

2023 Station Design Conference

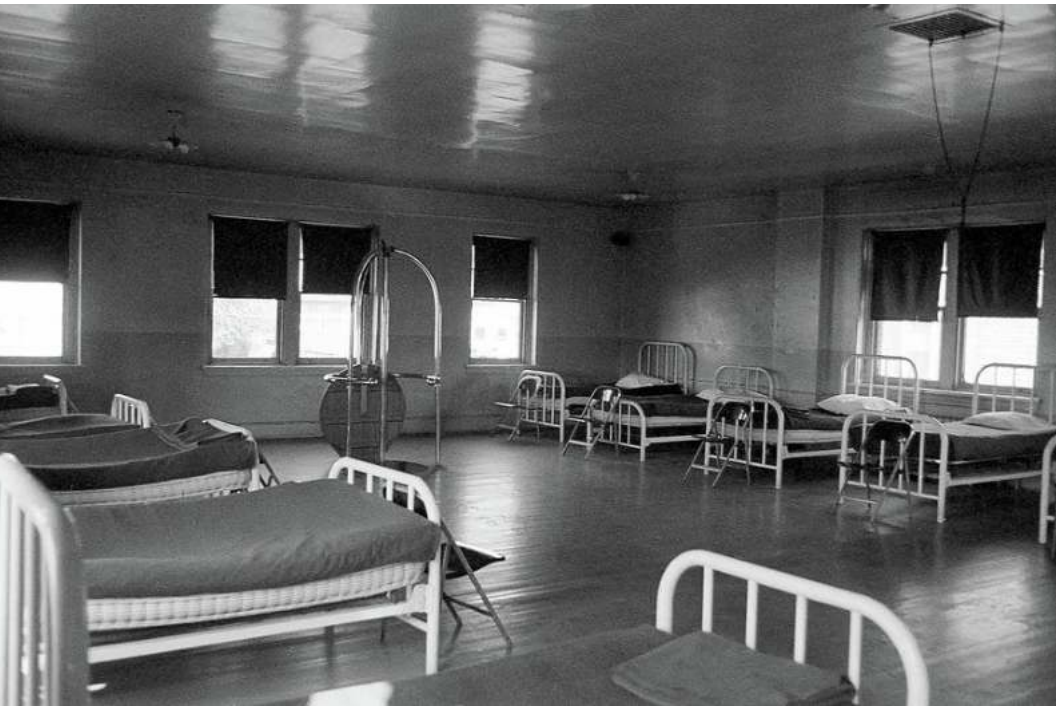
Designing Fire Stations that are Inclusive to All

Presented by:

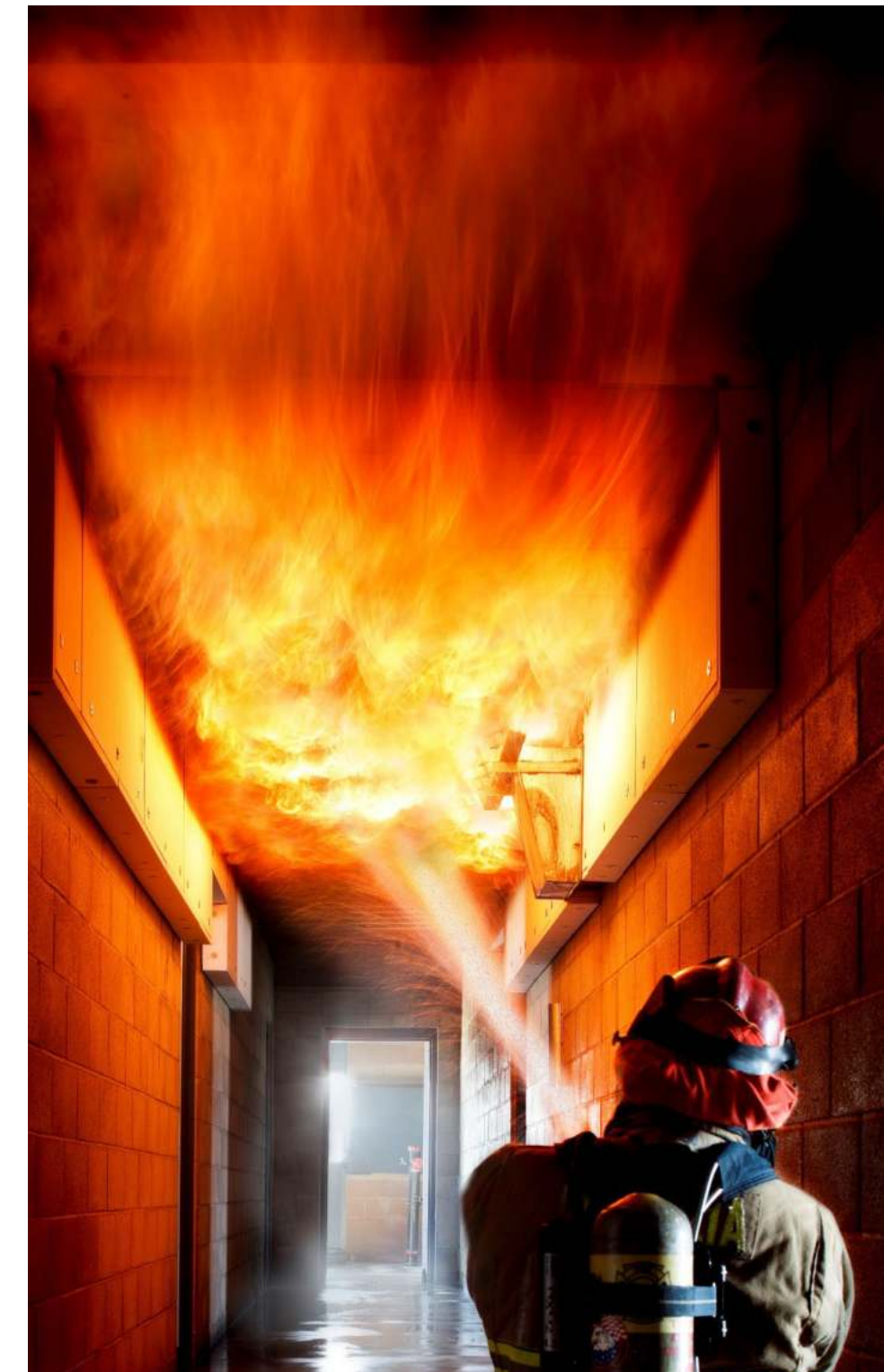
Mike Scott (Principal) and Kathryn Hicks (Project Manager)



Where we began...a culture of great teamwork with little to no privacy



Where we are going...a culture of teamwork in an inclusive environment that supports all of its firefighters



Defining Diversity + Inclusion

“Diversity is about counting people. Inclusion is about making people count. Diversity is about the ingredients, the mix of people and perspectives. Inclusion is about the container – the place that allows employees to feel they belong, to feel both accepted and different.”



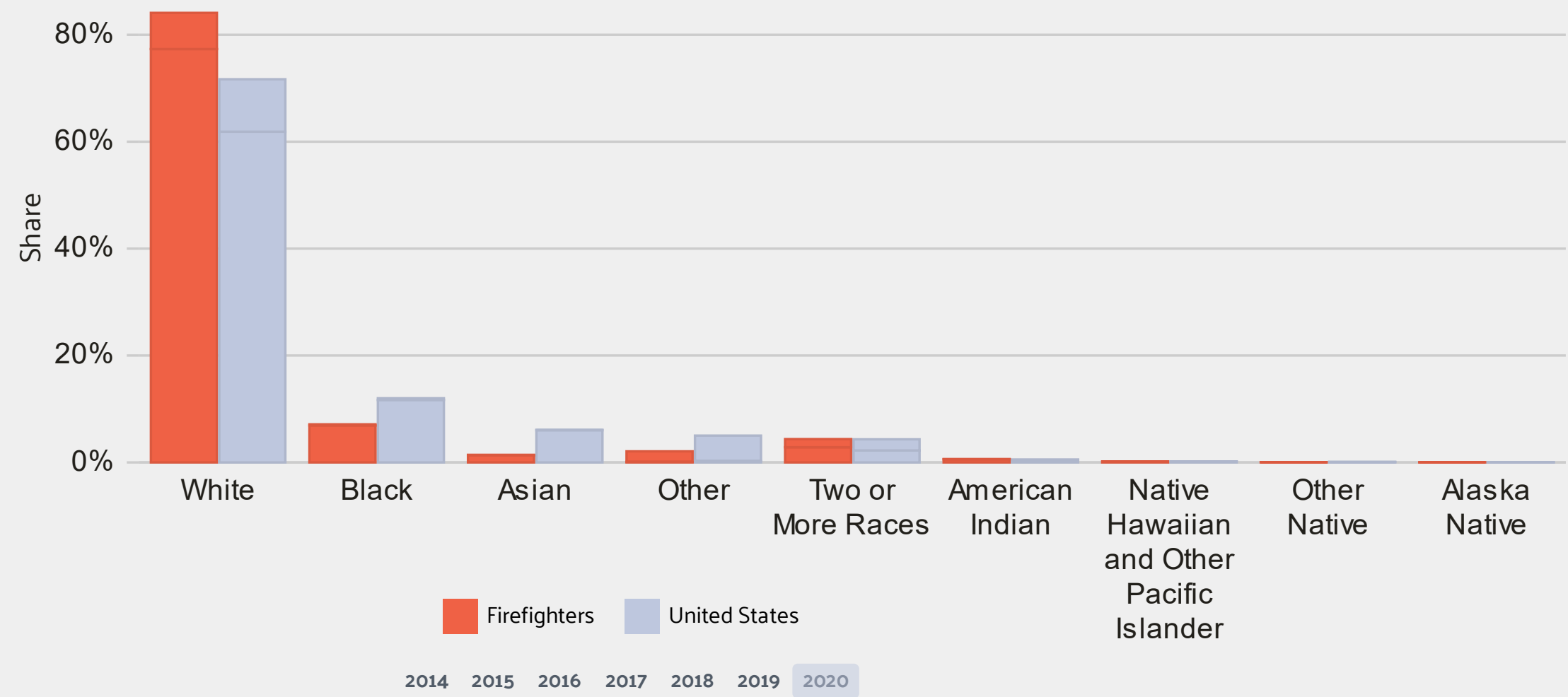
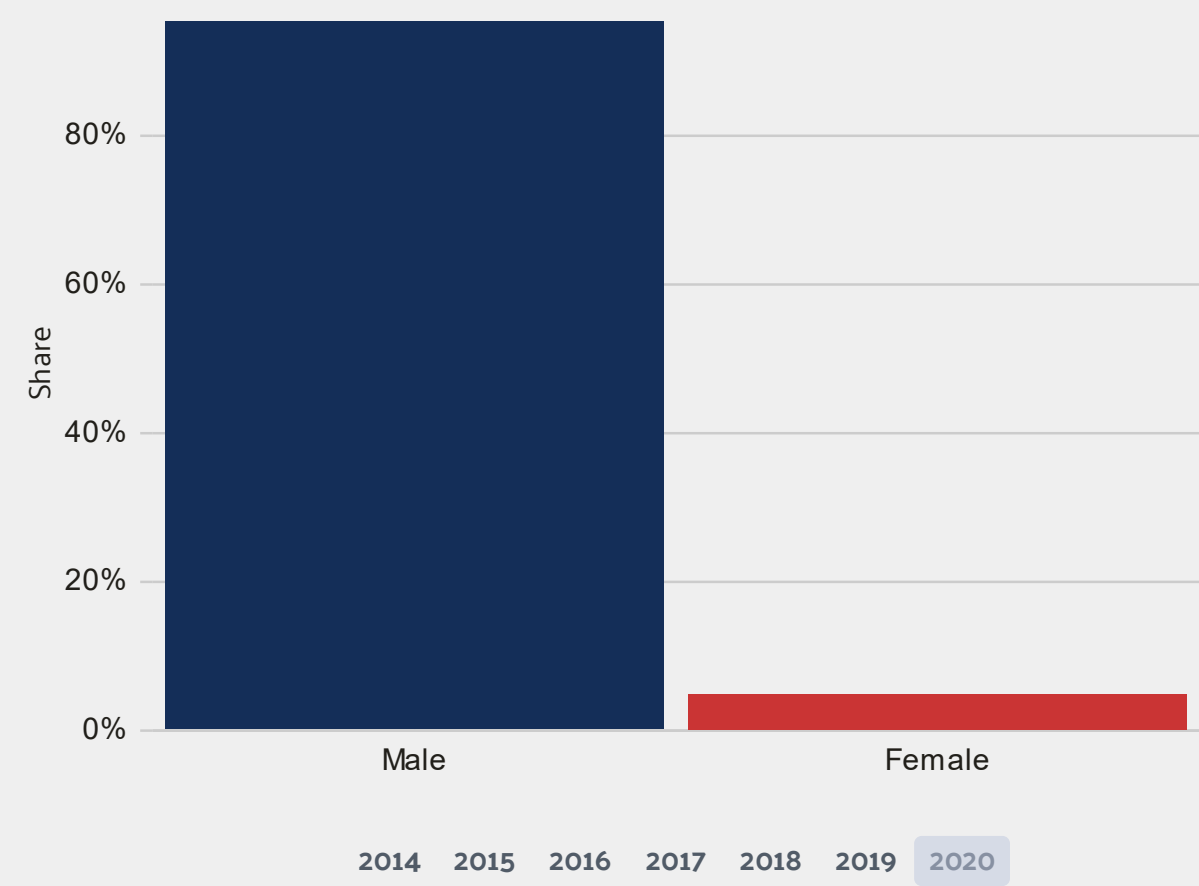
*- Battalion Chief Robert Avsec,
Chesterfield Fire + EMS Department (Retired)*



Demographics of Firefighters in the United States

95.2% Male
4.8% Female

- 84.1% white
- 7.0% black
- 1.4% Asian
- 4.4% two or more races
- 3.1% other



Fire Station Design

It is important that the design/layout of fire stations will support *all* firefighters regardless of:

- Gender Identity
- Sexual Orientation
- Race
- Culture
- Religion
- Skills/Abilities



In this presentation we will look at:

- Feedback from current firefighters
- Challenges of existing layouts
- Optimal designs for new stations
- Identify priorities for retrofitting existing stations

Meet Mary Gutierrez

- Fire Chief, Seaside Fire Department
- Former Chief of the Gilroy Fire Department's Paramedic Division
- Former Battalion Chief with the San Jose Fire Department
- Has worked as a firefighter-paramedic for 30+ years



"The fire service is steeped with tradition and rules, sometimes that are unspoken, and expectations that sometimes are unspoken," Gutierrez said, adding that women only make up three percent of the fire departments across the nation. "I try to teach young women just to focus on the job at hand and be confident. If you're well trained and you've prepared, it doesn't matter what your gender is. You have to be just as strong mentally as you are physically—especially for women."



Mary Gutierrez

Fire Chief, Seaside Fire Department

Lack of Privacy



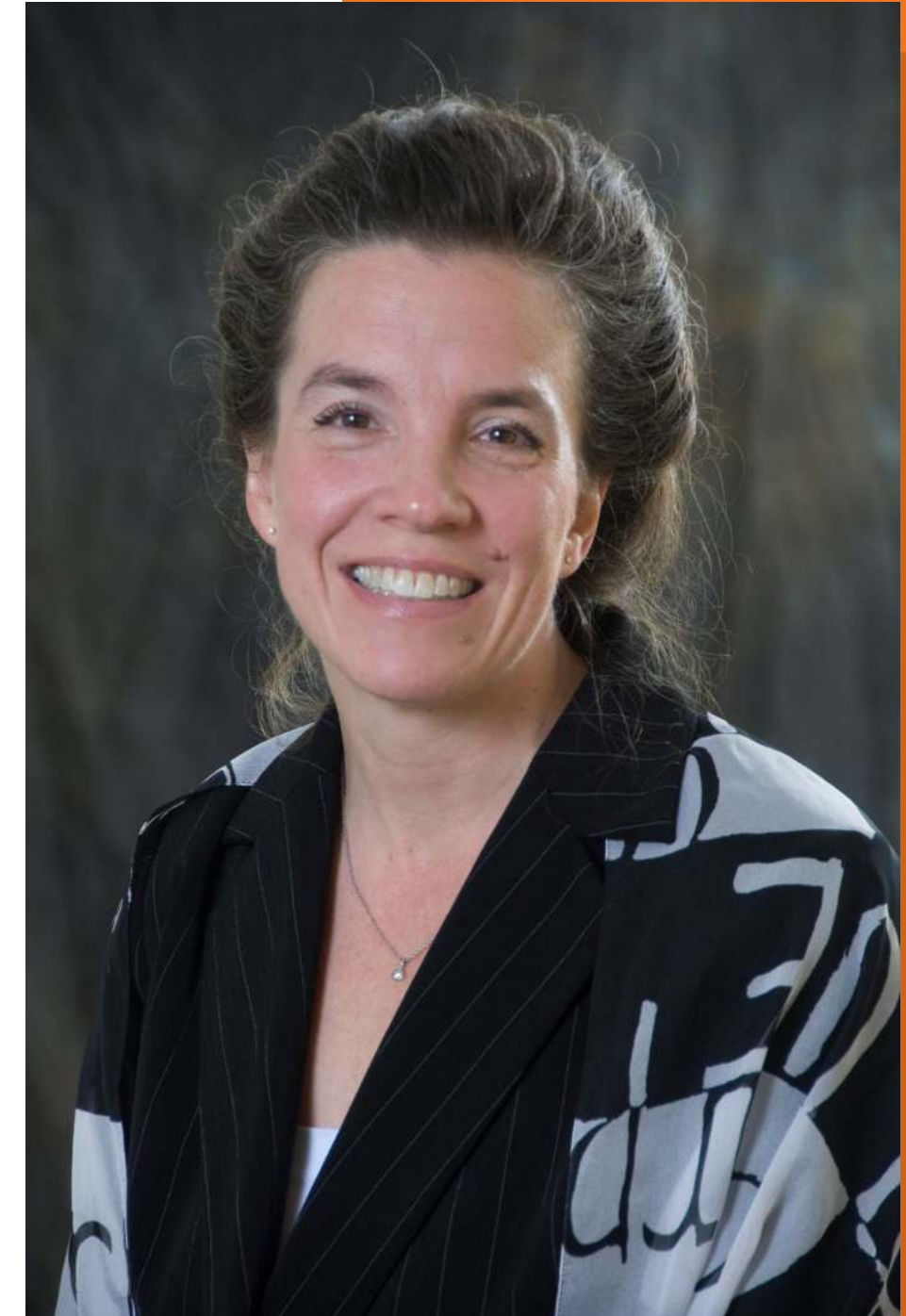
Meet Devon Kelsey

- Fire Firefighter with Santa Barbara County Fire Department – Six Years
- Previously with Wildland Fire – Eight Years



Dr. Jennifer Taylor

- Associate Professor in Occupational and Environmental Health with Drexel University
- Runs the Center for Firefighter Injury Research & Safety Trends (FIRST),
- Important to provide a breastfeeding room for new moms
 - (This is also federal law, you must provide a private room that is not a bathroom, along with refrigeration)
- More women = more safety; provide women with a safe place to talk
- Provide common spaces that encourage dialogue “phone free zones”; important the Chief establishes the culture of the station
- Provide good sleep hygiene
- The key is to balance privacy with collaboration; safety with tradition



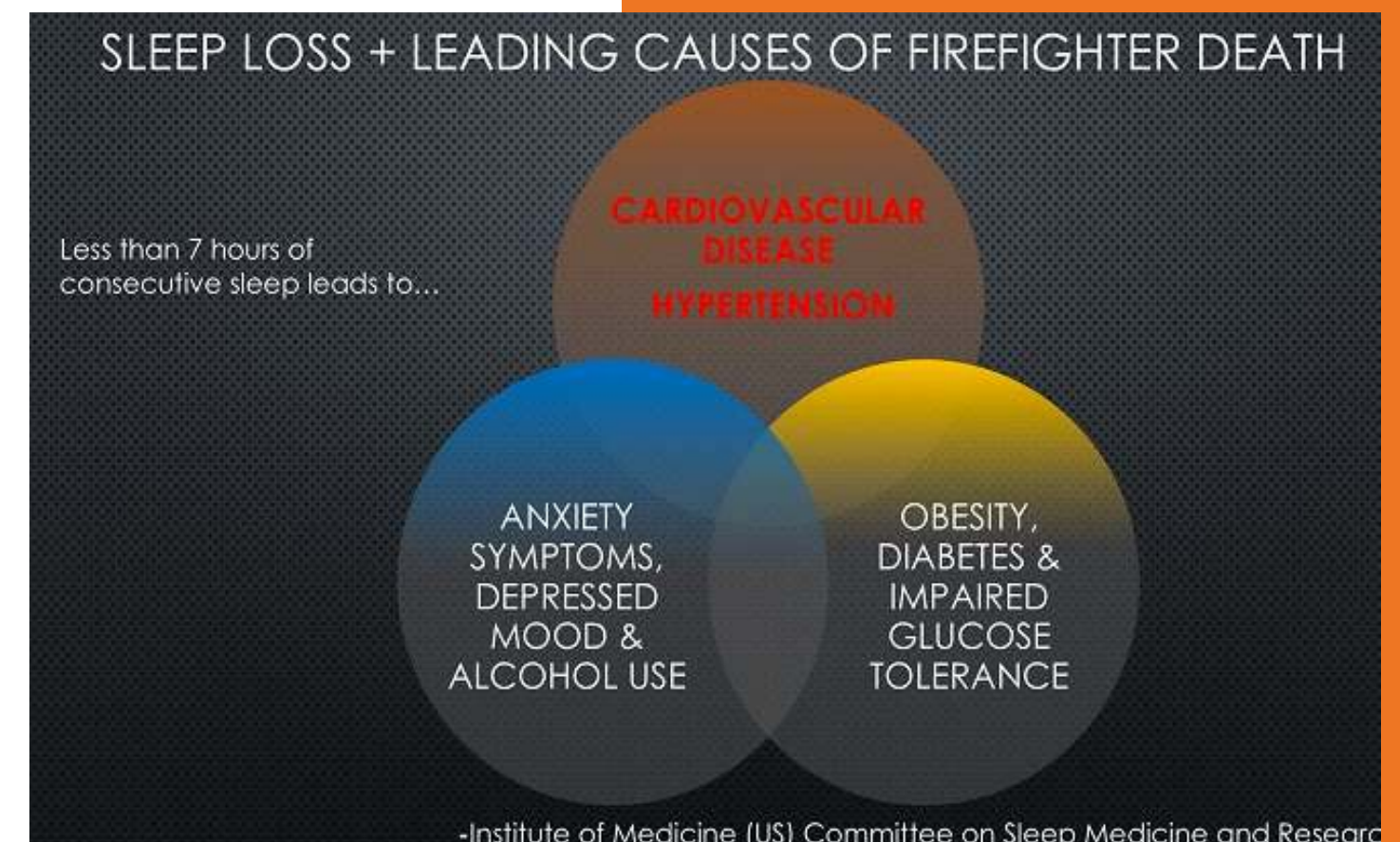
Importance of Quality Sleep

"Our study findings suggest that firefighters with sleep difficulties are likely to experience greater struggles accessing strategies to regulate their emotions, especially when feeling upset. This, in turn, may lead to or worsen feelings of depression and low mood"

Melanie Hom, a doctoral candidate in the Laboratory for the Study and Prevention of Suicide-Related Conditions and Behaviors within the department of psychology at Florida State University in Tallahassee, Florida.

"Firefighters are typically faced with many demands, including difficult work schedules, and they often both witness and experience traumatic events," said Hom. "It is not surprising that firefighters may experience sleep problems and depression, but it is critical that greater efforts be made to prevent and treat these problems."

"Contributing to cancer, cardiac events, and PTSD, lack of sleep may be the greatest cause of firefighter deaths."

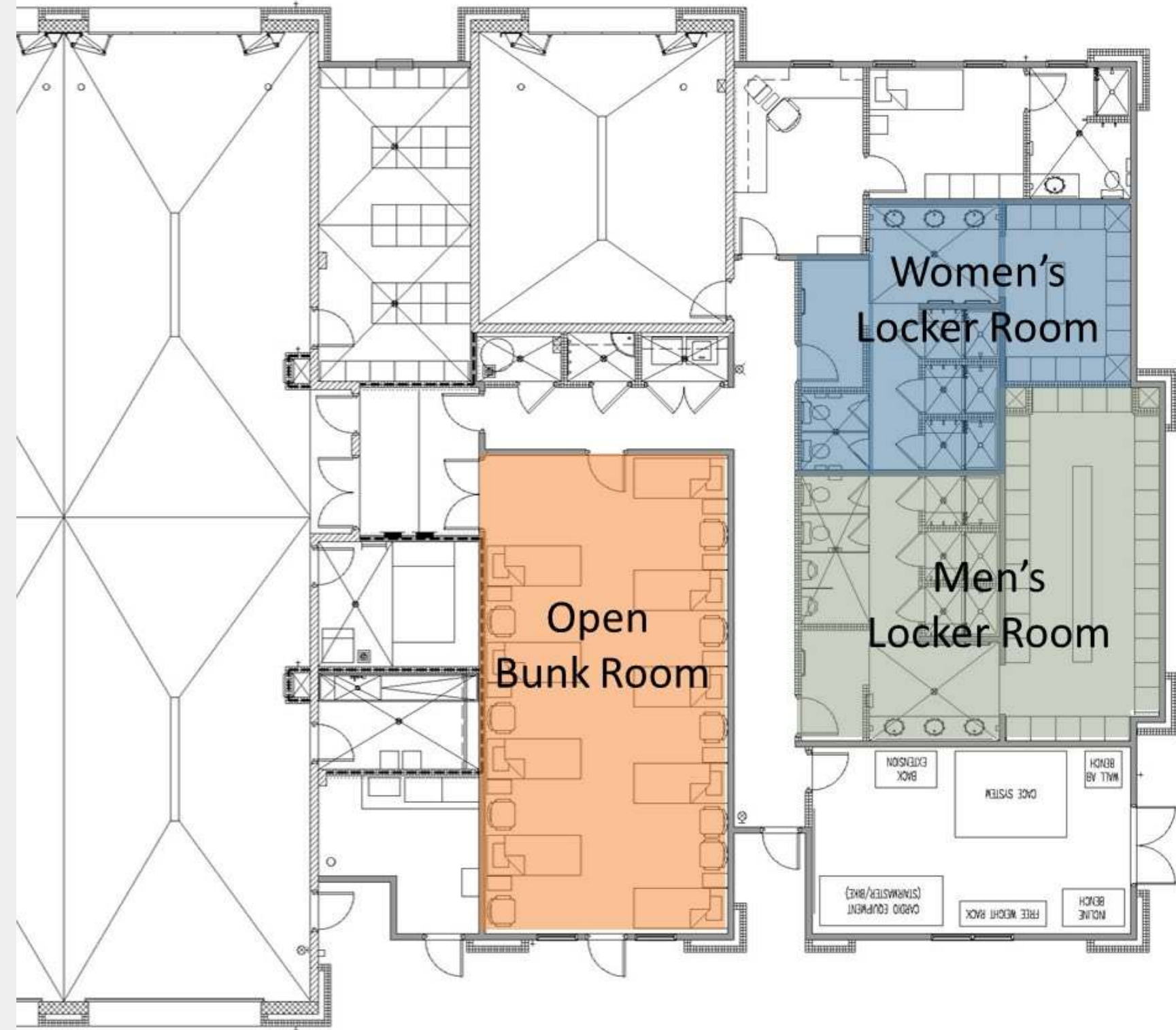


Sleeping Quarters



Open Bunk Rooms

- Ease of communication
- Improved camaraderie
- Lack of privacy
- Limited quality of sleep (snoring, noise, coughing, temperature control, etc.)
- Easily spread illness



Open Bunk Rooms:

Do they really save space?

Taking the previous floor plan, we calculated the following:

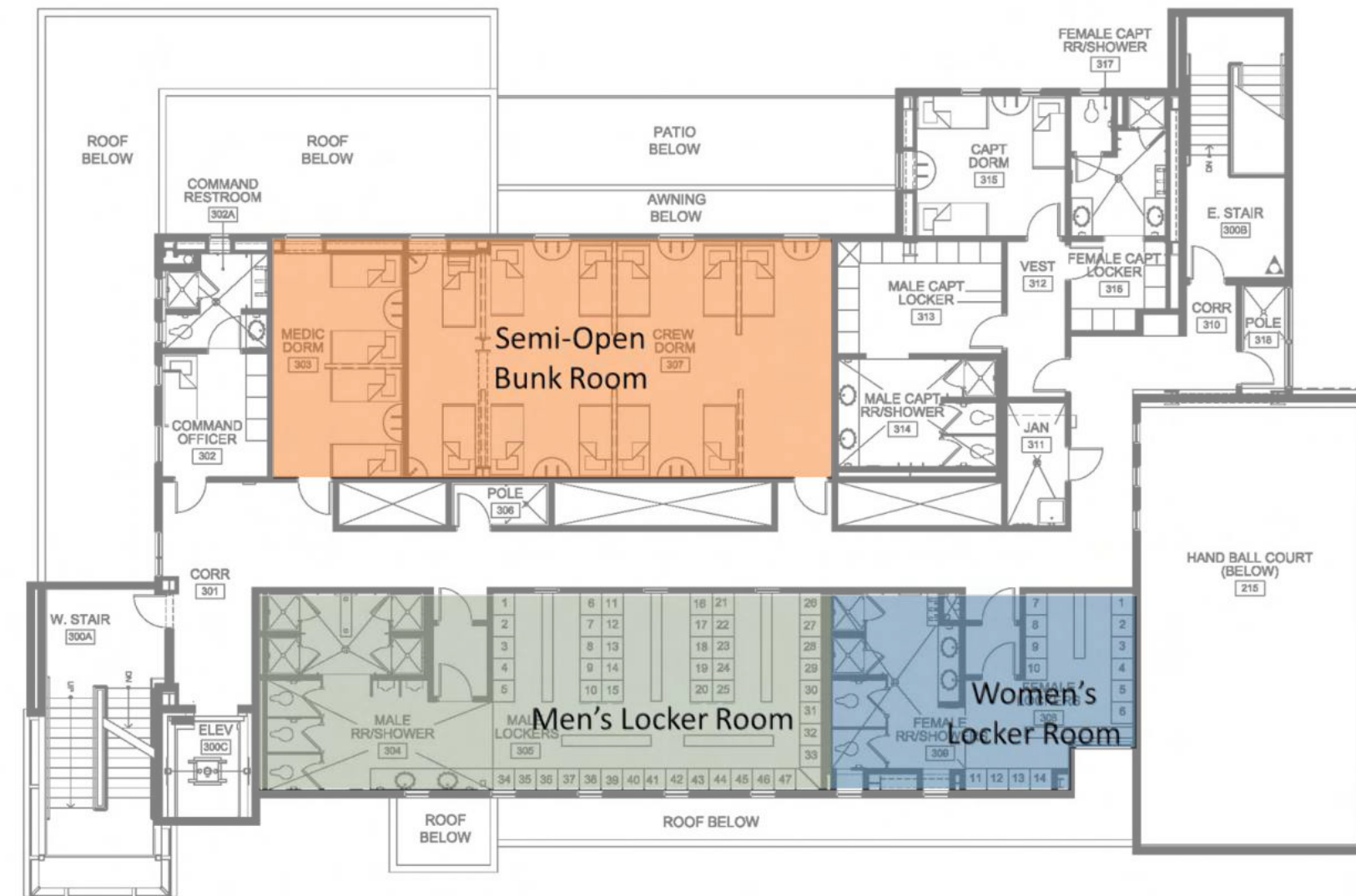
- Open Bunk Room with 9 Beds and 6 Shower/Toilet/Sinks
= 1,968 sf
- Private Bedrooms and Separate Private Restrooms for 6 Beds and 6 Restrooms
= 1,836 sf

Conclusion:

Private rooms are less or equal square footage

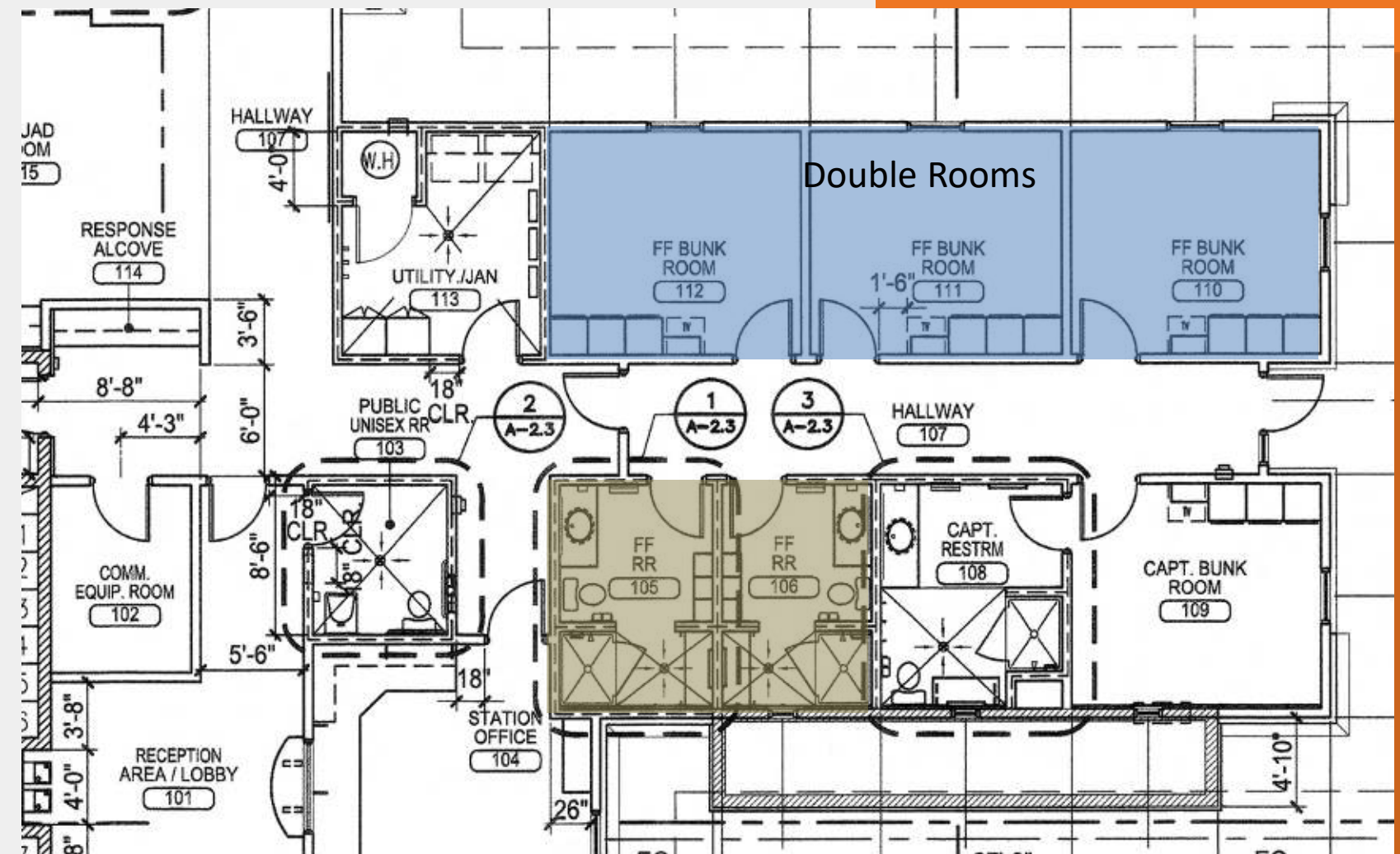
Semi-Open Bunk Rooms

- Ease of communication
- Slightly more privacy
- Improved camaraderie
- Limited quality of sleep (snoring, noise, coughing, temperature control, etc.)
- Easily spread illness



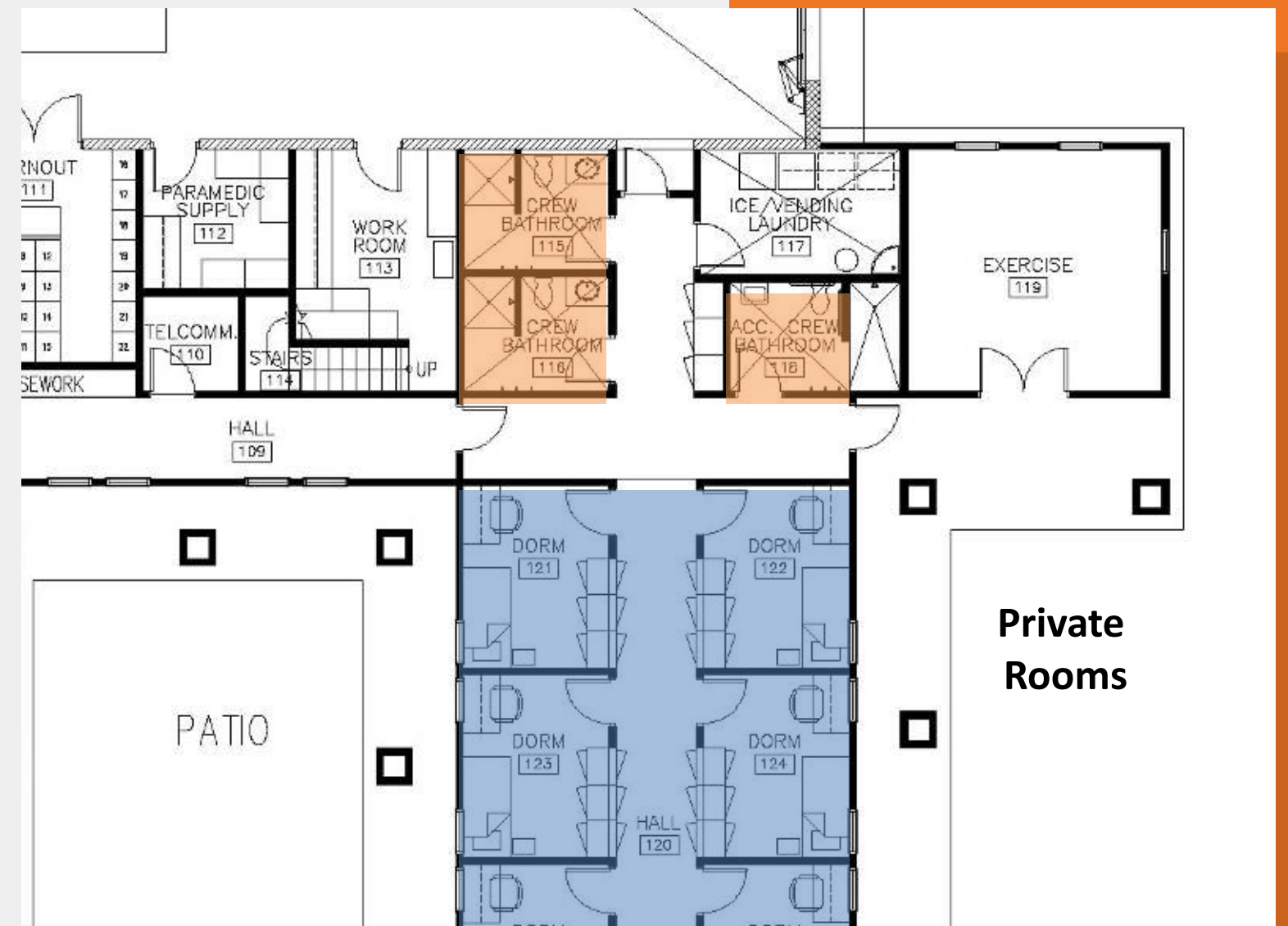
Double Rooms

- **Decreased ability to quickly communicate** – this can be mitigated by flexible, configurable alert systems that can be selective (only alert EMT, certain shifts, etc.)
- **Maximize privacy**
- **Improved quality of sleep** (limited noise interruptions and ability to control temperature)



Single Rooms

- **Decreased ability to quickly communicate** – this can be mitigated by flexible, configurable alert systems that can be selective (only alert EMT, certain shifts, etc.)
- **Maximize privacy**
- **Improved quality of sleep** (limited noise interruptions and ability to control temperature)

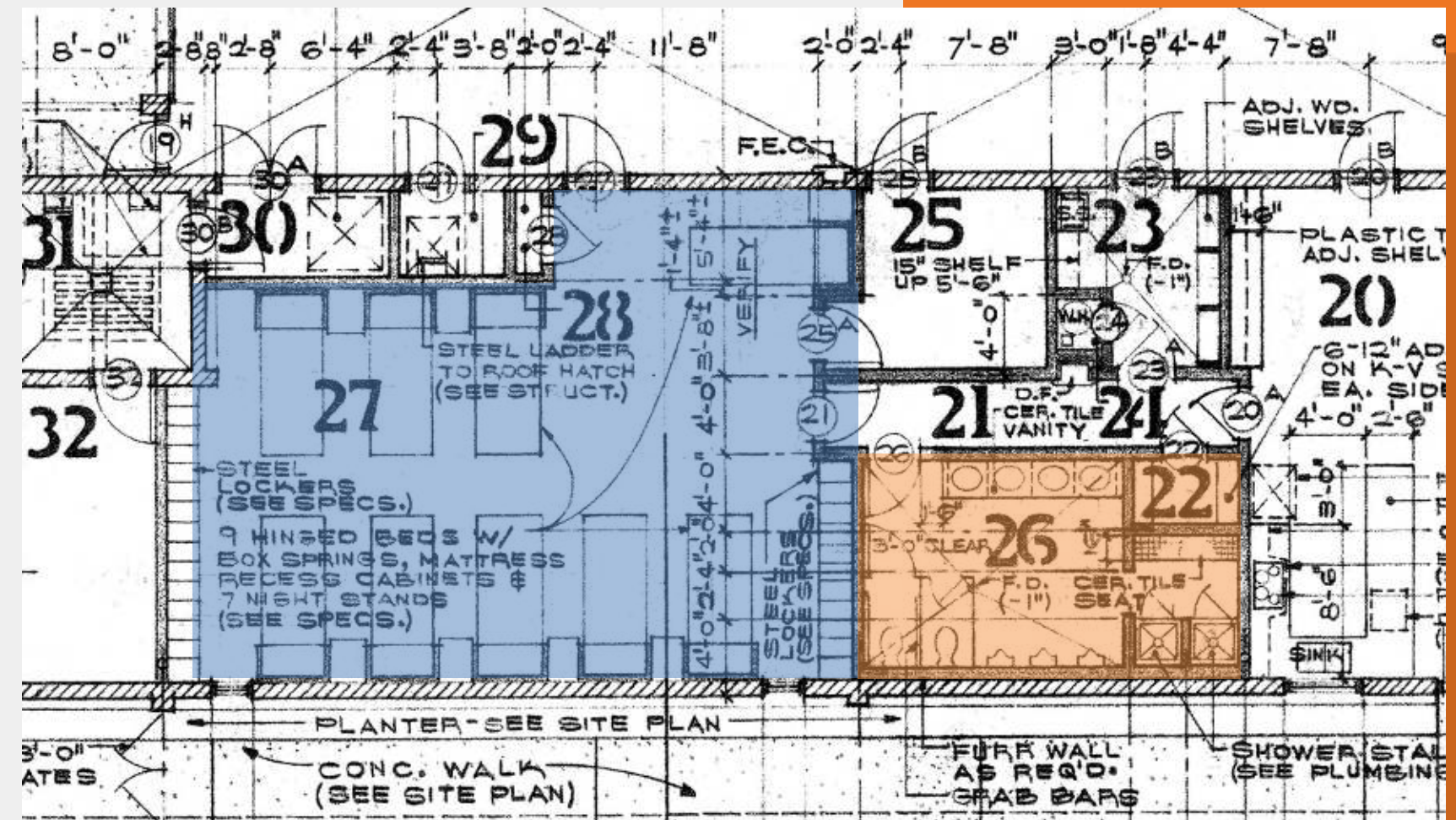


Bathroom + Locker Areas



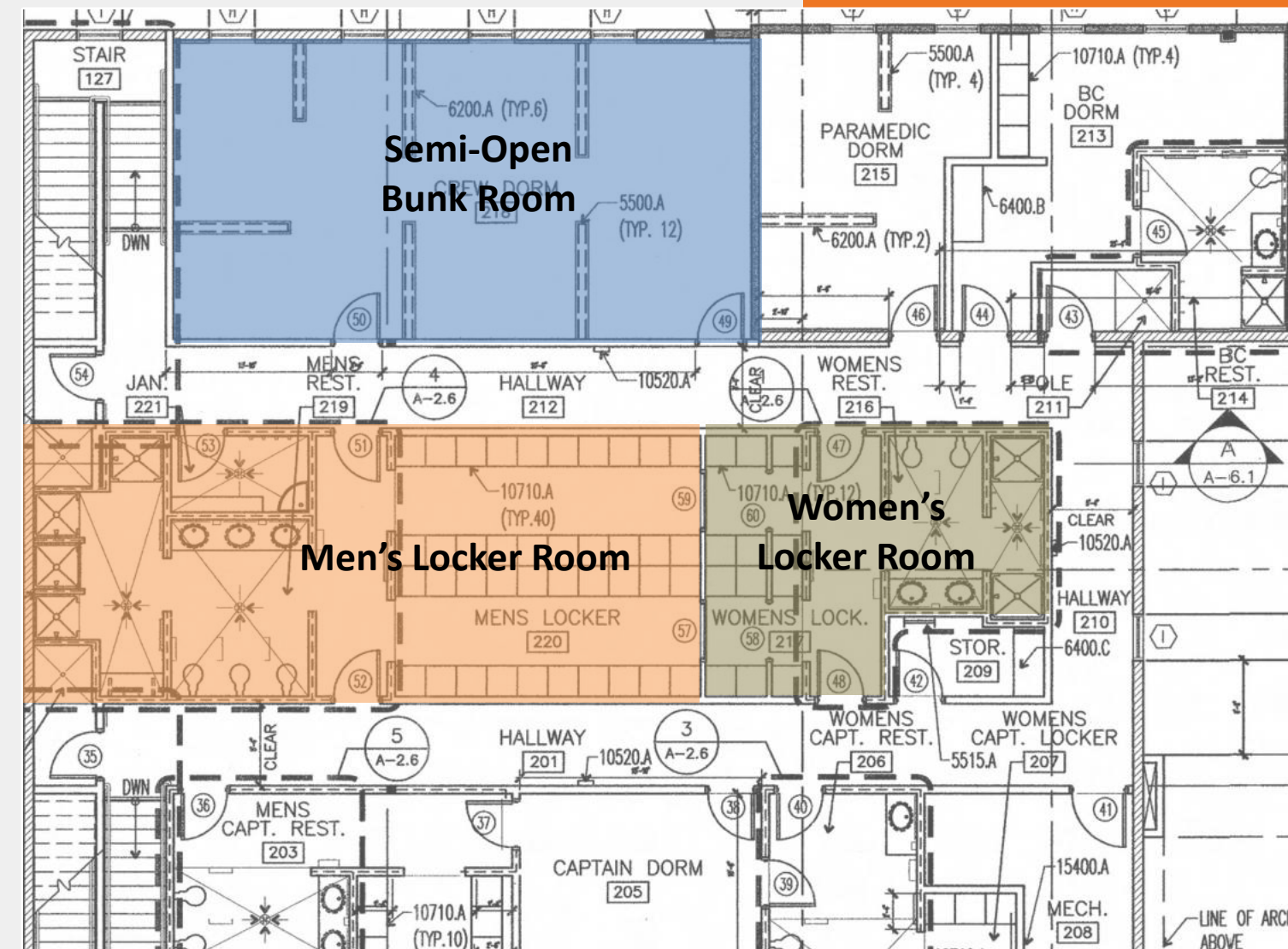
Shared Locker Rooms

- No privacy
- It forces one gender over the other to make accommodations (putting up a sign on the door, waiting until the other gender is done, etc.)
- Some stations even force one gender to use the Captains quarters, having to ask the Captain every time they need to use the restroom.



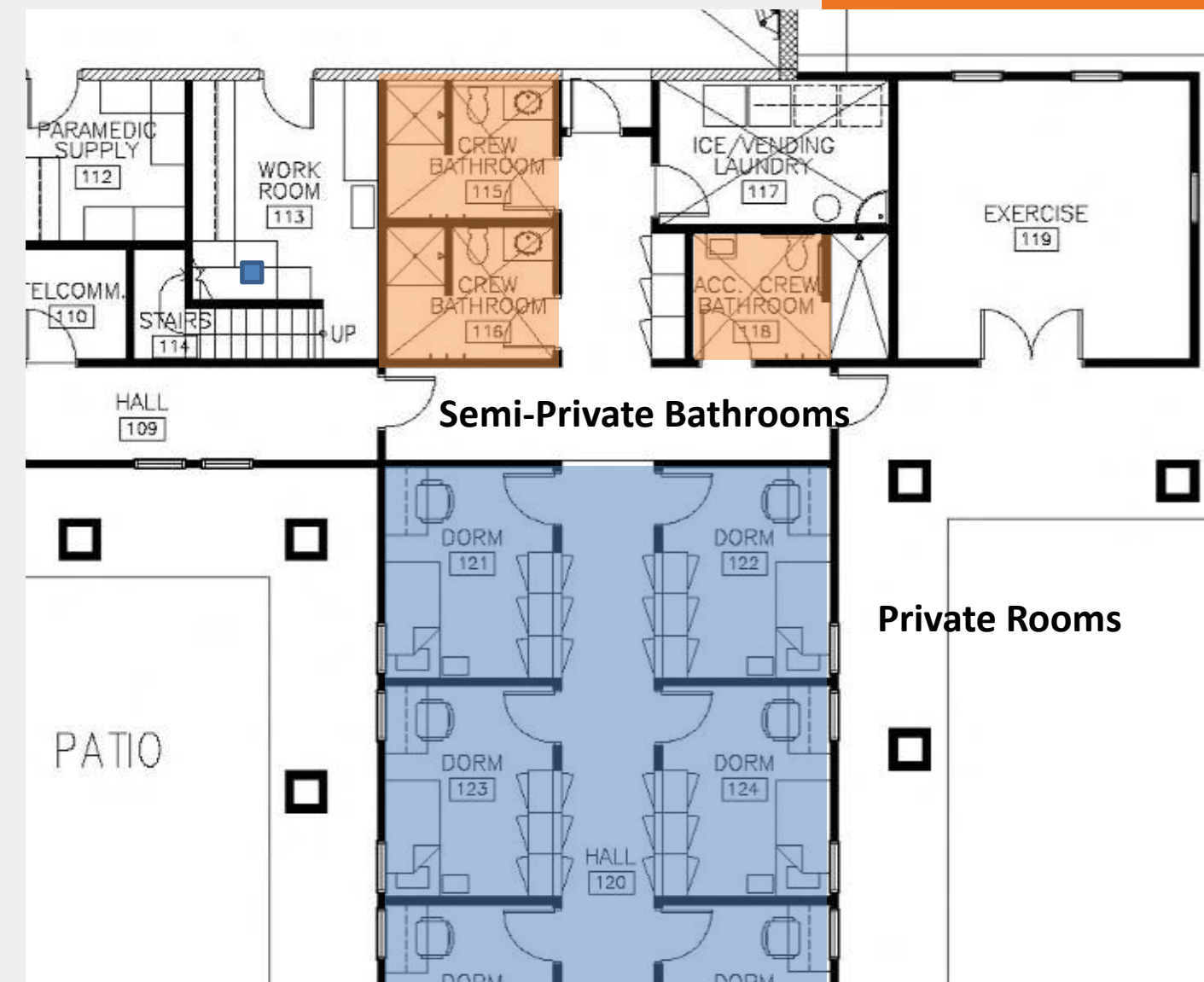
Separate Locker Facilities

- **Decreased ability to quickly communicate** – this can be mitigated by flexible, configurable alert systems that can be selective (only alert EMT, certain shifts, etc.)
- **Maximize privacy**
- **Improved quality of sleep** (limited noise interruptions and ability to control temperature)



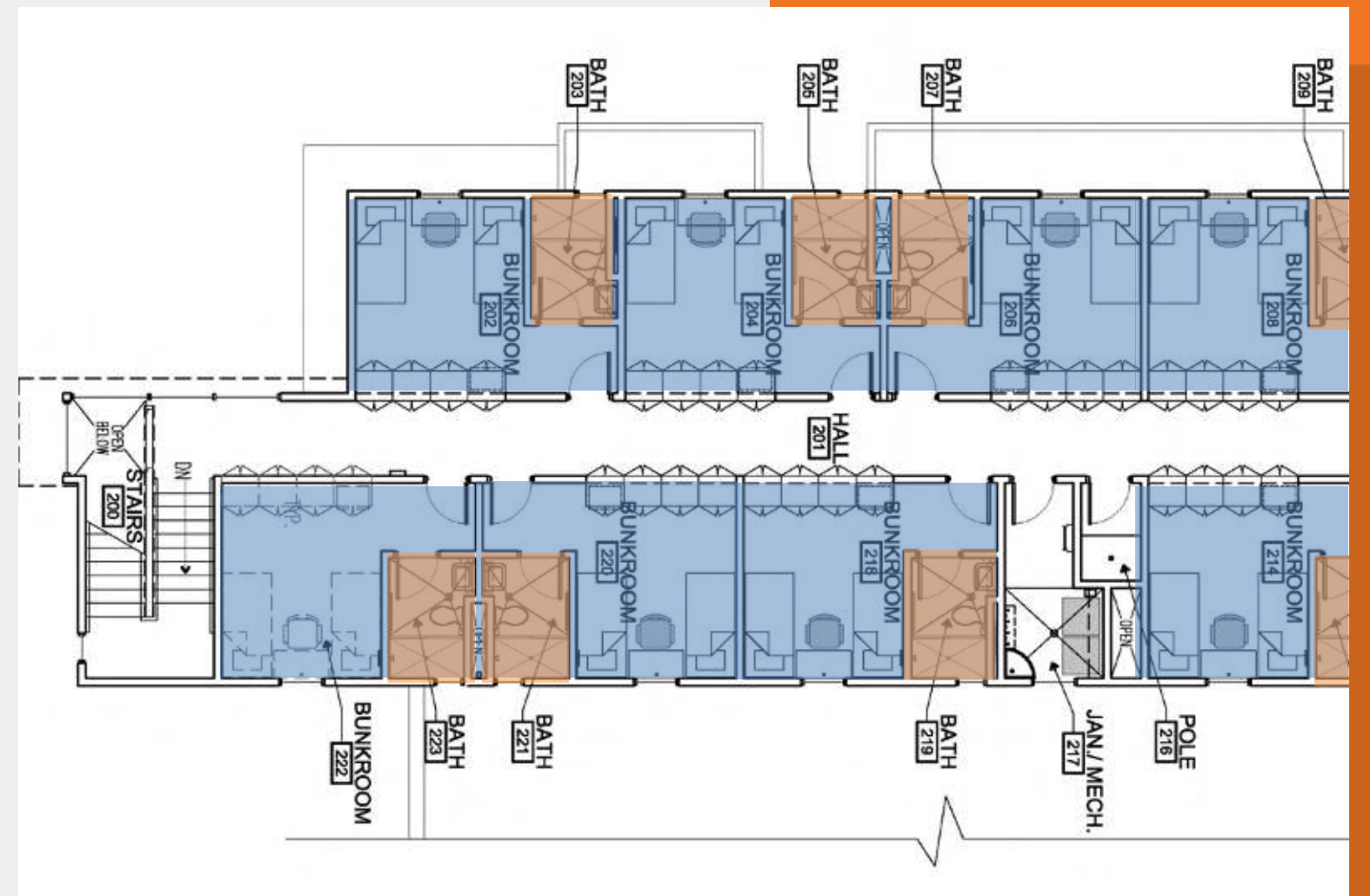
Separate Private Restrooms

- Shared private space
- Must maintain a modesty policy as these are accessed via hallways or separate from sleeping areas
- Removes any segregation by gender

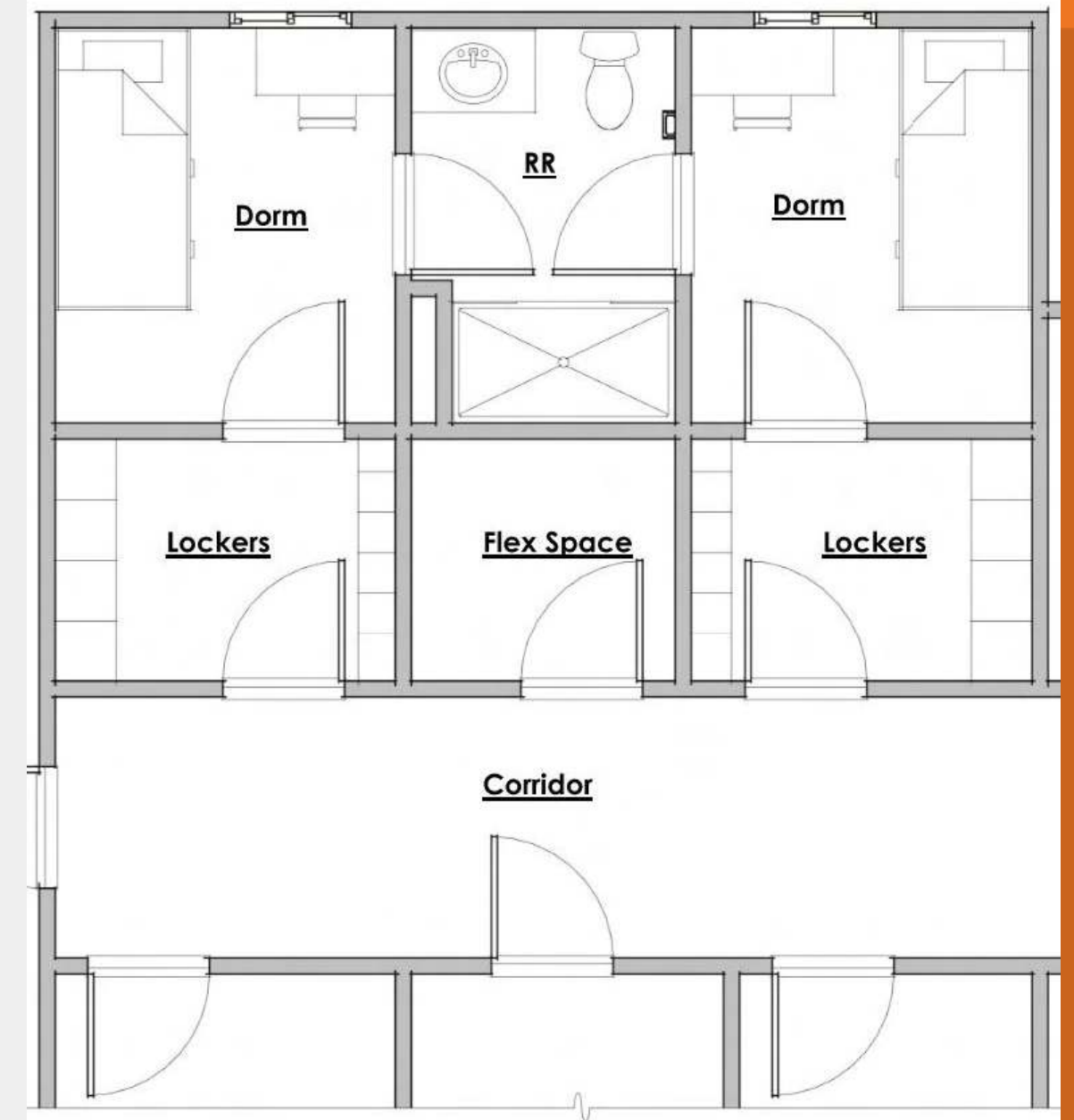
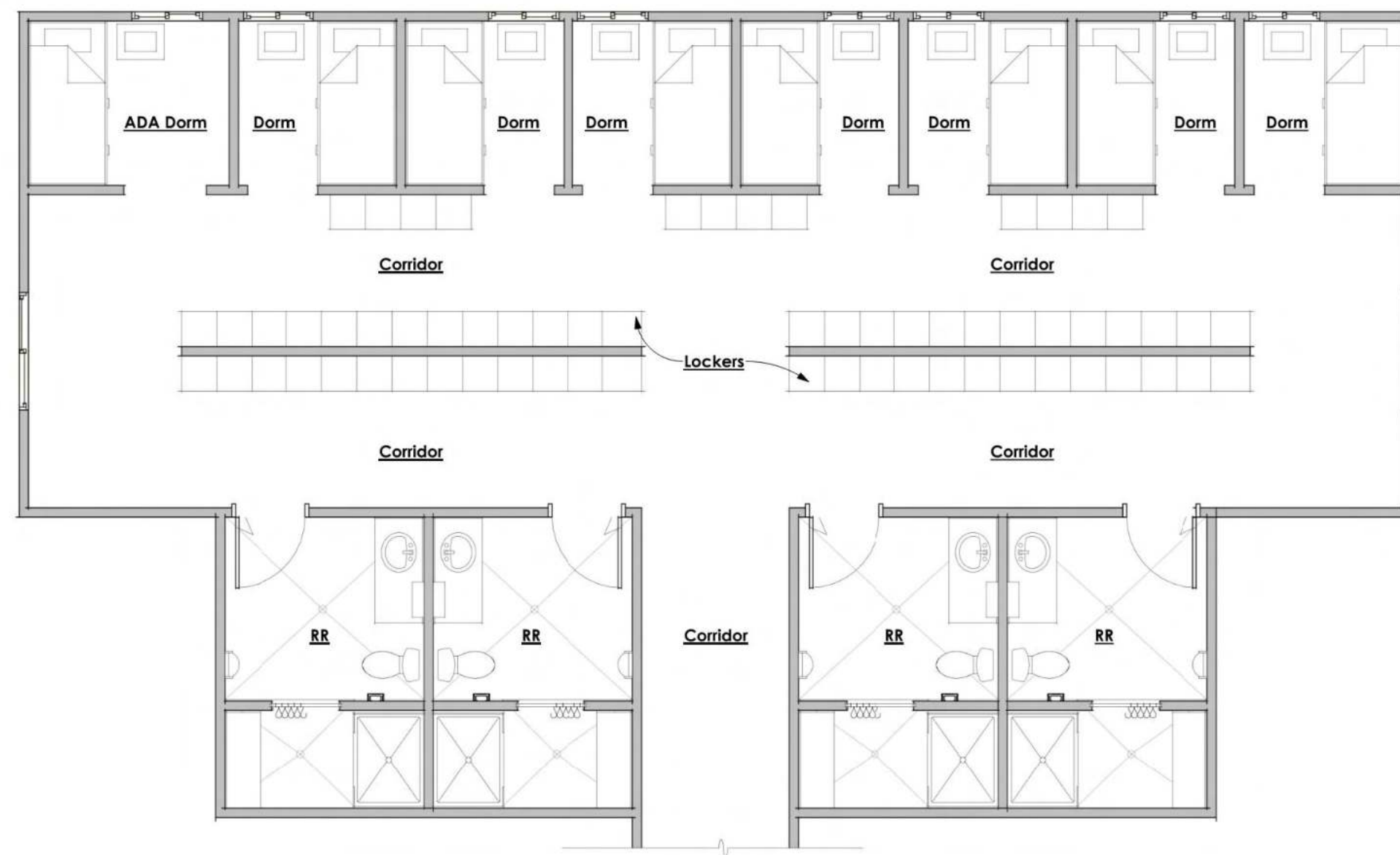


Separate Private Restrooms

- Most private option
- No need for a locker room
- Removes any segregation by gender



Shared Lock room with private Restrooms

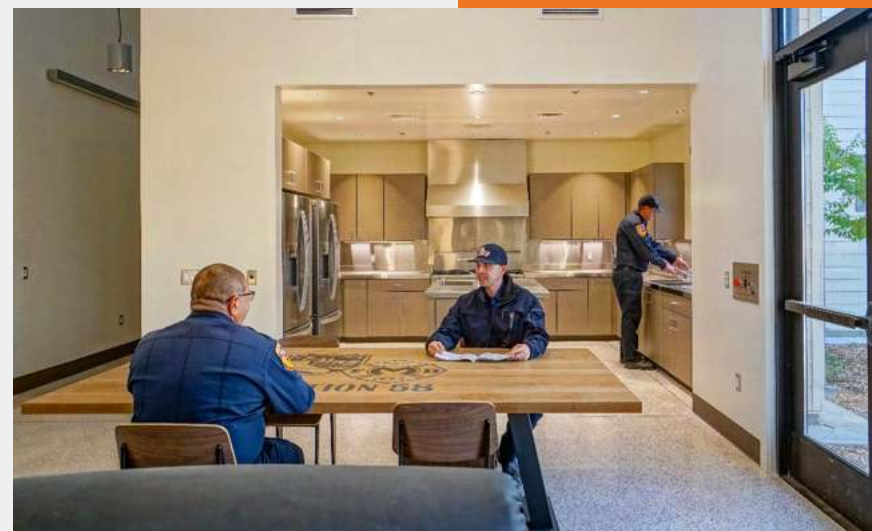


Other Areas



Common Areas

- To improve camaraderie that may be lost, or limit isolation that can occur when moving to private sleeping spaces; create common areas that encourage interaction
- Create “great rooms” instead of closing off day rooms from kitchen and dining rooms
- Provide indoor and outdoor spaces that promote interaction

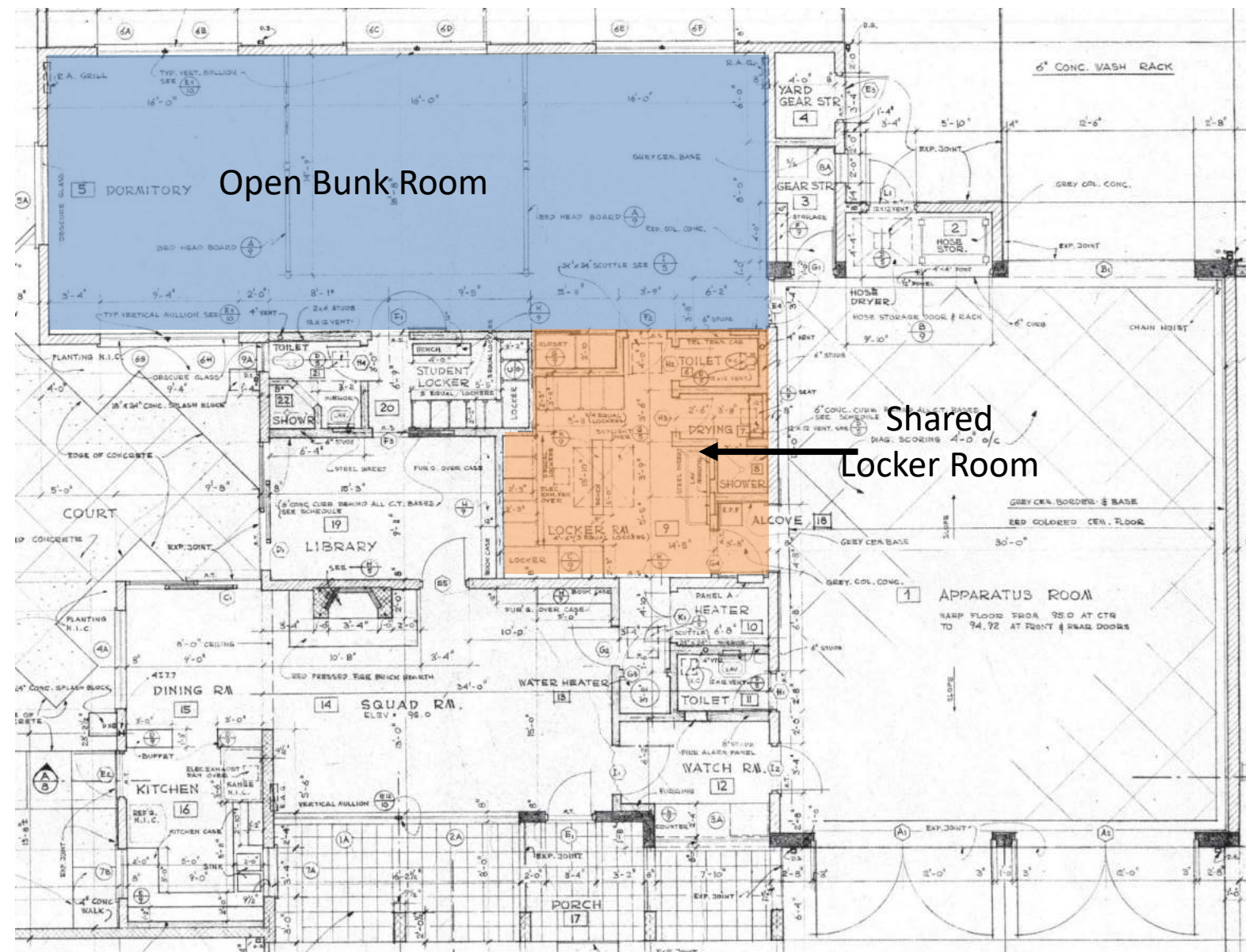


Retrofitting

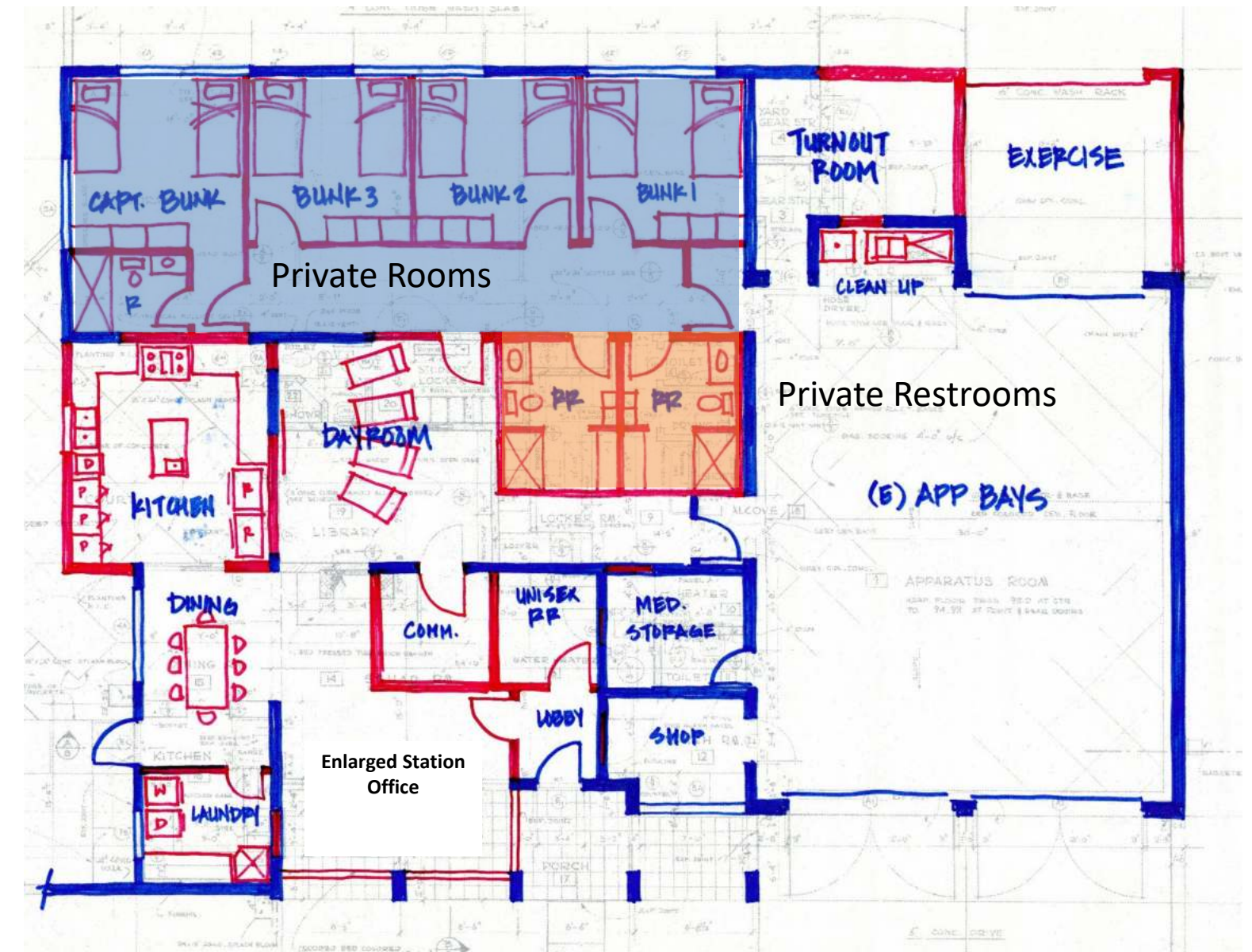


CASE STUDY: Bakersfield Fire Station No.8

Before:



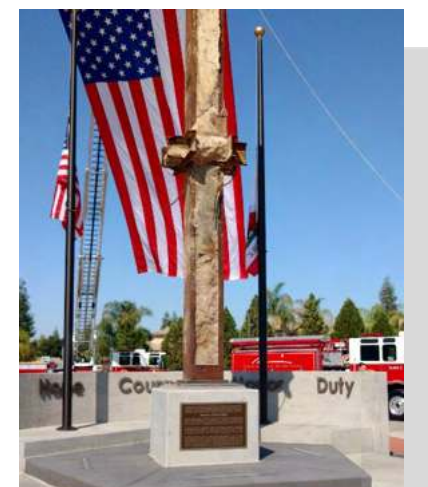
After:



Before:



After:

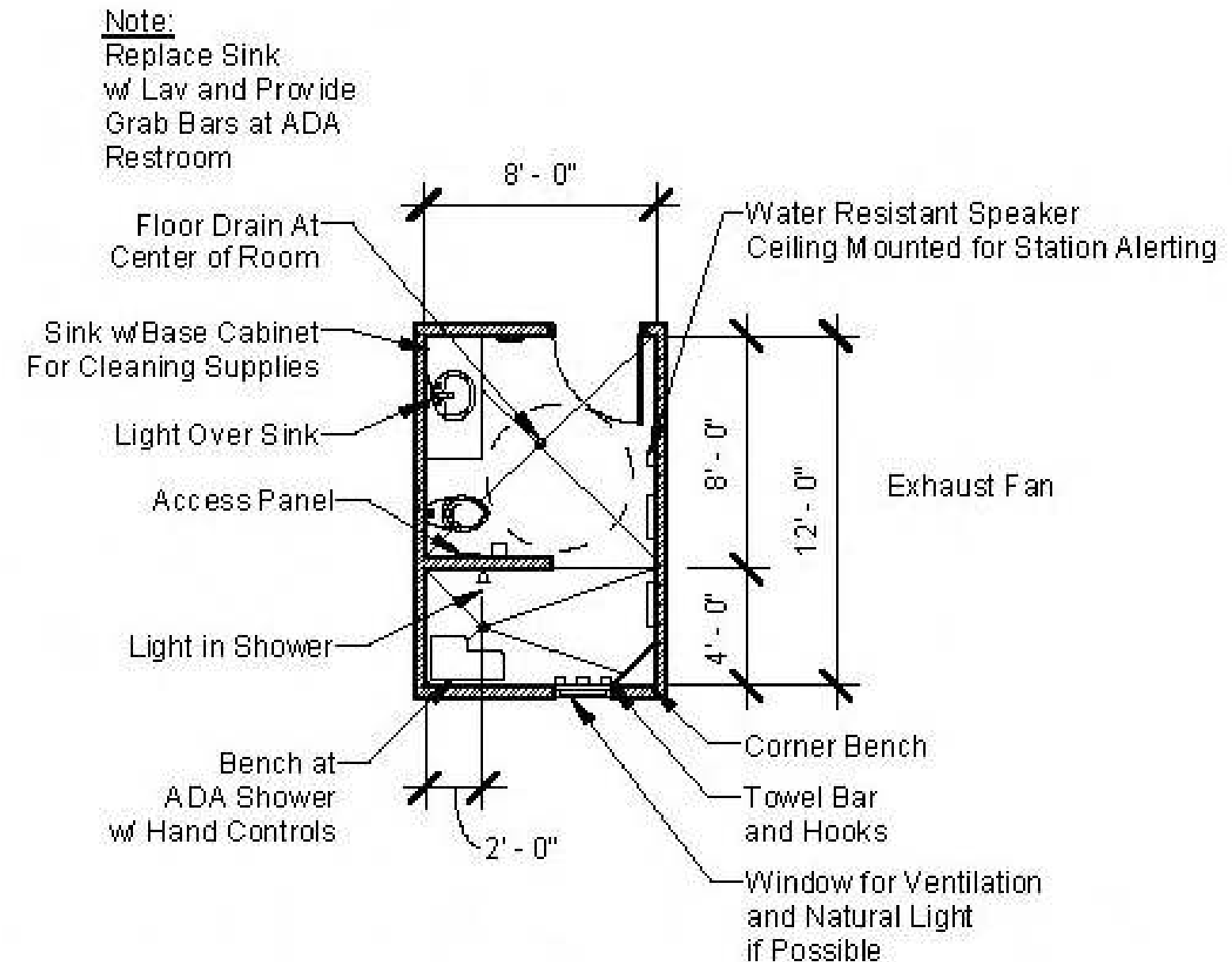


ADA Compliance



Accessible Restrooms

- An accessible firefighter restroom is being required by some municipalities
- Achievable within same individual module



16.0 - FIREFIGHTER TOILET / SHOWER ROOM

1/8" = 1'-0"