



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

## **4<sup>th</sup> IBCT Physical Fitness Facility**

**Building 8437  
Fort Stewart, GA**



**POTR – Phase 1  
Project No 71152**

**DATE: October 17, 2012**

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## CHAPTER 1 - GENERAL

### 1-1 Purpose

The intent of this document is to present the findings of the Phase I Post Occupancy Technical Review (POTR) performed on Building 8437 (4<sup>th</sup> IBC Physical Fitness Facility) at Fort Stewart, GA. The POTR was performed by the HNC team on October 17, 2012.

### 1-2 Facility Description

Building 8437 is a medium sized Physical Fitness Facility with an attached natatorium, that was occupied November 14, 2011. Hours of operations for the facility are Monday thru Friday from 5:00 am to 8:00 pm, Saturdays from 9:00 am to 5:00 pm, and Sundays from 9:00 am to 7:00 pm.

The users are overall pleased with the facility.

### 1-3 POTR Team Members

The following is a list of HNC's team members that participated in the POTR:

- Jay Clark – Architectural
- Bryan Simpkins – Mechanical
- Jackie White - Electrical

### 1-4 Meeting Contacts

The facility manager is is Jake Battle. The roster is attached in Appendix A

### 1-5 Contract Modifications

The design-build contractor for this project was Megen Construction. The following is a list of the major contract modifications issued during construction.

- A major user-requested mod was to revise the 2 pools (a 25 m lap pool and a recreational pool) and hot tub into one large non-standard lap pool. This mod occurred after construction on the pools had already begun.



- Add MNS transmitter.

### 1-6 Construction Issues

The users are concerned about all the problems being encountered with a new building. Some of these include:

- Leaking fluid from the basketball goals.
- Stairs leading upstairs are falling apart.
- Bleachers are falling apart.
- Intercom is not working in the gym and in rooms 207-1 and 207-2.
- Door frames and trim are already rusting.

### 1-7 Overall Satisfaction

- Overall, everyone is very pleased with the facility.
- They feel the facility is excellent, one of the best in the Southeast.
- Patrons have given mostly good comments and they love the facility.

## CHAPTER 2 - ARCHITECTURAL

### 2-1 General Discussion

- Approximately 1000 soldiers use the PFF for PT in the morning. The facility is packed!
- The pool mechanical was combined with the building mechanical. They had to separate the 2 areas with a chain link fence since the users need to access the pool mechanical.



- Per command decision, one basketball court has been taken over by a cross fit area, and another has been turned into a combatives area. Only the middle basketball court remains. The cross-court tournament court is unusable. Serious concern that the wood floor under the cross fit area will be ruined with the cross fit is removed.



- Their racquetball courts get a lot of use. There are 2 courts in this facility. As does the climbing wall.
- Due to command decision, the indoor cycling room is not used for cycling classes. Instead, this area is filled with cardio equipment.
- Could use more shelving in the storage room. They have a large storage room that serves both the gymnasium and the fitness module.
- There was a second gymnasium storage room; but it has been given over to the combatives.

- The Child Care area was converted to more admin space.
- Family changing rooms are just a locker/changing area. There are no showers or toilets.
- They love the laundry room. It measures approximately 22' x 12'. There are 2 extractors and 2 tumblers.
- There was a command decision not to provide any selectorized equipment in the fitness module. It is all free-weights and cardio. Some users are now requesting the selectorized equipment.
- They really like the cubbies in the various spaces around the facility.
- There were no ceiling fans in the facility.
- The control desk is located on the exterior wall to the right of the main entrance when you walk in. It has direct view into the fitness module through a glass wall, has direct view into pool area and racquetball courts. It also has direct vision of the climbing wall. A small storage room would be very beneficial. More data and power is required at the desk. Need at least 3 drops.



- They are concerned about not being able to see into the gymnasium from the control desk. The facility

had not been provided with cameras.

- The jogging track is 3 lanes. There are not banked corners, and they have received comments wishing the corners were banked. The entrance to the track is on the straightaway.



- The group exercise room is on the second floor. It is divisible; however, the door is bowed at the bottom. The ceiling is very low; approximately 8'-6". There is a small storage room that flows through from one side to the other.



- The fitness module is a two story open space. There is a bank of cubbies as you walk into the space. The windows on the west face of the building cause heat gain in the fitness area. The floor is rubber tile. There are mirrors between the windows and on solid wall areas. The lighting is direct lighting. They like the wainscot of the flooring material with the wood trim on top. It is protecting the walls from damage. There is a cardio balcony overlooking the large space on the first floor.



- The facility is provided with individual shower stalls with full-height ceramic tile walls. There is not really a separate drying stall (there is no separating curtain), but the shower stall is long enough to provide a drying area. The flooring is ceramic tile, and the ceiling is plaster. Originally, the floor in the shower room was not draining, so they had to come back and put a trench drain down the middle of the floor. The shower heads are on the sides of the stalls, which is preferred.

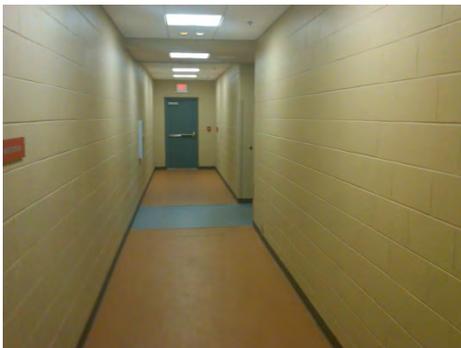


- There are enough lockers, but the number of showers is tight during PT. Lockers are NOT "Z-lockers",

and the users hate the “Z-lockers”. They are full-height and half-height metal lockers. This was a change after design since it’s a deviation from the criteria. The benches function as integral benches, but they are actually separate benches that are secured up against the lockers. The floor in the locker area is ceramic tile, and the ceiling is acoustical tile.



- The facility has a steam room. The users love it. Would like to consider an eucalyptus pump in the steam room.
- This facility has a corridor from the locker rooms to the pool, which also exits directly to the outside. This is the preferred solution for maintaining 2 means of egress from the locker rooms and being able to close the pool when the rest of the facility is open.



- The pool is provided with an indirect track lighting system around the perimeter.



- The pool is NOT provided with a UV system.
- There is a concession area on the second floor



- The climbing wall is off of the lobby. It would be good to have a stair or ladder behind the climbing wall to access and change the lines.



### 2-2 Feedback/Lessons Learned/Standard Design Impacts

- Provide a data drop in the lobby area for a display board.
- On climbing wall, continue the wall finish onto the adjacent walls to protect them from damage and scuffing.



- Provide climbing wall floor bolts for belaying systems.

**CHAPTER 3 - MECHANICAL**

**3-1 General Discussion**

HVAC

- The user, facility engineers, and maintenance personnel indicated that overall the HVAC system provided a comfortable environment for its users.
- Temperature range should be in the 70 – 75 degree range. Users really need to be able to adjust temperature. The user does not have access to the thermostat to adjust temperature. The user has to call or put in a trouble ticket to the DPW to come out and adjust the temperatures. The user indicated that once the temperature was set, it would not stay and would fluctuate again after a while.
- The facility engineers and maintenance personnel confirmed that the thermostats throughout the facility were working properly. The thermostats were all digital in the facility and were adequately placed for zone control.
- The user, maintenance personnel and facility engineers indicated that there are issues with the high humidity levels and temperature in the pool area. When walking through the pool area, the water temperature was 80 degrees F and the environment was very warm and humid. The facility maintenance personnel and engineers indicated that the problem was created by the heat valves of air handling units 3 and 4 not being fed. The maintenance personnel indicated that they were trying to address the issues by adjusting the controls associated with these units.





- The facility engineers and maintenance personnel indicated that a second unit to control the environment in the pool area had to be installed which differed from the RFP.
- The facility engineers indicated that there was a pressure issue in the pool area that has now been corrected. Initially, the pool area was not sealed properly and was allowing the chlorine gas from the pool area to leach into other areas of the facility. The engineers indicated that the problem was overlooked by the contractor's design. No other issues with pressure in the facility were reported.

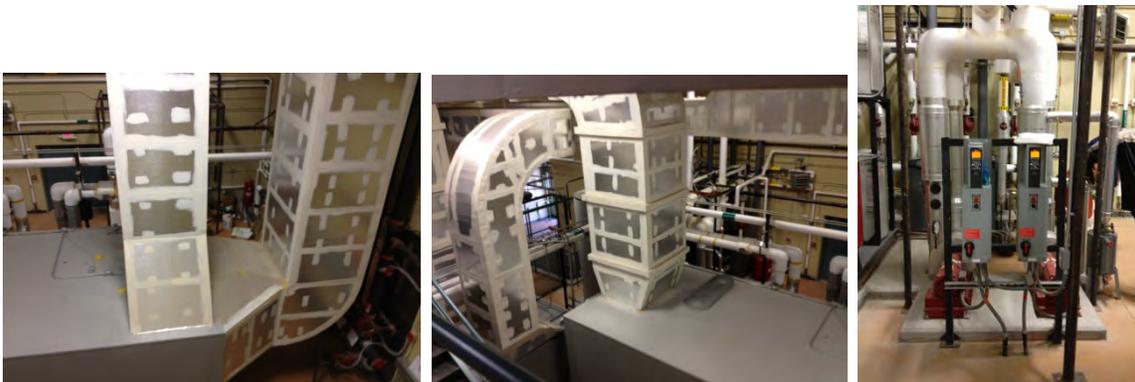
- The user indicated that the upstairs portion of the facility gets warmer than the lower level.



- The maintenance personnel indicated that the racquet ball courts and the smoothie shop were warm and they had issues cooling the areas. The smoothie shop was warm due to the amount of food equipment that was in the area that generated heat. They tweaked the dampers in the areas and adjusted the controls and now both areas are comfortable.



- All equipment seemed to be easily accessible for maintenance.





- The maintenance personnel indicated that the maintenance schedules of the HVAC system were being followed.
- The facility engineers indicated that they had to add a chain link fence to separate the mechanical room area from the pool control room.



- The mechanical room for the facility seemed to be of an adequate size. One issue that was noticed

was that it is going to be very difficult to change the light bulbs out in the mechanical room. The fixtures are set high in the area and mechanical equipment was placed directly under the fixtures. If the need arises to change out the bulbs, a man lift or ladders cannot be utilized due to the location of the equipment and space constraints. However, the facility engineers and maintenance personnel had no complaints with the spaces allocated with the mechanical room or the pump control room.



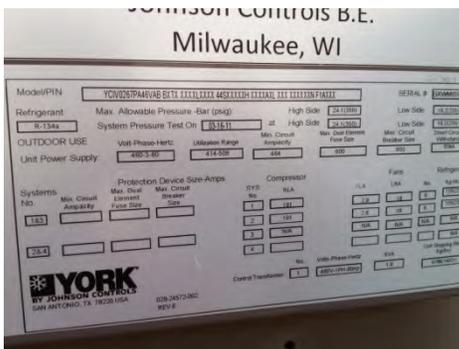
- The facility engineers indicated that a modification to change the pool from a family recreational pool to one big lap pool affected the original HVAC/plumbing design. The change required more equipment to be added. Also, the pressurization issue in the pool area mentioned earlier required changes to the original design.
- The commissioning process for the facility was a walk through after facility completion with the contractor, facility engineers, maintenance personnel, and proper authorities.
- There are no innovative technologies (solar, grey water, etc.) planned to be installed for this facility.
- Maintenance personnel indicated that all mechanical equipment was high efficiency and utilized energy recovery wheels, variable frequency drives, and that condensing boilers varied fire based on load demand.



- Ducted returns were utilized throughout the facility.
- Piping in the mechanical room was labeled and legible.



- The maintenance personnel indicated that they were having multiple warranty issues with the chiller. They currently have a bad condenser fan and either a drain valve or flash tank entry valve not operating properly. They are waiting on the warranty repair, but are worried because the warranty expires in November 2012.



- There is a separate split system unit to keep the communications room cool.



- The emergency shut off for the HVAC system is located at the front desk of the facility.

PLUMBING

- All plumbing fixtures throughout the facility worked properly and the user had no complaints.
- The user and facility engineers indicated that they were pleased with the overall plumbing system.
- The facility maintenance personnel confirmed that the hot water in the boiler was being stored at 140 degrees F.
- The boiler used to provide domestic hot water is a high efficiency unit.



- Toilets and urinals utilized push button flush valves. The toilets had a listed flush rate of 1.28 gallons per

flush and the urinals had a listed flush rate of 0.125 gallons per flush.



- Low flow lavatories were utilized in the bathrooms and low flow shower heads were used in the locker rooms.



- The sink that was installed in the play room for children is too close to the floor and the toilet is at standard height.



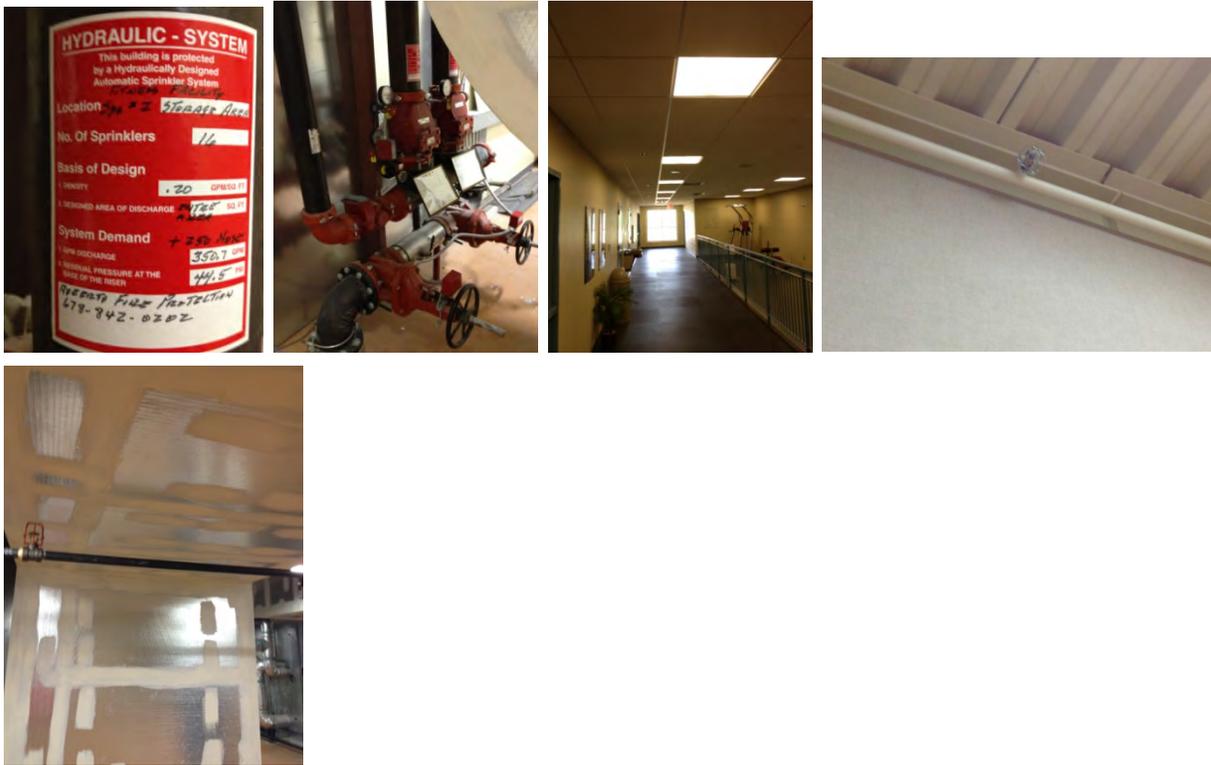
- Facility engineers and maintenance personnel indicated that scheduled maintenance and service for the plumbing equipment was being properly followed.
- The facility engineers and maintenance personnel indicated that there is an issue with scale build-up in the valves and within the steam generating systems for the steam room in the locker rooms. The issue is that there is an “on/off” switch and a timer outside of the steam room. The timer does not shut off the steam once the desired duration has been reached. Therefore the steam system continues to run after the time has expired and has the potential to run all day unless someone turns it off creating an overheating of the system. The scale frequently plugs up the system and requires a thorough cleaning.



- The pool plumbing systems had to be modified due to the change in the pool design.

### FIRE PROTECTION

- Fire protection system is wet pipe.



- The user and facility engineers indicated that the fire protection system had not given any false alarms and had no issues with inspections or tests performed by authorities.

### 3-2 Lessons Learned/ Standard Design Impacts

- All warranty repair issues need to be quickly resolved at this facility before the warranty runs out. Facility engineers and maintenance personnel indicated that the majority of the warranty issues are created from the scheduling difference between construction completion and the actual occupancy of the facilities. The facilities will be completed and placed into an active status which starts the warranty on the equipment of the facility. Then it may be an extend amount of time before the facility can be occupied. By the time people are able to use the facility and equipment is breaking or not functioning as it should, the warranties are close to expiring. Suggest coordinating construction completion and occupancy schedules so that full use of equipment warranties can be utilized.
- Since the temperatures throughout the facility fluctuate so much due to the activities being performed, it is suggested that the user have control to adjust the thermostats as opposed to having to wait on maintenance personnel to adjust the thermostats.
- The changes that were made to seal the pool area to keep chlorine gas from leaching into the other portions of the facility need to be incorporated into the as-built drawings.

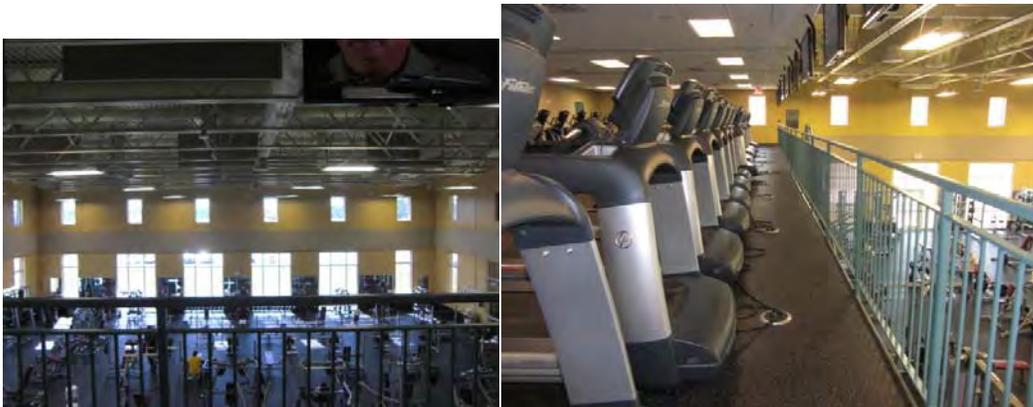
- Suggest adding a timer switch to the steam rooms in the locker room areas that controls the on/off function of the steam system. For example, after the desired time expires, the power to the steam system shuts off. This would limit the systems run time to only activate when someone is utilizing the steam room and therefore significantly reduce the scale build-up in the system.
- The humidity and temperature issues need to be addressed in the pool area.
- The issues with the chiller need to be corrected so that it functions properly.
- Consideration for changing lights and fixtures in the mechanical room need to be addressed in future equipment or electrical lighting lay outs.

CHAPTER 4 - ELECTRICAL

- The type of lighting used in the free weight area (minimum 70% indirect)



- The lights are controlled by time clocks.
- Natural light via windows is provided.



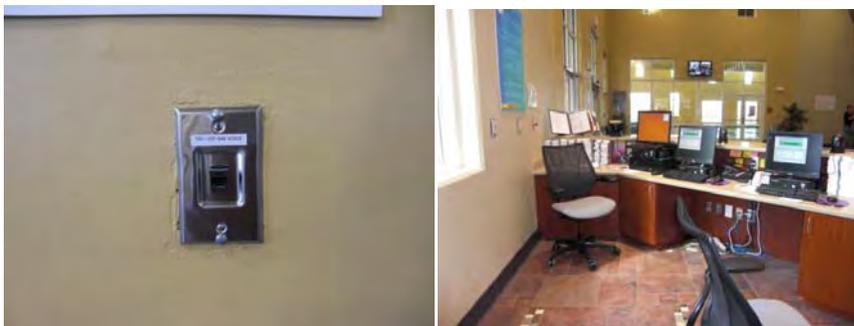
- Receptacles are located around the perimeter of the room.



- There are installed floor mounted, dual or quad outlets, or recessed boxes. (Solid brass cover plates, flush mounted) Cover plates with flip-up or hinged lids are not recommended.



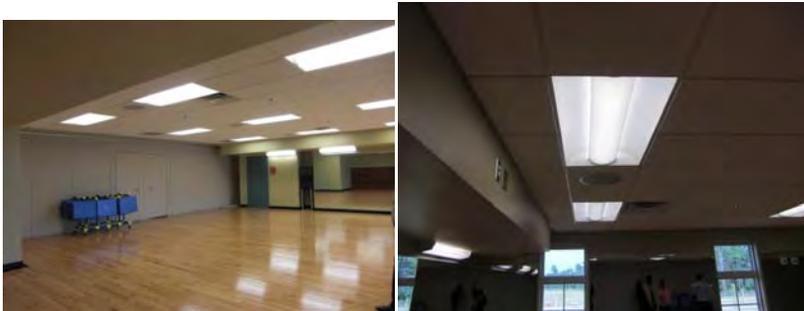
- This type of data ports was installed.( workstations, card access device, mobile monitoring workstations)



- Document type of sound system. (Speakers)



- Document if the lighting in the large group exercise areas are pendant mounted or suspended. The lighting is recessed.



- Document if the lighting is switched to allow for different light levels and natural light via windows. This lighting is switched but it dose not allow different light levels. The lights are on or off.



- The lighting is activated by motion detection in the storage room.



- Document how lighting on each side of the movable wall is controlled separately so each side of the room can function independently.



- Document if there is a recessed A/V rack with an amplifier, input/output control device and 2 microphone inputs. CD/DVD/MPE player with remote control.



- Document if there is two microphone outlets wired to locations remote from one another within the module for directed activities. Yes, microphone outlets were provided.
- Document type of sound system. (Ceiling mounted speakers)



- Document the type of direct/indirect lighting that illuminates the gymnasium



- Document if there is multilevel switching or dimming in the gymnasium. None
- Document independently control lighting on each court or for special activities are provided in the gymnasium



- There are natural lights shining into the gymnasium spaces through the use of windows/overhead skylights.



- Document type of physical protection (wire cages/etc) for the gymnasium lighting, exit signage, fire alarm/annunciation devices.



- Document where lighting control is located. (controlled/protected location) The lighting controls are located in the storage room.
- Only wall mounted outlets provided.



- Document the type of electronic scoreboard.



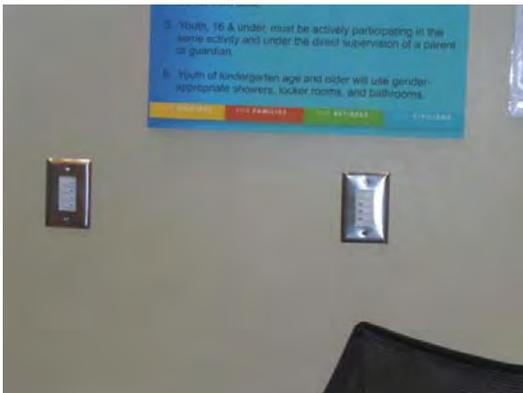
- Document if there is a divider curtains that blocks views , lower light levels in gymnasium



- Document if Lobby lighting allow for natural light through large windows and clerestories



- Document the type of lobby lighting control center at the control desk.

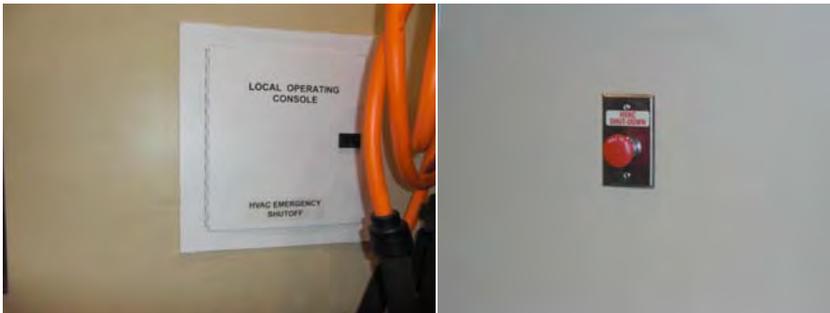


- Document if there is enough power/data receptacles at the Control Desk. Yes
- Document the type of TV throughout locker rooms. None

- Document if there is multilevel switching or dimming in admin and/or other areas. No
- Rooms (such as storage rooms, laundry rooms, etc) with more than one entrance should have 3-Way (or 4-Way) switching so the lighting can be turned "on" when entering each door. The lighting is controlled by motion detection.
- Document if Lighting is controlled with an automated time clock with a manual on/off time override in the natatorium. Yes



- Document if the lighting is controlled IAW ASHRAE 90.1 (time clock, motion sensors, etc)
- Document if there is a keyed HOA switch at the reception area



- Document if there is a timed over-ride at main entrance for janitorial staff. No



- Document if Cathodic Protection System was installed. Yes



- Document if wiring is concealed from view in finished rooms/areas. Yes
- Document if there a Service Entrance Panel metering (EMS/UMCS connection?) No
- Document adequate working clearance for electrical and communication panels



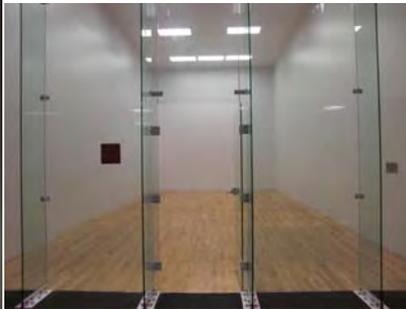
- The lights are not dimmable. The lights are either on or off. The break area lights do not work.

**CHAPTER 5 - COMMUNICATIONS**

- Document satisfaction with intercom system (announcements understandable). The intercom is not operational. There is no sound from the speakers in the gymnasium.



- Document type of sound system in the racquetball court. (Flush recessed speakers linked to paging system. Provide one speaker in spectator/waiting area with court speaker at back upper wall)



- Document type of sound system in the Climbing Wall area. (Speakers, paging system)



- Document type of sound system in the Combative area. (Speakers, Public Address)



- Document type of ceiling mounted speakers for public announcements in corridor.



- Document type of sound system in the lockers, showers, toilet, sauna areas. (Speakers, Public Address)

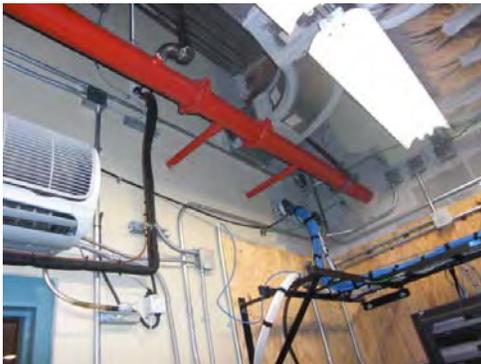




- Document if Communication Rooms are adequately heated/cooled. Yes



- Document if prohibited equipment/systems passed through Communication Rooms. Yes



- The intercom does not work in rooms 207-1 and 207-2. The User had an XM Radio installed after the building was turned over. This could have caused speakers in the in the gymnasium to not work. The contractor has not been notified about this issue. There may be a warranty issue with this sound system.

**CHAPTER 6 - SECURITY**

- The user is satisfied with the security systems.
- Document recording capability of security systems. No
- Document any video-surveillance of the entire pool area. None
- Document any control of who enters the building and check-in arrangement. Yes
- Document any video-surveillance of entrance to locker room and racquetball courts. None
- Document any video-surveillance of cardiovascular, circuit, exercise areas and gymnasium. None

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**CHAPTER 7 - MISCELLANEOUS**

**7-1 CIVIL/SITE**

- The entrance sidewalk is really too narrow for the size of facility.



**APPENDIX A - ROSTER**

# Post Occupancy Technical Review (POTR) - Roster

SAC : PFF

Installation: FT. STEWART		PN:	Bldg:
Name: JAY CLARK		Organization: HNC - COS	
Phone: (256) 895 1673	Email: james.t.clark@usace.army.mil		
Professional Responsibility: ARCHITECT			
Name: James Clark		Organization: HNC - COS	
Phone: ( )	Email:		
Professional Responsibility:			
Name: Nathaniel Robinson		Organization: HIBCT Fitness center	
Phone: (912) 435 9307	Email: JAKE BATTLE@us.army.mil		
Professional Responsibility: Manager			
Name: Troy Funk		Organization: USACE	
Phone: (912) 368-8180 x103	Email: Troy.A.Funk@usace.army.mil		
Professional Responsibility: Resident Engineer			
Name: Amanda Pommerenck		Organization: USACE	
Phone: (912) 368-8180 x.105	Email: amanda.pommerenck@usace.army.mil		
Professional Responsibility: Office / Civil Engineer			
Name: Hillary Torchia		Organization: USACE	
Phone: (912) 300-1111	Email: Hillary.R.Torchia@usace.army.mil		
Professional Responsibility: COE Quality Assurance			
Name: Brian Smith		Organization: UNIC-ED-RI	
Phone: (256) 595-595	Email: brian.smith@usace.army.mil		
Professional Responsibility: METALWORK			

Jackie White  
256 895-1742

CEHNL

Jackie.white@usace.army.mil

Electrical Engineer

Jim Shurling DPW, CONSTR. REP. 320-0472 james.h.shurling.civ@mail.mil

COE

# Post Occupancy Technical Review (POTR) - Roster

Installation:	PN:	Bldg:
Name: Jackie White		Organization: CEHNC
Phone: (256) 895-1742	Email: jackie.white@usace.army.mil	
Professional Responsibility: Electrical Engineer		
Name: Jim Shurling		Organization: DPW
Phone: (912) 320-0472	Email: james.h.shurling.civ@mail.mil	
Professional Responsibility: DPW Construction Rep		
Name: Gary McIntire		Organization: DPW
Phone: (912) 767-1376	Email: gary.e.mcintyre4.civ@mail.mil	
Professional Responsibility: DPW Construction Rep		
Name:		Organization:
Phone: ( )	Email:	
Professional Responsibility:		
Name:		Organization:
Phone: ( )	Email:	
Professional Responsibility:		
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Professional Responsibility:		
Name:		Organization:
Phone: ( )	Email:	
Professional Responsibility:		

# Post Occupancy Technical Review (POTR) - Roster

Installation:	PN:	Bldg:
Name: Jackie White		Organization: CENNC
Phone: (256) 895-1742	Email: jackie.white@usace.army.mil	
Professional Responsibility: Electrical Engineer		
Name: Jim Shurling		Organization: DPW
Phone: (912) 320-0472	Email: james.h.shurling.civ@mail.mil	
Professional Responsibility: DPW Construction Rep		
Name: Gary McIntire		Organization: DPW
Phone: (912) 767-1376	Email: gary.e.mcintyre4.civ@mail.mil	
Professional Responsibility: DPW Construction Rep		
Name:		Organization:
Phone: ( )	Email:	
Professional Responsibility:		
Name:		Organization:
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Professional Responsibility:		
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