

# 2020 Project Delivery Course

Are You Ready to Design & Build a Field Hospital in 10 Days?



The American  
Institute  
of Architects

Project Delivery  

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an **AIA** Knowledge Community

November 10, 2020

# Moderators



**GRACE C. LIN, AIA, CSI-CDT**  
CBRE | Healthcare

2019-2020 Chair  
Project Delivery Knowledge  
Community Advisory Group



**ARLEN SOLOCHEK, FAIA**  
AIA Documents Committee

Member  
Project Delivery Knowledge  
Community Advisory Group



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# Project Delivery Case Study Series

## Live Course - Are You Ready to Design & Build a Field Hospital in 10 Days?

When: Nov 10, 2020 from 2:00 PM to 3:30 PM (ET)

Community: [Project Delivery](#)

Course 1 = 1.5 LU/HSW

## Live Course - Project Delivery in a Global Pandemic

When: Nov 12, 2020 from 4:00 PM to 5:30 PM (ET)

Community: [Project Delivery](#)

Course 2 = 1.5 LU/HSW

## Live Course - COVID-19 Rapid Response Project Delivery

When: Nov 17, 2020 from 4:00 PM to 5:30 PM (ET)

Community: [Project Delivery](#)

Course 3 = 1.5 LU/HSW



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We encourage all registrants to fill out the post course survey. Your feedback is important and informs us of future course topics to better meet listener needs.

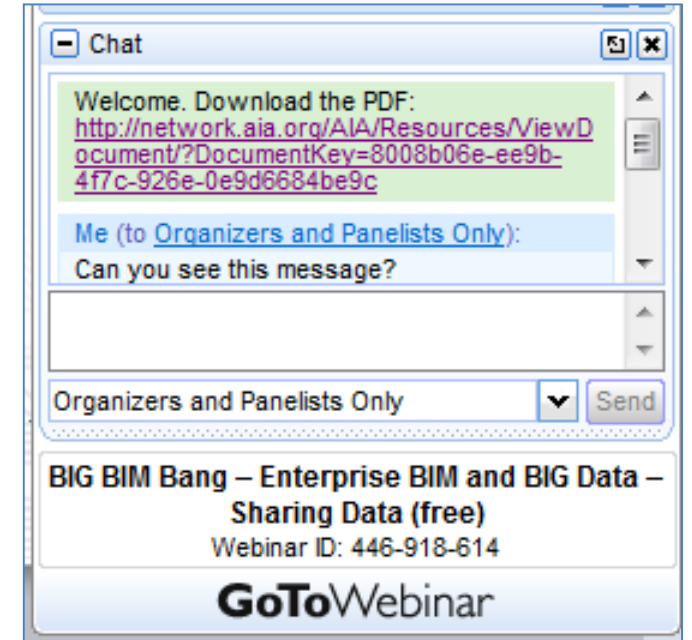


# Questions?

Submit a question to the moderator via the chat box.

Content-related questions will be answered during the Q&A portion, at the end of the presentation, as time allows. Any questions not answered during Q&A, will be answered and posted online within two (2) weeks.

Tech support questions will be answered by AIA staff promptly.



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# Project Delivery in COVID-19 Era

*“The COVID-19 pandemic is unprecedented. It has pressed on rapid design response and instant construction delivery to serve the community.*

*The AIA Project Delivery Knowledge Community (PDKC) gathered case studies from a number of architects who worked on the front lines during the public health emergency. These case studies share their stories, what they’ve experienced and learned in delivering essential projects during the moments of crisis. What worked, traps to avoid, how to win cooperation, and the course of actions taken to successfully deliver the projects.*

*These case studies highlight architects’ work that will inspire and improve the visibility and awareness of project delivery in our profession. Such leadership role demonstrates the importance of project delivery and helps architects rise to the occasion.”*

# Presenters



**LYNN M. EWING, PE**  
Contracting Officer's  
Representative  
USACE, Chicago District



**PAUL WIDLARZ, AIA**  
Principal  
HGA



**CORY POWERS**  
Engineering Principal  
HGA



**ADAM JELEN**  
Senior Vice President,  
Midwest Division  
Gilbane Building Company



# Learning objectives

1. How to build a high-performing rapid response team
2. Assembling the ultimate “Big Room”
3. How to convert an expo hall into a field hospital – strategies & tactics
4. Unique considerations when designing a field hospital in a prison

# Our Mission...

- Convert an exposition hall into an Alternate Care Site (ACS)
  - 296 Beds (in-line O2), 234 beds (bottled O2), 234 future beds
  - Temporary/portable support areas (toilets/showers/hand-washing)
  - Temporary medical gas (O2) facilities
  - Infrastructure (HVAC, Electrical, IT, Fire Protection) to support
- 10 days to complete
- Ability to demobilize without a negative impact on facility



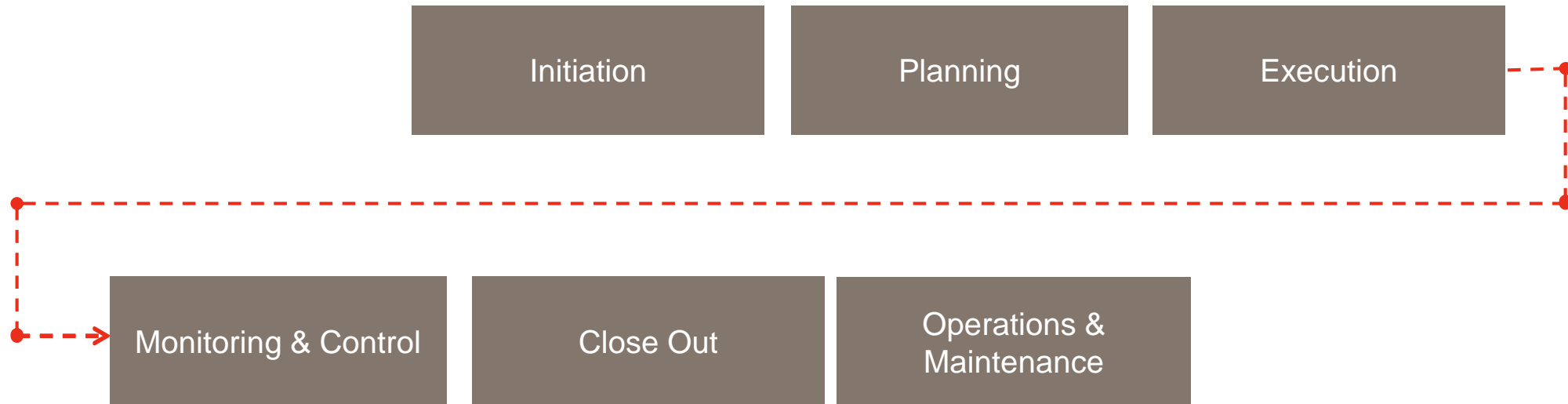
# Building the Team





# Operation Enduring Health – COVID-19 Response – USACE Chicago District

Summary of project life cycle



# Initiation

- Market research – determine pre-selected pool of contractors
- Survey of potential sites – as requested by the state
- State development of the resource requirements submitted to FEMA
- Awarding of the MATO (mission assignment task order) from FEMA
- Development of the PWS (performance work statement)
- Issuance of solicitation and source selection board
- Right of entry from state
- Award of undefinitized design-build letter contract
  - Durations, vision of USACE, requirements
  - Flow chart

# Planning & Execution

- Planning phase began upon award
- Kickoff meeting with all stakeholders, prime contractor and subcontractors
- Execution began upon award

# Assembling the Design-Build Team

- Trusted and proven partners
  - Design team
  - Subcontractor (trade partners)
- Federal experience
- Local resources and knowledge (AHJ's, supply chain, workforce, etc.)
- Ability to prefabricate
- Ability to deliver senior leadership on site to boots on the ground
- Training and set expectations for the team



# Team Building & Culture

- Daily presentation and collaboration
- Starting with caring moment
- Commitments and decisions
- Team building activities and appreciation

Deliver on our Mission **TOGETHER**





# Building the Design Team

**“We didn’t design and build this in 10 days, we designed and built this in 25 years plus 10 days...”**



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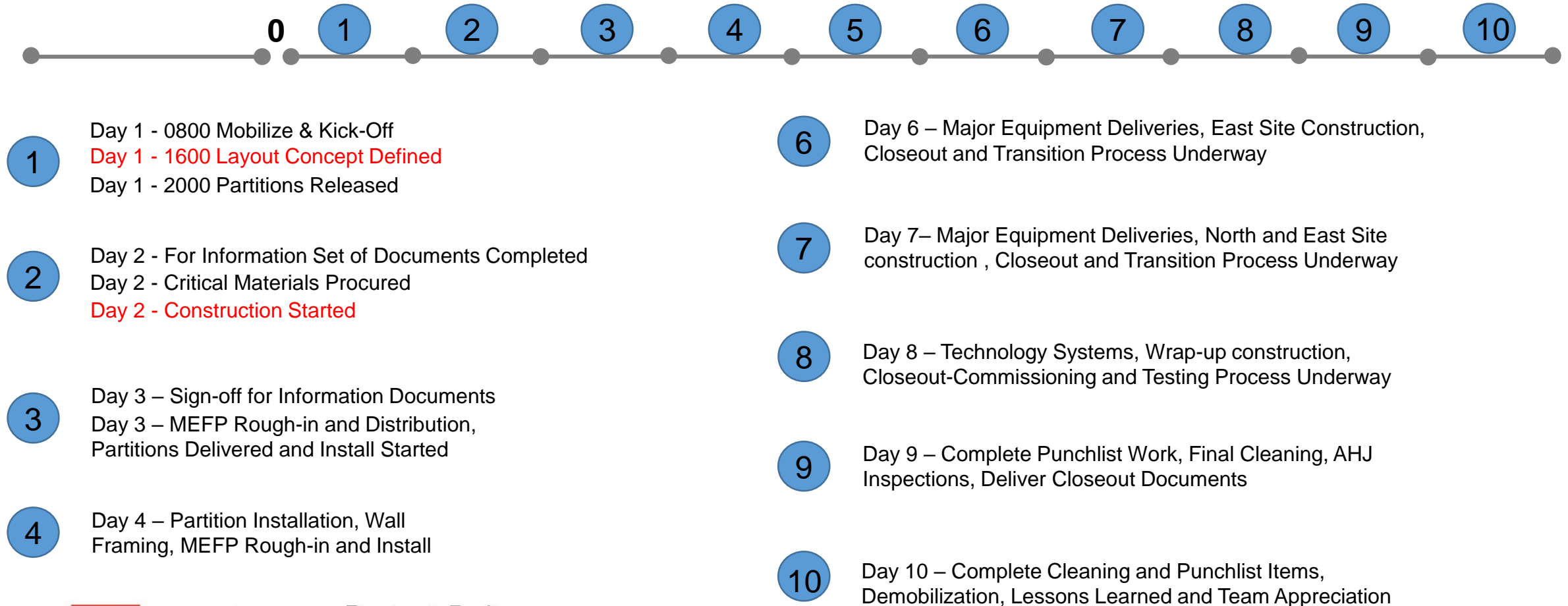
# Converting an Expo Hall into a Field Hospital



# Overall Timeline

## USACE Initiation

## Design & Execution





# A Video Overview...

# On-Boarding...

- Received meeting appointment for following morning at 0800
- Early days of the pandemic – where we were from a COVID knowledge standpoint at that time was very different from now









# Kick-Off Meeting

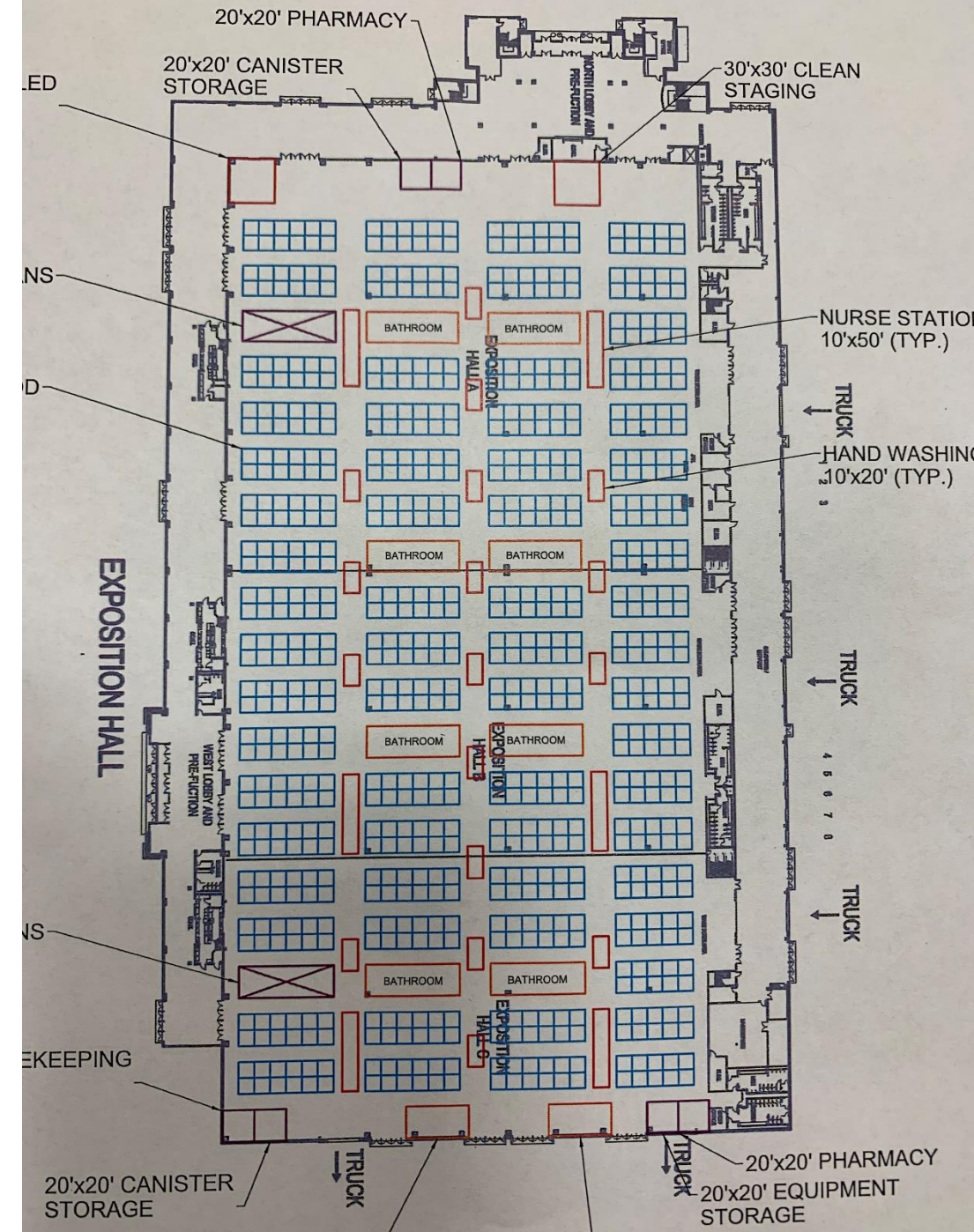
- Work Scope (PWS)
- Preliminary floor plan
- Facility tour
- 1<sup>st</sup> deadline – final floor plan 1600 hrs



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# Wisconsin State Fair Grounds

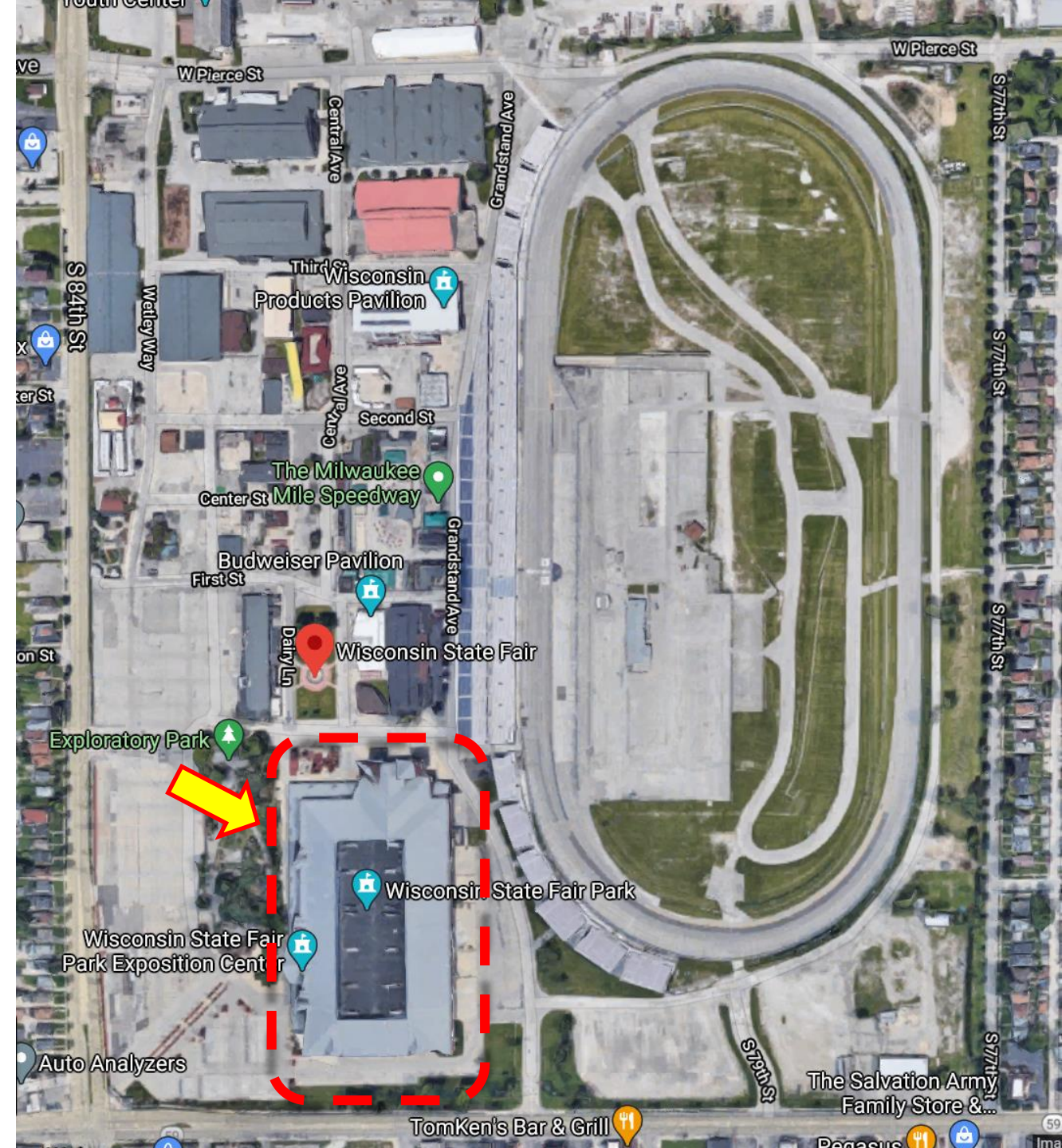
West Allis, Wisconsin



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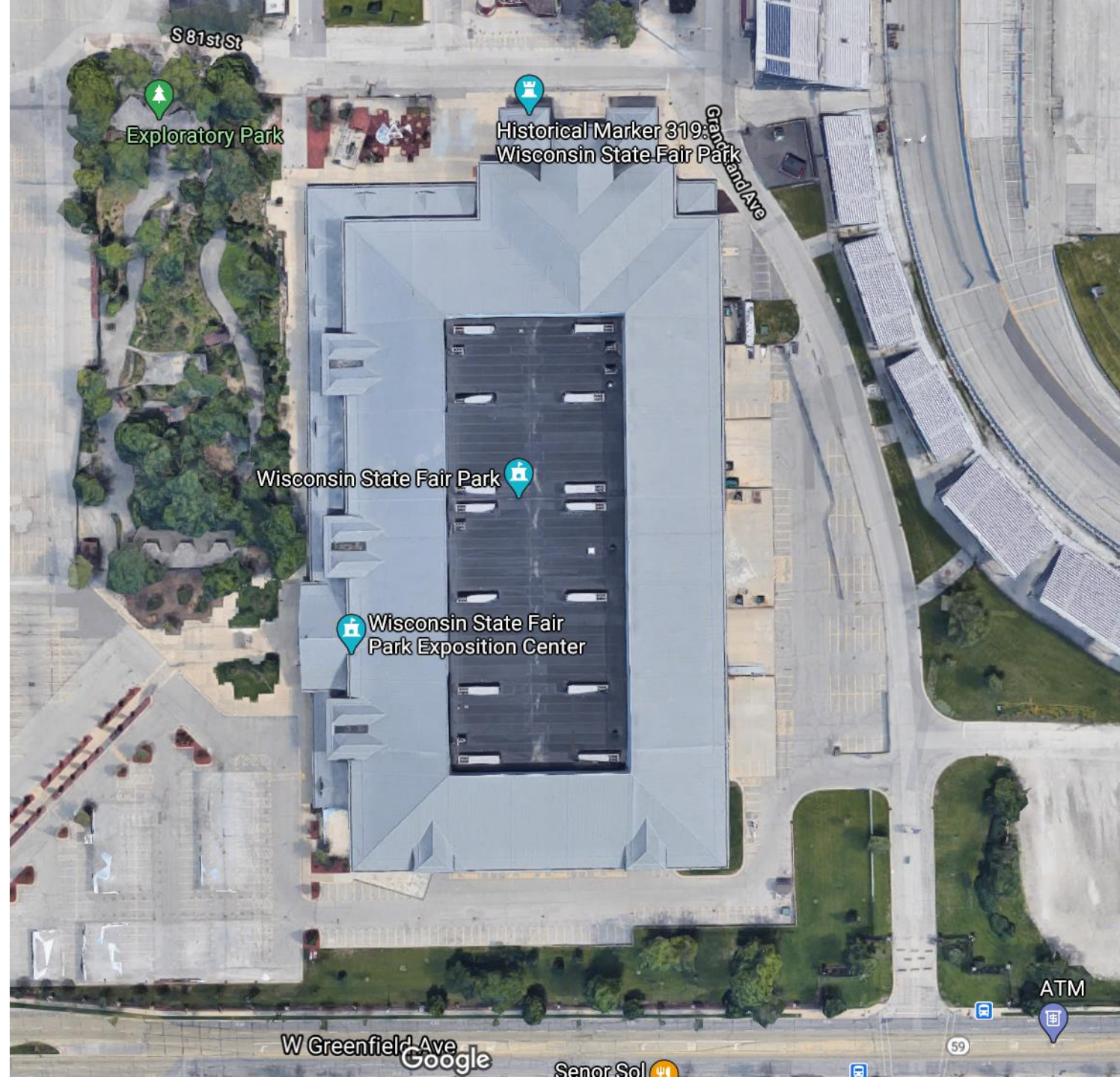
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# Key Stats

- Exposition Hall
- Built in 2002
- Multiple entries – all sides
- Loading dock
- Columns – 90' on center
- Utility boxes – 30' O.C.







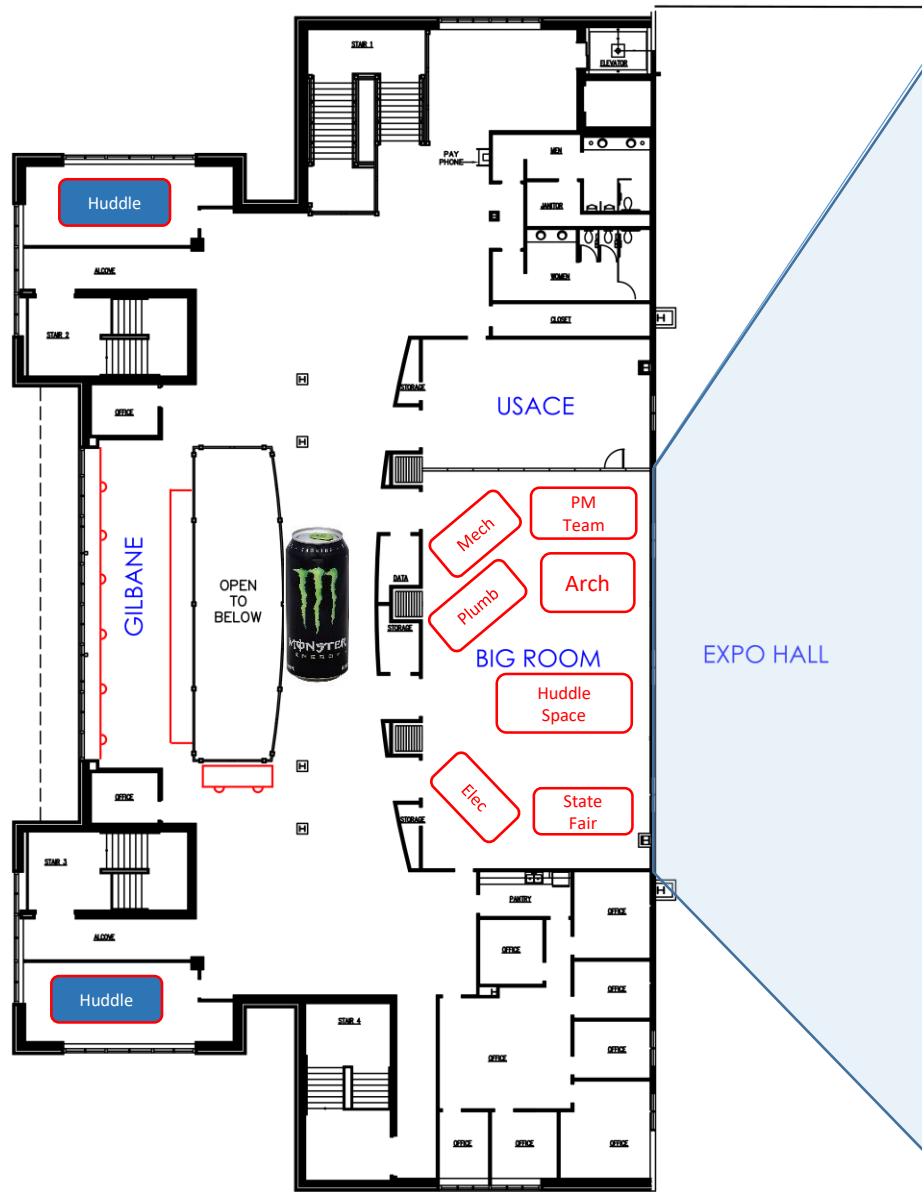


State of Wisconsin  
State Fair Park  
HGA Electrical  
Johnson Controls  
Col. Reisinger  
JE Ahaus  
ACE Support Team  
Part Arch & Planning Team



The Ultimate Big Room



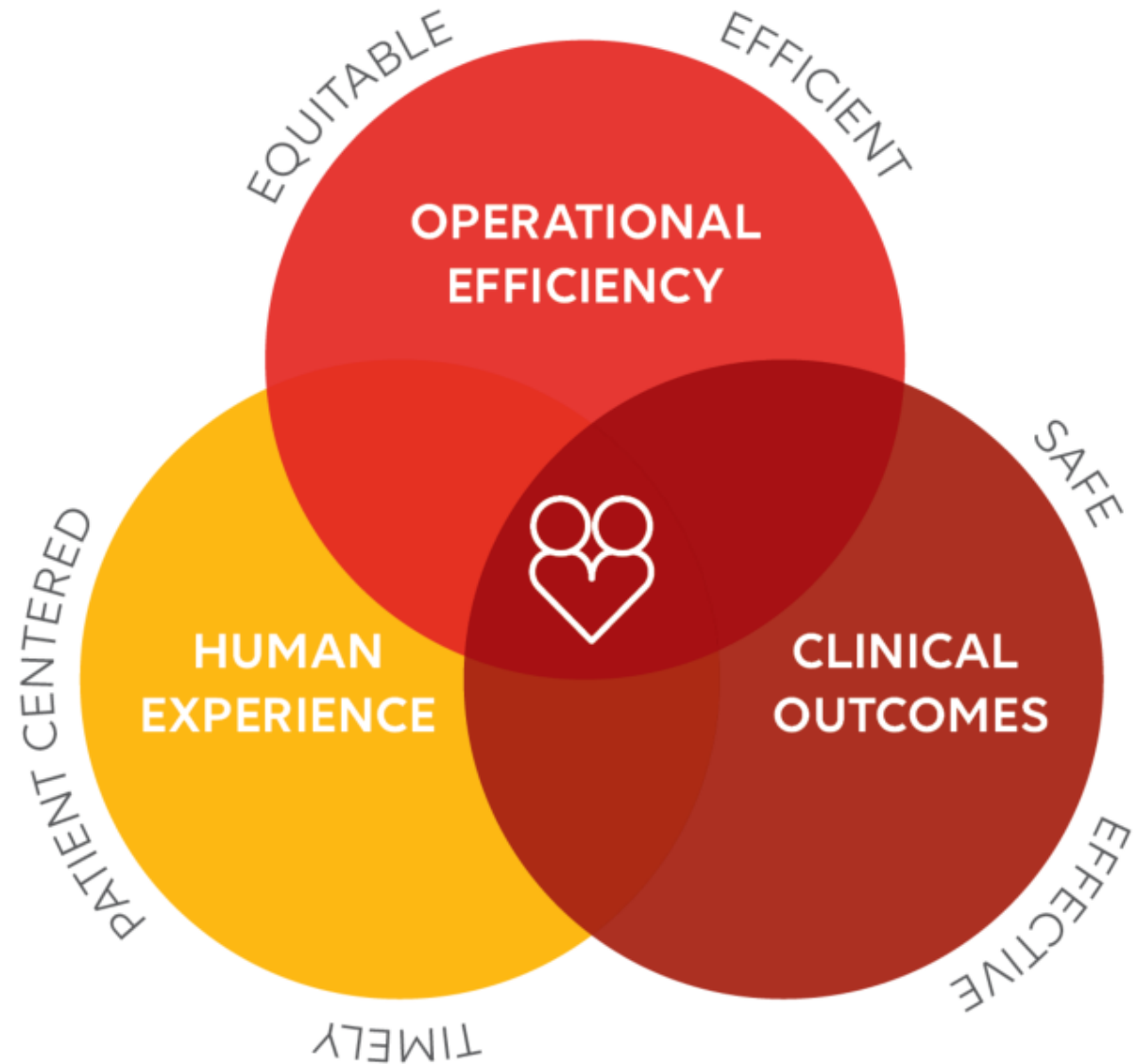


# Monitoring & Control

- Daily progress meetings with all stakeholders, daily construction meetings
- Daily reporting on actual expenses
- Daily reporting on safety and quality control
- Design submittals for information only
- Request for Information (RFI)'s – responded to immediately
- Definitization of contract

# Design Process

## The Triple Aim



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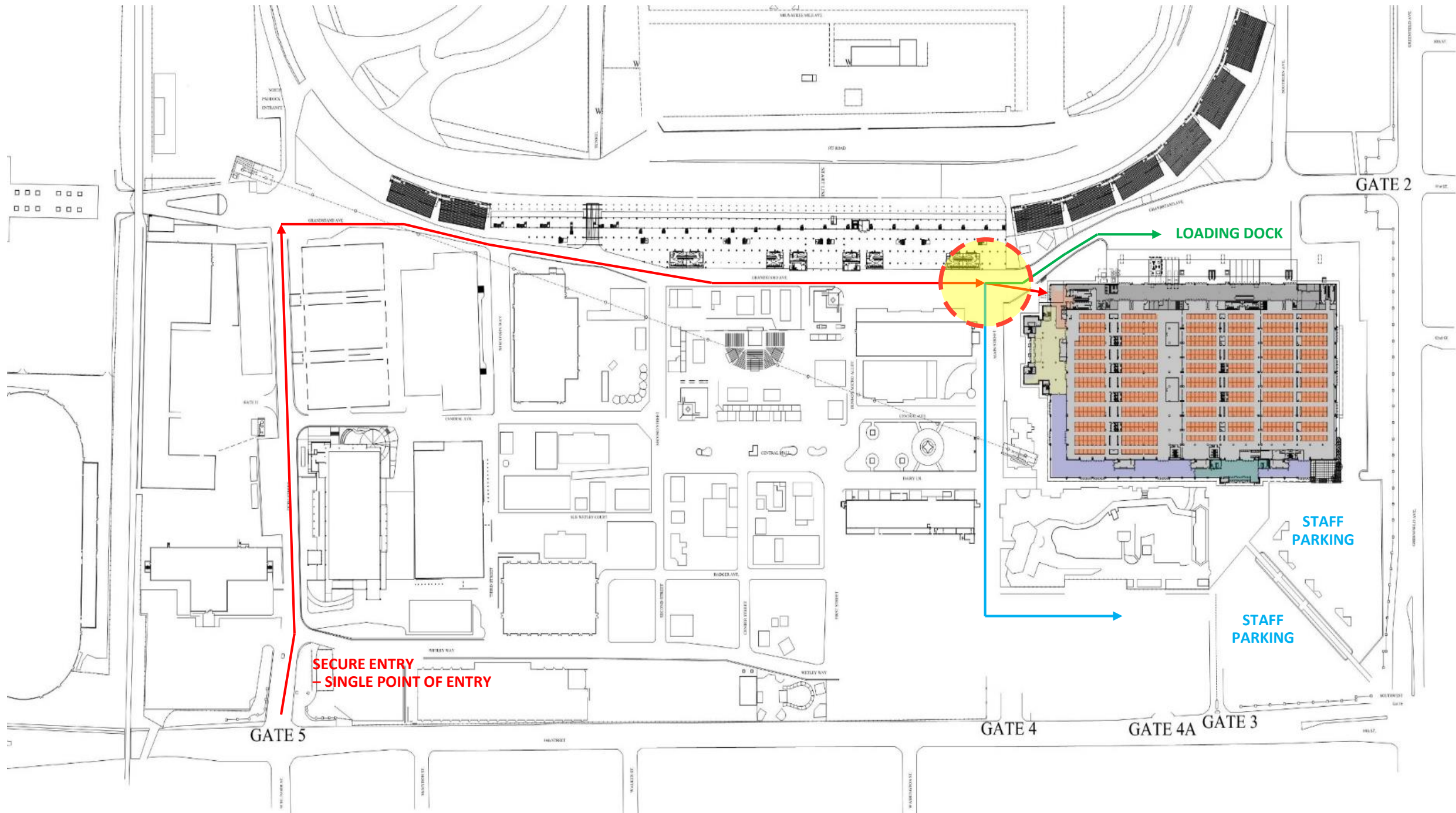
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# Design Process – Operational Flows

- Patient flow
  - Accessing the facility
  - Movement within the facility
- Staff flow
  - Building access
  - Movement within facility
- Material flow
  - How do goods arrive and move through the facility









1. Ambulance drop off
2. Registration desk
3. Nurse station for room assignment
4. Transport patient to "room"

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2. Registration desk
3. Nurse station for room assignment
4. Transport patient to "room"



**STATE FAIR PARK  
ALTERNATE CARE  
FACILITY**  
640 S 84TH ST.,  
WEST ALLIS, WI

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF

[illegible]

ISSUANCE HISTORY - THIS SHEET

HGA NO: 3099-005-00

## ACTIVATION PLAN

NOT TO SCALE

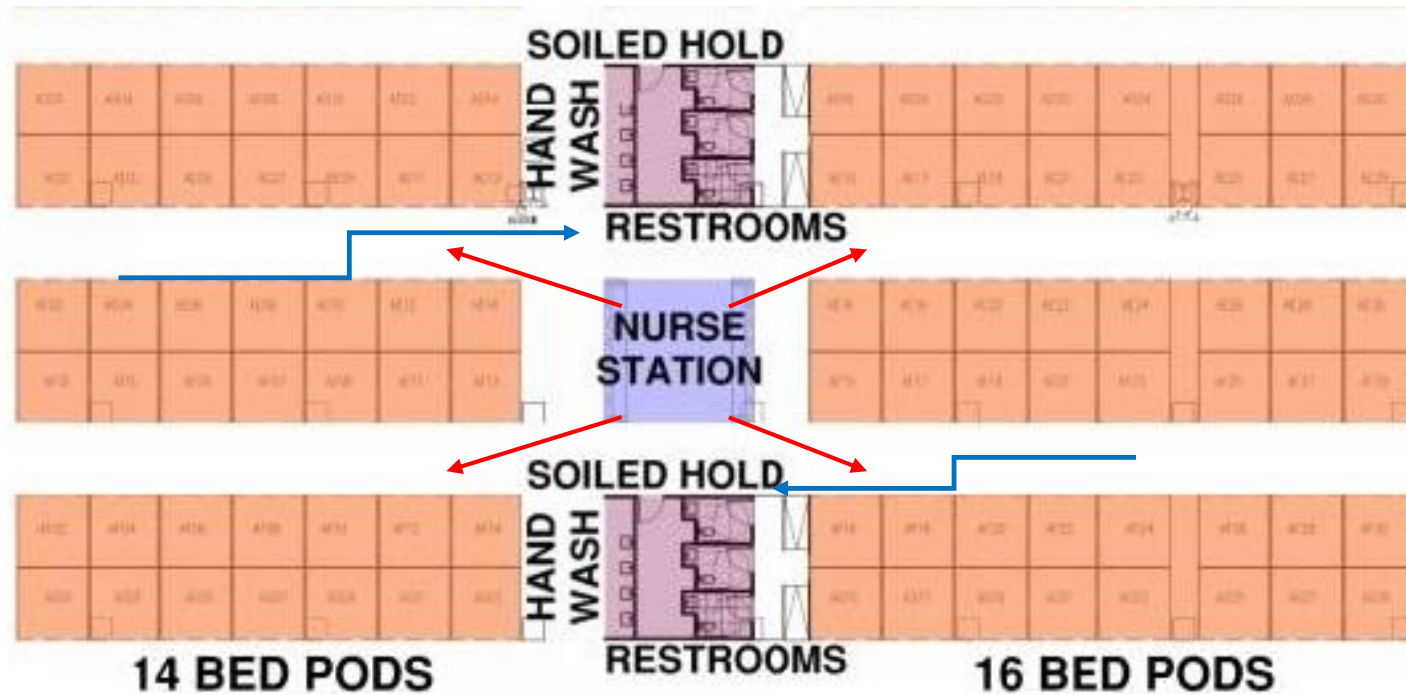
DATE: APRIL 13, 2020

DESIGN  
"FOR INFORMATION"

AP01



# Patient Care Areas



## Planning Guiding Principles:

- Patient safety
  - Maximize visibility
  - Minimize potential hazards
- Minimize walking distances
  - Caregivers
  - Patients (toilet rooms)
- Clear wayfinding
- Centralized support functions
- Efficient wall layout with access to utilities
- ADA accessibility
- Best value
- Supports prefabrication



- 28 beds in rows A & B to provide additional space at entry
- Remaining rows have 30 beds row
- 12 patient toilets with additional toilets for staff use in NE corner

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ALTERNATE CARE  
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ACTIVATION  
PLAN

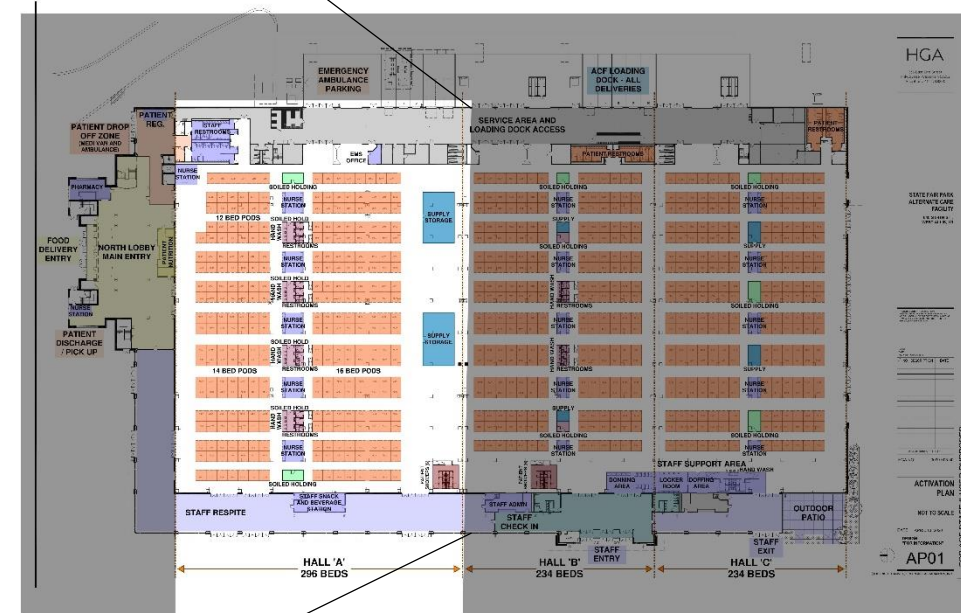
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AP01

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ROOM NAMING  
EXAMPLE ROOM AB02

- HALL A
- CORRIDOR B
- ROOM 02
- THERE IS NO ROW "I" TO ELIMINATE CONFUSION

FOR ACF STAFF & USER PURPOSES





ALTERNATE CARE FACILITY  
AMBULANCE  
DROP OFF  
→













AB16

PATIENT  
RESTROOM



[illegible]

## ACTIVATION PLAN

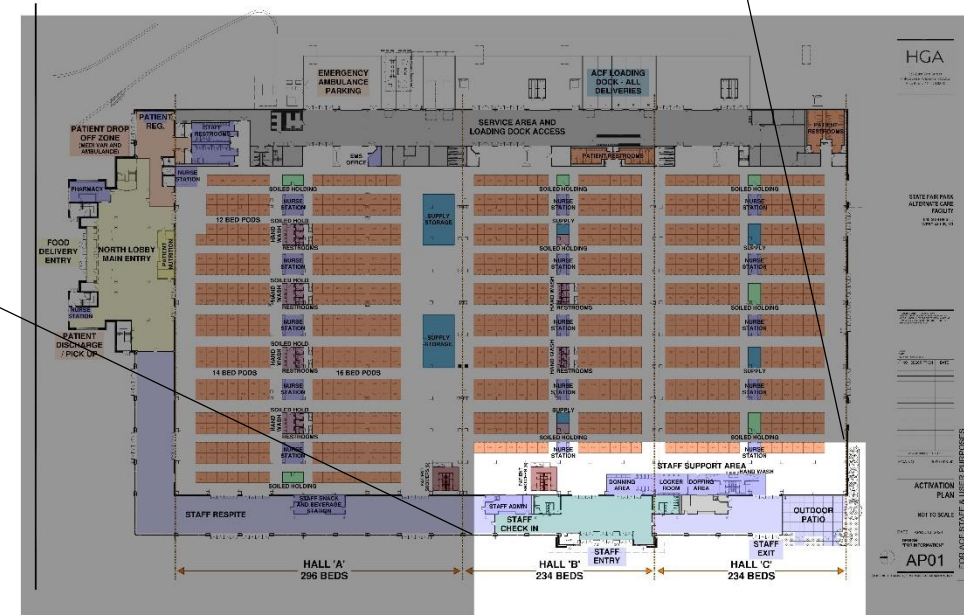
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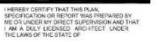
AP01



1. Staff check-in and receive assignments from admin area at the concession stand
2. Staff proceed to donning area, gather PPE supplies
3. Change in changing rooms
4. Lock up personal items in lockers
5. Enter Hall 'C' via the ante room



FOR ACF STAFF & USER PURPOSES

[illegible]

HGA NO: 3099-005-00

ACTIVATION  
PLAN

NOT TO SCALE

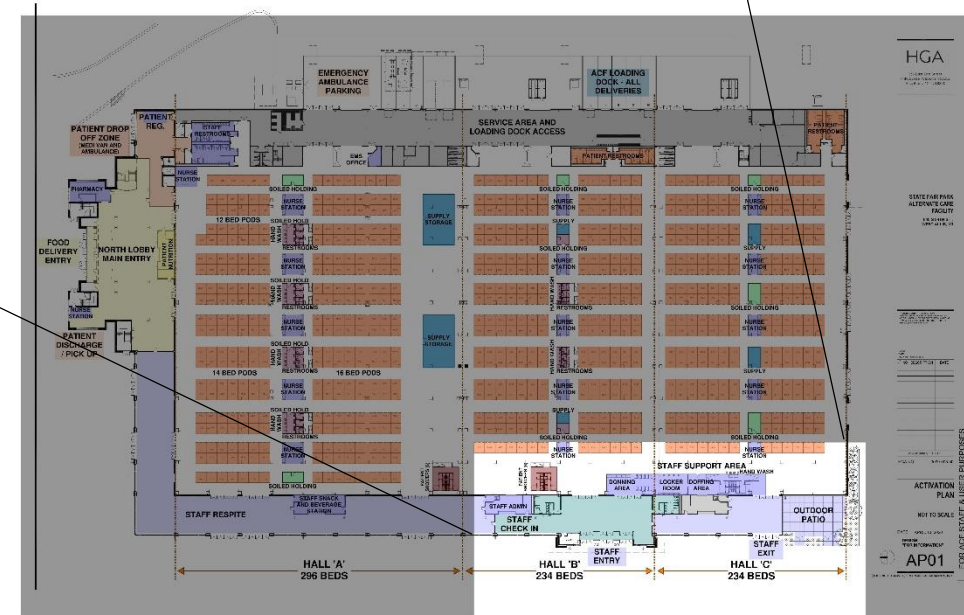
DATE: APRIL 13, 2020

DESIGN  
"FOR INFORMATION"

AP01

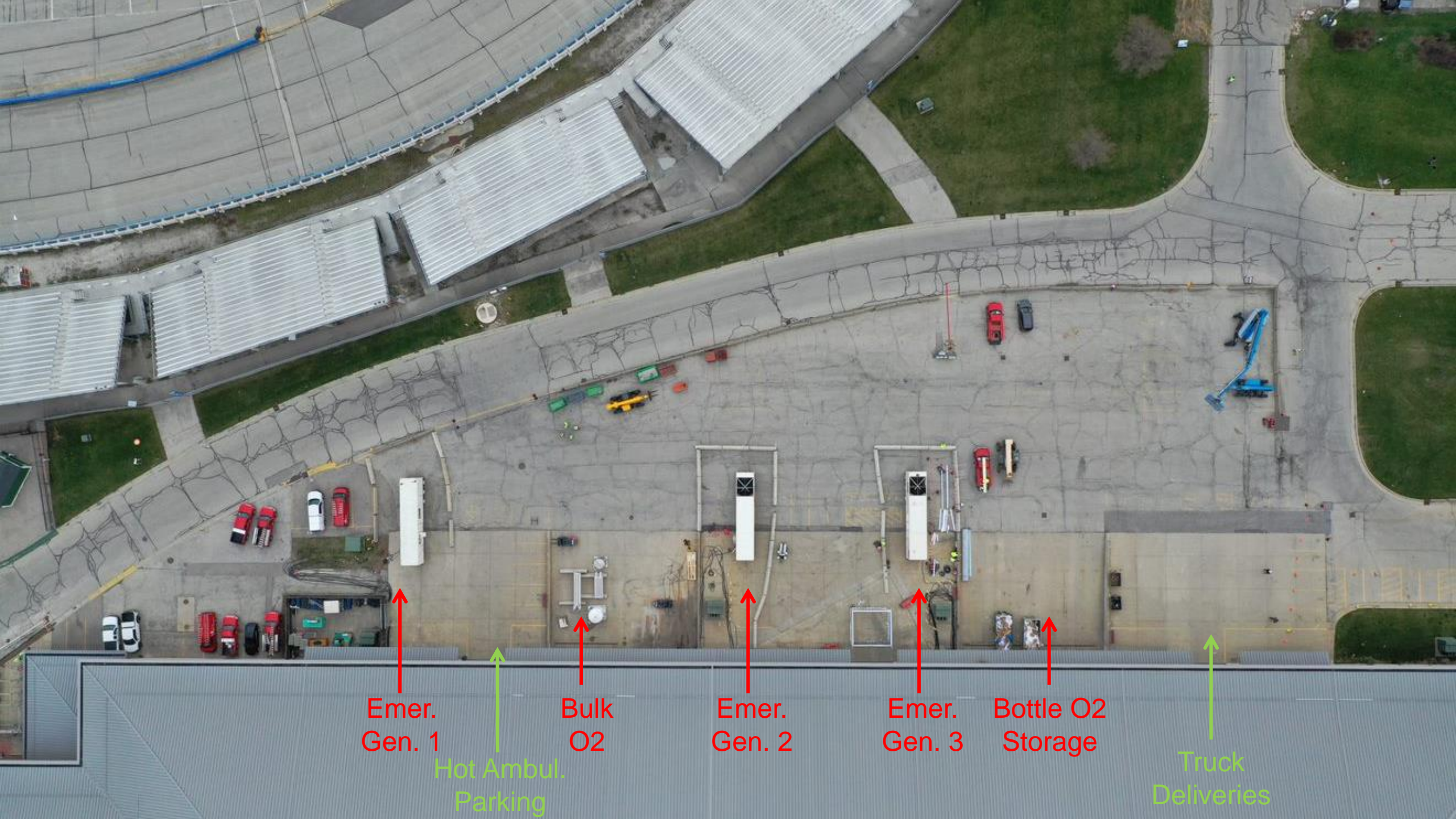
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1. Hand wash outside of ante room
2. Enter ante room to remove & dispose of ppe
3. Gather personal items from locker room
4. Staff to shower prior to exit
5. Exit via Hall C lobby



FOR ACF STAFF & USER PURPOSES





Emer.  
Gen. 1

Hot Ambul.  
Parking

Bulk  
O2

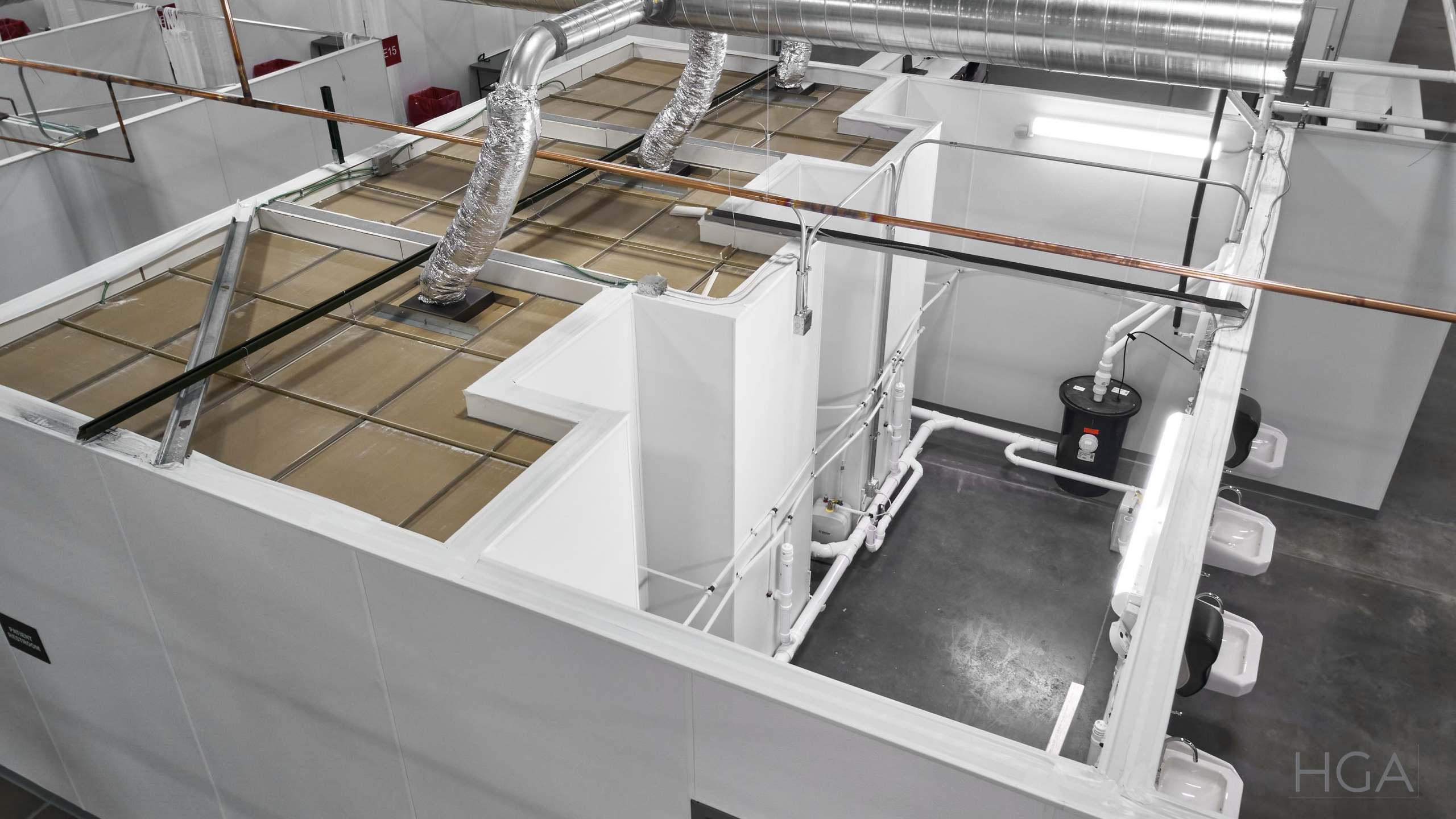
Emer.  
Gen. 2

Emer.  
Gen. 3

Bottle O2  
Storage

Truck  
Deliveries









**East Dock Electrical Distribution**





**Electrical Systems Prefabrication Delivery and Installation**









**Oxygen Systems Prefabrication Delivery and Installation**



# Close Out and Operation & Maintenance (O&M)

- State representatives and clinicians need to be part of pre & final inspections
- Integration of new team into facility
- As-built drawing review
- Turnover letter to State
- Operations & Maintenance (O&M)
  - Not responsibility of USACE or contractor – but Wrap Around Service
  - Warranties limited to manufacturer warranties on new equipment; no warranties on construction



# Lessons Learned – Hot Wash

## Teamwork

- Assemble trusted, highly-qualified and hard-working partners
- Bring all key stakeholders into the Big Room (face-to-face and on-site)
  - USACE
  - Building Owner (Leaders & Facilities Team)
  - Healthcare provider
  - Government officials
  - AHJ's
  - Construction Manager
  - A&E Designers
  - Trade Partners
- High energy level and excitement from the team.
- Open line of communication with all parties
- Provide DM's with the information needed to make decisions quickly
- Take a breath and pause for a moment to plan the work flow
- Assign 1 content manager from each team.....Ben, Matthew...

## Design

- Lead with Strategy - review operations plan with Operators to understand their process flow to develop the program
- Ask the right questions.
- Determine the high-level flows (Patient, Staff and Materials) Develop an efficient logical plan that responds to operations quickly & distribute to the team
- Leverage ALL the talent in the room (Architects, Engineers, Construction Manager, Trades)
- Past working relationships key (Gilbane, HGA, Ahern, Staff)

# Lessons Learned

## Tools

- Use MS Teams to track tasks due (ASI, Punchlist, As-builts, Etc.)
- Plan the deliverable schedule with a QC check
- We needed a shared folder on a cloud network. Relying on people to forward emails is too risky
- Implement commissioning earlier to test existing HVAC equipment
- HGA's iPad based punchlist tool was great.
- Drone footage was valuable

## Details

- Add electrical panel/clearance to backgrounds
- Earlier interior elevation of Patient Room & other key spaces
- Earlier Site drawing. Focused team on this topic
- Consider ceilings in soiled utility rooms.
- Room Numbering & Signage
- Use Revit
- Develop headwall earlier than prefab starts
- Solid existing drawings.... On other projects this was a huge problem out of the gate



# Converting a Prison into a Field Hospital



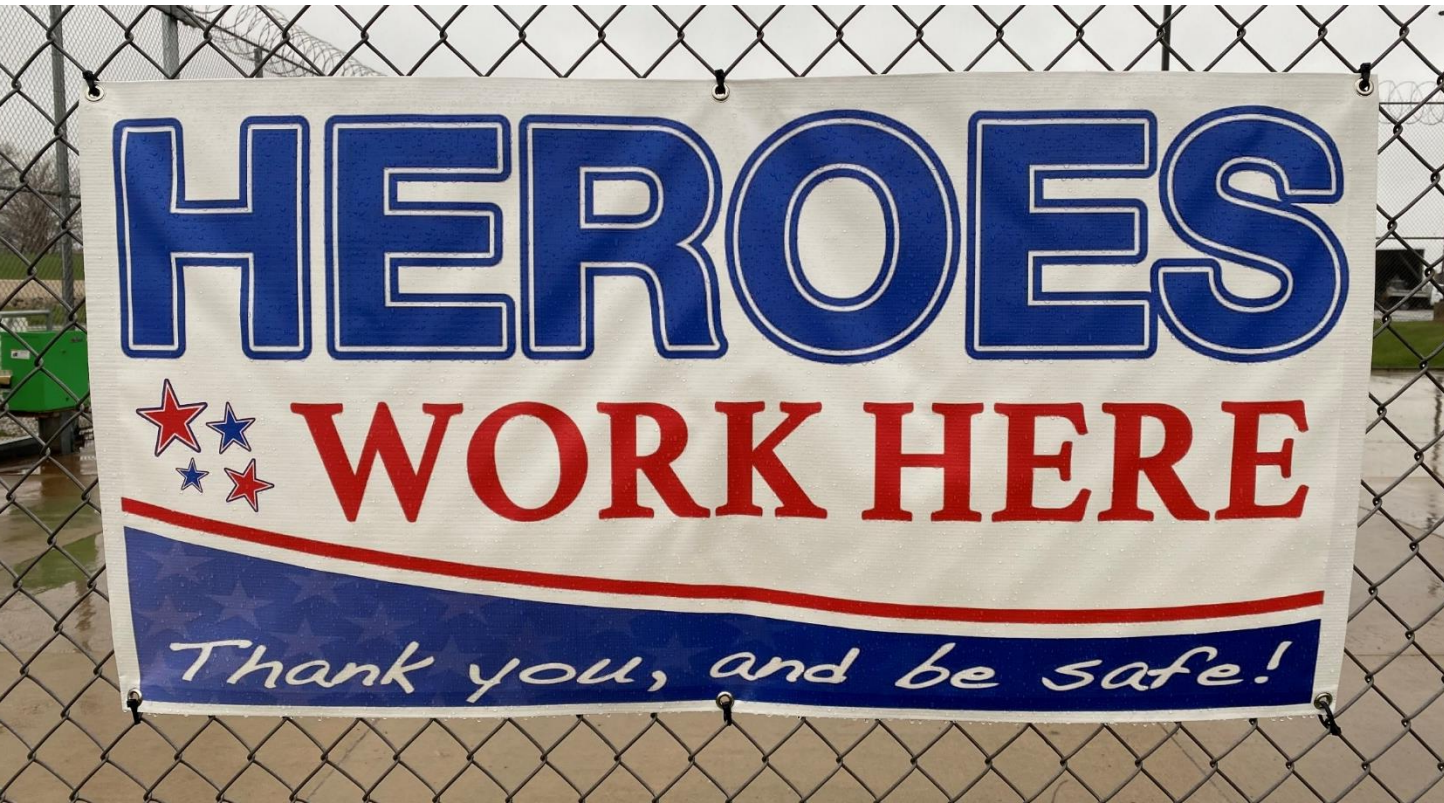
# Our New Mission...

- Convert existing prison facility into an Alternate Care Site (ACS)
  - 30 bed dorm low acuity (inline O2), 90 beds – non acute (no O2)
  - Temporary medical gas (O2) facilities
  - Infrastructure (HVAC, Electrical, IT, Fire Protection) updates
- Staff support areas – medical and correction officers
- 20 days to complete



# (Re)Assembling the Team

- Added corrections experience
- Integrated lessons learned





# Team Caring Moment





# Authorities Having Jurisdiction

**USACE - Contracting Officer's Representative (COR)** - Mr. Robert Vanoer - Scope Direction | Approval | Administration

**Milwaukee County** - Emergency Management Director - Ms. Christine Westrich

**State of Wisconsin - Director of Detention Facilities** - Mr. Gregory Bucholtz  
Plan Review and Letter 5/4  
Final Inspections Team

**City of Franklin - Building** - Building Permit and Inspection(s) - Mr. Scott Satula  
Demolition Permit 5/3  
Building Permit 5/6 (USACE Letter + Stamped Drawings)  
General Inspections and Final Inspection Team

**City of Franklin - Fire** (Fire Suppression | Fire Alarm) - Mr. Adam Remington  
Final Inspections Team

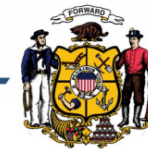
**City of Franklin - Health Services**  
Final Inspections Team



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**Wisconsin Department of Corrections**  
Governor Tony Evers | Secretary Kevin A. Carr

Office of Detention Facilities

May 3, 2020

TO: Christine Westrich, Director  
Office of Emergency Management: Milwaukee County

FROM: Gregory A. Bucholtz, Ph.D.  
Director, Office of Detention Facilities  
Wisconsin Department of Corrections

RE: **Re-Commissioning of Franklin M. Lotter Building**

Dear Director Westrich:

The Office of Detention Facilities is in receipt of your letter requesting that Milwaukee County be permitted to re-commission the inmate housing units located in the Franklin M. Lotter Building on the grounds of the Milwaukee County House of Correction. The purpose of the request is based on the current public health emergency resulting from the COVID-19 virus. Milwaukee County's plan is to develop an Alternate Care Facility within the Franklin M. Lotter Building for the purpose of housing inmates who test positive for the COVID-19 virus. In particular, the project is being facilitated by the U.S. Army Corps of Engineers' construction of an emergency alternative care site providing 90 beds of isolation and 30 beds of low-acuity medical care for male inmates in the custody of Milwaukee County.

Your request to re-commission the Franklin M. Lotter Building is approved. Please provide this Office with the final construction plans and specifications so that they may be reviewed and approved upon their completion.

Cc: Theodore Chisholm, Chief of Staff, MCSO  
Roberto Paredes, Area Engineer, USACE

Cc:

3099 E. Washington Avenue | Madison, Wisconsin 53704 | Phone Number: (608) 240-5052

# Kick-Off Meeting

- Work scope (PWS)
- Preliminary floor plan
- Facility tour



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## Performance|Work Statement (PWS)

### Convert an Open Area Dormitory within the Secured Correctional Campus into a Non Acute COVID Patient Care Facility

**Target Audience:** Two categories of patient spaces will be at the site. FPA 99 Category 3 Patient, which is defined as patient care “activities in which the failure of equipment or a system is not likely to cause injury to patients, staff, or visitors but can cause discomfort” (NFPA 99 para. 4.1.3). [only 1 category identified]

#### 1.0 GENERAL

This PWS provides minimum criteria for “sufficiency of care” to provide a rapid response to the expected need, therefore, it is critical that local authorities and/or Area Fire Marshal are involved in the development of the design and acceptance of this temporary Alternate Care Facility site.

The Coronavirus disease 2019 (COVID-19) is a respiratory infection caused by newly emergent coronavirus first recognized in Wuhan, China in December of 2019. For the purpose of this document. Non-acute COVID-19 patients are defined as those patients that do not require a ventilator, but may require oxygen (i.e. the use of either nasal tube or mask) and do require nursing support.

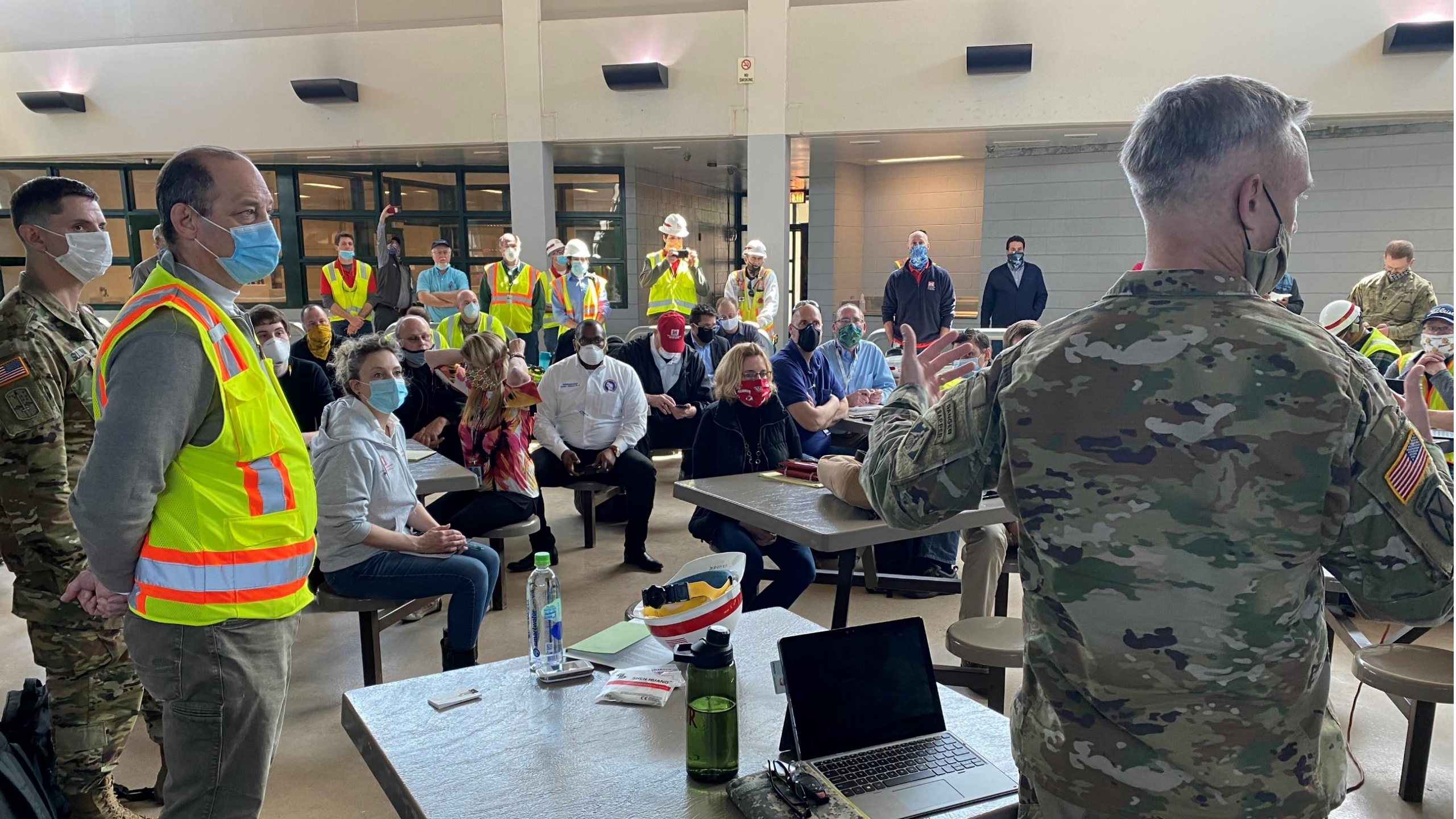
The Contractor shall retrofit the selected space into a Temporary Alternate Care Site (ACS) serving primarily non acute COVID-19 patients plus some low acute COVID-19 patients in transition to a medical facility which supports higher acuity care.

Standard dormitory layouts provide for 32 beds spaces each. The Contractor will not provide beds. Dormitory infrastructure has many built-in fire protection and life safety safeguards. The existing emergency duty generator shall be tested and repaired as required along with essential power circuits to ensure that uninterrupted power is available at all times. Submit the report to the COR within 24 hours of completing the test. All plumbing fixtures will be inspected and all brought up to full functioning performance.

Within the **Lotter Building** the Contractor shall convert three (3) open dormitory areas of approximately 2500 sf each (including toilet and shower facilities), support areas such as the Dining room (room 130), and other support areas into a **non-acute infectious COVID-19 patient care facility based on the requirements of NFPA 99 Space Category 3 (Basic Care).**

The Contractor shall convert one (1) open dormitory area of approximately 2500 sf (including toilet facilities) into a low acute infectious COVID-19 patient care facility based on the requirements of NFPA 99 Space Category 3 (Basic Care). **A centralized oxygen distribution system will be provided. Oxygen dispensing shall be provided at a minimum volume flow rate of 6 liters per minute at the outlet for each of the 32 patient’s beds.** Other medical gas systems, such as medical grade air or vacuum lines, will not be provided.









Milwaukee County  
House of Correction

H.O.C.

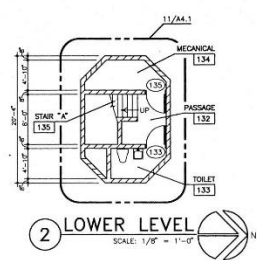






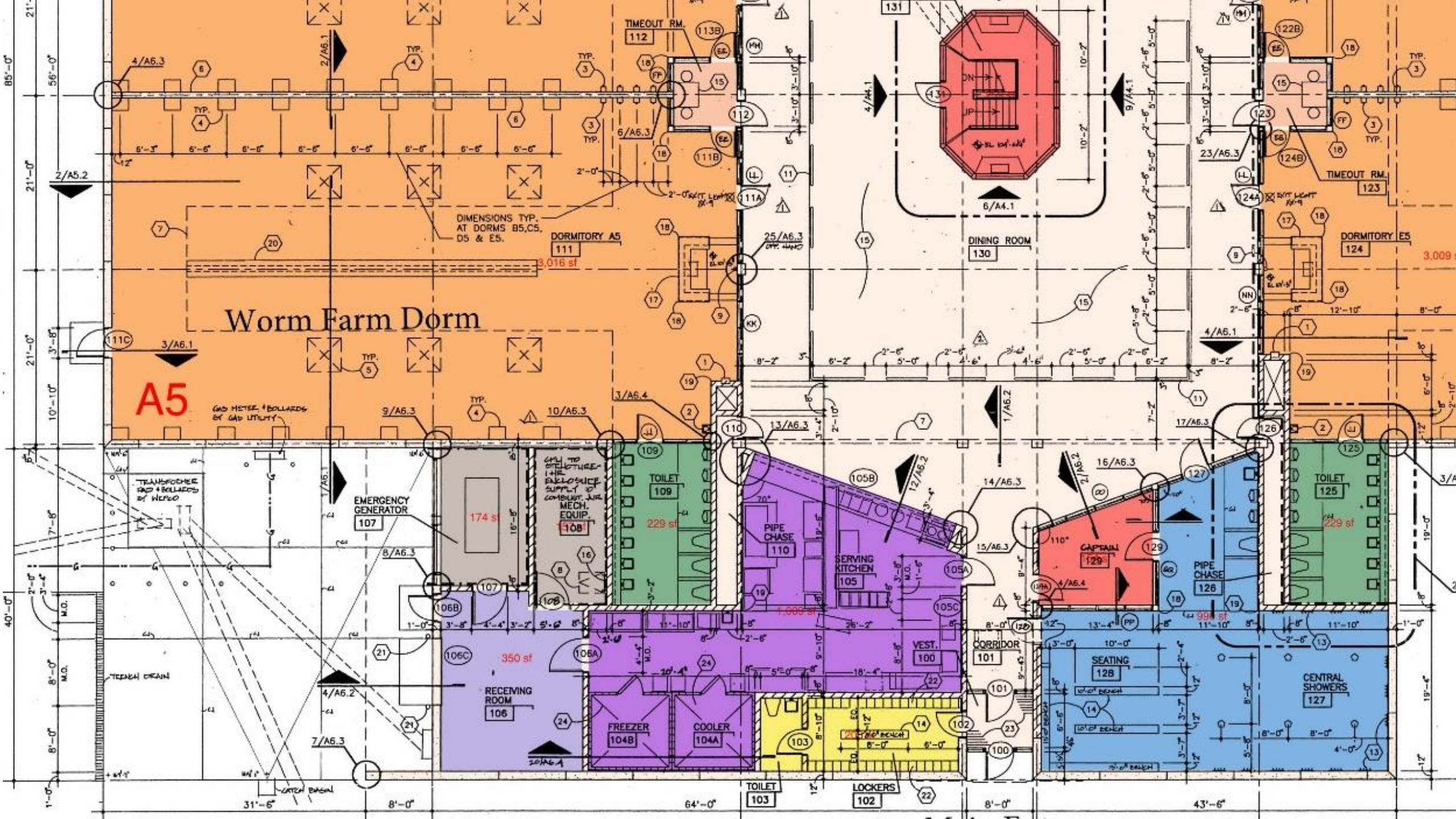






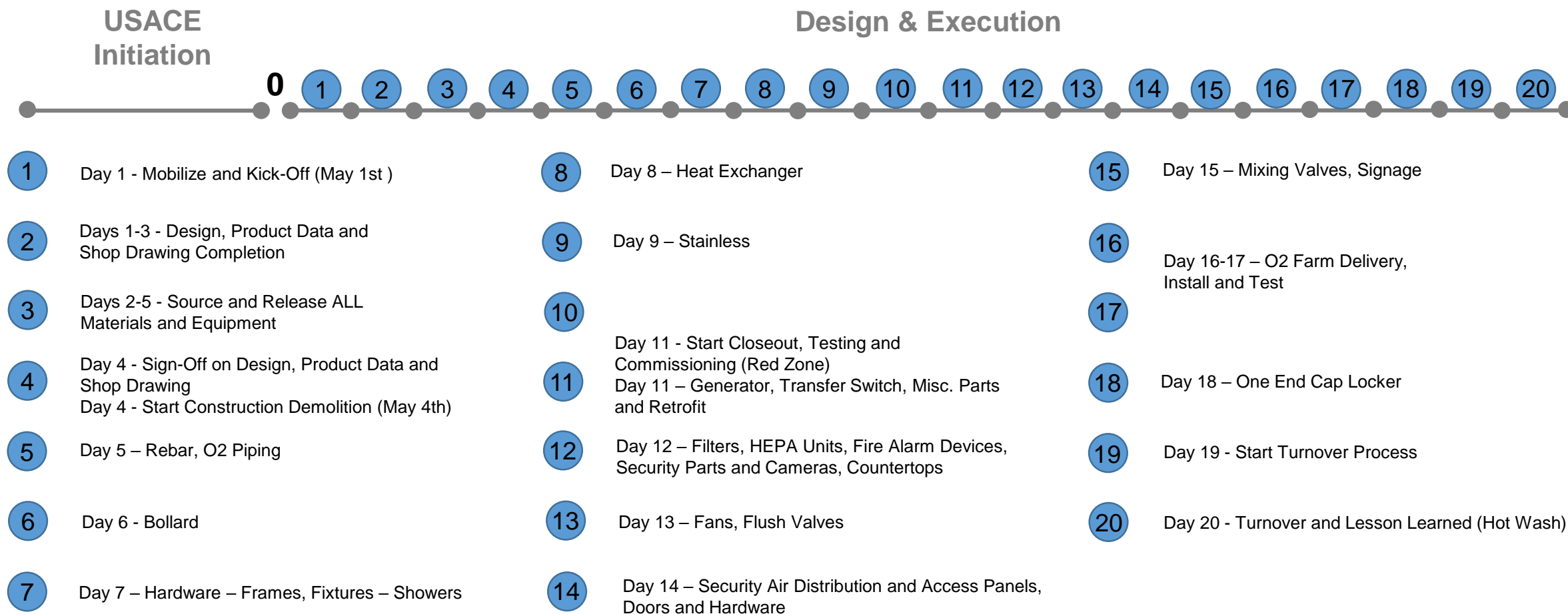
- 1 SEMI-RECESSED FIRE EXTING. CABINET
- 2 NON-FLUORESCENT DOWNING, RHANAL
- 3 WALL HUNG TELEPHONE
- 4 SURFACE MOUNTED  
DETECTION SHELVE: (18" x 24")  
SUPPLIED/CONTRACTOR INSTALLED
- 5 LIGHT LOCATION
- 6 IMBEDDED CONDUIT IN WET REEF WALL.  
PER V.P.F. (SEE ELEC. DRAWINGS)
- 7 LINE OF SIGHT ABOVE
- 8 ROOF DRAIN DEFLECTOR (SEE DETAIL 4/A3.1)
- 9 ROOF DRAIN CONDUIT
- 10 UNDERFLOOR DUCT CHASE  
(SEE H.W. DRAWINGS)
- 11 STL. PIPE GUARD RAIL ● 3" - 4" A.F.F.  
SEE SECTION 7/A3.3
- 12 ● 3" - 4" O.G.  
AND 3" - 4" O.F.F. (13.25")  
SECURE TO WALL AS REQUIRED.
- 13 RAILING AFFIXED TO FLOOR.
- 14 TUBES V.P. CHAIRS SECURED TO FLOOR.  
(SEE DETAIL PLAN SH-422 FOR  
EXACT LOCATION)
- 15 SUPPLIED/CONTRACTOR INSTALLED
- 16 STL. LADDER UP TO ROOF CHASE  
SECURE TO WALL AS REQUIRED.
- 17 STEEL TYPE 304 STAINLESS DOMINATORY.  
(SEE ENLARGED PLAN 7/A4.1)
- 18 CORNER GUARD BELOW H.W. FRAME  
OF GLASS LAMINATE COUNTER.
- 19 CORNER GUARD TO 6" - 4" A.F.F.
- 20 2" x 6" SELF AFFIXED ON  
TOP OF C.M.I.
- 21 CONCRETE BOLLARD (SEE DETAIL 2/A.1.1)
- 22 MET. LOCKERS ON 4" HIGH CONCR. CURB.
- 23 METAL FLOOR IN ENTIRE VESTIBULE.
- 24 INSULATED CONCRETE SLAB BELOW  
FREEZER & COOLER  
NOTES TO DETAIL 6/A.4.4







# Overall Timeline



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# Big Room Re-Imagined



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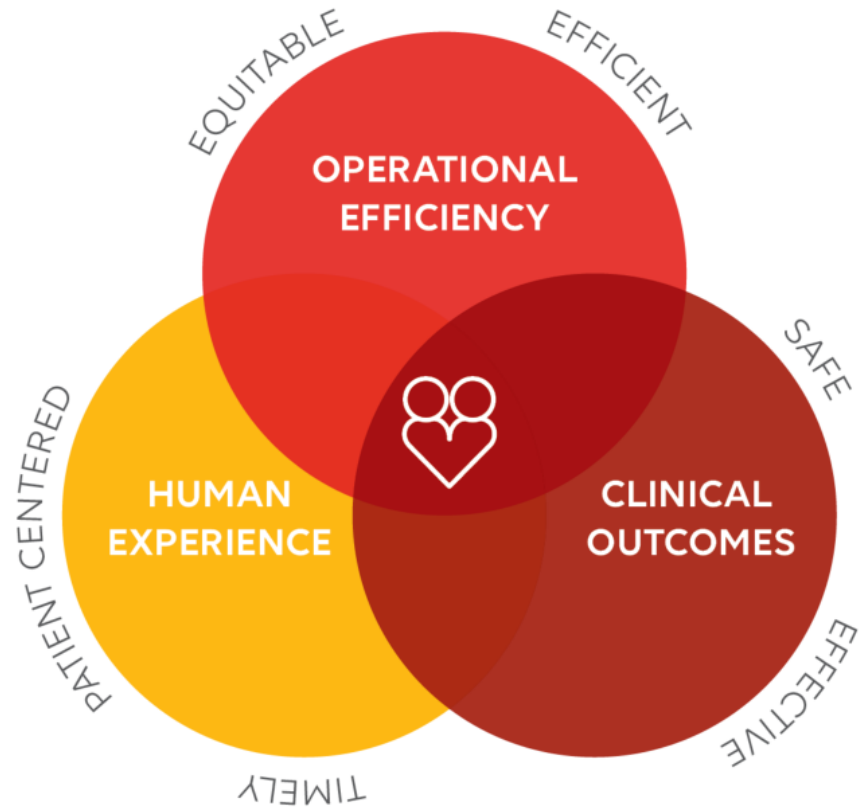
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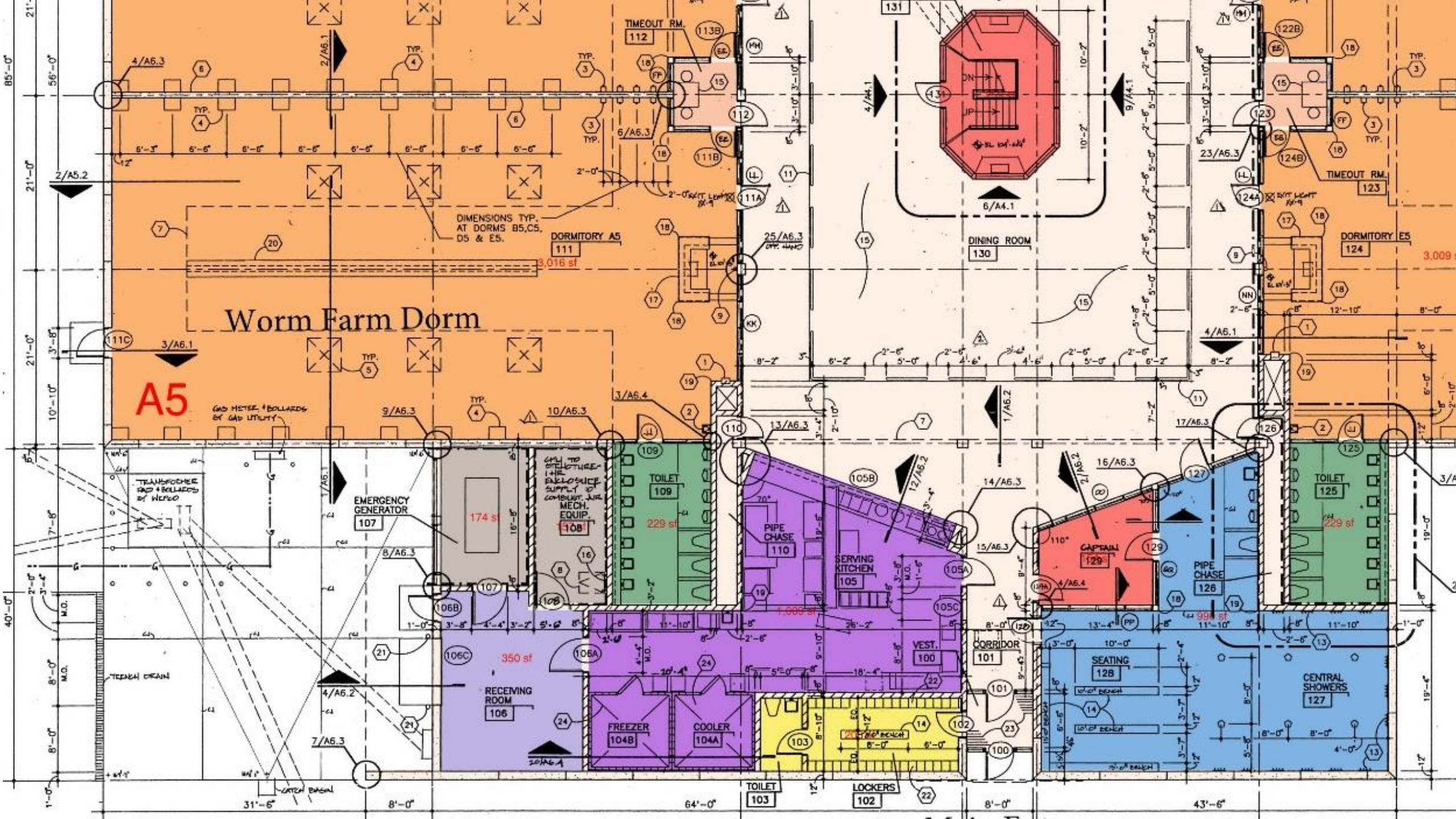


# Design Process

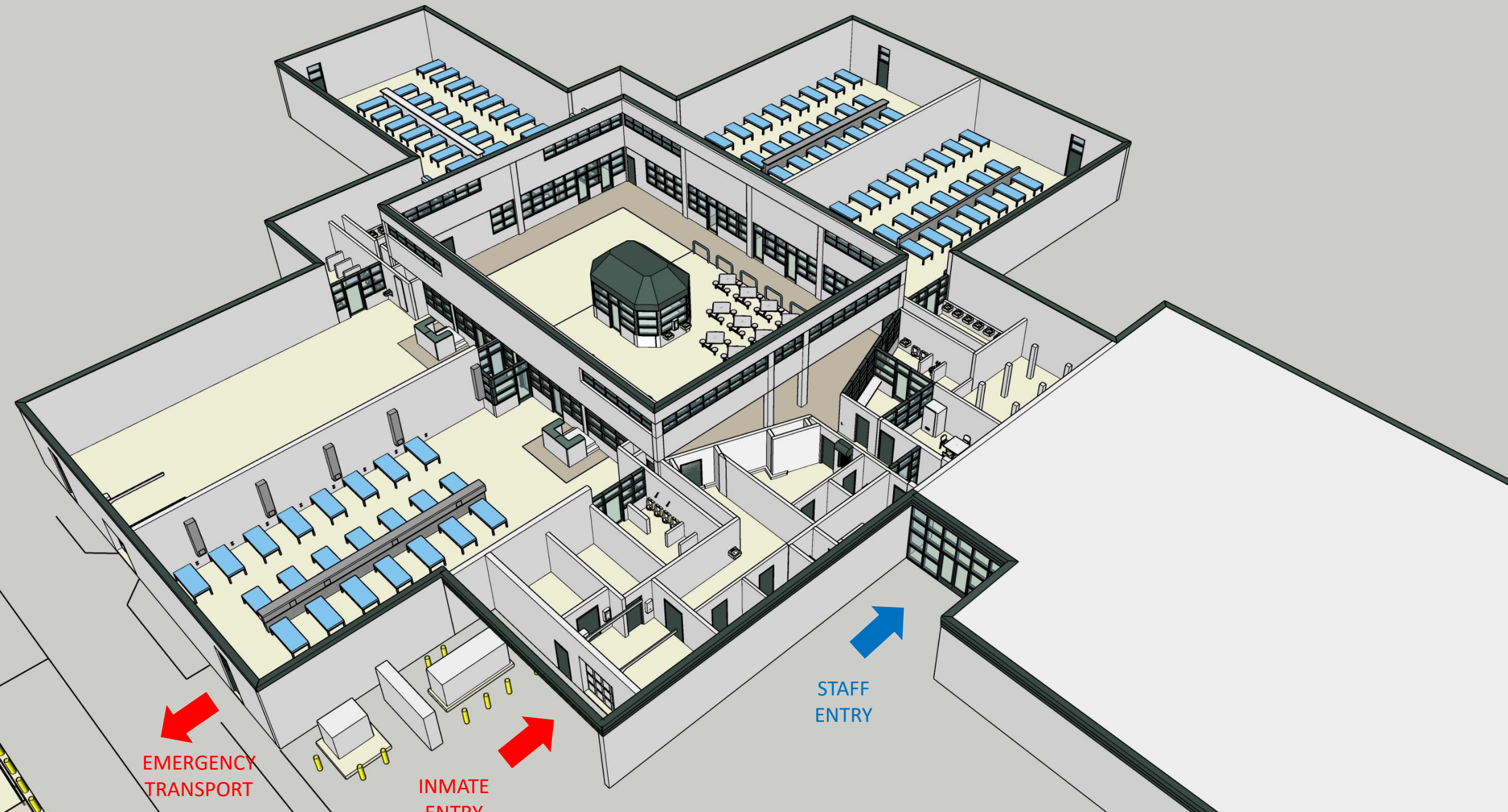
- Patient/inmate flow
  - Accessing the facility
  - Movement within the facility
  - Security and safety
- Staff flow
  - Building access
  - Movement within facility
  - Patient observation and interaction
  - Safety
- Material flow
  - How do goods arrive and move through the facility











EMERGENCY  
TRANSPORT

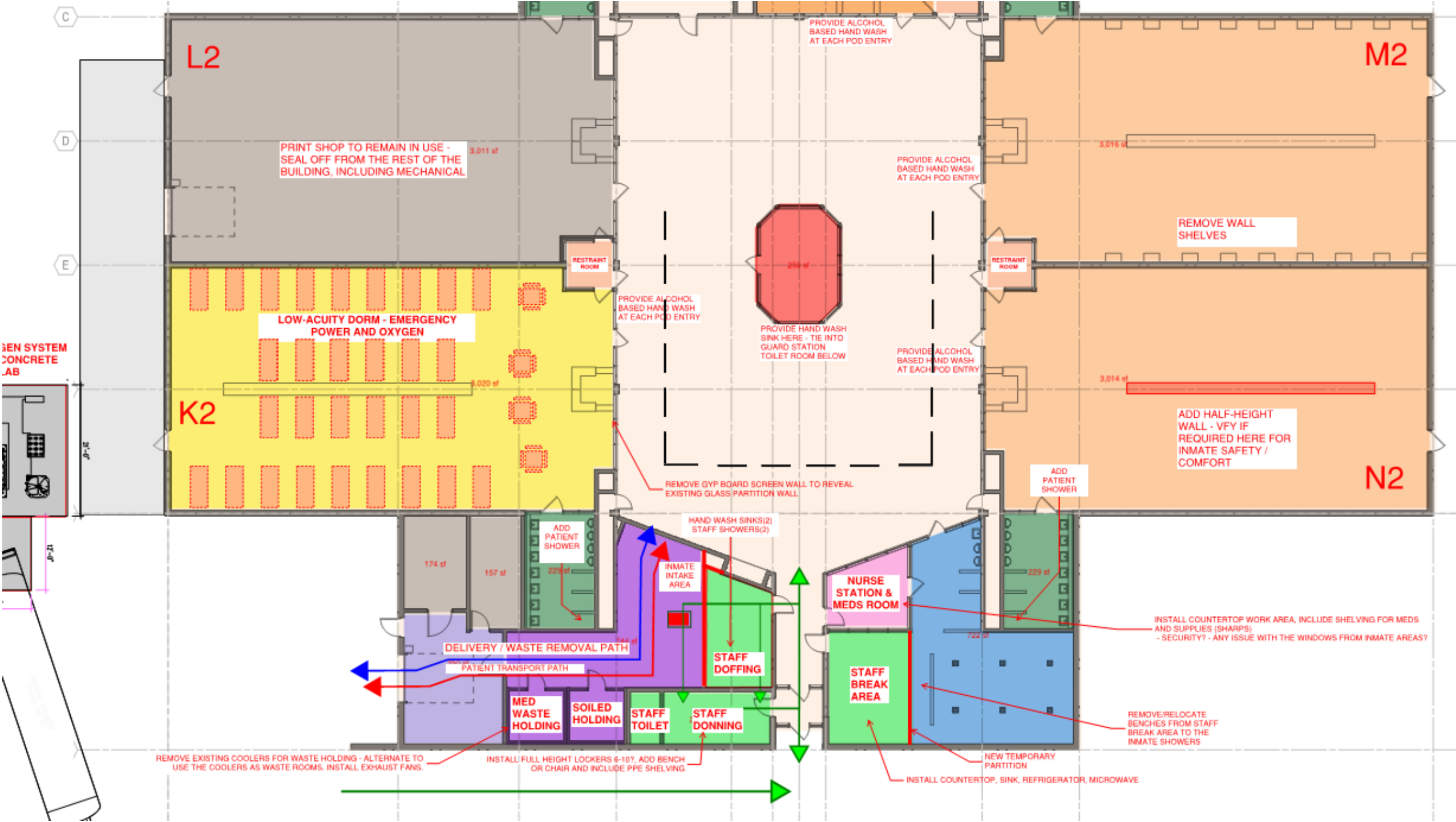
INMATE  
ENTRY

STAFF  
ENTRY

































**GENERAC**  
INDUSTRIAL  
POWER

INMATE  
ENTRANCE

HGA















# Overall Keys to Success

- 1<sup>st</sup> 48 hours and with value decisions
- Coming in with a proven robust local team
- On site leadership from each partner
- Clear critical path for each day and shift to include design, procurement, decisions, close out and AHJ's + user
- Daily leadership meetings with follow-up
- Great team spirit and a high bar set each day
- Moments of pride
- Diversity of great talent by all partners on site
- Project controls management and position
- The right players at table from day one
- Total project life cycle management and care by team, selflessness



# COVID-19 Rapid Response Project Delivery Case Studies

## Q & A



The American  
Institute  
of Architects

Project Delivery

an **AIA** Knowledge Community



# AIA KnowledgeNet

<https://network.aia.org/communities>

The AIA **Project Delivery Knowledge Community** (PDKC) promotes the architect's leadership role in all project delivery methods by assembling and distributing knowledge and best practices for a variety of project delivery methods, e.g. design-build (DB), integrated project deliveries (IPD), and public-private partnerships (P3).



# Upcoming Courses

November 2020

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## Live Course - Project Delivery in a Global Pandemic

When: Nov 12, 2020 from 4:00 PM to 5:30 PM (ET)

Community: Project Delivery

1.5 Hours Course = 1.5 LU/HSW

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## Live Course - COVID-19 Rapid Response Project Delivery

When: Nov 17, 2020 from 4:00 PM to 5:30 PM (ET)

Community: Project Delivery

1.5 Hours Course = 1.5 LU/HSW

Visit <https://network.aia.org/projectdelivery> for more information



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# THANK YOU



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