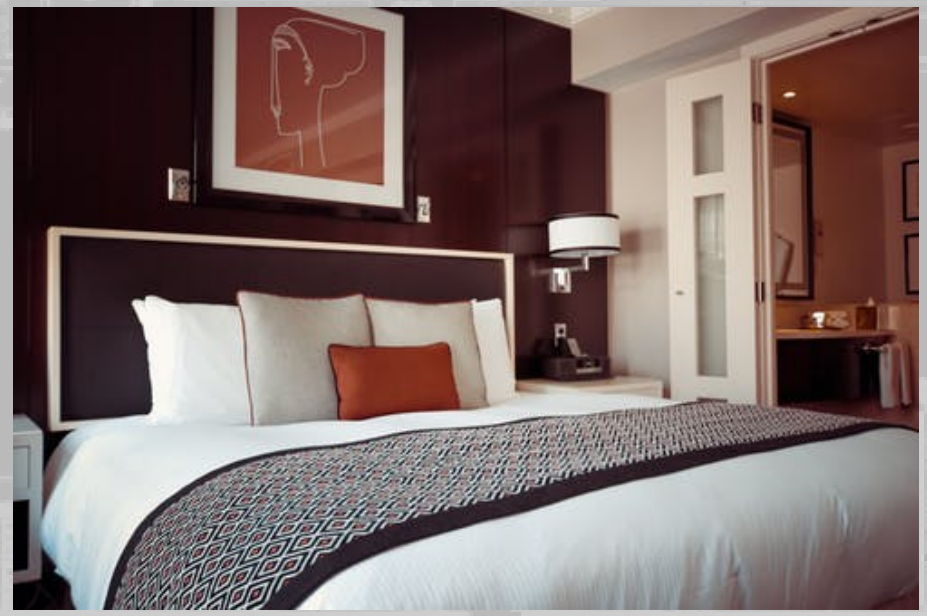
HOTEL TO HEALTHCARE CONCEPT (H2HC)

ALTERNATE HEALTHCARE FACILITY

30 March 2020



U.S.ARMY

US Army Corps of Engineers®

H2HC – CONCEPT OF THE OPERATION

PHASES

1. PLAN – STATE Responsibility

- Identify existing, available facility
- Assess for suitability
- Technical advice/assistance from USACE under FEMA MA – Critical Public Facilities PRT
- Existing utilities and infrastructure (electric, power, water, HVAC, IT,…)
- Lease facility
- Transfer authority to USACE to convert and retrofit facility

2. BUILD – USACE Mission (MA from FEMA)

- Convert/Retro-fit existing code-compliant structure
- Hotel, dorm, or apartment building
- Enable conversion of facility to support an ICU-like capability
- Main Functions - supply power (+ auxiliary), remove carpet, modify HVAC for negative pressure, install nurse's station, enable/configure IT infrastructure, etc…
- Stafford Act – emergency contracting authorities, utilizing local, capable business(es); Construction contracts.

3. SUPPLY – FEMA Mission

- Procure, Install, and Configure medically unique equipment
- Meets end-state requirements
- FEMA would task to either HHS or DLA to procure and install

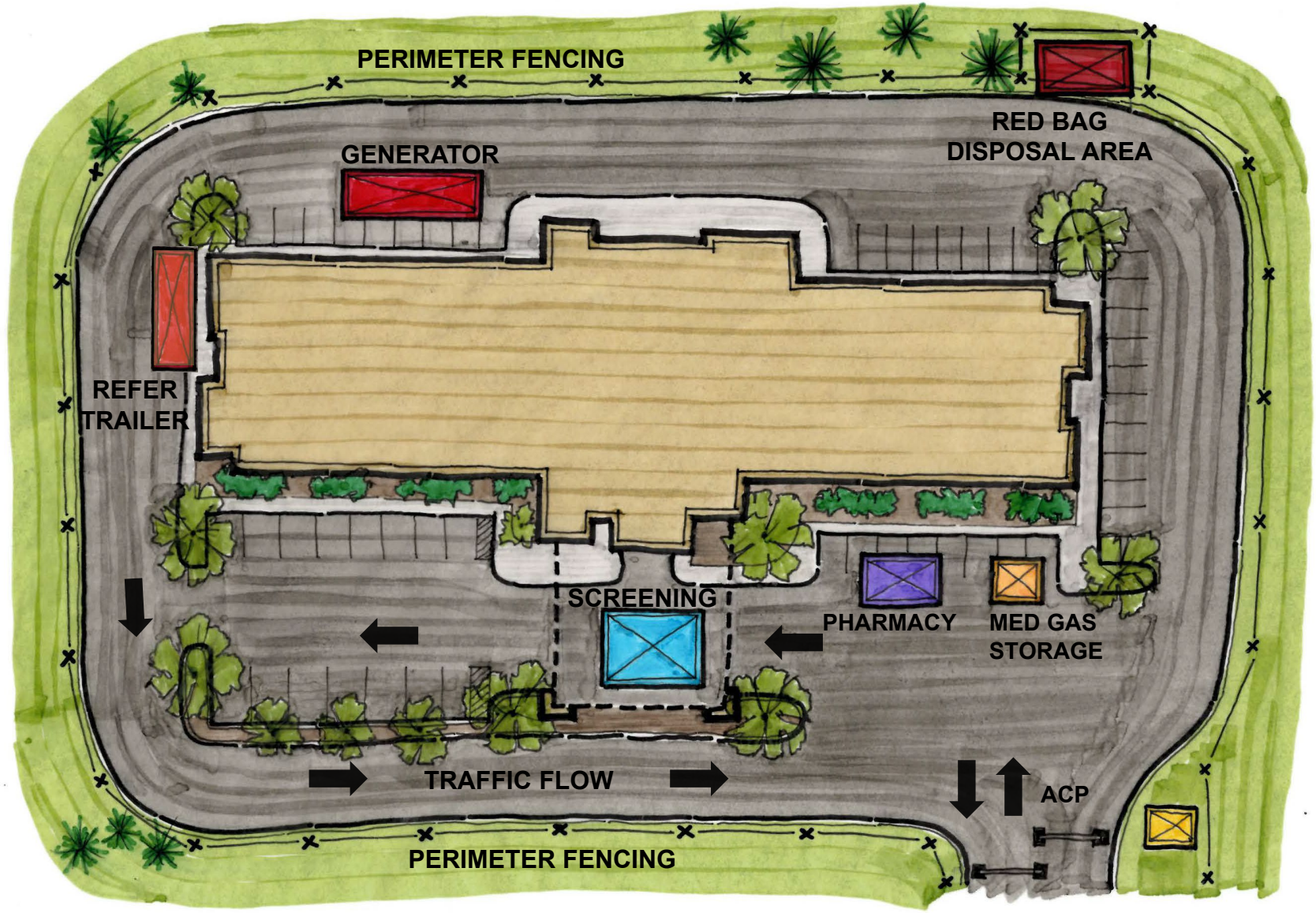
4. STAFF – STATE Responsibility

- Clearly a state function with available staff
- Expect to be critical path

BUSINESS RULES

- Proximity to existing, permanent medical hospital (10 mile/30 min)
- Readily available (10 mile/30 min) HazWaste disposal, linen/laundry, pharmacy
- Will not be fully ADA compliant; only to extent of existing facility
- Facility templates and standards are adapted from DoD UFC criteria.
- Local municipality/county/state standards should be discussed and agreed upon by municipality and the Construction Agent.
- State or City Owned Property Preferred...eases leasing and permitting.
- Built/Renovated after 1990 to mitigate lead paint/asbestos.
- Already has redundant power or emergency power
- Building is provided with Sprinkler and Fire Alarm
- Should be Single Room with attached Bathroom
- Meet Modern Power 3-Phase, 3-Wire
- Utilize exterior wall to install exhaust if needed

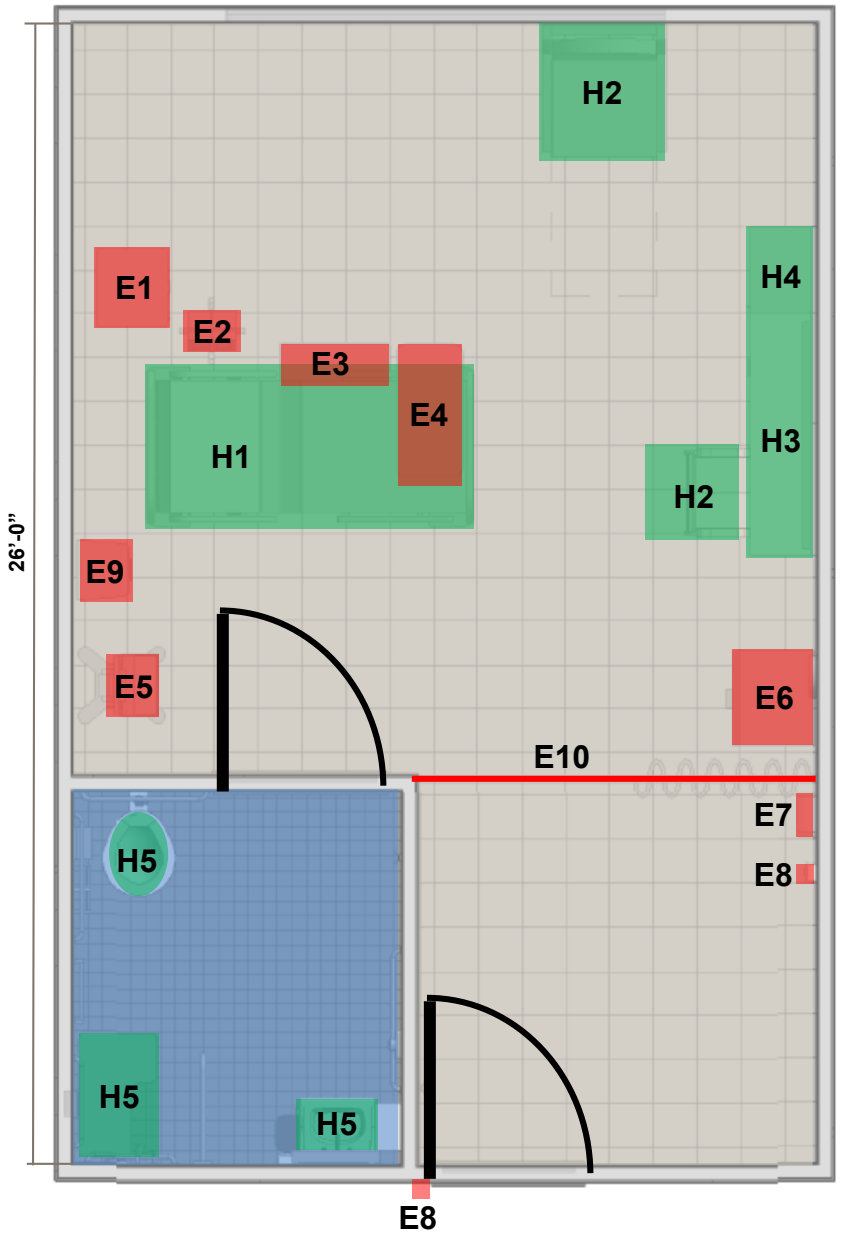
H2HC – SITE IMPROVEMENT PLAN



ENGINEERING CHANGES

- ADD PERIMETER FENCING
- ADD GENERATOR
- ADD PATIENT SCREENING TENT
- ADD EXTERIOR PHARMACY
- ADD MED GAS STORAGE
- ADD ACCESS CONTROL POINT (ACP)
- ADD RED BAG DISPOSAL AREA

NOTIONAL HOTEL ROOM to HEALTHCARE ROOM



ENGINEERING CHANGES

- REMOVE CARPET
- INSTALL VINYL FLOORING OR EPOXY
- REVISE HVAC DUCTING AND HEPA FILTERING
- ADD EMERGENCY BACK-UP POWER & UPS
- ADD PRIVACY CURTAIN
- ADD ELECTRICAL OUTLETS

REUSE

H1. HOTEL BED *WITH MEDICAL LINENS
H2. HOTEL/RECLINING CHAIR
H3. HOTEL DESK
H4. HOTEL WARDROBE
H5. HOTEL PLUMBING FIXTURES

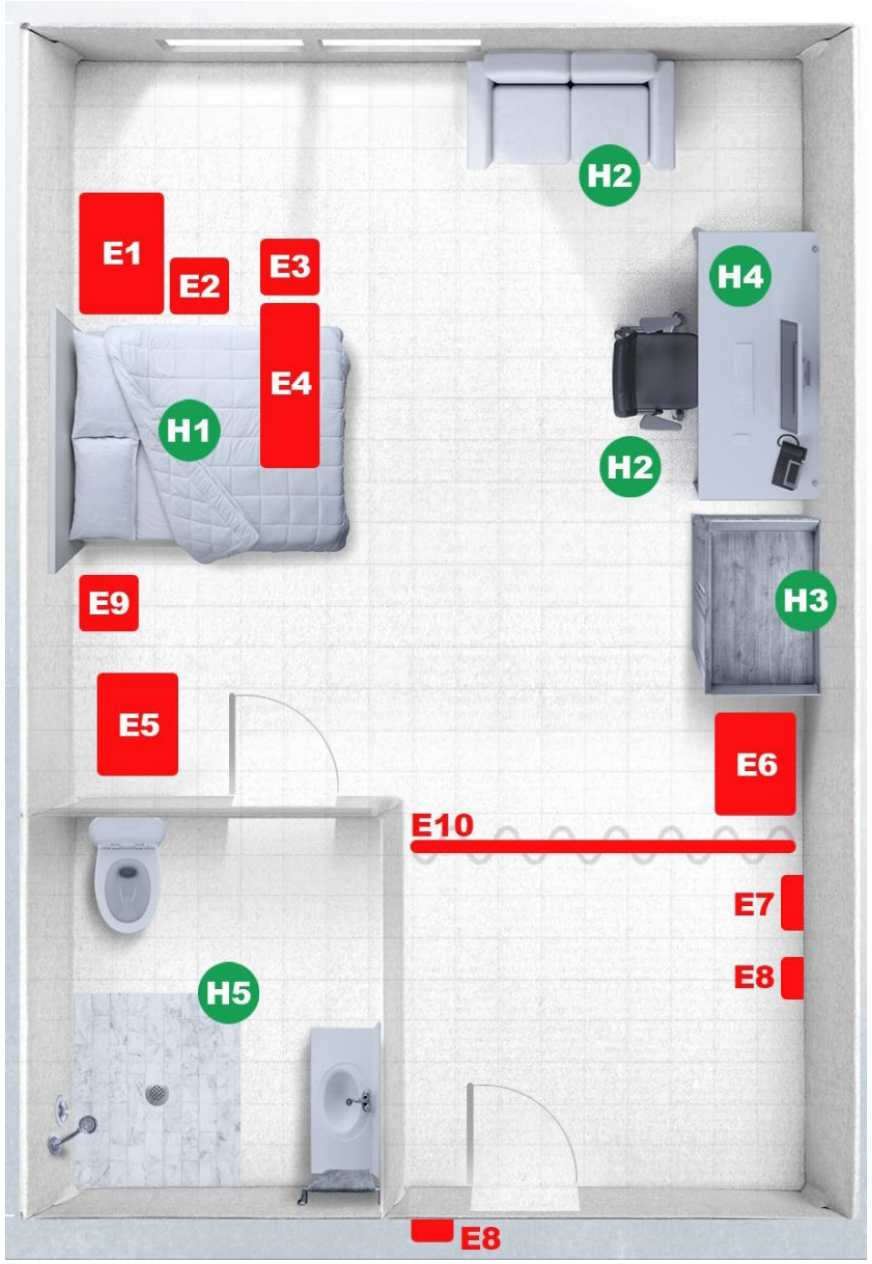
NEW EQUIPMENT

E1. VENTILATOR CAPABLE; STORAGE CABINET
E2. TELEMETRY/PUMP ON IV STAND
E3. STOOL
E4. OVER BED TABLE
E5. MOBILE WORK STATION
E6. LINEN HAMPER
E7. SHARPS/GLOVES
E8. HAND SANITIZER STATION
E9. INFECTIOUS WASTE
E10. CUBICLE CURTAIN

KEY POINTS

- **ALTERNATE CARE** (Contingency) Standards
- **WAIVERS** Required for Unified Facilities Criteria and Typical Medical Facility Standards, as agreed upon between state and construction agent
- **ABA ACCESSIBILITY** All rooms may not be ABA compliant or wheel chair accessible
- TYPICAL PATIENT ROOM LAYOUT: 420 SF
- TYPICAL HOTEL ROOM LAYOUT:
  SINGLE ROOM: 275 SF
  DOUBLE ROOM: 325 SF

NOTIONAL HOTEL ROOM to HEALTHCARE ROOM



Hotel PROVIDED

H1. HOTEL BED
*WITH MEDICAL LINENS
H2. HOTEL RECLINING CHAIR/DESK CHAIR
H3. HOTEL WARDROBE
H4. HOTEL DESK
H5. HOTEL PLUMBING FIXTURES

ENGINEERING CHANGES

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- ADD EMERGENCY BACK-UP POWER & UPS
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- ADD PRIVACY CURTAIN

SPECIAL MEDICAL EQUIPMENT – *TO BE PROVIDED BY OTHERS (NON-USACE)*

E1. VENTILATOR CAPABLE; STORAGE CABINET
E2. TELEMETRY/PUMP ON IV STAND
E3. STOOL
E4. OVER BED TABLE
E5. MOBILE WORK STATION
E6. LINEN HAMPER
E7. SHARPS/GLOVES
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PHASES

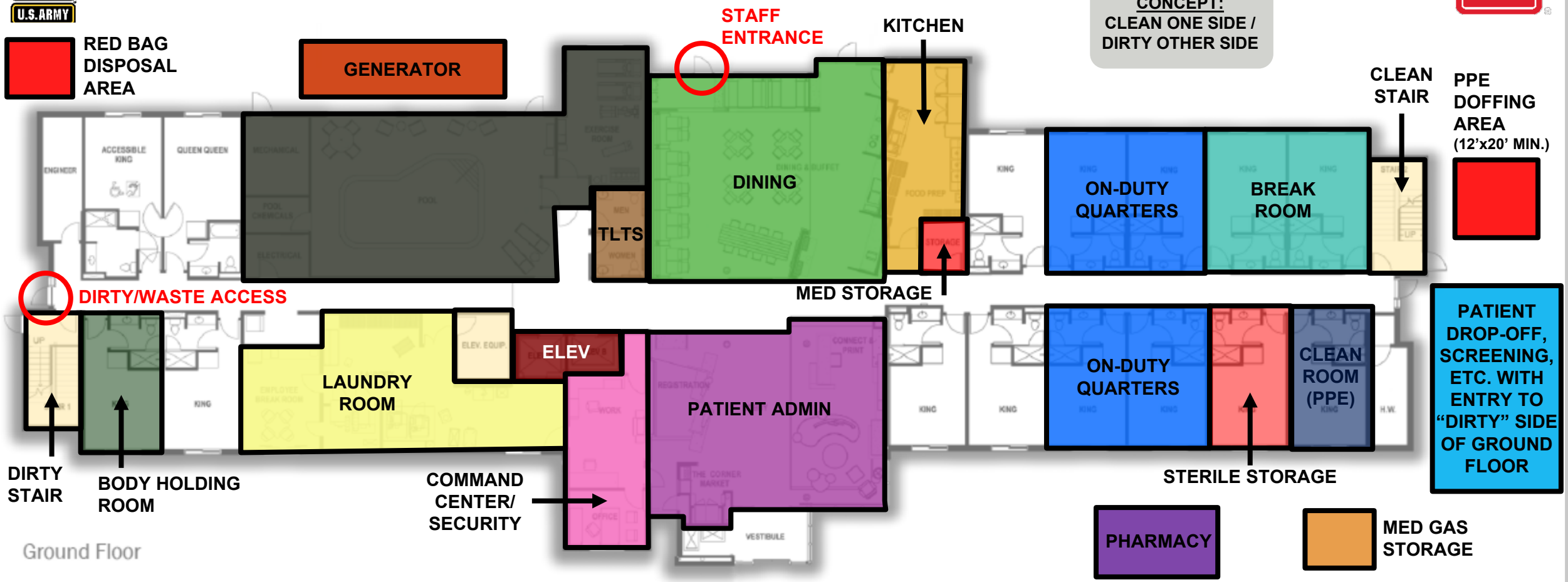
1. SITE (State)
2. BUILD (USACE)
3. SUPPLY (FEMA)
4. STAFF (State)

STANDARD DESIGN

*COVID
Non - COVID
Scalable, Tailorable, Site Adaptable

H2HC - GROUND FLOOR PLAN

CONCEPT:
CLEAN ONE SIDE / DIRTY OTHER SIDE



STANDARD DESIGN
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ENGINEERING CHANGES

- ALL TYPICAL FLOOR PLAN ADDITIONS
- PLUS GENERATOR

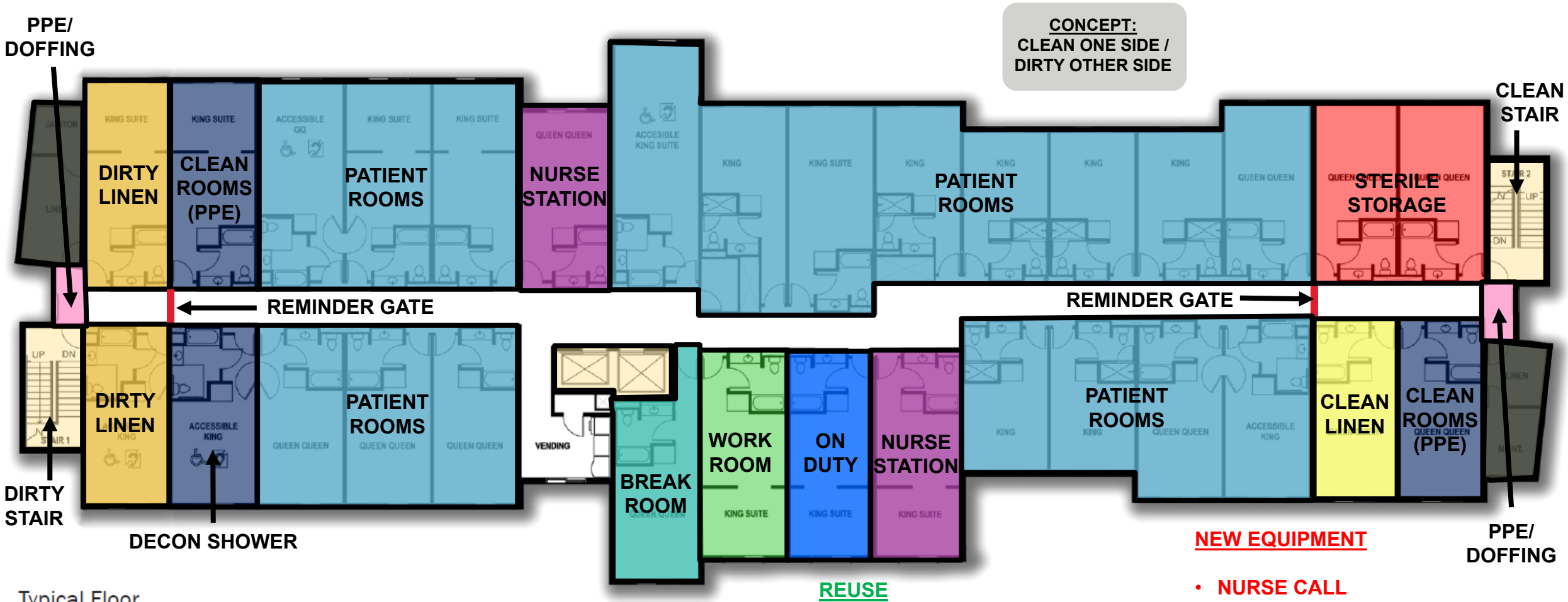
REUSE

- HOTEL FURNITURE FOR STAFF QUARTERS
- HOTEL KITCHEN
- HOTEL DINING
- HOTEL VESTIBULE
- HOTEL CCTV FOR SECURITY
- HOTEL CARD READERS

NEW EQUIPMENT

- METAL DETECTOR
- VTC FOR COMMAND CENTER
- CONTROLLED ACCESS
- INFECTIOUS/CLEAN
- REMINDER GATES
- EYE HANDWASH STATIONS

H2HC - TYPICAL FLOOR PLAN



Typical Floor

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ENGINEERING CHANGES

- INSTALL PRESSURE MONITORING
- MODIFY HVAC TO ACHEIVE NEGATIVE PRESSURE (BY FLOOR)
- MODIFIED ELEVATOR CONTROLS

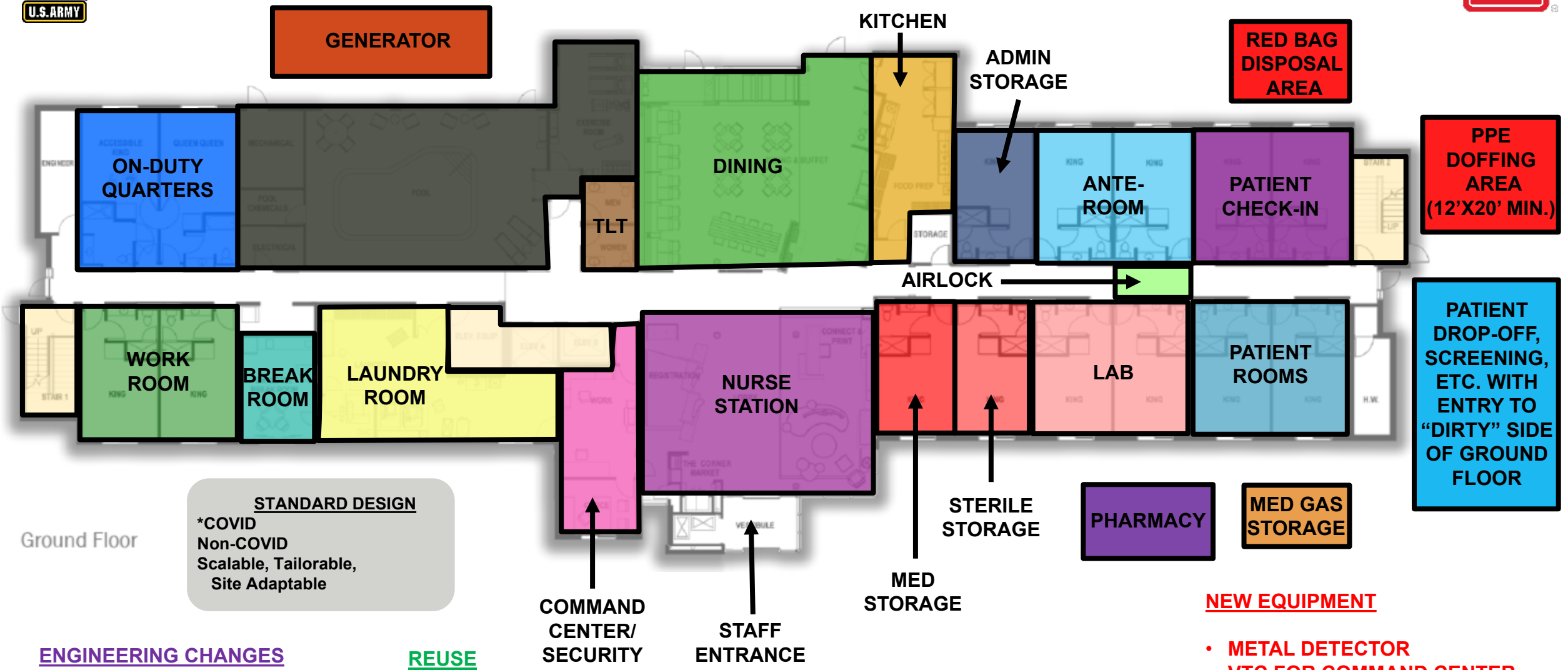
REUSE

- HOTEL WIFI
- HOTEL PHONE SYSTEM
- HOTEL INHOUSE NETWORK/TVS
- HOTEL ICE MACHINE/VENDING
- HOTEL PACKAGED HVAC

NEW EQUIPMENT

- NURSE CALL
- STORAGE SHELVING
- WORKSTATIONS
- MED DISPENSING UNITS
- #TBD VENTILATORS / FLOOR
- “CRASH” CART / FLOOR
- REMINDER GATES
- EYE HANDWASH STATIONS

H2HC - GROUND FLOOR PLAN – OPTION 2



Ground Floor

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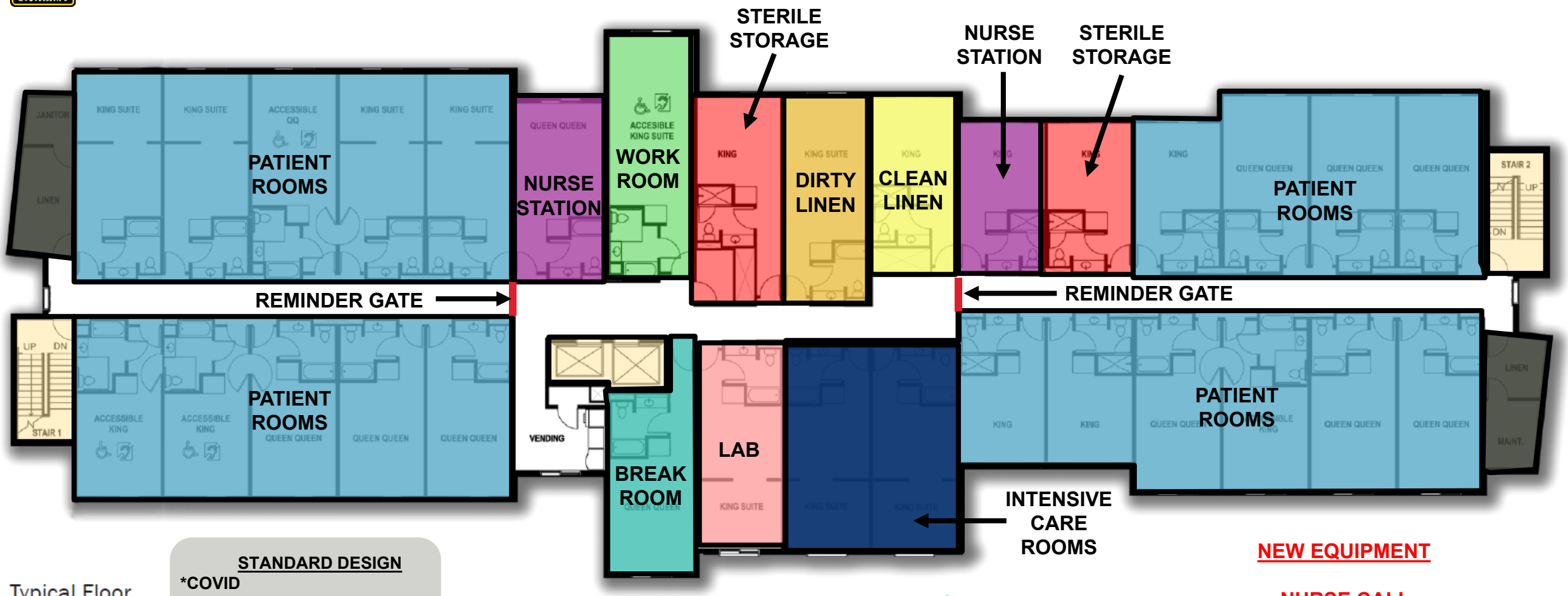

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ENGINEERING CHANGES

- INSTALL PRESSURE MONITORING
- MODIFY HVAC TO ISOLATE BY FLOOR
- MODIFIED ELEVATOR CONTROLS

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- HOTEL PHONE SYSTEM
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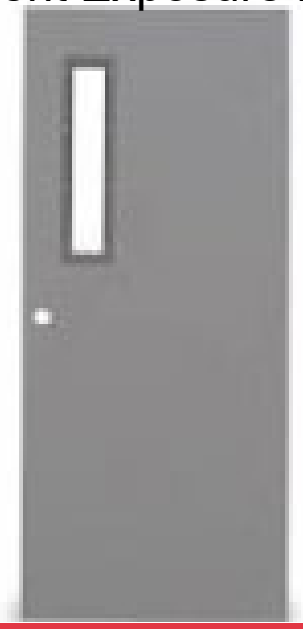
INFECTION CONTROL IN TRANSITION AREA

- Engineering Controls to keep staff safe.
- Clean room for Donning Personal Protective Equipment (PPE) is required.
- Reminder gates transitioning to infectious or clean areas.
- Normally eye, hand, and small wash station, if minor soiling
- However, urgent exposure room, would be first hotel room nearest to reminder gates

Urgent Exposure Room (this is bypassed normally and has shower)

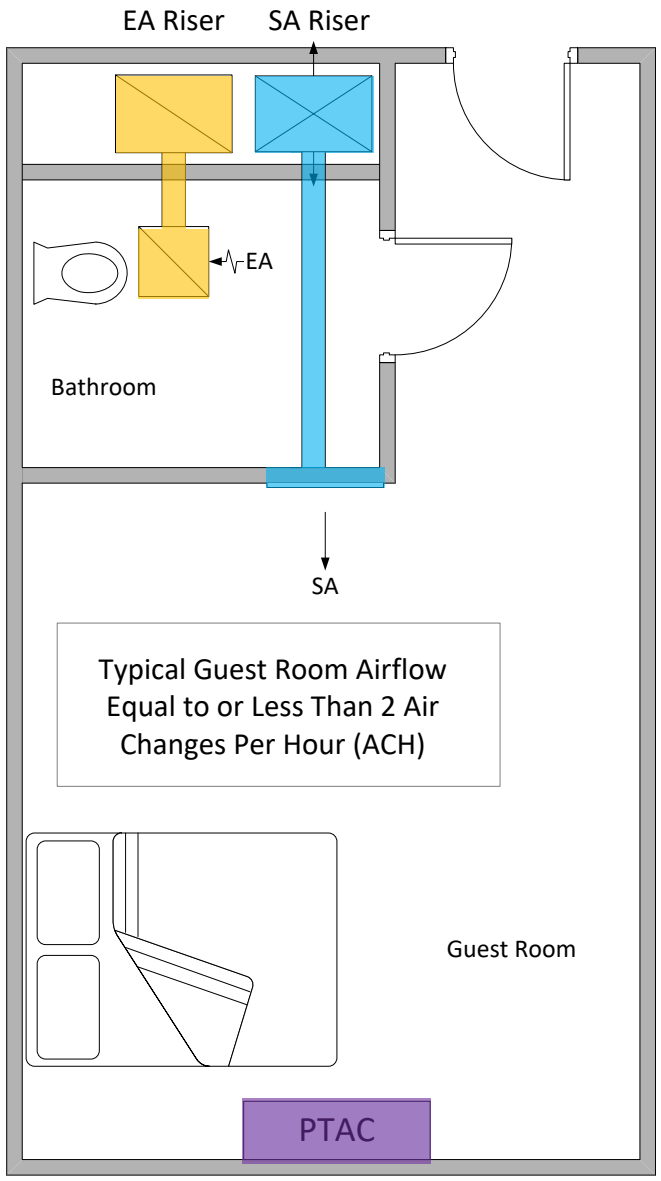


Eye, Hand, and small exposure wash station

Reminder Gates

Clean room for Donning PPE

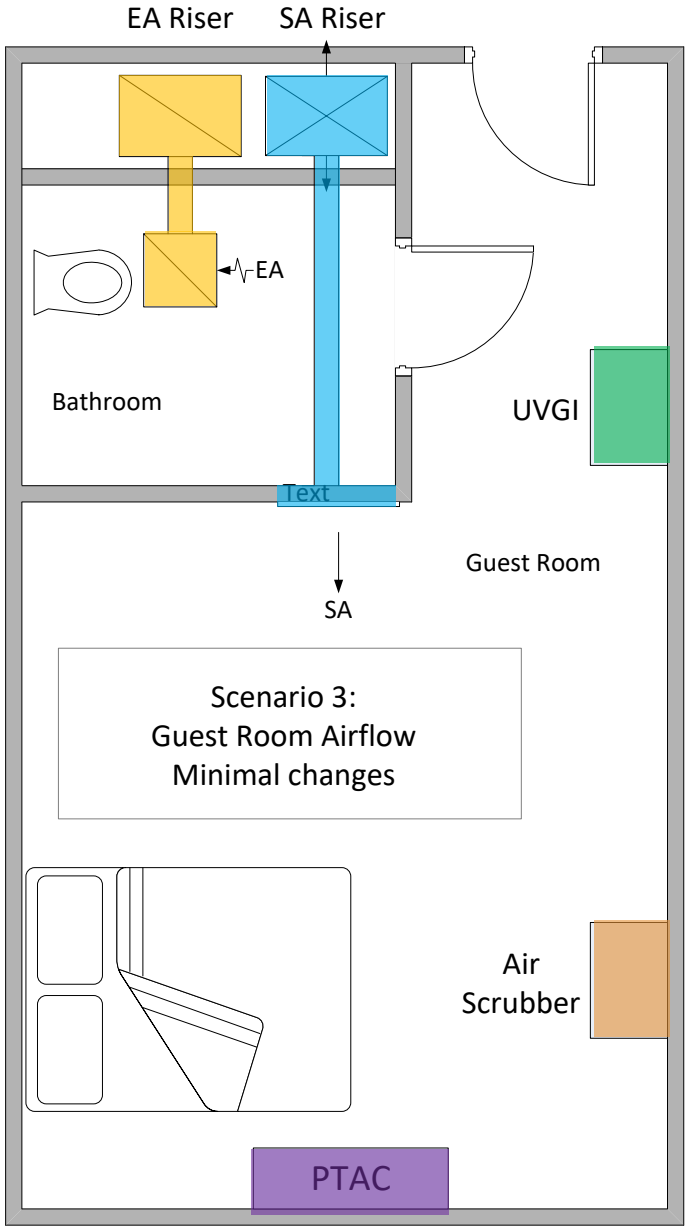
H2HC – TYPICAL HOTEL ROOM HVAC LAYOUT



Typical HVAC Features Provided in Hotels

- PTAC/FCU – Packaged, Through-the-Wall, Air Conditioning Unit for Heating and Cooling the Guest Room Suite.
- EA – Exhaust Air Provided in Bathroom Sized for Single Plumbing Fixture (50-70 CFM) and Connected to Exhaust Air Riser Distribution Duct.
- Exhaust Air Riser Connected to Central Exhaust System Consisting of One or More Exhaust Fans Located on Roof.
- SA – Supply Air Provided in Guest Room Sized to Makeup the Air Exhausted From Bathroom and to Provide Ventilation Air.
- The Supply Air Typically Provides Less Than 2 Air Changes Per Hour (ACH) and is Provided to the Rooms at a Neutral Temperature (70 degrees F).
- Supply Air Riser Connected to Central Makeup Air System (MUA) Consisting of One or More Air Handling Units Located on Roof.

H2HC – SCENARIO ONE: MINOR MODIFICATIONS

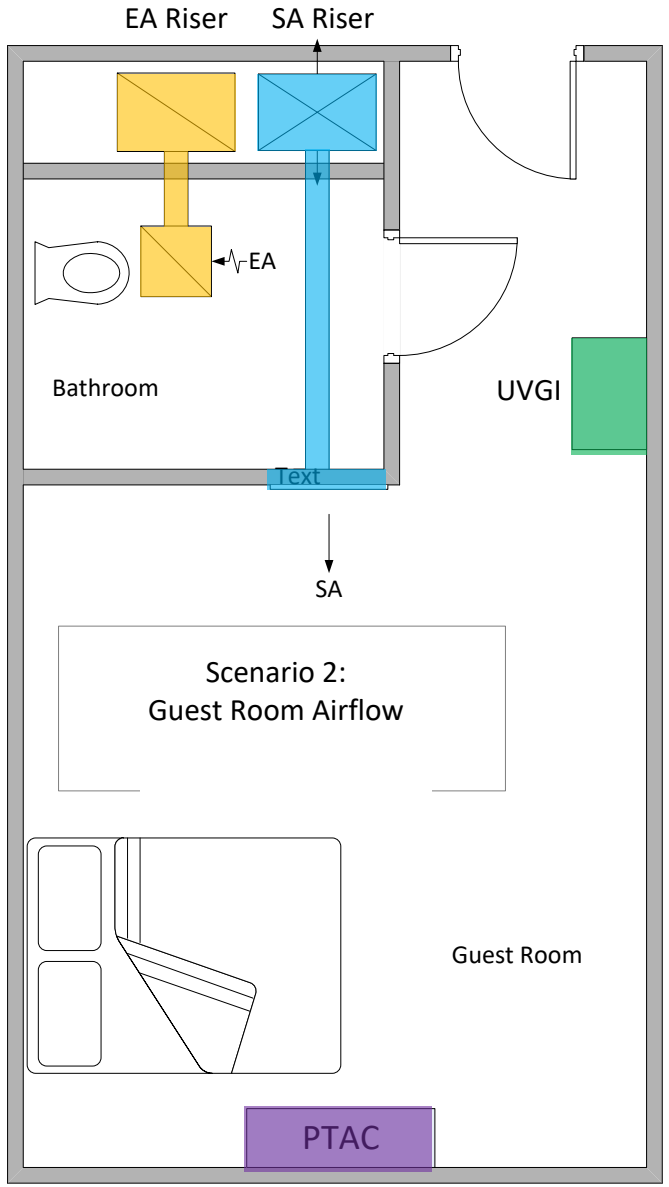


This scenario is one in which only minor changes can be made to existing HVAC systems

- Replace/modify exhaust fan to pull more air.
- Replace/modify MUA to increase air flow to guest rooms.
- PTACS remain for more precise room temperature control.
- Assuming NO changes to ducts, noise levels in suites will be higher.
- (OPTIONAL) Provide upper room Ultraviolet Germicidal Irradiation units for supplemental infection control measure.
- (OPTIONAL) Provide HEPA-provided air scrubbers in each room for supplemental air filtration.
- Upgrade central exhaust system with system able to provide at least negative pressurization to each suite iaw PWS requirements.

Note: To have a converted patient room more negative pressure than existing bedroom, add the UVGI for infection control and the air scrubber for filtration.

H2HC – SCENARIO TWO: MEDIUM MODIFICATIONS



This scenario is one in which moderate changes can be made to HVAC systems.

- Modify exhaust fans to pull more air.
- Modify MUA to increase air flow to guest rooms.
- Add HEPA filter.
- PTACS remain for more precise room temperature control.
- Assuming no change to ducts, noise levels in suite will be higher.
- (OPTIONAL) Provide upper room Ultraviolet Germicidal Irradiation units for supplemental infection control measure.

Note: If able to increase air changes, this will allow for better air filtration and the air scrubber will not be needed. Provide only the UGVI for infection control.