDATORY REQUIREMENT OF:

- Guidelines for Design and Construction of Hospital and Healthcare Facilities (American Institute of Architects)
- Joint Commission on Accreditation of Healthcare Facilities
- OSHA regulations
- EPA regulations (regulated medical waste)

Level II

1. Provide active means to prevent airborne dust from dispersing into atmosphere.
2. Seal unused doors with duct tape.
3. Block off and seal air vents.
4. Place dust mat at entrance and exit of work area
5. Remove or isolate HVAC system in areas where work is being performed.

Care

Reinforce

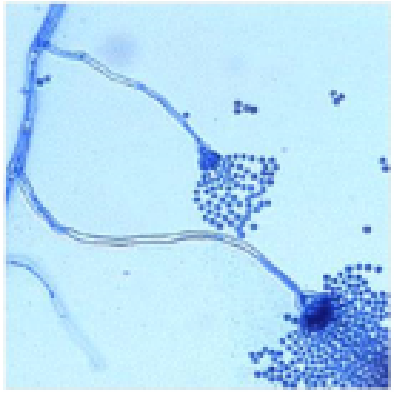
- Inspect sites at different times
- Logs
  - Key points documented
- Emails
  - Cc the right people
- Ability to shut down the job

Construction/Renovation

- Need to control dust……. why?
  - Outbreaks of *Aspergillosis* linked to construction activity in hospital, including demolition, and excavation
  - Even virgin wall board and other new construction material can contain *Aspergillus* spores

Aspergillus

Water+ Food Source
+Time =
Mold Growth



- **Decaying leaves**
- **Compost**
- **Plaster & drywall**
- **Settled dust**
- **Previously wet ceiling tiles**
- **Previously wet carpet**
- **Bubbling walls**
- **Previously wet wallpaper**

Who may be affected by *Aspergillus* spores?

Need to protect vulnerable populations at risk in the inpatient setting & outpatient setting, too

- **Premature babies**
- **Transplant patients**
- **Cancer treatment patients**
- **People with poor immunity**
- **Those with lung problems**

We Treat All These Types Of Patients

Aspergillus sp.

- Invasive aspergillosis is associated with significant mortality, with a rate of 30-95%.
- Chronic necrotizing *Aspergillus* pneumonia has a reported mortality rate of 10-40%, but rates as high as 100% have been noted because it often remains unrecognized for prolonged periods.

Anderson Sampling

Construction-Related Nosocomial Infections

- **Construction-related Nosocomial Infections By Dr. Michael Berg, EMLab P&K Senior Molecular Biologist**
- **The risk of nosocomial (also known as hospital-acquired) infections increases significantly when hospitals are undergoing constructions and renovations. Dust particles contaminated with bacteria and fungi are dispersed and pose a health risk for patients, staff and visitors. In order to minimize the risk and prevent hospital-acquired infections, construction projects within and adjacent to hospitals should integrate infection prevention and control into their project management plans.**

Reported construction-related nosocomial infections are primarily caused by fungi, and to a lesser extent, by bacteria. The most common etiological agent is *Aspergillus*, in particular, *A. fumigatus*, *A. flavus*, *A. niger* and *A. terreus*. *Aspergillus fumigatus* is considered the most pathogenic species and responsible for more than 90% of all *Aspergillus* infections. It is the most rapidly growing species, extremely tolerant to temperatures, and binds laminin and fibrinogen (glycoproteins) more efficiently than other species, possibly promoting better airway adhesion before invasion. *Aspergillus fumigatus* spores have a hydrophobic protein-coat layer, which may help the organism to evade the host's defense system. In addition, the very small spore size enables deep penetration into the lung.

Characteristics of the most common major pathogenic *Aspergillus* species:

Species	Global/Regional Distribution	Pathogenicity	Typical Clinical Presentation
A. fumigatus	Ubiquitous throughout world; decomposing vegetative matter is primary ecological niche; often found in and around human dwellings in rural areas; common in the home	Most pathogenic species; isolated in ~66% of all clinical infections, but with decreased prevalence in recent years	Responsible for >90% of invasive aspergillosis cases; most rapidly growing species; also causes pulmonary disease, aspergilloma, allergic bronchopulmonary aspergillosis, may be amphotericin B resistant
A. flavus	Found in soil and decaying vegetation	Isolated in ~14% of clinical infections	Common isolate in sinusitis, skin, and invasive infections; produces an aflatoxin; may be amphotericin B resistant
A. terreus	Found in soil; Increasingly found in water supplies	Isolated in ~5% of clinical infections	Increasingly reported in invasive infection in immunocompromised hosts; resistant to amphotericin B, more susceptible to newer azoles
A. niger	Found in soil, on plants, and in food and condiments (for example pepper)	Isolated in ~5% of clinical infections	Uncommon in invasive infections; usually causes superficial infection (for example otitis externa); common colonizing isolate
A. nidulans	Found in decomposing vegetative matter	Isolated in a small percentage of clinical infections	Causes diverse infections, especially in patients with chronic granulomatous disease; may be resistant to amphotericin B
A. ustus	Found in decomposing vegetative matter	Isolated in a small percentage of clinical infections	Causes disseminated infection, otitis media, skin burn and cutaneous infections, and endocarditis

Anderson Sampling in OR's

Interpretation Sample – Project F

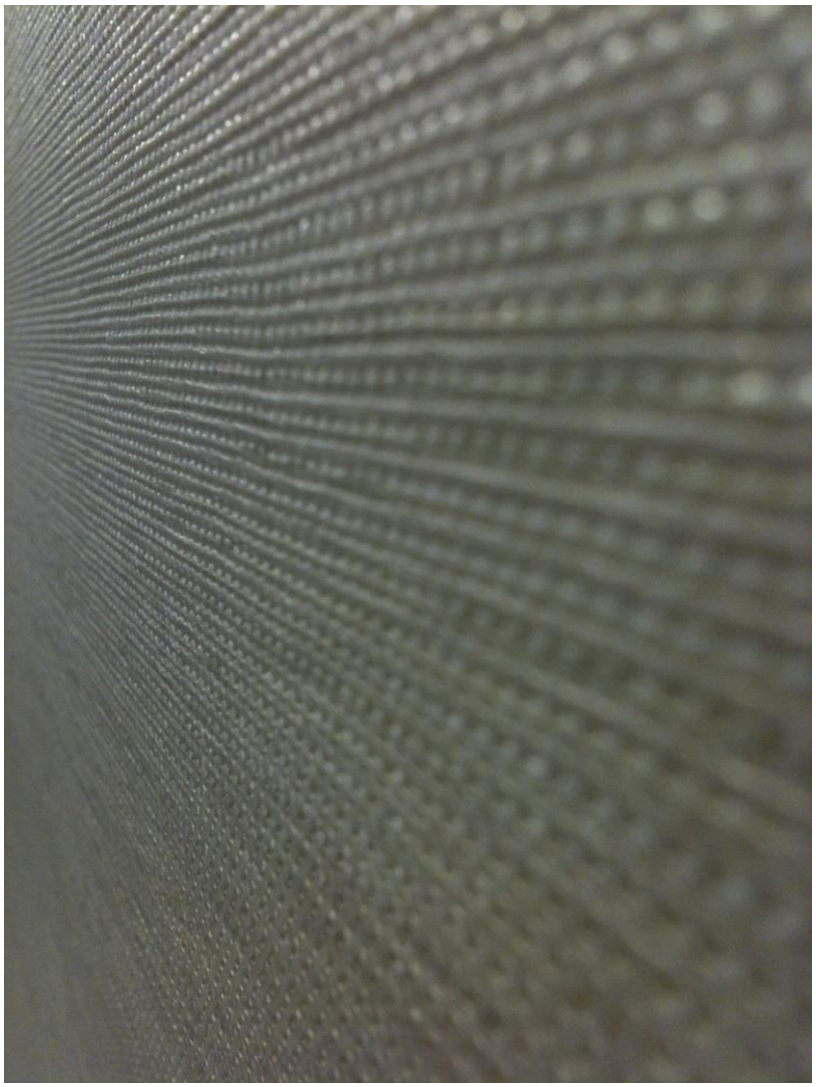
CULTURABLE AIR FUNGI REPORT

Location:	OR 1		OR 2		OR 3		Outdoors	
Comments (see below)	None		None		None		None	
Lab ID-Version‡:	320679-1		320680-1		320681-1		320682-1	
	raw ct.	cfu*/m3	raw ct.	cfu*/m3	raw ct.	cfu*/m3	raw ct.	cfu*/m3
Acremonium								
Alternaria							3	35
Aspergillus flavus								
Aspergillus fumigatus	1	1			3	3		
Aspergillus nidulans								
Aspergillus niger	4	4						
Aspergillus ochraceus								
Aspergillus versicolor							1	12
Aspergillus, other							2	24
Aureobasidium								
Aureobasidium pullulans							2	24
Basidiomycetes								
Bipolaris/Drechslera group							2	24
Botrytis							1	12
Chaetomium								
Cladosporium							63	813
Curvularia								
Epicoccum							2	24
Fusarium								
Non-sporulating fungi							6	71
Paecilomyces								
Penicillium							3	35
Phoma								
Rhizopus								
Stachybotrys chartarum (atra)								
Ulocladium								
Yeasts								
Positive Hole	400		400		400		400	
Sample volume (liters)	1016.0		1016.0		1016.0		84.9	
TOTAL CFU*/M3		5		< 1		3		1,074

* cfu = colony forming units Positive hole correction chart used for all calculations AIHA EMPAT NO.: 102856

Comments:

Architect Elements Beware



Architect Elements Beware Of

Laser Dust Particulate Counters

Laser Dust Particulate Reporting

Second Floor - Air Quality Dust Sampling

Sample #	Data Slot	Location	Particle Count Results			
			0.5 Micron	1.0 Micron	2.5 Micron	5.0 Micron
SSB2 - 1		SSB2 East main corridor - outside Rm 278-C	29926	9959	6432	2089
SSB2 - 2		SSB2 North main corridor - midspan	28682	7072	3784	1042
SSB2 - 3		SSB2 West main corricor - outside Rm 269	26894	6028	3052	800
SSB2 - 4		SSB2 South main corridor - outside Rm 252-B	25212	5724	3102	970
SSB2 - 5		SSB2 North clinic hallway - outside Rm 285-E	25696	5644	3274	1080
SSB - 6		Outside Air at East Elevation ADA ramp	128168	44468	18556	1566

Notes: - Air sampling results were performed using: Handheld 3016 - Lighthouse
Instrument Manufacturer and Model
- Each sample shall be taken for a 5 minute duration.

Comments: Calibrated 11/3/08 # 153595

Samples Performed by:

Patrice Williams
Print Name

Signature

CSMC
Company

11/11/08
Date

Witnessed by:

Signature

Time

Company

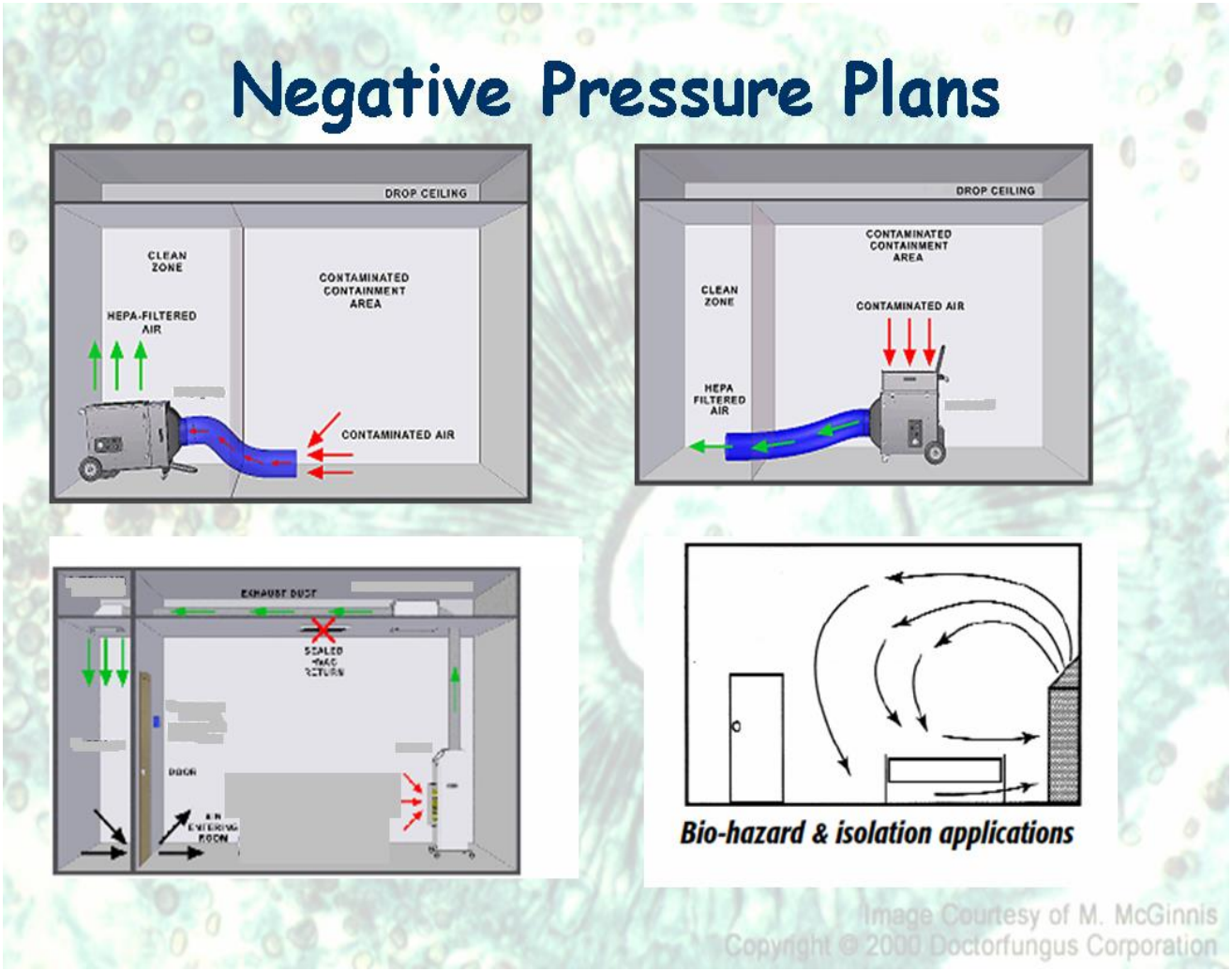
Particulate Reporting

Isn't this better

- Thank you for letting me test your work space. The results for the test are based on testing from a Lighthouse 3016 laser particle counter. The span of the results includes a range from 0.5µ to 5.0µ particles. Generally the air inside an office space is cleaner then the air outside. This is true of your results. I've only found it different when next to some construction sites. Your results are very close to each other as opposed to the outside air.
- Front Room is 3.7 times better then outside air.
- Back Room is 2.9 times better then outside air
- Entrance Area is 2.9 times better then outside air.
- The results are similar to hospital air.
- If you want a further break down I can provide it.

What’s Wrong With This Picture?

Maintain Negative Pressure



Management Plans

Standard EC.01.01.01

The hospital has a written plan for managing the following:

- Safety
- Security
- Hazardous Materials & Waste
- Medical Equipment
- Utilities
- Construction

Safety & Security

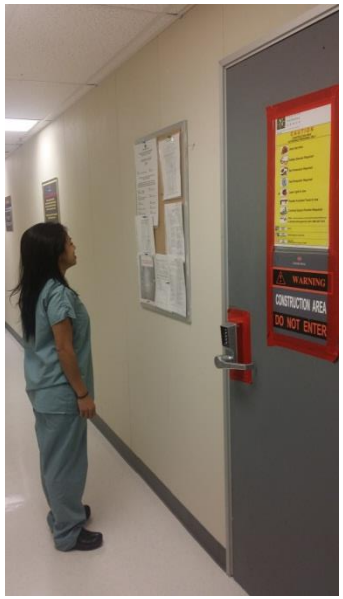
Standard EC.02.01.01

- The hospital identifies safety and security risks associated with the environment of care.
- The hospital identifies individuals entering it’s facilities
- The hospital controls access to and from areas it identifies as security sensitive

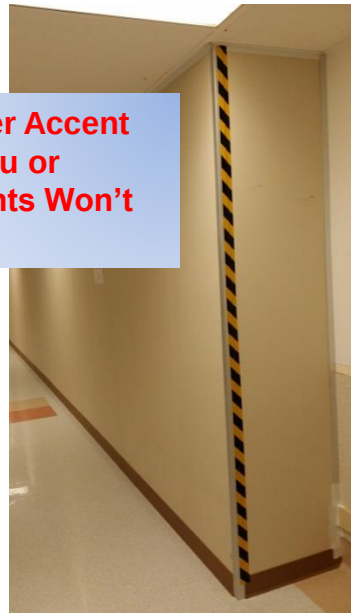
Construction Safety (it's everywhere)

Construction activity should never pose a risk to visitors, patients and staff

All Employees Can Review The Infection Control Permit & Interim Life Safety Measures At Each Job



Construction Barriers From Floor To Ceiling and Clean



Corner Accent So You or Patients Won't Hit It

Dirty workers and clothes should remain behind the barrier in construction

All Contractors Need To Wear Their ID Badge

Hazardous Materials/Waste

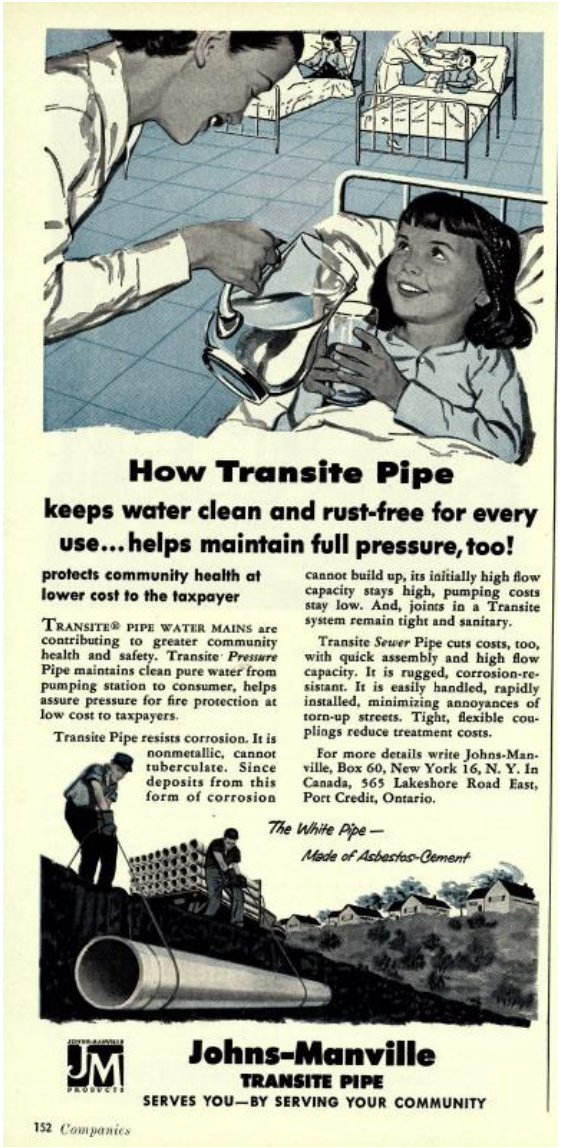
Standard EC.02.02.01

- The hospital implements it's procedures in response to hazardous material and waste spills or exposures
- The hospital monitors level of hazardous gases and vapors to determine that they are in safe range
- For managing hazardous materials and waste, the hospital has permits, licenses, manifests and MSDS required by law and regulation

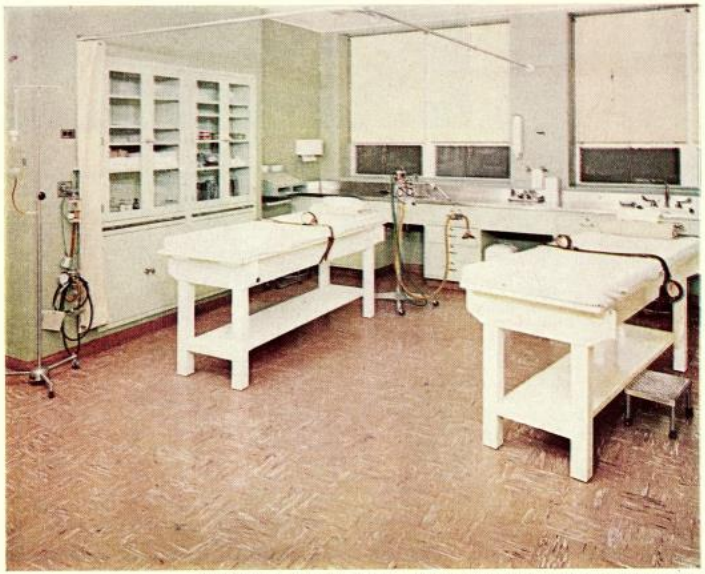
Asbestos / Lead Materials

- We will provide information on these materials for each project. We will abate an area of these materials before work begins.
- Hospital may have hidden lead walls

Asbestos In Hospitals



Asbestos In Hospitals



Emergency Room, Alameda County Highland Hospital, Oakland, California • Arthur W. Anderson, Architect.

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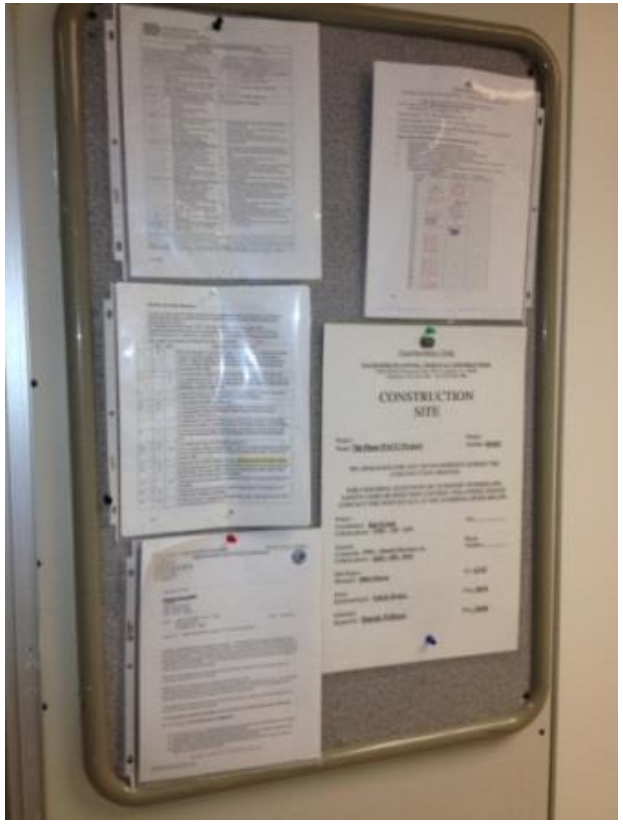
Southern GARDIAN

Managing Fire Risk

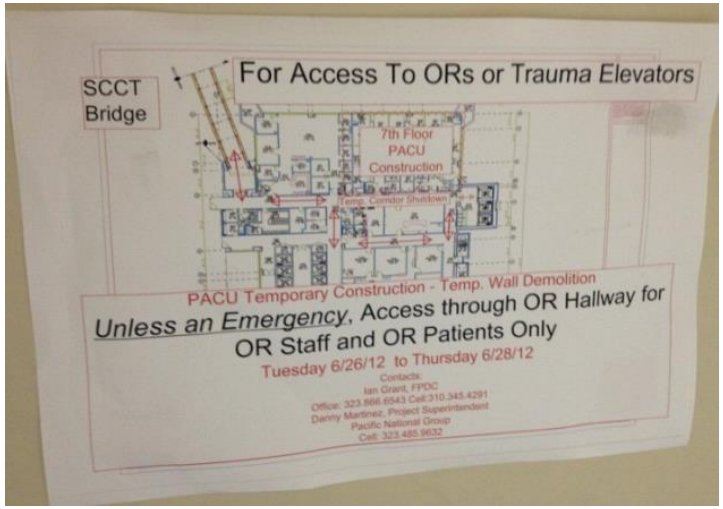
Standard EC.02.03.01

- The written fire response plan describes the specific roles of staff and licensed independent practitioners at and away from a fire's point of origin, including when and how to sound fire alarms, how to contain smoke and fire, how to use a fire extinguisher and how to evacuate to areas of refuge

Fire



- Contractors will add fire extinguishers to their work site
- Flame retardant poly sheets or wallboard
- Patch penetrations walls & floors
- Interim Life Safety Measures
- Code Red-listen to Code Red announcements, check your area.
- Know Your Company's Evacuation Collection Site and work site evacuation route



Box needed a pallet

Fire Drills

Standard EC.02.03.03

- The hospital conducts fire drills once per shift per quarter in each building defined as a health care occupancy by the Life Safety Code.
- The hospital conducts quarterly fire drills in each building defined as an ambulatory health care occupancy by the Life Safety Code.
- The hospital conducts fire drills every 12 months from the date of the last drill in all freestanding buildings classified as business occupancies and in which patients are seen or treated.

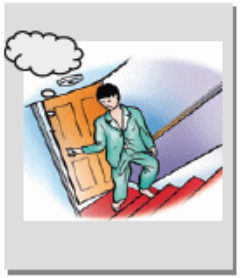
2. Fire

CEDARS-SINAI MEDICAL CENTER

IN CASE OF FIRE FOLLOW THESE STEPS:

1. **S**AFETY OF LIFE – REMOVE PEOPLE IN DANGER

2. **K**EEP FIRES FROM SPREADING- CLOSE DOORS



3. **A**CTIVATE NEAREST ALARM

4. **T**ELEPHONE EXT 3-5511, GIVE EXACT LOCATION

5. **E**XTINGUISH FIRE IF SAFE TO DO SO OR **E**VACUATE

Front

Back

Fire System Testing

Standard EC.02.03.05

Key Fire System Maintenance Requirements

- Every 12 months the hospital tests visual and audible fire alarms including speakers
- Every quarter the hospital tests fire alarm equipment for notifying offsite fire responders.
- At least quarterly the hospital tests supervisory signal devices.
- Every 12 months the hospital tests duct detectors, electromechanical releasing devices, heat detectors, manual fire alarm boxes and smoke detectors.
- Every 6 months the hospital tests valve tamper switches and water-flow devices.

Fire System Testing

Standard EC.02.03.05

Key Fire System maintenance Requirements

- At least monthly, the hospital inspects portable fire extinguishers
- Every 12 months the hospital performs maintenance on portable fire extinguishers
- The hospital operates fire and smoke dampers 1 year after installation and then at least every 6 years to verify that they fully close.
- Every 12 months the hospital tests automatic smoke-detection shutdown devices for air-handling equipment

Medical Equipment

Standard EC.02.04.01

- The hospital maintains either a written inventory of all medical equipment or a written inventory of selected equipment categorized by physical risk associated with use and equipment incident history.
- The hospital evaluates new types of equipment before initial use to determine whether they should be included in the inventory

Medical Equipment Maintenance

Standard EC.02.04.03

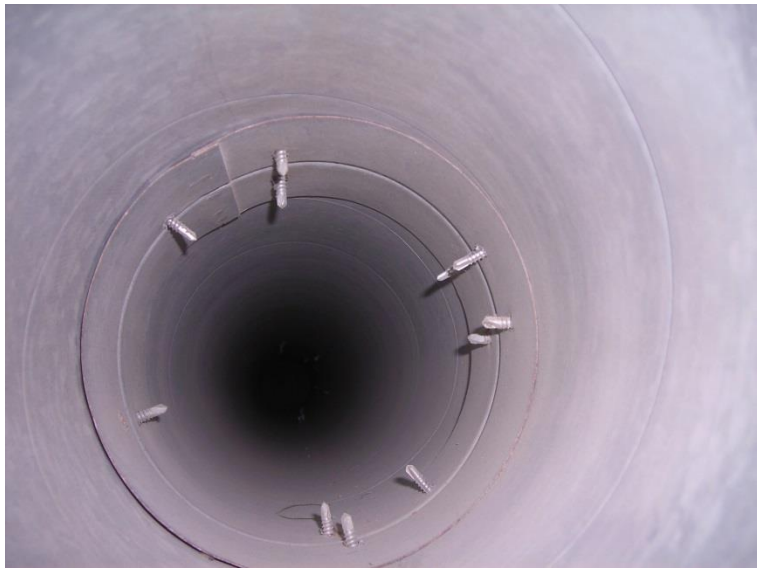
- The hospital inspects, tests and maintains all life-support equipment.
- The hospital inspects, tests and maintains non-life-support equipment identified on the medical equipment inventory.
- The hospital conducts performance testing of and maintains all sterilizers
- The hospital performs equipment maintenance and chemical and biological testing of water used in hemodialysis.

Maintaining a Safe Environment

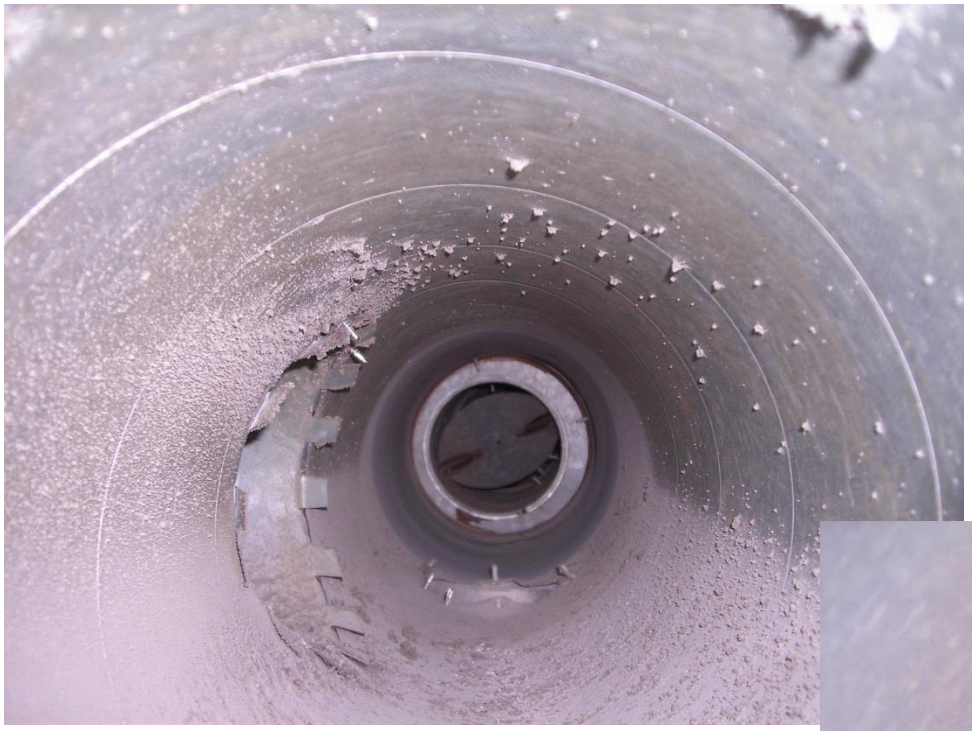
Standard EC.02.06.01

- The hospital maintains ventilation, temperature and humidity levels suitable for the care, treatment and services provided
- The hospital provides emergency access to all locked and occupied spaces
- The hospital keeps furnishings and equipment safe and in good repair

Duct Cleaning



Duct Cleaning



Monitoring the Environment of Care

Standard EC.04.01.01

- The hospital establishes a process for continually monitoring internally reporting and investigating the following:
  - Injuries to patients or others within the hospital's facilities
  - Occupational illnesses and staff injuries
  - Incidents of damage to property or the property of others
  - Security incidents involving patients, staff or others within its facilities
  - Hazardous materials and waste spills and exposures
  - Fire safety management problems, deficiencies and failures
  - Utility systems management problems, failures or use errors
  - Every 12 months the hospital evaluates each environment of care management plan, including a review of the plan's objectives, scope, performance and effectiveness

Moisture Meter

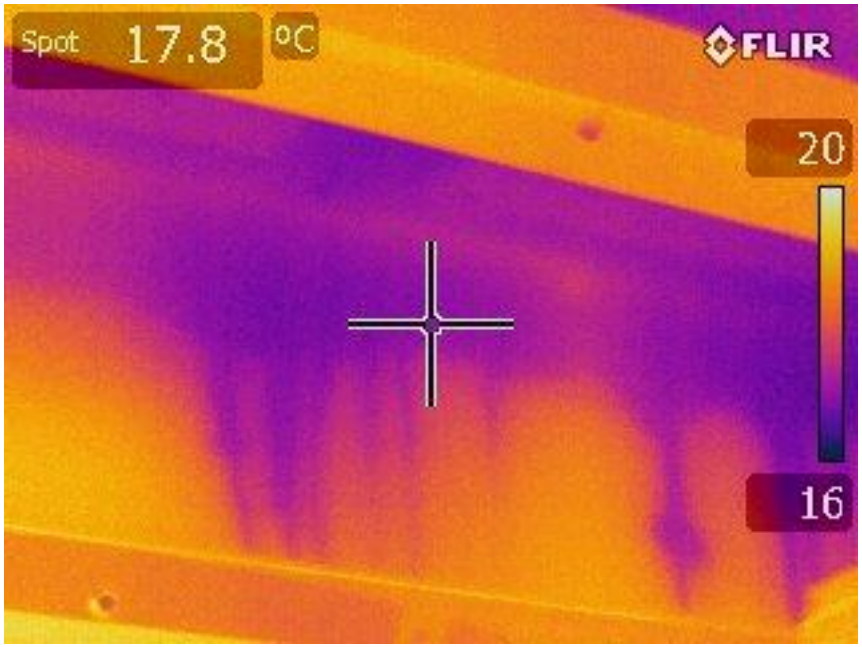
Inexpensive Moisture Meter
Provides the needed information as the more expensive one below.

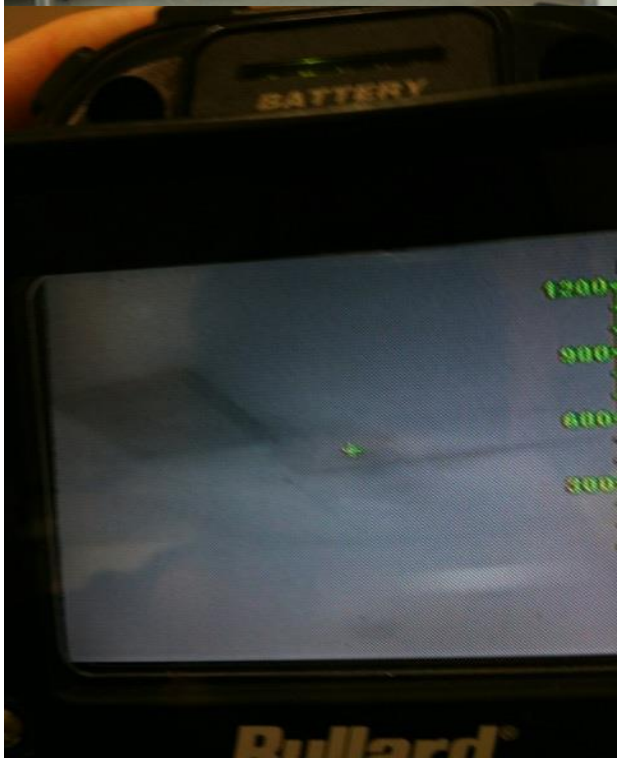
Features:
* Popular analog readout
* Two meter scales:
o Reference Scale — reads from 0 to 100 on a relative basis. Use on non-wood materials such as concrete, plaster, and insulation
* One-year warranty

Water Intrusion Mitigation

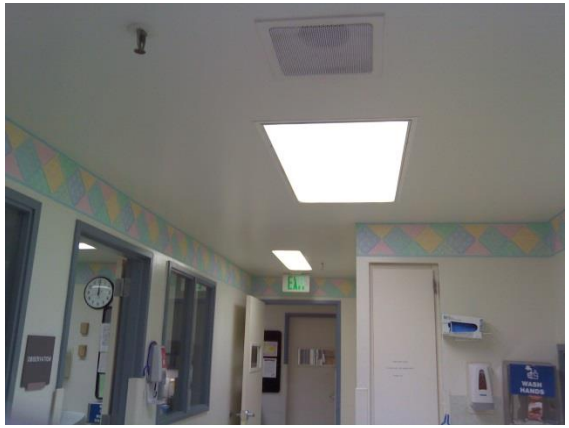
Water Intrusion Mitigation

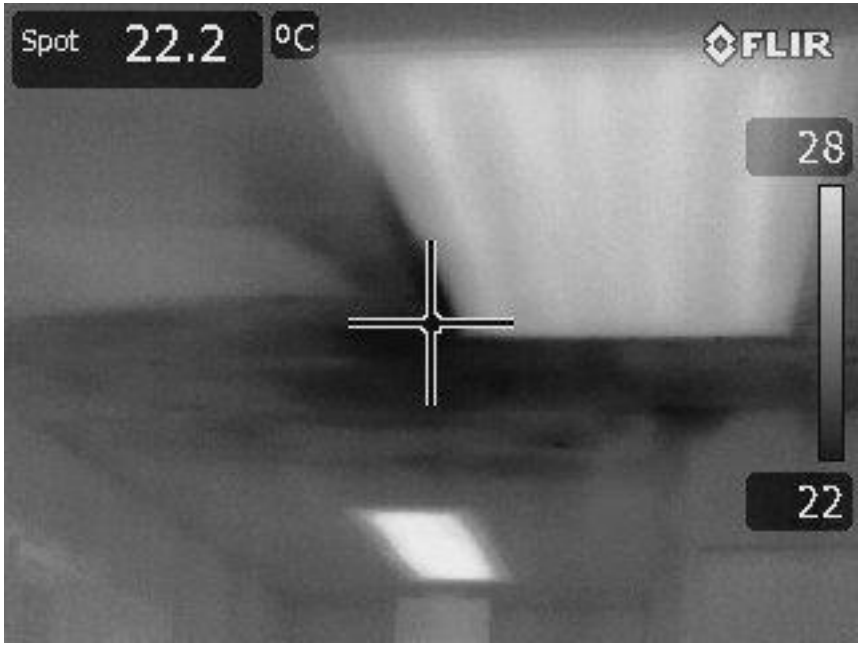
Water Intrusion Mitigation

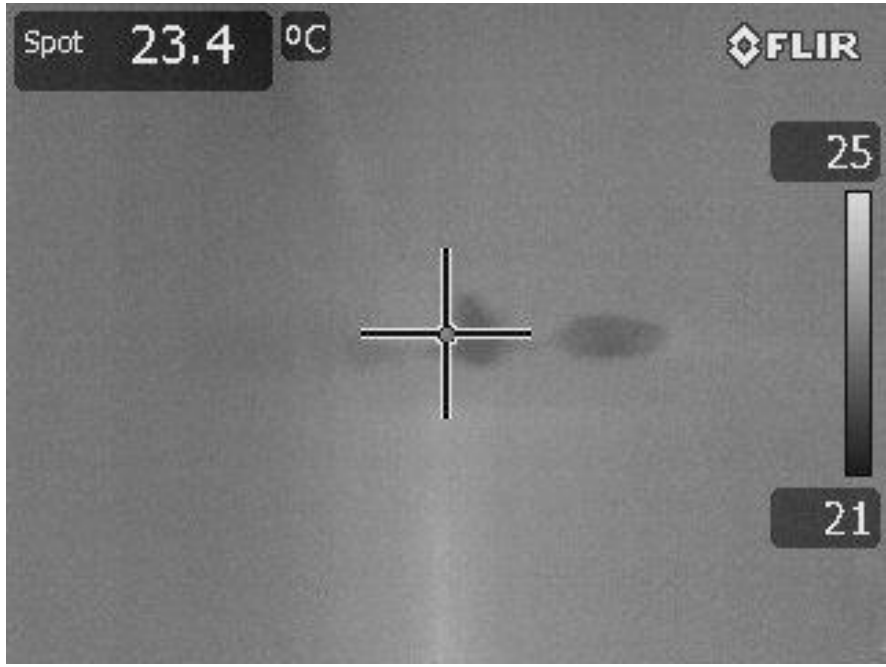




Water Intrusion Mitigation







Water Intrusion Mitigation

Improving the Environment of Care

Standard EC.04.01.03

- Annually, representatives from clinical, administrative and support services recommend on or more priorities for improving the environment of care

Standard EC.04.01.05

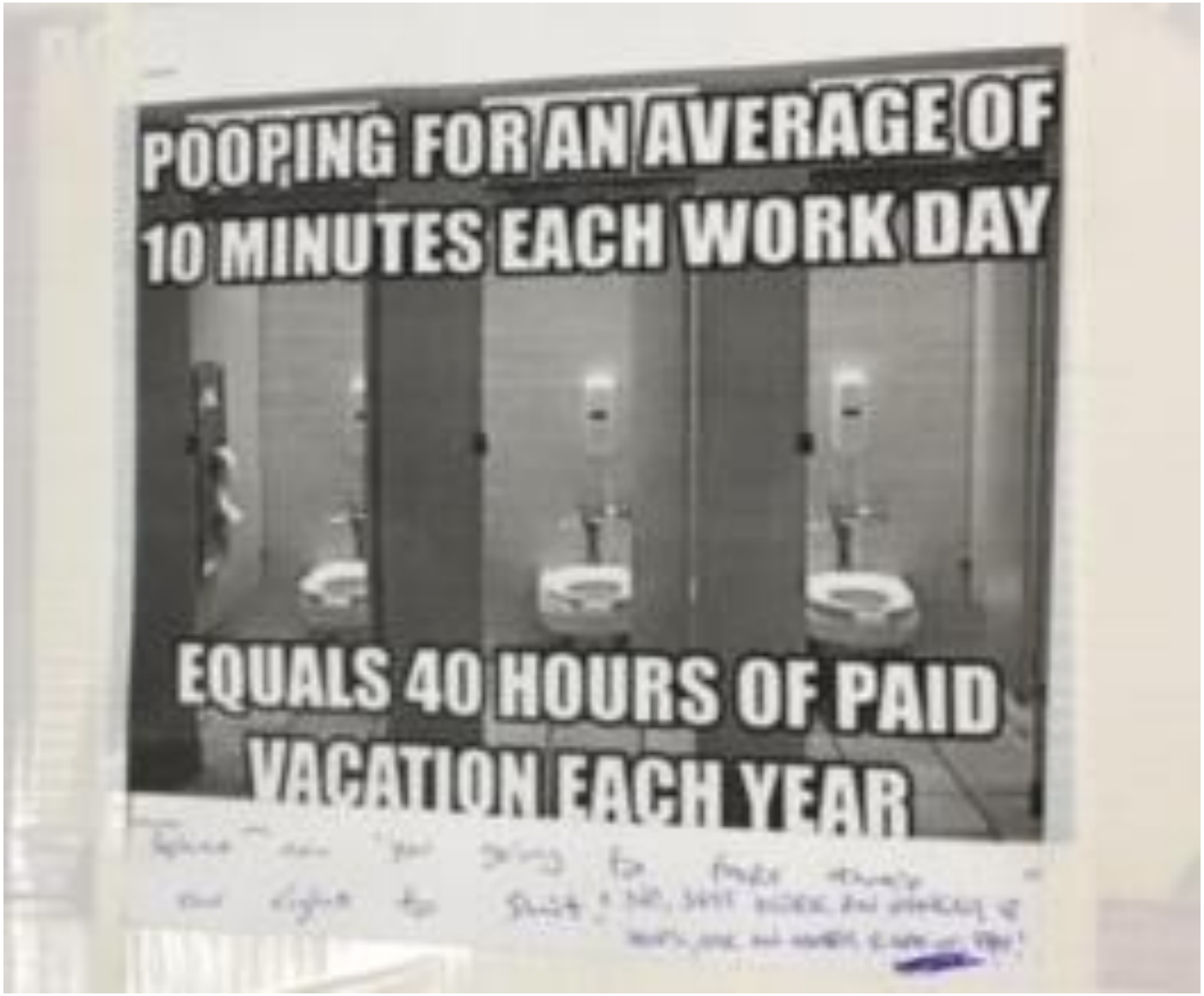
- The hospital takes action on the identified opportunities to resolve environmental safety issues
- The hospital evaluates changes to determine if they resolved environmental safety issues

Construction Activities :Class A

- Visual inspection of 1 ceiling tile per 50 sq. ft.
- Painting (no sanding)
- Wall covering
- Electrical trim work
- Minor plumbing
- Floor scrubbing
- Activities that don't generate dust, cut walls, or access ceilings other than to look.

IC Humor:
The First Report of Bird Flu in Anaheim

Construction Humor



Empathy: The Human Connection to Patient Care

https://youtu.be/cDDWvj_q-o8