Post Occupancy Technical Review (POTR)

U.S. Army Corps
of Engineers
Engineering and Support
Center, Huntsville

Fire Station #5

Building 2620
Fort Riley, KS

POTR – Phase 2
Project No 54914

DATE: July 16, 2015

TABLE OF CONTENTS

CHAPTER 1 - GENERAL

1-1 Purpose

The intent of this document is to present the findings of the Phase 2 Post Occupancy Technical Review (POTR) performed on the One Company Satellite Fire Station (FS), Building 2620, at Fort Riley, KS. The POTR was performed by the HNC team on July 16, 2015.

1-2 Overall Satisfaction

The users are extremely satisfied with the facility.

1-3 Staff

The fire chief is CPT Marty Coufal.

1-4 Meeting Contacts

The roster is attached in Appendix A.

1-5 Changes in Regulations that affect the function of the facility

None.

1-6 Changes from Phase I

- The chief's office was originally 2 small rooms. Removed the wall between the 2 areas to make 1 larger room.

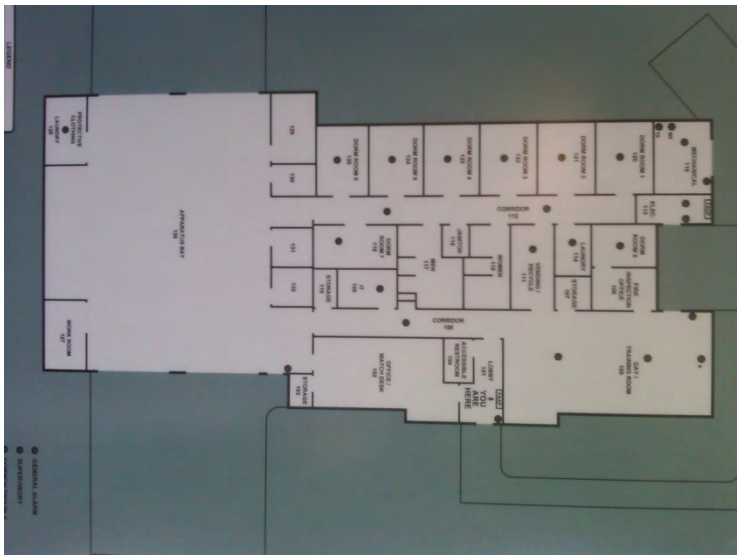
1-7 Standard Design Questions/Comments – Lessons Learned

- HVAC – Provide VAV system for entire occupied space and eliminate ductless split systems in sleeping quarters.
- Solar Hot Water – Provide adequately sized storage tanks for SHW system.
- Oil-Water Separator – Provide oil-water separator capable of handling soap from vehicle washing.
- Safety System – Facility users have recommended that the power to the oven and stove be automatically disconnected when an emergency call comes in and that lighting in sleeping quarters be turned on.
- Alert System – Facility users have recommended installing an alert system that gradually increases in volume and strobe intensity level as a safety precaution to sleeping firefighters.

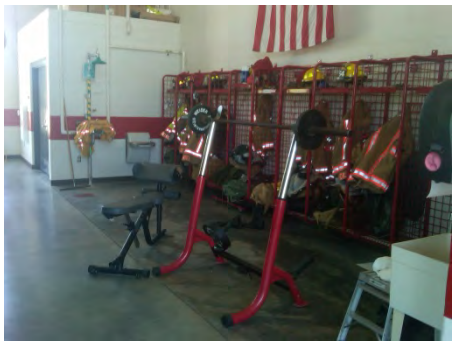
- Need to look at how to supply commercial kitchen equipment as part of the construction project.
- Need to provide a personnel door on both the front and the back of the apparatus bay.
- Within the apparatus bay, they need more space between the apparatus and the entrance into the facility. They had to park their smaller vehicle in the first bay in order to efficiently move around it.
- Ensure a fitness room is required.
- Ensure multiple pantries and refrigerators are provided, so that each shift has their own. This facility has 2 pantries and 2 refrigerators for shifts A and B.
- Evaluate the size of the dorm rooms. Users here felt the rooms are too small. Also ensure adequate distribution of electrical outlets and data outlets, taking into account furniture arrangement.
- Ensure natural gas is provided in patio area for gas grill. Also would be good if some shading could be provided for the patio
- Need outdoor storage for mowers, snow blowers, etc.
- Heated driveway should be an option, especially in areas that can get snow or ice.
- Ensure Janitor's Closet is adequately sized. It is too small in this facility.
- Need an indicator that the back doors in the apparatus bay are fully opened to avoid driving into them. This does NOT need to be a traffic signal!
- Ensure a hydrant is provided in both the front and back of the driveway through the apparatus bay. It is very beneficial

CHAPTER 2 - ARCHITECTURAL

- Staff in this facility ranges from 4 – 6. The plan of the facility is below.

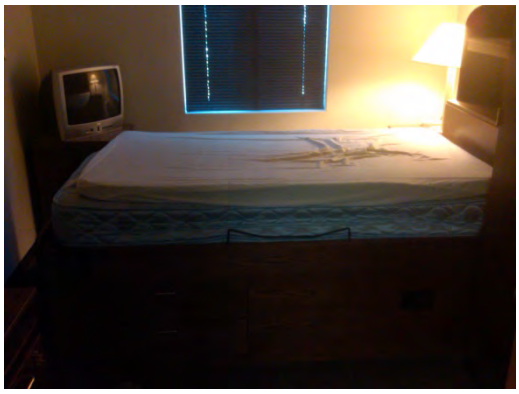


- Bay doors – when it rains, all the rain comes into the apparatus bay. There is no trench drains at the doors. Problem with roll-up doors is it is very difficult to get a good seal due to the auto reverse function.
- Fire proof caulking was not provided around piping in the fire wall.
- Front windows are not operable. Bedrooms typically have operable windows.
- 2 bays are inadequate. Need at least 3 bays. There is no way to expand the facility at this time.
- They have concerns with the gear lockers in the apparatus bay. One concern is that the gear is exposed to hazardous fumes. The other concern is that the gear is exposed to sunlight, which degrades the gear quicker.
- There is not enough storage space for the inventory of items stored. They have a shed outside for additional storage.
- This facility does not have a fitness room. What had originally been designated as the fitness room is the small inner room that was opened up to create the Chief's Office. The space as originally designed was too small and was not practical for the function.



- They need a place for the HAZMAT trailer. Would be nice to have like an extended parking space with a decorative fence. Also could use some protection for their pickup truck.

- They have had problem with the kitchen settling and the doors not closing properly.
- They really like the kitchen design, and say it is perfect for a one-company facility.
- Need to provide commercial appliances, to include the dishwasher. They are constantly replacing the dishwasher.
- Ft. Riley has a central dispatch for all EMS, which is run by the police.
- They have had some issues with the VCT flooring. Some tiles have been damaged and have had to be replaced.
- Dorm rooms are too small. Power/data outlets should be on each wall. The street lights shines through the windows. Provide shades or blinds for windows that keep out light.

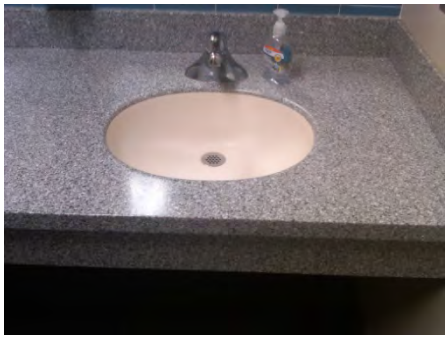


- The solid surfacing counter is OK. Granite is not allowed due to sanitation. One L section of the solid surfacing had to be replaced because it cracked.
- The users like the open dayroom/kitchen/dining concept. Training is done in the larger office in the facility.
- The type of range hood provided does not contain a light (which is desired), and also keeps the range from going all the way back to the wall which is resulting in the range being damaged.

- Most fire hoses do not need to be dried. There is not really a need for a hose dryer or drying tower.
- They do not need the apparatus bay doors to open any faster than a normal roll-up door. In fact, they'd be worried about mechanical issues if they were faster.

- They would like a cascade system to fill air bottles. This may be something to be considered for the standard.

- They like the undermount sinks in the restrooms.



- The cabinet in the laundry room will not allow the dryer door to open fully.

- Do not provide a lot of space for vending. Vending was not provided at this station, so the area for vending is wasted space. I recommended they could turn that area into a storage closet to help alleviate their storage shortfall.

CHAPTER 3 - MECHANICAL

HVAC

Building occupants were generally satisfied with the performance of the HVAC system. A few issues were noted and are discussed below:

- Range Hood – The range hood in the kitchen is improperly configured and allows extreme amounts of infiltration during both the heating and cooling season.

- Cooling/Heating – Facility users reported both cooling and heating issues during the extremes of the season. During peak humidity events, piping above the ceiling begins to sweat and condensation builds up in the light fixtures. The sleeping quarters are provided with independent ductless split systems.

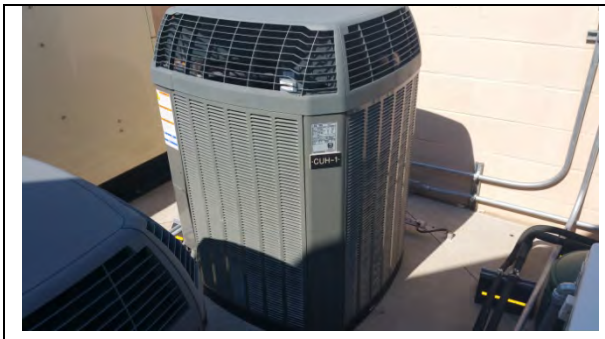


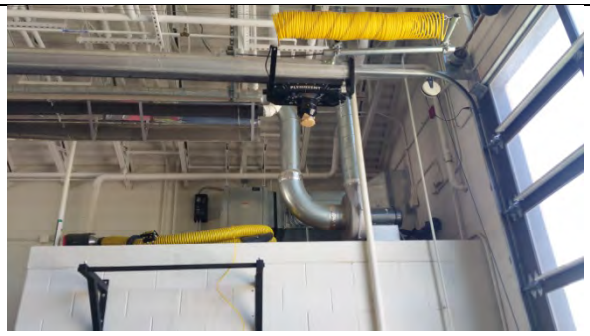
Figure 1 – Condensing Unit 1

Figure 2 – Condensing Unit 2

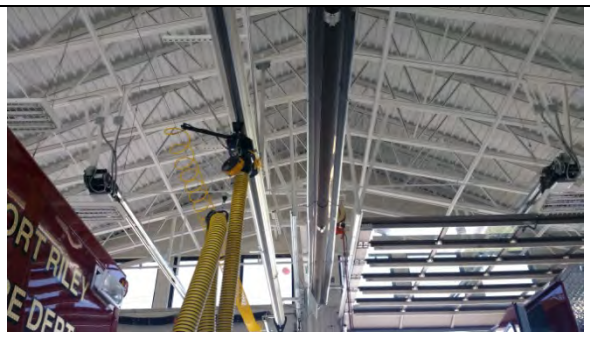
Figure 3 – Supplemental Ductless Split System

Figure 4 – Light Fixture Condensation

- Vehicle Bay HVAC – The ventilation system in the vehicle bay is non-operational and the facility users report that it has never operated. The exhaust fan has a disconnect switch that was inaccessible and may just need to be powered on. It was unclear as to what controls the exhaust fan and outside air louver. However, the radiant heat beams seem to function properly. There is no ventilation area provided for soiled firefighter gear.

	
Figure 5 – Outside Air Intake Louver	Figure 6 – Exhaust Fan

- Vehicle Exhaust System – The vehicle exhaust system is only partially operational and no longer incompliance with NFPA guidelines.

	
Figure 7 – Vehicle Exhaust Tubing	Figure 8 – Vehicle Exhaust Manifold

- There appeared to be no HVAC in the laundry room.

PLUMBING

Building occupants were generally satisfied with the plumbing system. A few issues were noted and discussed below:

- Solar Hot Water – It appears the Solar Hot Water (SHW) system was never commissioned and presents a major safety risk. Facility users reported that the domestic cold water at taps throughout the facility was boiling hot along with the domestic hot water at the tap. DPW appears to have tried to correct the situation by partially closing a ball valve in the mechanical room just downstream of the thermostatic mixing valve. DPW's fix has made the situation less dangerous but still needs to be further investigated and resolved. After a brief investigation, it is likely that the piping was incorrectly configured to re-

circulate the hot water into the domestic cold line. In conjunction with the piping error, the system is most likely oversized with no storage capacity and continually heats the re-circulated water.

Figure 1 – SHW Temperature Gauges

Figure 1 – Typical SHW Collector Panels

- Oil-Water Separator – Due to environmental regulations, the facility users are not permitted to wash the fire trucks on site. Also, they were told that the oil-water separator installed for the facility was incompatible with vehicle washing soap.

FIRE PROTECTION/MASS NOTIFICATION

- Lights and tones should come on gradually in the dorm rooms at a minimum, and possibly all spaces. Also check on the color of the light; may not be white light.

CHAPTER 4 - ELECTRICAL

- Adequate exterior lighting system was provided for parking areas, sidewalks, building entrances and perimeter for safety, evacuation, and security measures.

- The emergency generator back-up power and Heating Ventilation Air Conditioning units are located near the patio area. This equipment is very noisy. An area away from the patio and dorm rooms would be better suited for this equipment.

- The Apparatus Bay power outlets are not 36 inches above the finish floor. This is a problem when washing down the fire trucks. Water could get into the outlets. Power outlets should be waterproof.

- The Firefighter Alert System controls audible alert in the Dorm Rooms. There is no dedicated alert lighting in the dorm rooms.

- The light fixture and ceiling title have condensation on hot days.

- Motion and sound detectors are not working well for the fire station. The lights in the dorm rooms turn on when a sound or movement is detected.
- A doorbell and/or emergency phone at the front door is needed.
- They like the floor outlets in the day/training rooms. They are used.
- Need zoned volume controls for the radio and PA. This will allow them to turn off radio talk in the dorm rooms and the adjacent corridor.

APPENDIX A – ROSTER

Post Occupancy Technical Review (POTR), Phase II - Roster

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Phone: (256) 895-1742	**Email:** jackie.white@usace.army.mil		
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