



**Sealed Air**  
Diversey Care

## New Construction Issues for Infection Control

PICNet 2016  
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## Objectives

- Look beyond the dust barriers and Z317.13 remediation issues
- Discuss issues with larger construction projects
- Review Blueprint reading and interpretation



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## Old Hat Issues

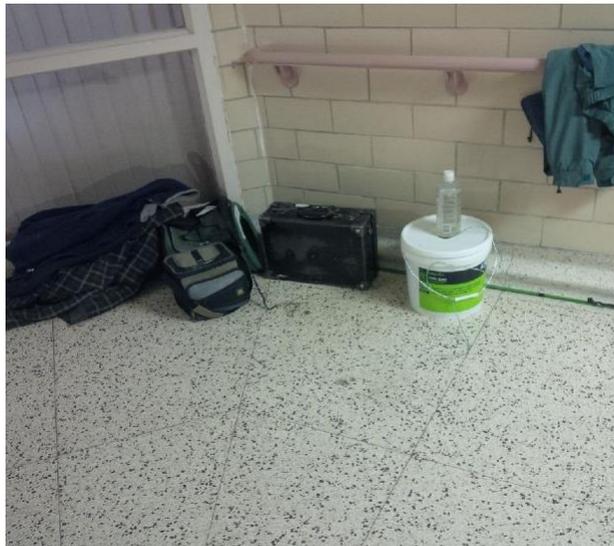
A photograph of a heavily stained and discolored hard hat resting on a pink fabric surface.

## Old Hat Issues

Barriers  
Dusty Footprints  
People on site we don't know about!

Tools!

## Unattended Tools



## New Construction

Multidisciplinary team

- Regular meetings
  - Our training of their staff
  - Their training of our staff

Site inspections

Demolition issues



## Assistance

IPAC-Canada's Construction, Renovation, Maintenance and Facility Design Interest group has a toolkit:

<http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/IPAC/Pages/CRMD.aspx>

- Hint: Go to main website, type in "construction" and use first folder!



## Z317.13 Sec 8.1.2 New Projects

### **Category 1—New location:** ...land that is

- i) geographically isolated from existing health care facilities (e.g., on a vacant parcel of land that is not part of an existing facility campus); and
- ii) at a sufficient distance from existing health care facilities that the activities associated with construction will not in any way impair the air quality or water quality (with respect to pathogenic organisms, mould, bacteria, or dust) of another health care facility



## Category 2 Existing Detached

Construction of a new building on land that is geographically associated with an existing HCF building, but is not connected for the purpose of normal foot traffic

**Note:** ...buildings that are near each other but not linked by corridors (i.e., one would have to go outside to get from one to the other). The buildings could be linked by other means such as utility connections, tie ins, or routing of existing services such as mechanical, electrical, plumbing, medical gas, medical vacuum, IT cabling, service tunnels, etc.

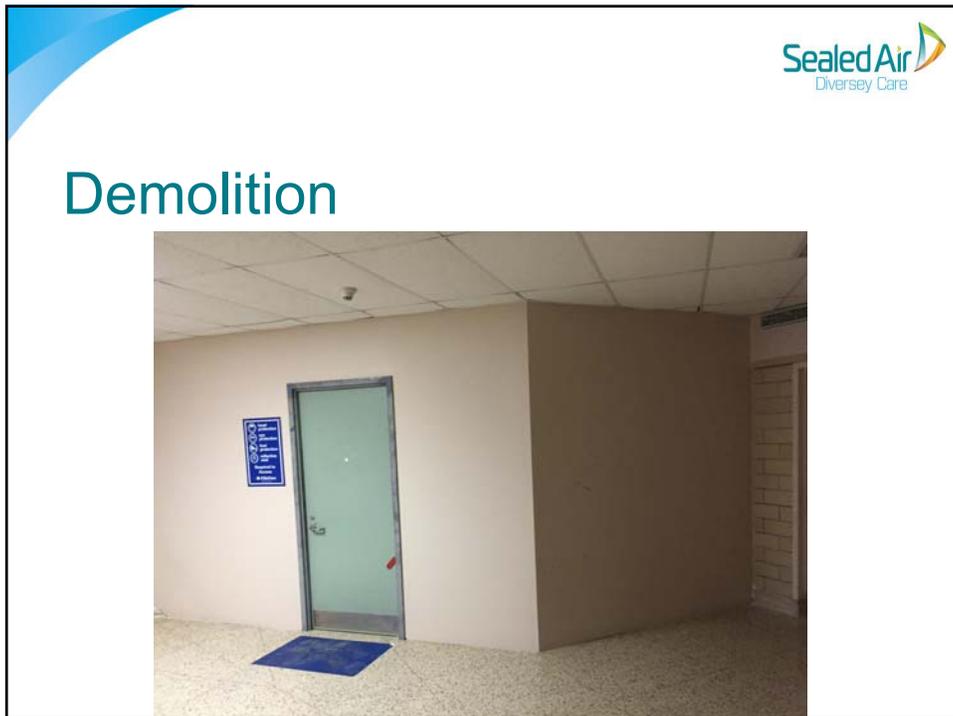
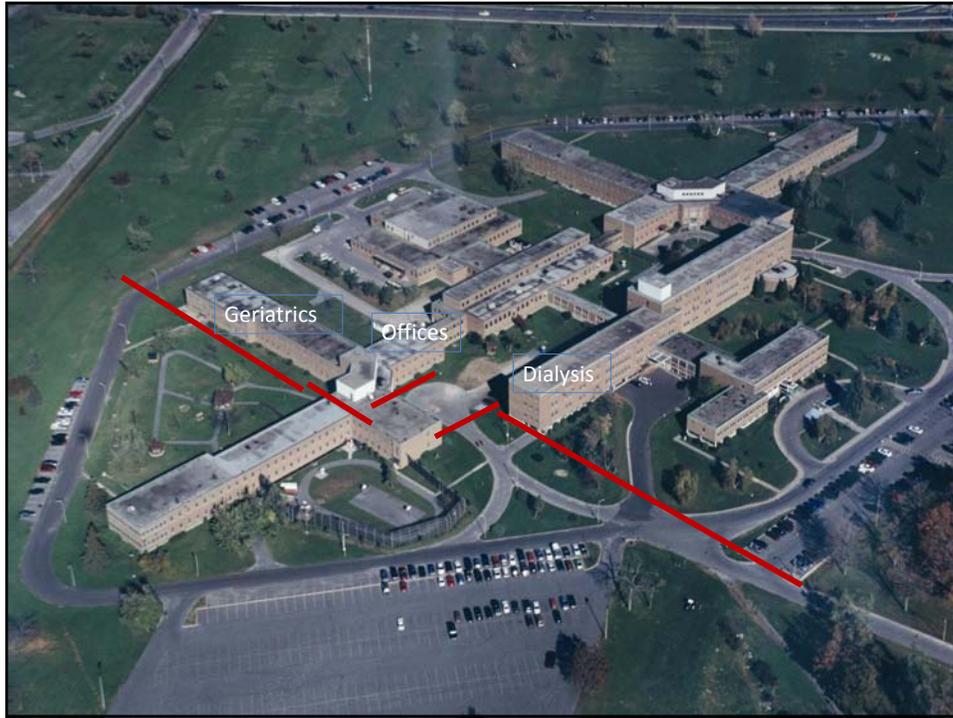


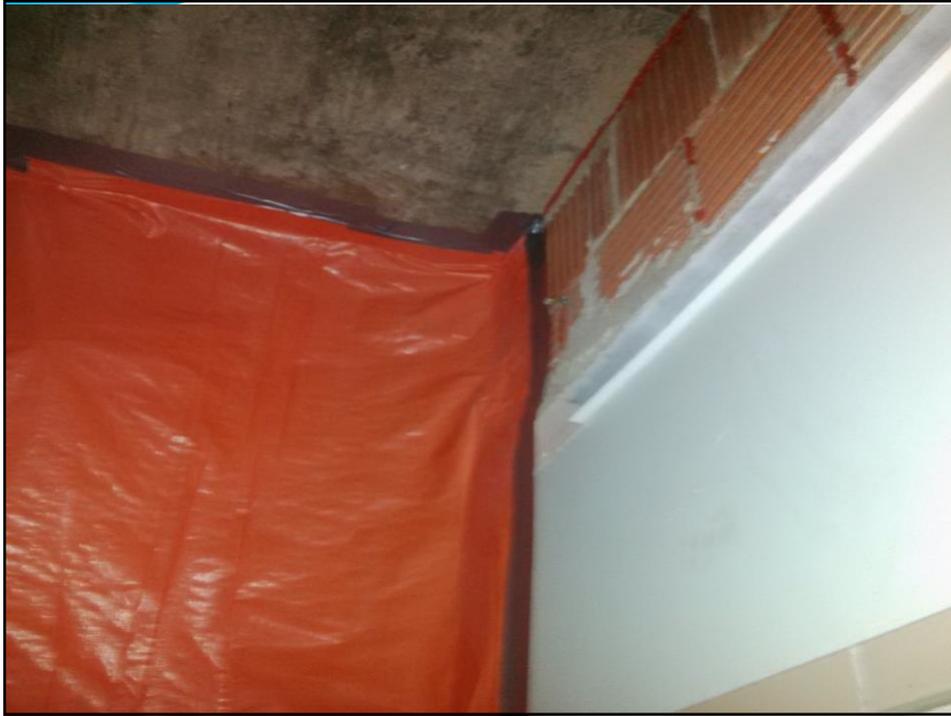
## Category 3 Existing Connected

Construction of a new building or addition that is directly connected to an existing HCF building (i.e., such that normal foot traffic is possible between buildings without going outside)



## Demolition





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# Demolition

An exterior photograph of a brick building in the process of being demolished. The building is a two-story structure with many windows, some of which are missing. In the foreground, there is a large pile of dark gravel and debris. Two construction cranes are visible in the background against a grey, overcast sky.



# Windows



# Air Filters





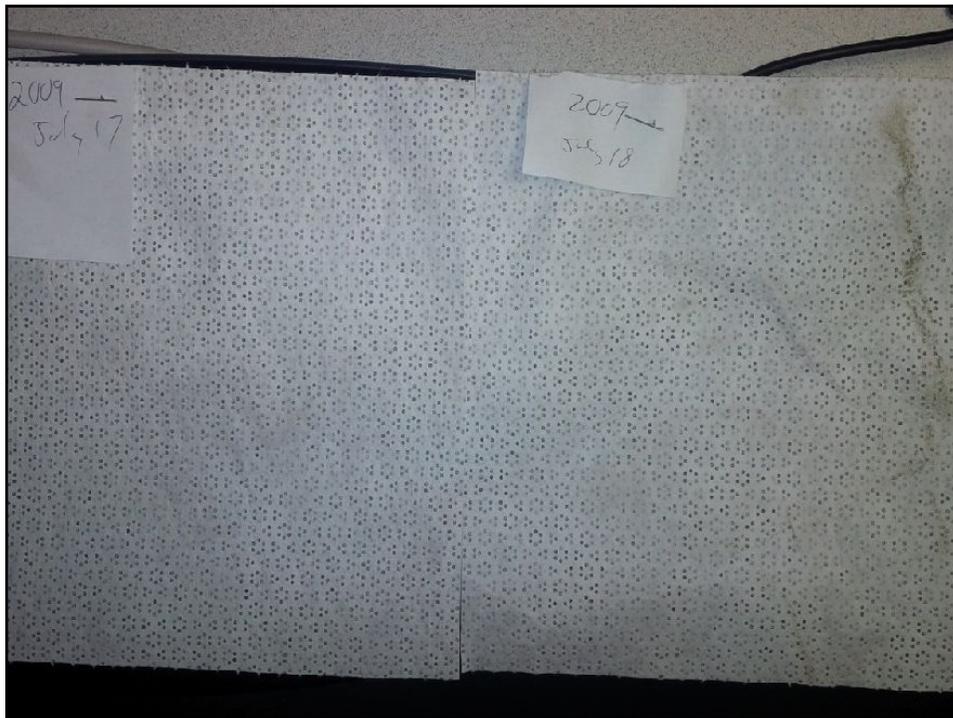
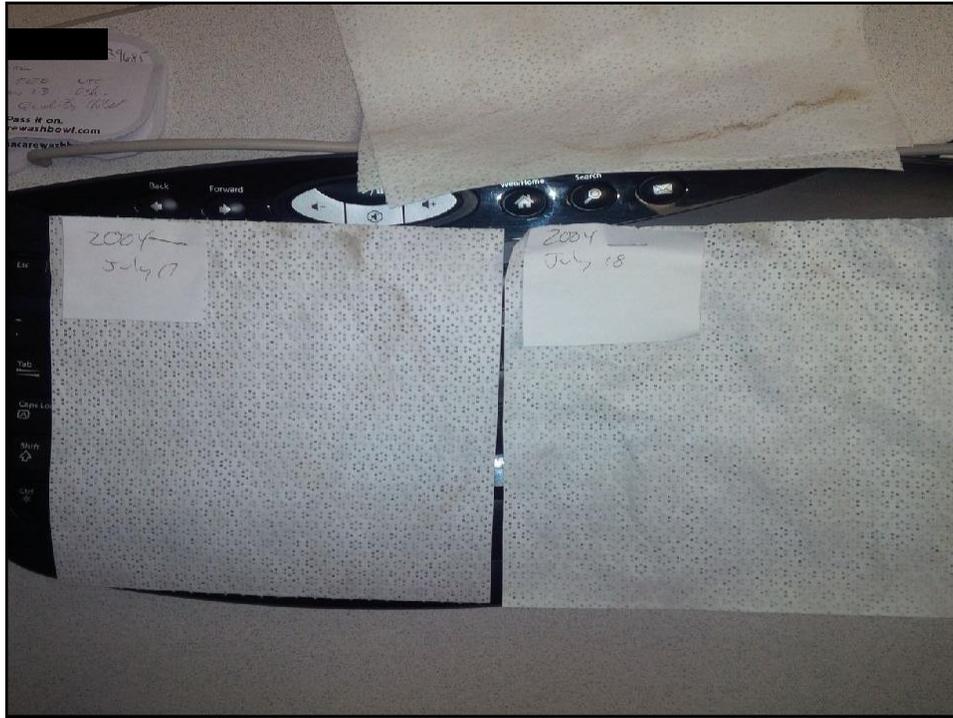


## Demolition Summary

- Understand the staging of the demolition
- Check barriers on your side of the construction
- Know your prevailing winds (use an indicator)
  - Air intakes
- Secure, if necessary, areas where dust can come in

## Dust







## Duct Work

### 8.2.11

In new construction projects, temporary heating/cooling may be provided through the use of the building's permanent HVAC system (in whole or in part), provided that the following requirements are met:

- a) Such use shall be approved by the MDT, owner, constructor, and mechanical design consultant



## Duct Work

### CSA Z317.13 Sec 5.3.3

### CSA Z317.2 HVAC and Healthcare

Shipped sealed

Sealed after assembly

Cleaned before commissioning

*(NADCA General Specification for the Cleaning of Commercial, Heating, Ventilation and Air Conditioning Systems)*

**National Air Duct Cleaners Association**











**National Air Duct  
Cleaners Association**

**SealedAir**  
Diversey Care

**NADCA GENERAL SPECIFICATIONS  
FOR THE CLEANING OF COMMERCIAL  
HEATING, VENTILATING AND AIR  
CONDITIONING SYSTEMS**

National Air Duct Cleaners Association  
1518 K Street, N.W.  
Suite 503  
Washington, DC 20005  
(202) 737-2926 · Fax (202) 347-8847  
info@nadca.com · www.nadca.com



## NADCA

The return air grilles, return air ducts to the air handling unit (AHU), the interior surfaces of the AHU, mixing box, coil compartment, condensate drain pans, humidifiers and dehumidifiers, supply air ducts, fans, fan housing, fan blades, air wash systems, spray eliminators, turning vanes, filters, filter housings, reheat coils, and supply diffusers...



## NADCA

Visible clean  
All components  
Use of antimicrobial agent ONLY if active fungal growth is "reasonably suspected"  
All done within ducts under negative pressure  
HEPA filtered if air from negative pressure is dumped within building

# Sealing the Building





















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## Issues

Ask questions!

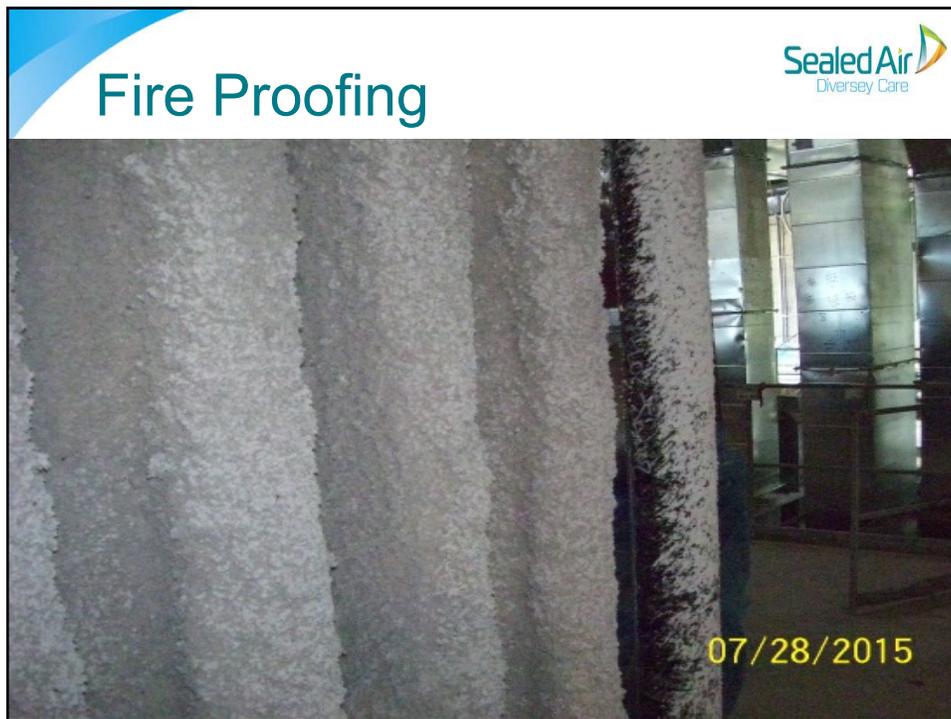
- We can't be expected to be contractors
- Watch for eye-rolling

Take pictures

- Phones, camera

Document

- E mail

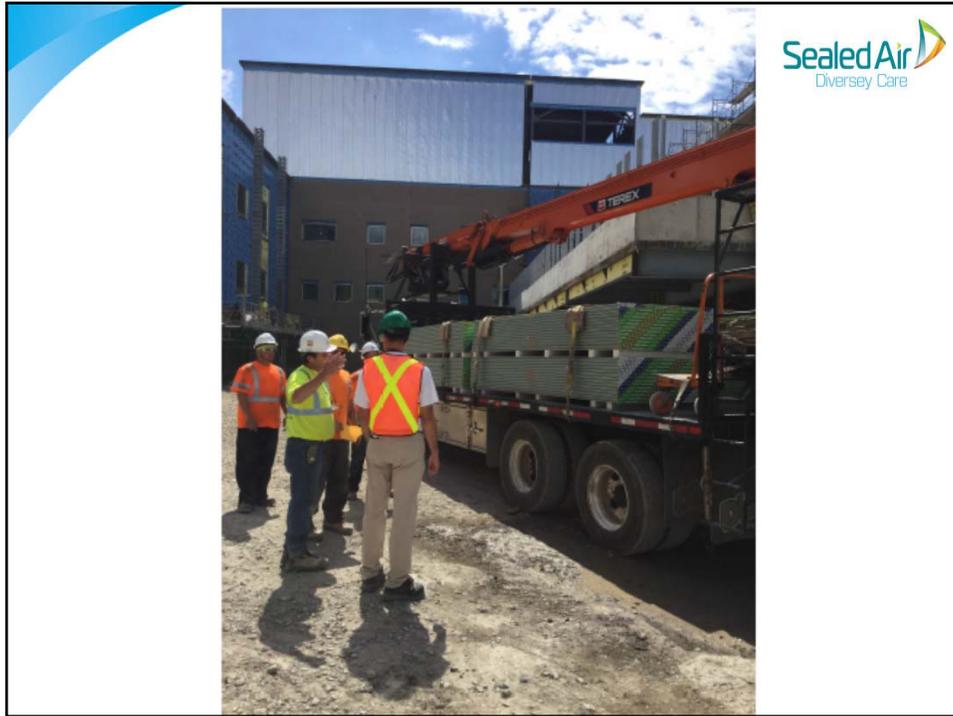


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## Inspections

As required  
Weekly once sealing in starts  
Frequency depending on stages and activities

- Drywall installation

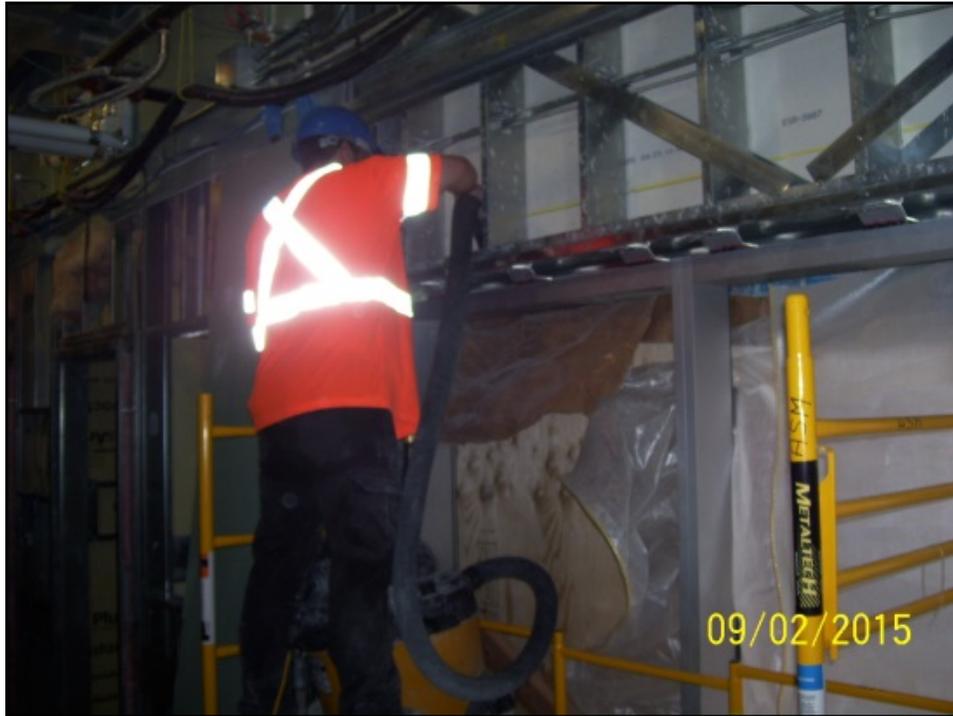












## Sealing of Walls

- One side done first
- Outside walls insulated during brickwork on our project
- HEPA vacuumed
- Ducts, pipes above drywall ceiling dry wiped
- Don't be the only signatory



### Quality Control Checklist

Interior Gypsum Board - Boarding

Project: Providence Health Care  
 Subcontractors: ASB  
 Groupe Pehr



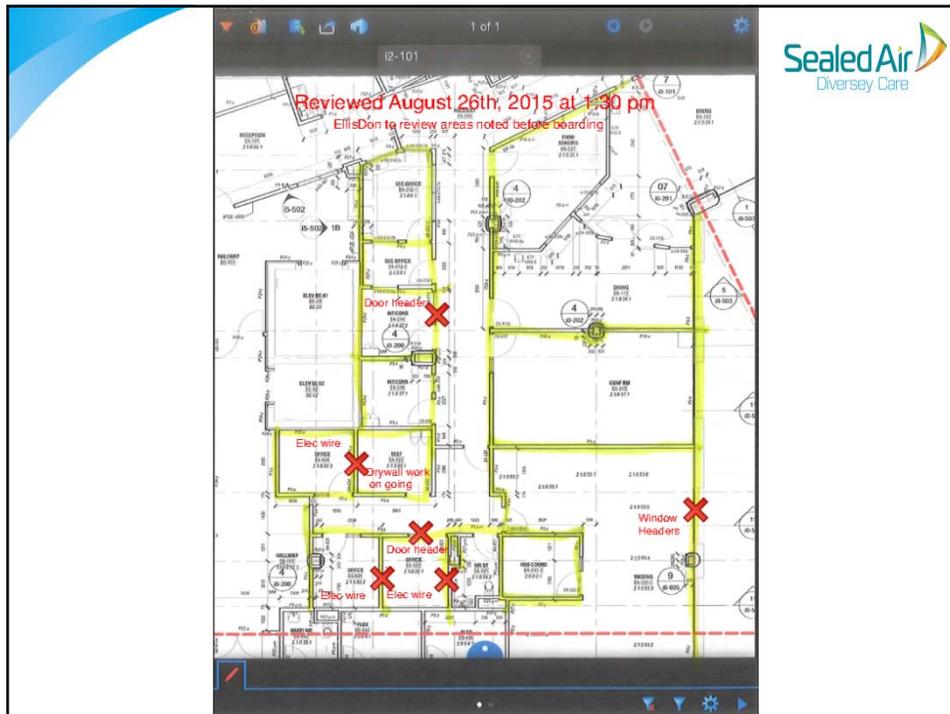
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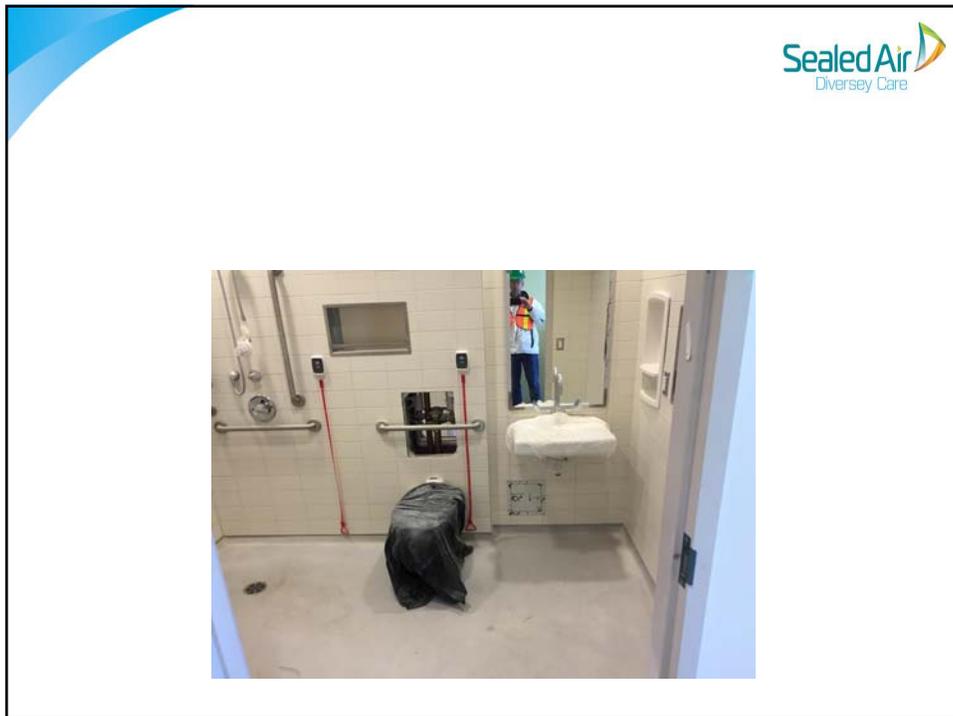
Location  
 Building: D Area: D1a-00 Room: (As Highlighted)  
 Start Date: Aug 25, 2015 Finish Date: \_\_\_\_\_

Installation Checklist	SIIP	EC	P	R
<b>Materials</b> - All material is as specified, damage free, and correct for installation location.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Inspection</b> - Ensure all wet work in surrounding area is complete and work area is dry.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Inspect</b> - Remove any loose shavings signs of mold, rot, or insect growth.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Storage</b> - Elevate off ground, keep material dry, store gypsum panels flat. Area should be well ventilated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>1. Examination and Coordination</b> - Ensure all framing, mechanical and electrical roughing is complete and signed off before commencing gypsum board installation. Pre-board checklist complete.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>2. Clean</b> - upper framing, ensure all tracks, bracing, boxes are HEPA vacuumed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>3. Inspection</b> - upper framing by ICP and EllisDon	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>4. Board</b> - uppers only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>1. Exterior Walls</b> - Clean bottom track of exterior walls with HEPA vacuum	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>2. Inspection</b> - by ICP and EllisDon	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>3. Moisture Reading</b> - Moistures content of wood in walls (if applicable)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>4. Board</b> - exterior walls only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>1. Board</b> - Alternating rooms only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>2. Clean</b> - all wall cavities, door/shadow headers and ceiling space using a HEPA vacuum and sweeper	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>3. Inspections</b> - by ICP and EllisDon	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>4. Insulation</b> - install Sound Attenuation Batt insulation using implement strips	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>5. Board</b> - walls and ceilings	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Drawings</b> - Board type installed as detailed on partition legend and drawings.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Fasteners</b> - Space fasteners as per specification max. 305mm (12") edges and field or per manufacturers installation instructions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Joints</b> - Fit joints tightly, offset joints in double layer applications minimum 250mm, keep gypsum board min 1/4" & max 1/2" above finished floor. Drywall to end on the center of a stud.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Control Joints</b> - Located as per drawings. Installed straight and true, backed by continuous dust barrier	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Sealants</b> - Install sealant as detailed on plans and specifications.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Spot Guard</b> - Spot guard as per drawings. Installed straight and true, backed by continuous dust barrier	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Double Layer</b> - Brace layer to be installed at right angles to face layer.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Penetration &amp; Insulation Recesses</b> - Follow special procedures for gypsum board installation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>City of Kingston Inspection Completed for Fire Stopping Details</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Cleaning</b> - Working area is clean and organized (from start to finish). Daily Clean up required	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Final Clean</b> - Please protect material with proper bin and ensure area is free of debris	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

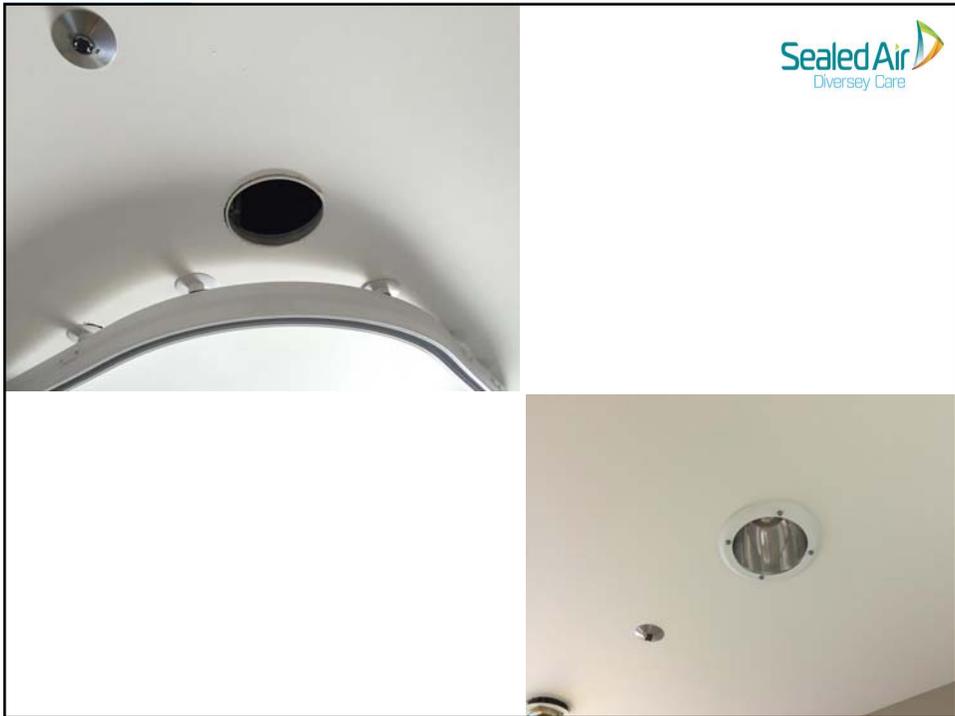
All horizontal items to be run over with a vacuum  
 Run a vacuum over the door header and side  
 Top of boxes to be vacuumed

Final Signoff		Signature	Date
ASM	GFC	Signature	Date
ED		Signature	Date





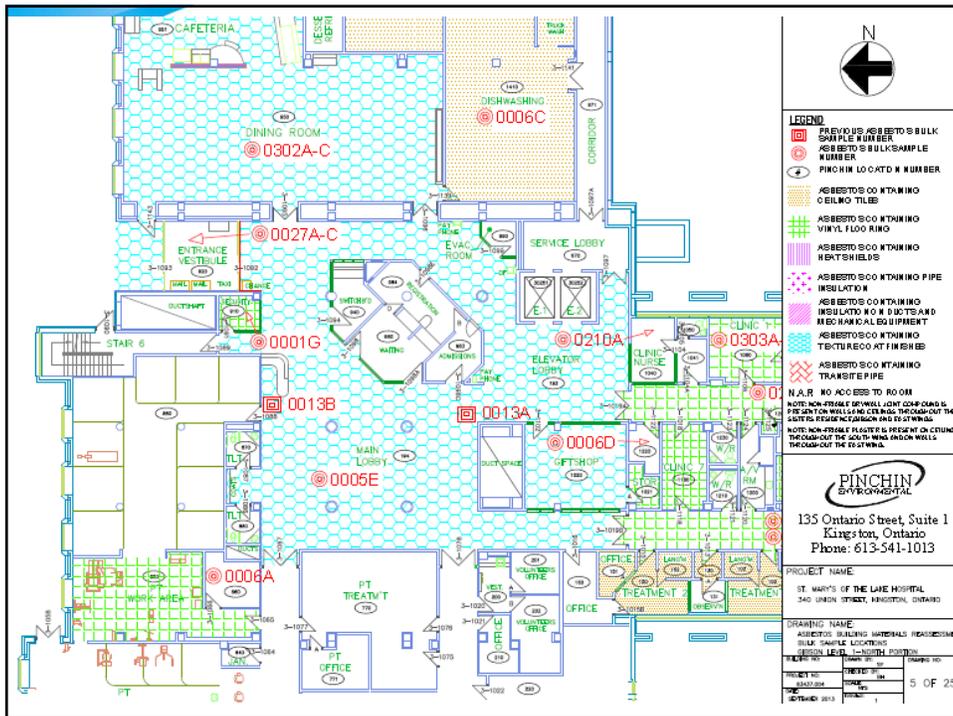
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## Blue Prints

- Aren't blue!
- Aren't that confusing...
- Need to take your time and ask questions
- Use references for orientation of plan







**LEGEND**

- PREVIOUS ASBESTOS BULK SAMPLE NUMBER
- ASBESTOS BULK SAMPLE NUMBER
- PINCHIN LOCATION NUMBER
- ASBESTOS CONTAINING CEILING TILES
- ASBESTOS CONTAINING VINYL FLOORING
- ASBESTOS CONTAINING HEATSHIELDS
- ASBESTOS CONTAINING PIPE INSULATION
- ASBESTOS CONTAINING INSULATION ON DUCTS AND MECHANICAL EQUIPMENT
- ASBESTOS CONTAINING TEXTURED AC FINISHES
- ASBESTOS CONTAINING TRANSITE PIPE

N.A.R. NO ACCESS TO ROOM  
NOTE: NON-FIBREGLASS WALL JOINT COMPOUND IS PRESENT ON WALLS AND CEILING THROUGHOUT THE SOUTH WING OF GIBSON AND DEPT 2100  
NOTE: NON-FIBREGLASS IS PRESENT ON CEILING THROUGHOUT THE SOUTH WING AND ON WALLS THROUGHOUT THE EQUIPMENT



135 Ontario Street, Suite 1  
Kingston, Ontario  
Phone: 613-541-1013

**PROJECT NAME:**  
ST. MARY'S OF THE LAKE HOSPITAL  
340 UNION STREET, KINGSTON, ONTARIO

**DRAWING NAME:**  
ASBESTOS BUILDING MATERIALS REASSESSMENT  
BULK SAMPLE LOCATIONS  
GIBSON LEVEL 1-NORTH PORTION

<b>BUILDING NO:</b>	<b>DRAWN BY:</b> SY	<b>DRAWING NO:</b>  5 OF 25
<b>PROJECT NO:</b> 63437.004	<b>CHECKED BY:</b> BH	
<b>DATE:</b> SEPTEMBER 2013	<b>SCALE:</b> NTS	
	<b>ISSUED:</b> 1	



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	<b>ISSUED:</b> 1	




**LEGEND**

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-  ASBESTOS BULK SAMPLE NUMBER
-  PINCHIN LOCATION NUMBER
-  ASBESTOS CONTAINING CEILING TILES
-  ASBESTOS CONTAINING VINYL FLOORING
-  ASBESTOS CONTAINING HEAT SHIELDS
-  ASBESTOS CONTAINING PIPE INSULATION
-  ASBESTOS CONTAINING INSULATION IN DUCTS AND MECHANICAL EQUIPMENT
-  ASBESTOS CONTAINING TEXTURE COAT FINISHES
-  ASBESTOS CONTAINING TRANSITE PIPE

N.A.R. NO ACCESS TO ROOM  
 NOTE: NON-FRAME OF WALL JOINT COATING IS PRESENT ON WALLS AND CEILING THROUGHOUT THE SOUTH WING IN CLASH AND DECKING.  
 NOTE: NON-FRAME FRIGTES IS PRESENT ON CEILING THROUGHOUT THE SOUTH WING AND ON WALLS THROUGHOUT THE EQUIPMENT.



135 Ontario Street, Suite 1  
 Kingston, Ontario  
 Phone: 613-541-1013

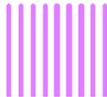
PROJECT NAME  
 ST. MARY'S OF THE LAKE HOSPITAL  
 340 UNION STREET, KINGSTON, ONTARIO

DRAWING NAME  
 ASBESTOS BUILDING MATERIALS REASSESSMENT  
 BULK SAMPLE LOCATIONS  
 REGION LEVEL, LAYOUT POSITION

DATE:	ISSUED BY:	PROJECT NO.:
REVISED BY:	DATE:	SCALE:
		5 OF 25



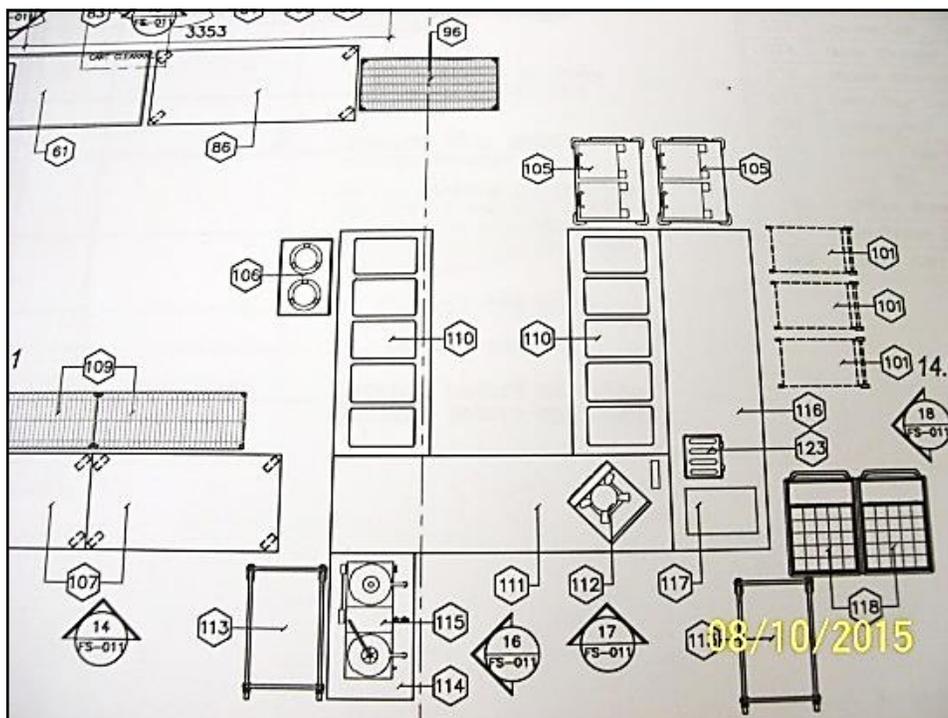

**LEGEND**

-  PREVIOUS ASBESTOS BULK SAMPLE NUMBER
-  ASBESTOS BULK SAMPLE NUMBER
-  PINCHIN LOCATION NUMBER
-  ASBESTOS CONTAINING CEILING TILES
-  ASBESTOS CONTAINING VINYL FLOORING
-  ASBESTOS CONTAINING HEAT SHIELDS

● CONDUIT STUB DOWN

**-BOX SIZE**  $\boxed{f}^4$   $\boxed{f}^{4+}$   $\boxed{f}^6$   $\boxed{10}^f$   
 (4x4x2 $\frac{1}{2}$ ) (4 $\frac{1}{2}$ x4 $\frac{1}{2}$ x2 $\frac{1}{2}$ ) (6x6) (10x10)ETC. . .

SYMBOL	LIGHTING LEGEND
	RECESSED FLUORESCENT LUMINAIRE ON CONDITIONAL POWER.
	RECESSED DOWN LIGHT ON CONDITIONAL POWER.
	WALL MOUNTED FIXTURE ON CONDITIONAL POWER. W INDICATES "IN USE LIGHT"
	FLUORESCENT LUMINAIRE ON CONDITIONAL POWER. C/W ELECTRONIC BALLAST.
	FLUORESCENT LUMINAIRE ON CONDITIONAL POWER.
	FLUORESCENT STRIP LIGHTS MOUNTED IN ARCHITECTURAL COVE / VALANCE OR UNDER CABINET, AS SHOWN IN DRAWINGS.
	RECESSED FLUORESCENT LUMINAIRE ON VITAL POWER.
	CEILING OR WALL MOUNTED LUMINAIRE ON VITAL POWER.
	FLUORESCENT LUMINAIRE ON VITAL POWER.
	EXTERIOR SINGLE HEAD CEILING OR WALL MOUNTED HID LUMINAIRE
	EXTERIOR POLE MOUNTED HID LUMINAIRE
	WALL OR CEILING MOUNTED LED TYPE EXIT LIGHT WITH RED LETTERS. ARROWS INDICATE ILLUMINATED FACE(S) AND DIRECTION(S). BAR(S) INDICATE FACE(S) ONLY. (WALL MOUNTED 150mm & ABOVE DOOR FRAME)



99	Unassigned
100	Reach-in Freezer – Double
101	Utility Cart
102	Unassigned
103	Air Curtain Refrigerator
104	Mobile Tray Dispenser
105	Mobile Plate Dispenser – Heated
106	Mobile Plate Dispenser – Unheated
107	Room Service Table – Long
108	Unassigned
109	Gravity Shelf
110	5-Well Hot Food Table



## Meetings, Bloody Meetings

PSOS (Project Specific Output Specifications)

- Standards to which the new hospital will be built
- Operational standards after completion
- Includes
  - Design construction standards
  - Height of hand wash sinks
  - Paint, surfaces
  - Steel for framing
  - Type of drywall



## Equipment

### Plumbing

- Sinks, toilets, shower heads

### Furniture

Pharmacy, Dentist, Kitchen

Outdoor furniture

Appliances

Etc.



## Operational Readiness

More temporary positions

Working to guide transition into new building

- Policies



## Last Suggestion

Track time!

- Excel sheet



## Summary

Intimidating

Neat!

Time Consuming

Share our experiences!

# Questions?

