Cultivating Discussion During the Design Phase: Stakeholders, Policy, and Compliance

CHRISTA MARDAUS, NICK HOFFMAN, AND AMANDA BROWN

Disclaimer

The guidelines and instructions presented here are not meant to supersede manufacturers' instructions, contractors' job site requirements, or healthcare facilities' policies or procedures nor are they meant to replace any current local, state, provincial, or federal safety rules or regulations.
It is essential that you always follow all current local, state, provincial, or federal safety rules, regulations, and guidelines whenever you perform any of these tasks.

No statements made in this presentation should give the impression that Carpenters Training Institute their affiliates, representatives, or employees have assumed any part of the employer's legal responsibility to provide a "safe and healthful workplace," as mandated by the Occupational Safety and Health Act of 1970.

Objectives

- Establish an owner-led team approach to support effective communication and coordination between stakeholders to ensure the health and safety of building occupants during construction
- Identify how the FGI can provide a proactive approach to the design phase
- Understand the potential impacts of ICRA and strategies to mitigate the risk during the design phase
- Demonstrate how to incorporate ICRA using VR/AR technologies to increase occupant safety and cost-effectiveness


UBC ICRA
BUILDING STANDARDS FOR INFECTION PREVENTION

We Know the Concerns, Now What?

- Implement ICRA requirements
- Use the FGI as a guide to mitigate risk during construction
- Ensure contractors are ICRA trained as a risk mitigation strategy
- Include ICRA project requirements in bid specs
- Encourage infection prevention input in the early stages of project development

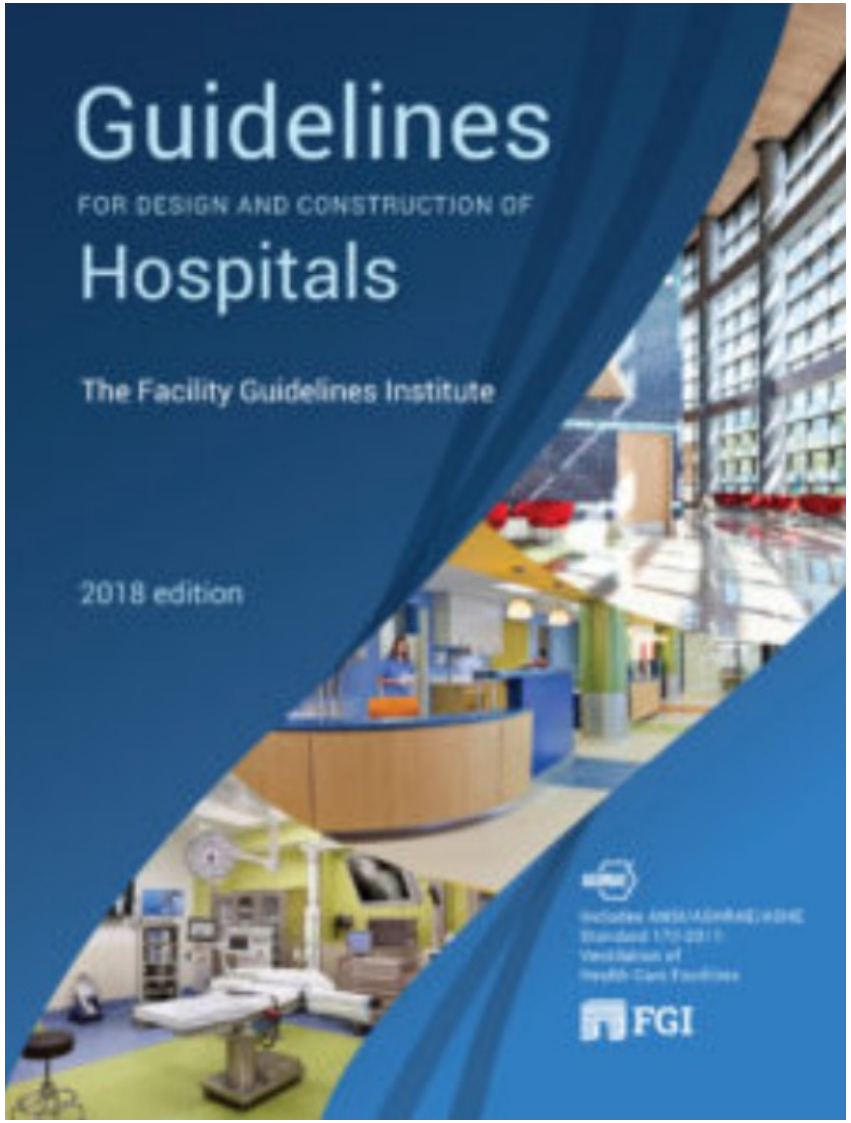
Implement ICRA Requirements

CMS Conditions of Participation

Hospital Infection Control Worksheet

Cite: 42 CFR 482.42(a)

1.A.6 The hospital has infection control policies and procedures relevant to construction, renovation, maintenance, demolition, and repair, including the requirement for an infection control risk assessment (ICRA) to define the scope of the project and need for barrier measures before a project gets underway.



Implementing ICRA Requirements

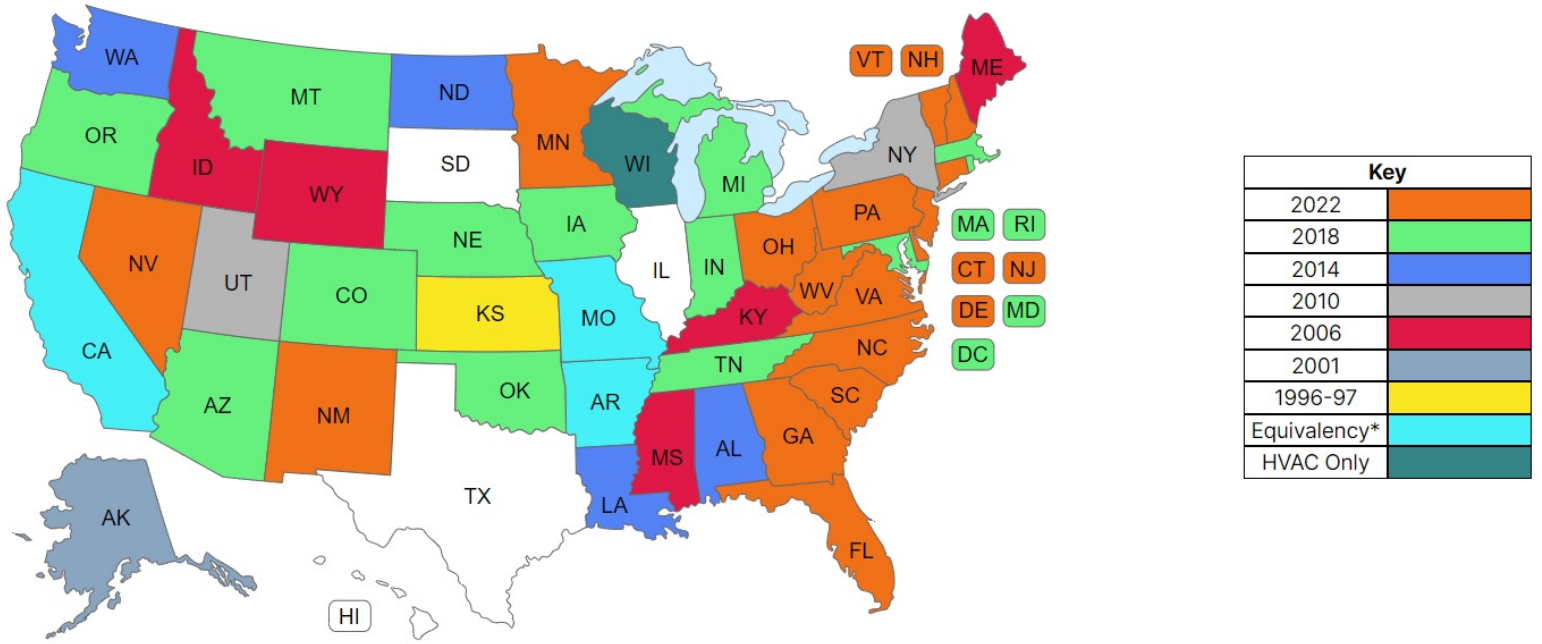
The industry's most widely recognized guidance for planning, designing, and constructing health care and residential health, care, and support facilities

What you'll find:

- Minimum program requirements
- Space risk assessment
- Infection prevention details
- Architectural detail
- Surface requirements
- Built-in furnishing requirements

Published every 4 years and adopted differently by each state

Implementing ICRA Requirements



(FGI, 2024)

1.2-4.2: Infection Control Risk Assessment (ICRA)

"...infection control risk assessment shall be part of the integrated facility planning, design, construction, and commissioning activities and shall be incorporated into the safety risk assessment" (FGI, 2022, p. 20)

Use the FGI to Mitigate Risk

Design elements to consider

- Day-to-day and long-range infection prevention
  - •Special patient care rooms (AII, PE Rooms)
  - •HVAC Systems to accommodate services
  - •Water Plumbing Systems
    - •Potable water systems, heated potable water distribution systems, sinks, hand sanitizer dispensers, hand washing stations
      - Address/mitigate risk of pathogens
  - •Room or design elements
    - •Sinks, hydrotherapy, ice-making equipment, shower/bathing facilities
  - •Surfaces and furnishings

Use the FGI to Mitigate Risk

Construction Impacts on:

•Essential service disruptions

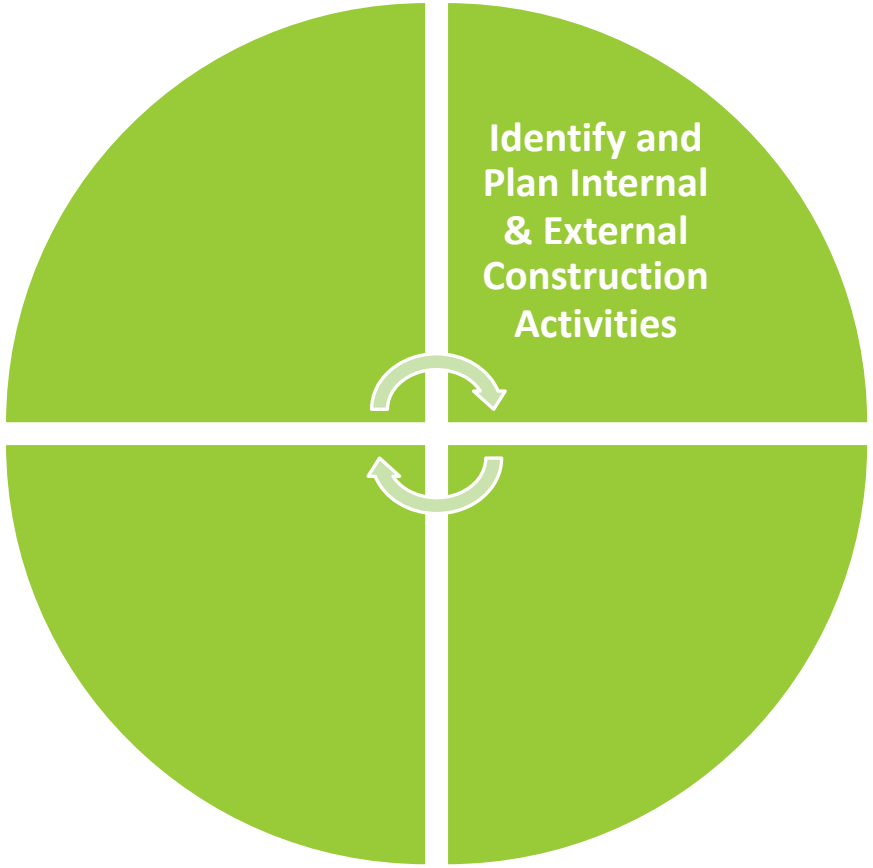
• Site-specific hazards and protections

•Patient susceptibility and risk

•Traffic flow (debris and human)

•Assessment of internal and external construction activities

•Location of known hazards



Use the FGI to Mitigate Risk

Consider:

- Essential service disruption impacts
  - Water
  - HVAC
  - Other mechanical systems
- Dust Control
  - Tools
  - Barriers
  - Air Pressures
  - Monitoring

Use the FGI to Mitigate Risk

1.2-4.2.3 Infection Control Risk Mitigation (ICRMR)

"Plans that describe the specific methods by which transmission of contaminants will be avoided during maintenance, renovation, construction, and commissioning"

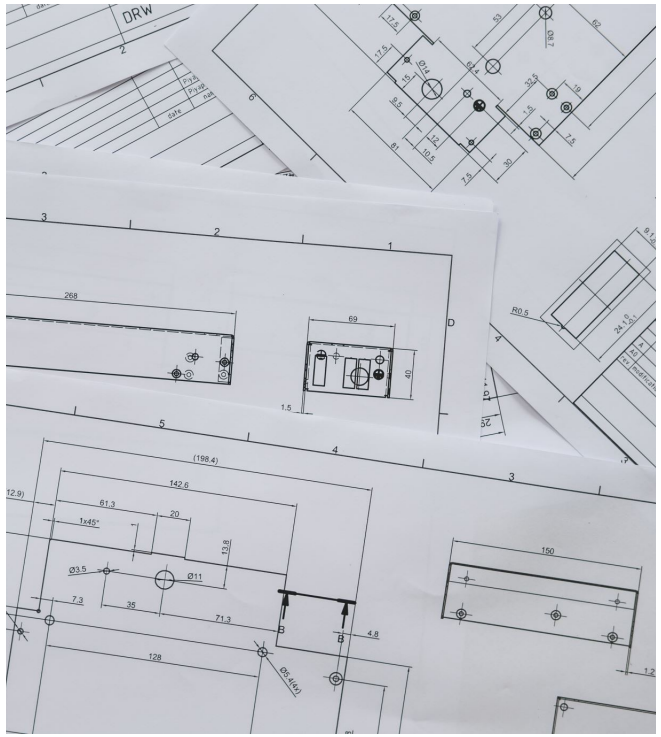
Use the FGI to Mitigate Risk

1.2-4.2.3 Infection Control Risk Mitigation (ICRMR)

Address the Following Issues:

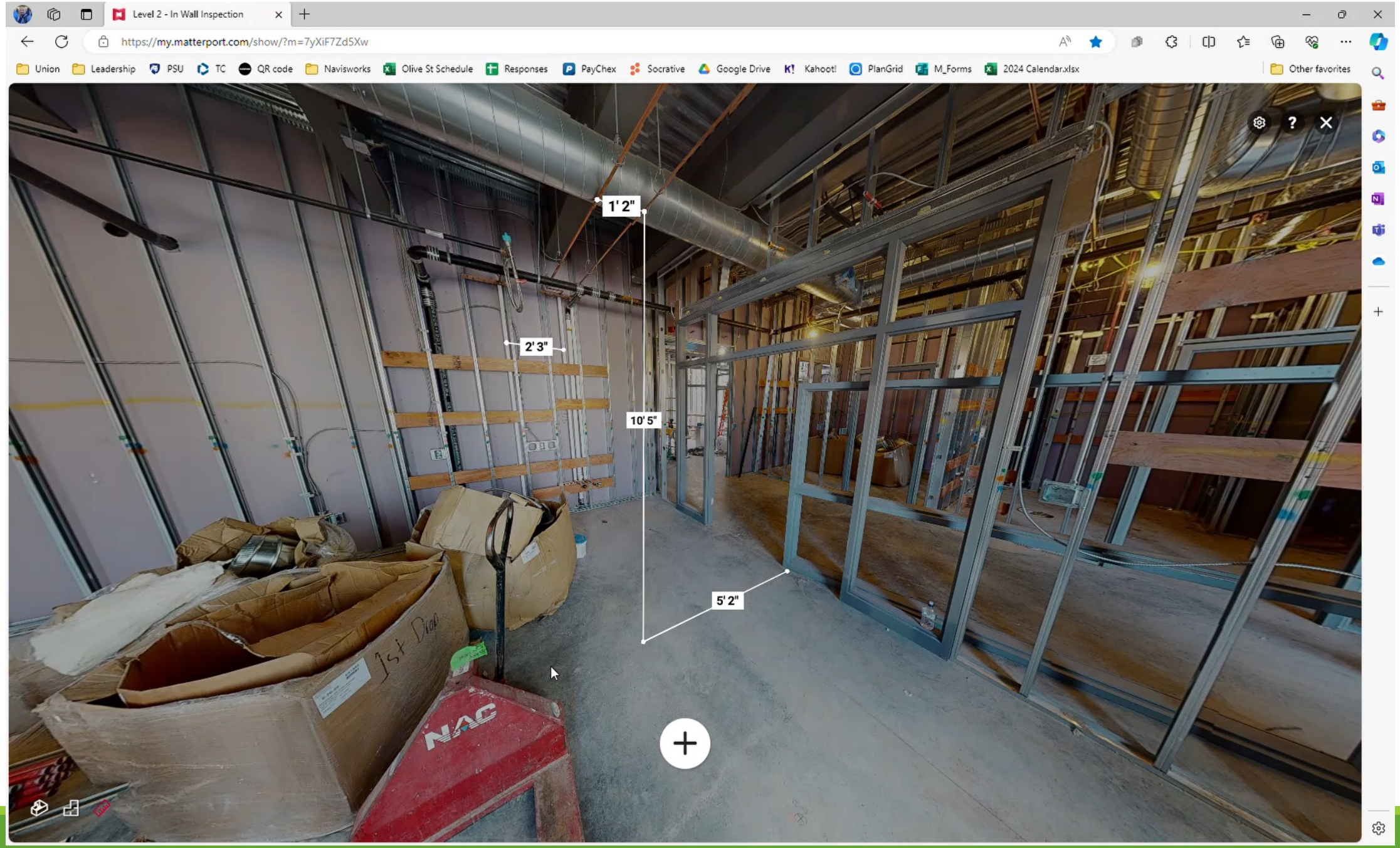
- Patient relocation
- Standards for barriers
- Temporary provisions/phasing for water and HVAC
- Protection from demolition
- Training
- Impact of outages
- Debris movement and traffic flow
- Provisions for construction
- Policies for installation of clean and water-free materials

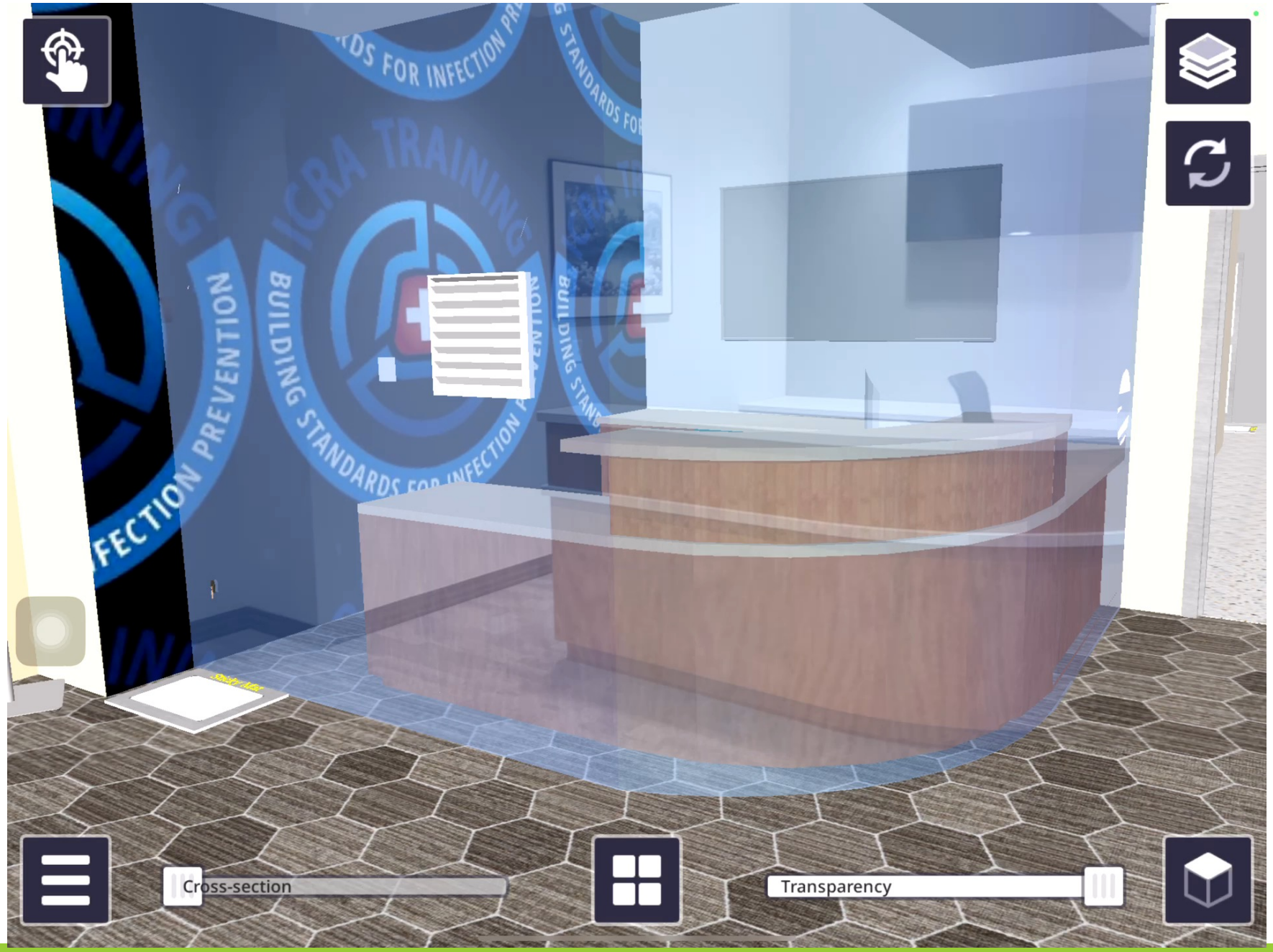
FGI, ICRA, and Building Information Modeling (BIM)



BIM Technology offers a digital representation of a facility's physical and functional characteristics

- **Operational processes**
  - Asset management, streamlined maintenance
  - Products including Matterport and Trimble X9 Scanners
- **Visualization and simulation capabilities**
  - Design efficiency and space utilization
  - Enhance workflow
  - Better communication
  - Improved collaboration

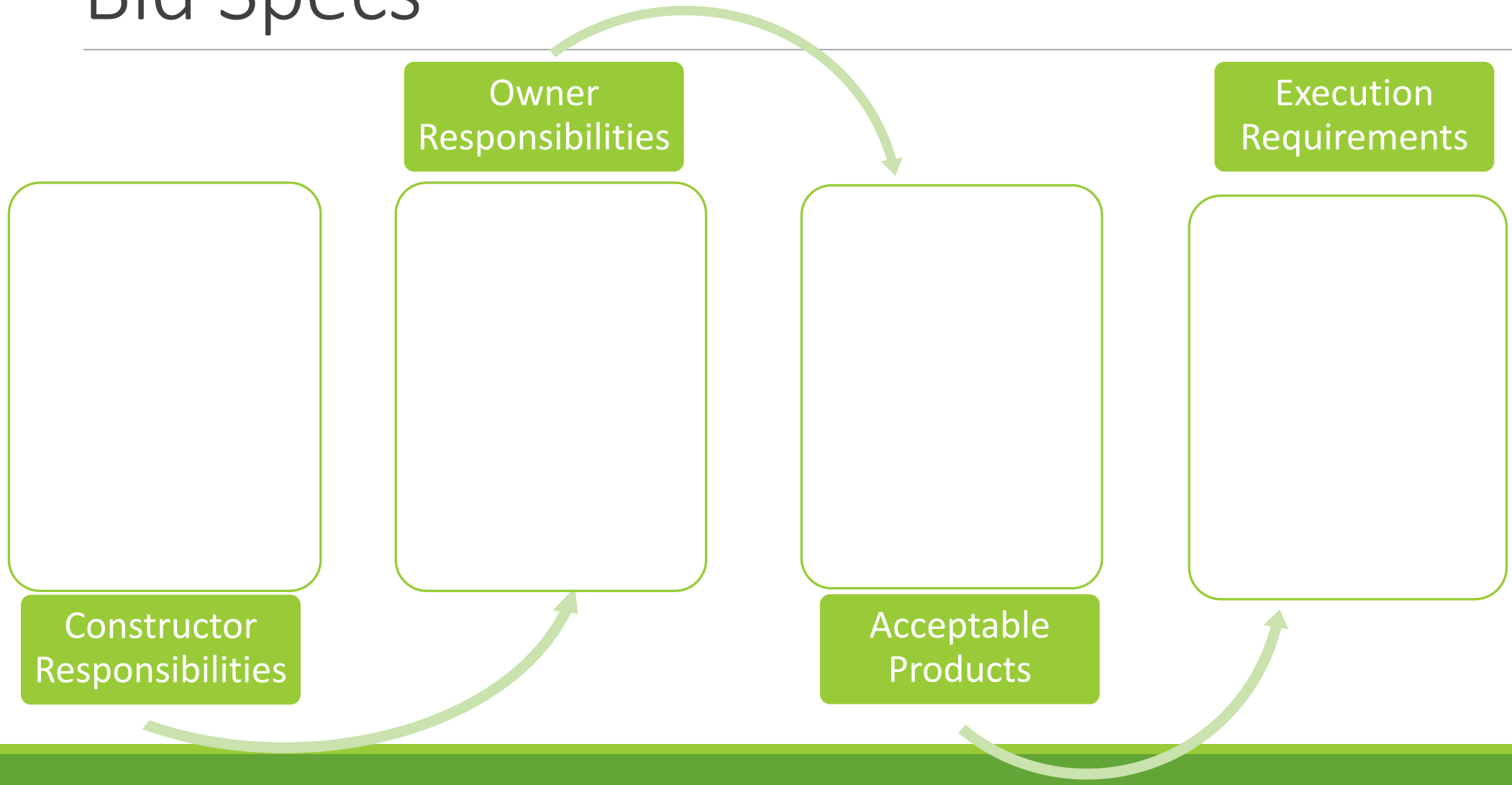

Level 2 - In Wall Inspection
https://my.matterport.com/show/?m=7yXiF7Zd5Xw
Union
Leadership
PSU
TC
QR code
Navisworks
Olive St Schedule
Responses
PayChex
Socrative
Google Drive
Kahoot!
PlanGrid
M_Forms
2024 Calendar.xlsx
Other favorites
1' 2"
2' 3"
10' 5"
5' 2"
NAC


ICRA TRAINING
BUILDING STANDARDS FOR INFECTION PREVENTION
Cross-section
Transparency

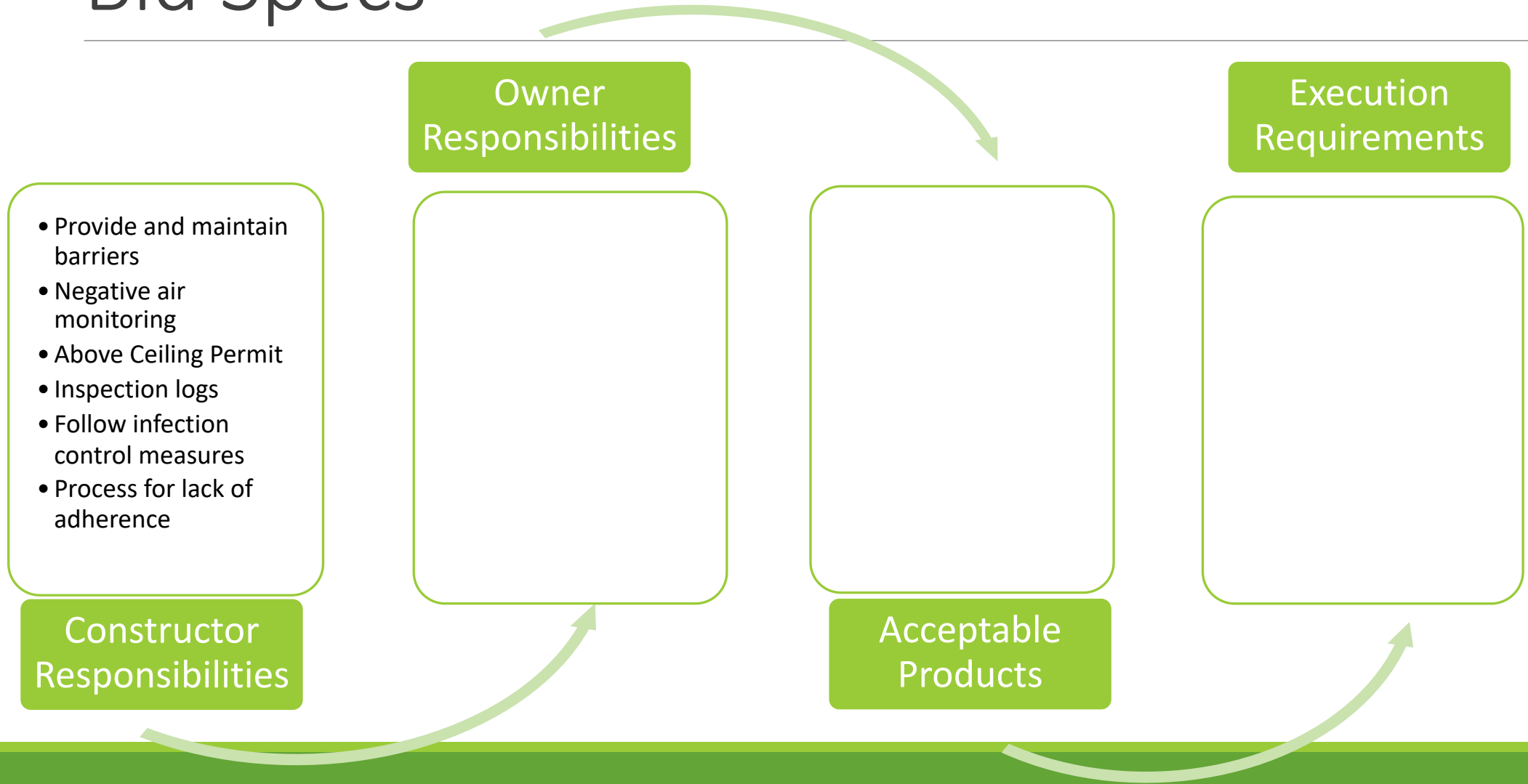

Cross-section
Transparency

Share your WHY

Include ICRA Project Requirements in the Bid Specs

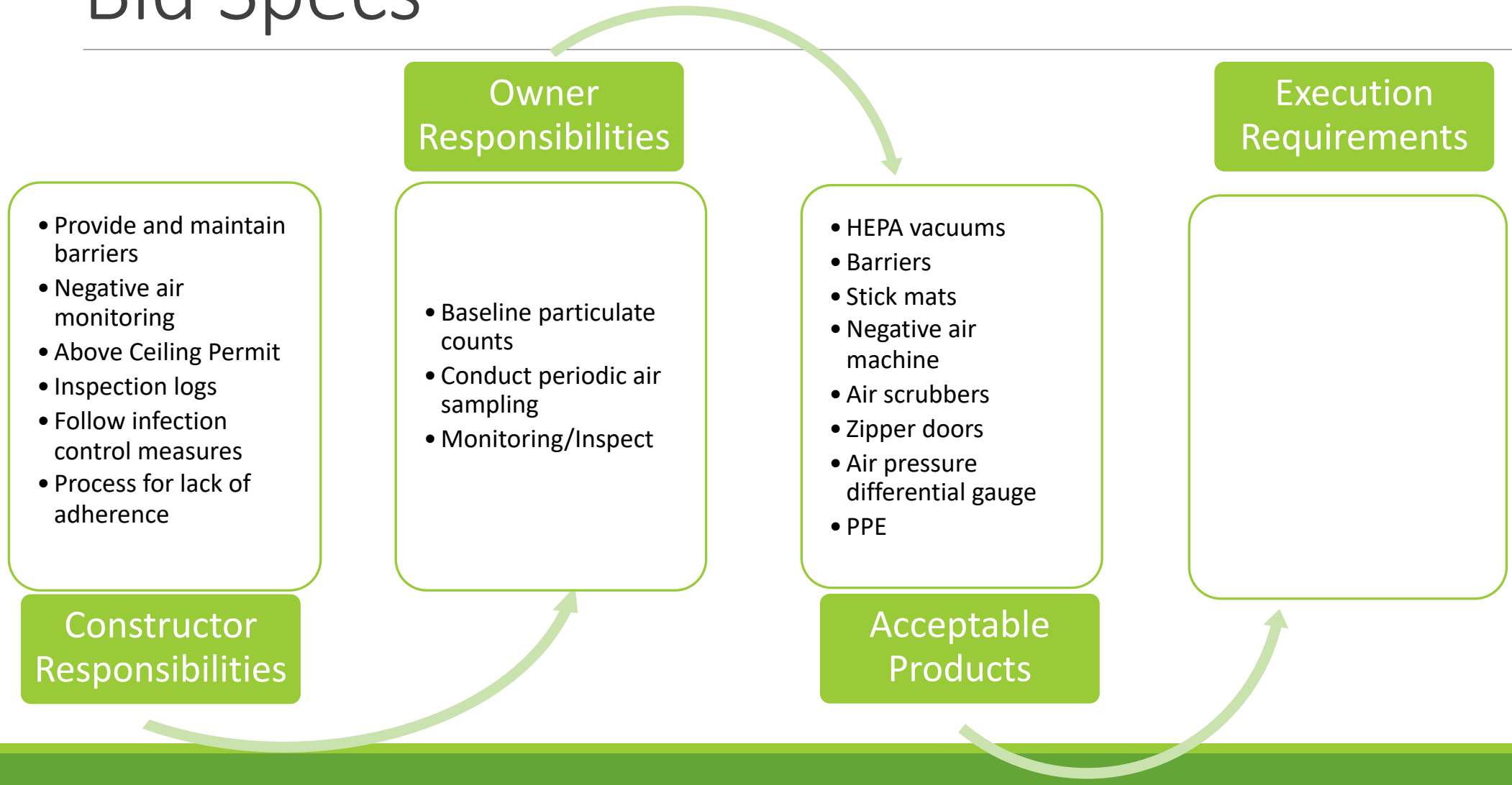


Include ICRA Project Requirements in the Bid Specs



Include ICRA Project Requirements in the Bid Specs

Include ICRA Project Requirements in the Bid Specs



Include ICRA Project Requirements in the Bid Specs

Infection Control Risk Assessment (ICRA) Project Requirements

Step 3

Match the **Patient Risk Group** (Low, Medium, High, Highest) with the planned **Construction Project Type** (A, B, C, D)

Infection Control Matrix
Class of Precautions: Construction Project by Patient Risk

	Construction Project Type			
Patient Risk Group	**TYPE A**	**TYPE B**	**TYPE C**	**TYPE D**
LOW Risk Group	I	II	II	III/IV
MEDIUM Risk Group	I	II	III	IV
HIGH Risk Group	I	II	III/IV	IV
HIGHEST Risk Group	II	III/IV	III/IV	IV

Note: Infection Control approval will be required when the Construction Activity and Risk Level indicate that Class III or Class IV control procedures are necessary.

INFECTION CONTROL GENERAL NOTES

1. THE OWNER HAS DESIGNATED THIS PROJECT TO REQUIRE INTERIM INFECTION CONTROL MEASURES - CLASS III.
2. INFECTION CONTROL RISK ASSESSMENT (ICRA) SEE PROJECT REQUIREMENTS IN SPECIFICATIONS FOR COMPLETE REQUIREMENTS FOR WORK WITHIN THE INFECTION CONTROL ZONE.
3. CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST FOURTEEN (14) CALENDAR DAYS PRIOR TO PREPARING A CONTAINMENT AREA OR STARTING WORK OUTSIDE THE CONTAINMENT AREA.
4. INSTALLATION, INSPECTION , AND REPAIR ACTIVITES REQUIRE THE GENERAL ABOVE CEILING WORK PERMIT TO BE POSTED AT ALL TIMES WHEN ABOVE THE CEILING WORK OCCURS.
5. ALL INFECTION CONTROL MEASURES SHALL BE COMPLETELY INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. ALL TEMPORARY INFECTION CONTROL BARRIERS REQUIRED DURING NON-REGULAR HOURS SHALL BE INSTALLED DURING NON-REGULAR HOURS.
7. ALL WORK OUTSIDE THE CONTAINMENT AREA (SECONDARY CONTAINMENT) SHALL BE SCHEDULED IN ADVANCE WITH THE OWNER'S REPPRESENTATIVE.
8. ALL TEMPORARY PARTITIONS MATERIALS SHALL BE PRECUT OFFSITE TO THE GREATEST EXTENT FEASIBLE.
9. SITE SHALL BE MAINTAINED IN A CLEAN AND ORDERLY FASHION.
10. REMOVE WASTE MATERIALS, DEBRIS AND RUBBISH FROM THE SITE DAILY AND LEGALLY DISPOSE OFF-SITE. WASTE REMOVAL SHALL ONLY BE DONE AFTER HOURS.
11. ALL INTERIOR AREAS SHALL BE CLEANED USING HEPA VACUUM PRIOR TO START OF SURFACE FINISHING AND CONTINUE CLEANING TO ELIMINATE DUST.
12. ALL PENETRATIONS SHALL BE SEALED APPROPRIATELY.
13. THE OWNER RESERVES THE RIGHT TO INSPECT THE WORK AT ANY TIME TO VERIFY COMPLIANCE WITH INFECTION CONTROL REQUIREMENTS.

INFECTION CONTROL LEGEND

REFER TO SECTION 01 35 33 FOR MORE DETAIL

PROJECT BOUNDARY - CONTAINMENT AREA

STUD WALL TEMPORARY CONSTRUCTION PARTITION
-SEE NOTE 1

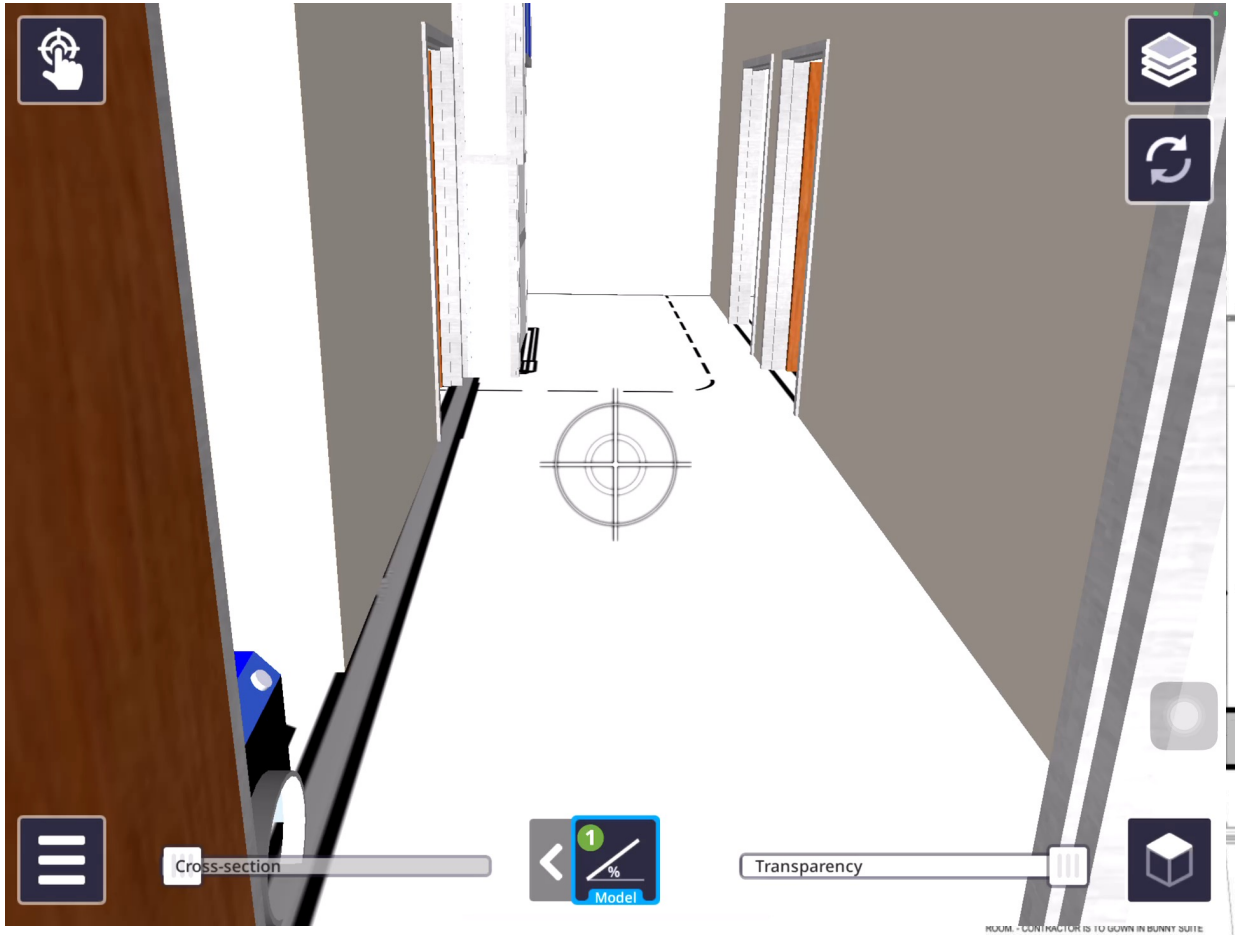
ZIPWALL
-SEE NOTE 2

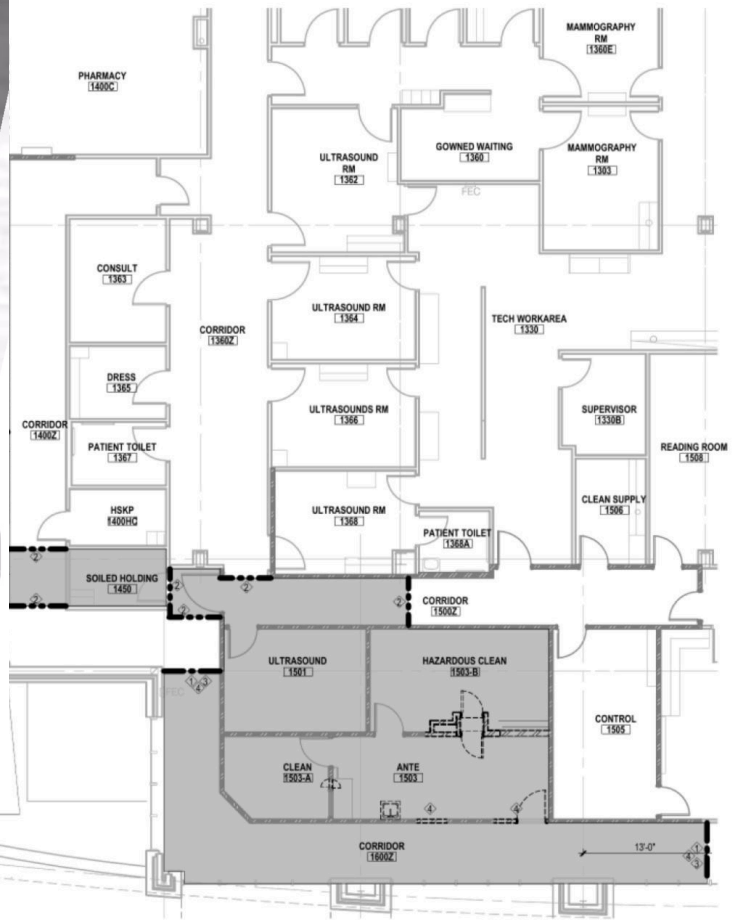
① TEMPORARY STUD WALL PARTITION:
3 5/8" 20 GA MTL STUD AT 16" OC W BLANKET INSUL
1 LAYER 5/8" GYP BD, EA SIDE, TAPE AND PAINT
VINYL BASE
TEMPORARY WALL TO TERMINATE AT CEILING GRID
ABOVE CEILING GRID SHALL BE PLASTIC CONTAINMENT

② ZIPWALL TEMPORARY BARRIER:

③ TEMPORARY CONSTRUCTION DOOR:
HARDWARE BY CONTRACTOR, CORES BY OWNER

④ STICKY WALK-OFF MATS:
4'-0" WIDE MIN, 30" DEEP MIN





ROOM. - CONTRACTOR IS TO GOWN IN BUNNY SUITE AND BOOTIES WHEN TRAVELING TO AND FROM PROJECT SITE FROM ENTRY/EXIT OF ROOM 1400.
-ALL EQUIPMENT AND SUPPLIES ARE TO BE CLEAN BEFORE ENTRY INTO ROOM 1400.

A2 **INFECTION CONTROL PLAN - LEVEL 1**
1/8" = 1'-0"

BE PREPARED FOR NEW CONSTRUCTION.

13 ELECTRICAL CONTRACTOR TO LABEL ALL ELECTRICAL CIRCUTS AND FIRE ALARM WIRING PRIOR TO TOTAL DEMOLITION.

14 THE CONTRACTOR IS RESPONSIBLE FOR STORAGE AND PROTECTION OF ALL SALVAGE ITEMS TO BE REUSED AND REINSTALLED BY THE CONTRACTOR.

15 THE CONTRACTOR IS RESPONSIBLE FOR ANY DEMOLITION NOT NOTED ON DRAWINGS AS NEEDED FOR INSTALLATION OF BACKING FOR COMPOMENTS, ACCESSORIES OR ELECTRICAL ROUGH-INS.

16 ALL DEMOLITION DEBRIS REMOVAL SHALL OCCUR OUTSIDE REGULAR BUSINESS HOURS: 6:00 PM TO 6:00AM. CONTRACTOR SHALL COORDINATE WITH OWNER FOR USE OF LOADING DOCK.

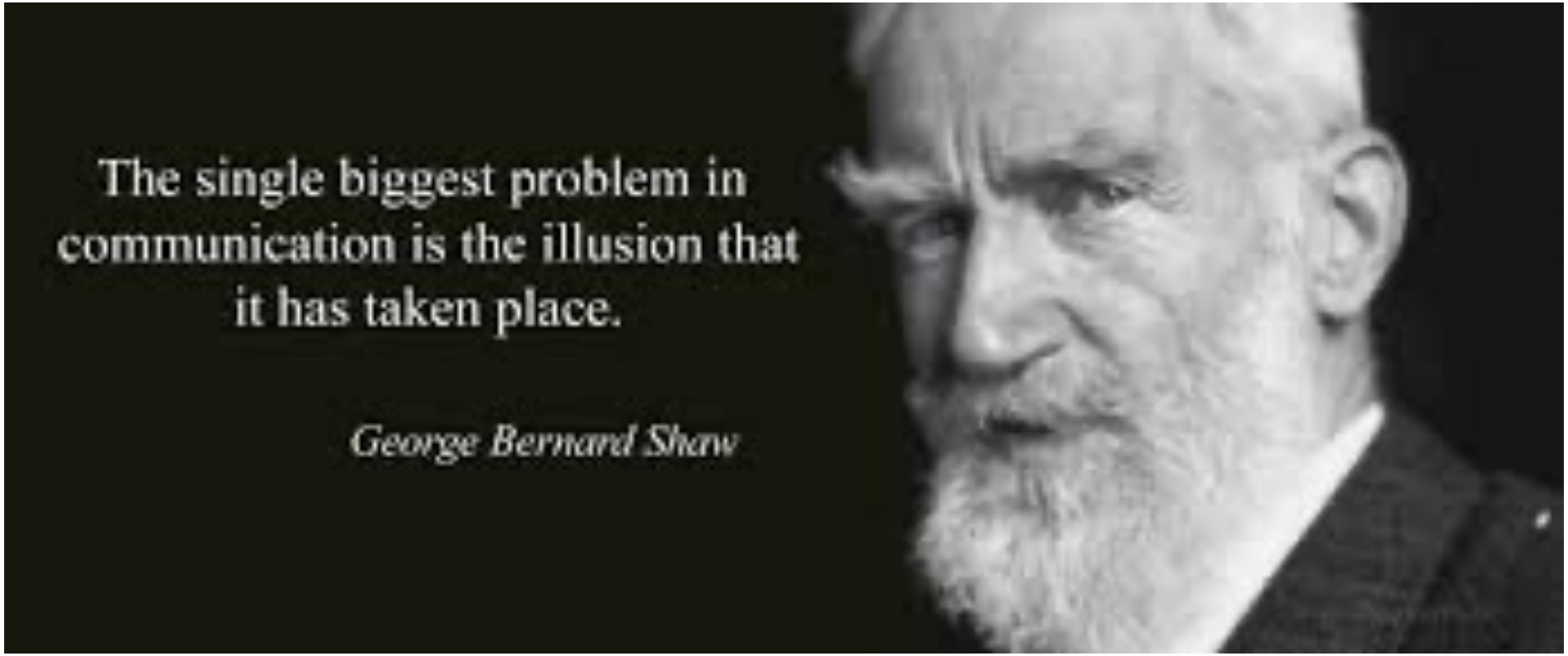
KEYED DEMOLITION NOTES

1. REMOVE DOOR PANEL, PROTECT DOOR FRAME IN PLACE FOR REUSE. SALVAGE LEVER HARDWARE FOR RE-USE. PREPARE FRAME FOR NEW CONTINUOUS HINGE.
2. SEAMLESS FLOOR TO BE REMOVED IN SPECIFIC AREA. PATCH AND REPLACE CONCRETE FLOORING TO RECIEVE NEW FLOORING. SEE FINISH PLAN FOR MORE DETAIL OF SCOPE
3. REMOVE ALL EXISTING VINYL FLOORING AND BASE. PATCH AND REPAIR EXISTING CONCRETE FLOOR SURFACE AS REQUIRED TO RECEIVE NEW FLOORING.
4. SALVAGE WALL MOUNTED CAMERA AND RETURN TO OWNER- WIRING FOR CAMERA TO BE REMOVED BACK TO CEILING AND REPURPOSED FOR NEW CAMERA LOCATIONS. PATCH AND PAINT WALL
5. REMOVE ALL SUSPENDED ACOUSTICAL CEILING SYSTEM.
6. PROVIDE OPENING IN EXISTING GYP BD / MTL STUD WALL FOR NEW DOOR. SEE A02.01 FOR NEW LAYOUT.
7. REMOVE EXISTING GYP BD / MTL STUD PARTITION. PATCH EXISTING WALL (AT THE CONNECTION WITH DEMOLISHED) AS REQUIRED TO RECEIVE NEW FINISH.
8. REMOVE EXISTING WINDOW IN ITS ENTIRETY
9. REMOVE EXISTING PASS THROUGH WINDOW
10. REMOVE CONCRETE SLAB FOR RE-ROUTE PIPING TO NEW SINK
11. EXISTING SINK TO BE REMOVED. REMOVE AND STORE WALL MOUNTED MIRROR. MIRROR TO BE REINSTALLED. SEE MECHANICAL DRAWINGS FOR MORE DETAIL. PATCH WALL AS REQUIRED TO MATCH ADJACENT FINISHES.
12. REMOVE EXISTING DOOR, FRAME AND HARDWARE. SALVAGE DOOR FOR RE-USE. SEE NEW WORK PLANS FOR NEW DOOR LOCATION. HARDWARE TO BE RE-USED. PREPARE DOOR FRAME FOR CONTINUOUS HINGE.
13. EXISTING COMPOUNDING HOOD TO REMAIN IN ROOM FOR DURATION OF CONSTRUCTION. CONTRACTOR IS TO COVER HOODS WITH CARDBOARD AND PLASTIC WRAP TO PROTECT HOOD DURING CONSTRUCTION.
14. REMOVE EXISTING DOOR. SALVAGE DOOR TO BE RE-INSTALLED WITH CONTINUOUS HINGE. PREPARE FRAME FOR CONTINUOUS HINGE.
15. REMOVE CORNER GUARDS, REMOVE CEILING, PREPARE WALLS FOR NEW WALL CONTSTRUCTION.
16. REMOVE AND REPLACE DRYWALL FOR NEW MECHANICAL DUCTWORK AND GRILLE
17. SALVAGE EXISTING WALL MOUNTED CALL DEVICE. STORE FOR RE-INSTALLATION.
18. EXISTING SHELVING AND CUBICLES ARE TO BE COVERED AND PROTECTED DURING ABOVE CEILING WORK IN THIS AREA.
19. SALVAGE EXISTING MIRROR AND PROTECT FOR RE-INSTTALTION.

UNKEYED SALVAGE SCHEDULE

1. REMOVE, STORE AND PROTECT THE FOLLOWING MATERIALS AND EQUIPMENT FOR REINSTALLATION.
   A. DOOR HARDWARE, AS SCHEDULED

2. OWNER WILL REMOVE THE FOLLOWING MATERIAL AND EQUIPMENT
   A. PHARMACY EQUIPMENT
   B. FURNISHINGS
   C. COMPUTERS, COMPUTER MOUNTING ARMS, NON WALL MOUNTED CAMERAS


The single biggest problem in communication is the illusion that it has taken place.
George Bernard Shaw

Questions?

Christa Mardaus
cmardaus@carpenterstraininginstitute.org
☎ 651-341-4418

Nick Hoffman
nhoffman@carpenterstraininginstitute.org
☎ 218-391-9017

Amanda Brown
abrown@carpenterstraininginstitute.org
☎ 651-308-0285

CARPENTERS
TRAINING INSTITUTE