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6 May 2015

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: End State Technical Review Report, Phase I, construction completed 2014.  
Fort Drum, NY, Main Post Chapel Addition/Renovation (PN 61235)

PART ONE, ASD FUNCTIONAL BASIS EVALUATION SUMMARY

This portion of the Memorandum will address the specific evaluations made as they relate to the Army Standard Design (ASD) for this facility type. Because any completed facility also includes characteristics and features not part of the ASD requirements, not all of the potential Lesson's Learned have application to the ASD. The primary focus of this investigation is to improve the ASD and to do so in a way that reflects upon the underlying assumptions and theories (design concepts) upon which the ASD was developed. "PART TWO" of the Memorandum will include detail on the actual observations and take up the various issues unique to this facility as well as those applicable to the ASD. To assist perusal of the document the primary functional space type being discussed has been inserted (in parentheses) in between the appropriate groups of comments.

Unlike other End State Technical Reviews (ESTRs), the Fort Drum Chapel is an Addition/Renovation. Few of the salient components of the ASD are not present; however, many of the critical characteristics are present and collecting this information is critical to improving the ASD. In general, all agreed that the completed facility is performing well in many ways; the building layout allows great flexibility. The Users feel generally empowered to accomplish the Chaplaincy mission in ways that were just not possible before. This has been of tremendous value to the congregations being supported and the entire military community and Army mission.

Weaknesses of the facility focus primarily on a few components that are not functioning quite as intended. There were also a (very) small number of weaknesses that were rooted in all of the aspects of what puts a project together (contract, design, construction), as well.

Observations made that relate directly to the ASD requirements and the design concepts selected for use by the Office of the Chief of Chaplains (OCCH) are as follows:

1.1 The office walls are very thin; this may lead to potential confidentiality issues since counseling may happen in the individual offices. The walls extend to the deck but it is unknown if the walls have an STC rating appropriate for the room's function. **The COS is aware the contract documents indicate the walls have an STC rating of 35; however, they should have an STC rating of at least 52 or greater. The COS will suggest the User verify if the walls are to have a higher STC rating per the contract and contact the contractor to correct if necessary. A potential fix to this issue is to lay ceiling insulation above ceiling tiles to help absorb sound and install acoustical panels to the walls. Manufacturers such as Armstrong produce a wide range of acoustical wall panels. (This comment is the same as 2.1)**

1.2 The Activity Center is a versatile and well-utilized space. The storage underneath the stage holds about 90% of the folding tables and chairs, which is just short of holding the 100% needed. This allows Users to load and unload equipment in a very short amount of time so they are able to schedule events for this room closer together. **Optimizing space for storage is critical in facilities where storage is limited. However, the under-platform storage has not succeeded perfectly at any of the completed facilities, in spite of a very wide variety of closure and construction choices. The 2012 ASDs have abandoned both the (permanent) raised platform and the under-platform storage (for numerous additional reasons). (This comment is the same as 2.5)**

1.3 Portable projectors instead of permanently mounted projectors are in the Activity Center; perhaps this is due to the vaulted ceiling in the Activity Center, which may not allow an appropriate anchoring location. **The addition/renovation at this facility presents a unique challenge to provide all the salient features of the ASD. The renovated portions of the facility attempts to tie into the existing aesthetic theme, which included vaulted ceilings in the Activity Center and Worship Center. This ceiling type does not provide an optimal mounting location for projector mounts. (This comment is the same as 2.6)**

1.4 Users recommended that there be more storage near the stage in the worship area since they are currently leaving large pieces of furniture on the stage even when they are not being used, and hauling smaller items (like music stands) from storage on the other side of the building when they are needed. **The storage restrictions hampering this facility will not exist in future facilities; the 2012 ASD will significantly improve this situation. (This comment is the same as 2.11)**

1.5 The Users are aware of complaints regarding sound transmission from the Activity Center to the Worship Center, through the movable partition. **Although this project is an addition/renovation, the design includes the movable partition, which is one of**

**the many ASD salient features. The User can usually improve the situation; however, they cannot necessarily fix the problem. A potential solution to this problem might be to install acoustical wall panels in the Worship Area and Activity Center to reduce the level of sound within the rooms. Observations made of the partition during our walk-thru shows a considerable gap at the floor, near the sill of the movable partition. (This comment is the same as 2.15)**

1.6 The bell tower does not have any bells/equipment to issue sound. User stated it would be nice if the structure were to allow them to announce service with bell tones. **The 2004 ASD contains information regarding the carillon system; however, this language was not included in the RFP. The COS will do a better job at providing the ASD salient language for non-Wizard RFPs. (This comment is the same as 2.16)**

**IN SUMMARY: In general, the results of this ESTR demonstrate that the underlying concepts behind the 2004 ASD were sound and effective. Each of the principle functional areas and features are supporting an excellent level of successful ministry. The Users stated that they are pleased with everything about this facility. Although small, the completed facility appears to represent a very-close-to-optimum balance between aesthetics, function, cost, and maintainability. The completed facility also appears to represent a high-value long-term asset for the military community, the Garrison, the OCCH, and the Army.**

## PART TWO, ALL OBSERVATIONS AND DISCUSSIONS

This portion of the Memorandum will address each observation discussed. Because any completed facility also includes characteristics and features not part of the ASD requirements, not all of the potential Lesson's Learned have application to the ASD. Some are project specific and related to project history, unique points-of-view, unique features, or unique functions that needed to be added to the general facility mission. This portion of the report allows all such observations and discussions to be recorded and applied to future projects as appropriate. The following observations and discussions were identified:

(Administrative Spaces)

2.1 The office walls are very thin; this may lead to potential confidentiality issues since counseling may happen in the individual offices. The walls extend to the deck but it is unknown if the walls have an STC rating appropriate for the room's function. **The COS is aware the contract documents indicate the walls have an STC rating of 35; however, they should have an STC rating of at least 52 or greater. The COS will**

**suggest the User verify if the walls are to have a higher STC rating per the contract and contact the contractor to correct if necessary. A potential fix to this issue is to lay ceiling insulation above ceiling tiles to help absorb sound and install acoustical panels to the walls. Manufacturers such as Armstrong produce a wide range of acoustical wall panels.**

(The Worship Center)

2.2 Users recommend adding a TV or projector to the back wall of the Worship Center so the people on stage can easily see what is shown on the projector screens above the stage/alter area. **The 2004 ASD does not provide specific guidance regarding the placement of the projectors and screens; however, the 2012 ASD requires three (3) permanently mounted LCD projectors.**

2.3 The Chaplains complained about the noise in the worship area from the ceiling fans. The fan speed was not variable (only on/off control), and the high speed generated a noise that was very disruptive to the services. After further discussion, it appears that the fans did have speed control initially, but that function was lost after the installation of additional fans. The fans did have a dimmer switch control, but it had no effect on the fan speed at the time of the review. The loss of control functionality appears to be an installation issue. **Ceiling fans are not part of the ASD for the Worship Area or Activity Center. The use of ceiling fans could have the benefit of reducing stratification and distributing air more effectively; however, could also lead to problems with noise and lighting configurations. We will examine the potential addition of ceiling fans to the ASD using the team to evaluate the pros and cons.**

2.4 The recessed outlet covers at the stage are experiencing malfunctions, the covers do not completely close. **This problem appears to be a project specific issue that the ASD may not address. The User should contact Department of Public Works (DPW) to determine if this is a contractor warranty issue.**

(The Activity Center)

2.5 The Activity Center is a versatile and well-utilized space. The storage underneath the stage holds about 90% of the folding tables and chairs, which is just short of holding the 100% needed. This allows Users to load and unload equipment in a very short amount of time so they are able to schedule events for this room closer together. **Optimizing space for storage is critical in facilities where storage is limited. However, the under-platform storage has not succeeded perfectly at any of the completed facilities, in spite of a very wide variety of closure and construction**

**choices. The 2012 ASDs have abandoned both the (permanent) raised platform and the under-platform storage (for numerous additional reasons).**

2.6 Portable projectors instead of permanently mounted projectors are in the Activity Center; perhaps this is due to the vaulted ceiling in the Activity Center, which may not allow an appropriate anchoring location. **The addition/renovation at this facility presents a unique challenge to provide all the salient features of the ASD. The renovated portions of the facility attempts to tie into the existing aesthetic theme, which included vaulted ceilings in the Activity Center and Worship Center. This ceiling type does not provide an optimal mounting location for projector mounts.**

(The Baptistry Suite)

2.7 The drain is not at the lowest point in the baptistry, which often leaves standing water on bottom. **This is a specific equipment and installation problem and not normally run in to on projects. The User should contact Department of Public Works (DPW) to determine if this is a contractor warranty issue.**

(Audio/Visual System Issues)

2.8 There is no rear-facing projector in the Worship Area for a speaker/presenter to view displayed information. **The 2004 ASD does not provide specific guidance regarding the placement of the projectors and screens; however, the 2012 ASD requires three (3) permanently mounted LCD projectors.**

2.9 All A/V controls for Worship Center are located in the A/V room, where the noise levels inside the A/V room from other electronic equipment prevent the sound technician from hearing the service. **This problem appears to be a project specific issue that the ASD does address to some extent; the ASD requires the A/V controls to be located on a booth in the Worship Center. However, the addition/renovation at this facility presents a unique challenge to provide all the salient features of the ASD.**

(The Kitchen Suite)

N/A

(The Blessed Sacrament Space)

N/A

(The Sacristy and Robing Suite)

N/A

(Multi-purpose/Classroom Spaces)

N/A

(The Toddler Nursery Accommodations)

N/A

(Vestibules/Lobbies/Corridors/Stairways)

2.10 The hallways in the new addition office areas are narrow; it is difficult to maneuver shipments of big items through the corridors and around corners. **This could lead to potential damage to the walls. The COS recommends providing additional wall protection at these locations.**

(Storage Spaces)

2.11 Users recommended that there be more storage near the stage in the worship area since they are currently leaving large pieces of furniture on the stage even when they are not being used, and hauling smaller items (like music stands) from storage on the other side of the building when they are needed. **The storage restrictions hampering this facility will not exist in future facilities; the 2012 ASD will significantly improve this situation.**

(Toilet Rooms and Janitor's Closets)

2.12 They have found that the amount of toilet stalls and urinals are not adequate for the number of people that are utilizing the space at one time. Each Women's restroom has two toilet stalls and each Men's restroom has one stall and one urinal (with no urinal screen). **In addition to the Women's and Men's restrooms, there are individual restrooms near the offices that the Users appreciate, so the officiant does not need to wait in line to use the restroom before he begins the service. The Designer of Record (DOR) should provide fixture counts based on UFC 3-420-01.**

(Building Features and Finishes)

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2.13 There is carpet tile on the floor of the Multi-Purpose Room and they do not have any problems with cleanliness of the carpet. They regularly use the space after services for coffee and donut type of gatherings. **The floor finish decision, which deviates from the normal or “default” finish requirement of the ASD, has proved not to be a problem at this facility. Some finish decisions always occur during the design and construction process that vary slightly for a variety of reasons.**

2.14 They have not had any issues or concerns with the lighter color of the ceramic tile flooring and grout in the restrooms and baptismal area. The carpet tile is also holding up very nicely and not showing soiling. **This is gratifying evidence of the forethought put into the 2004 ASD and this specific project.**

2.15 The Users are aware of complaints regarding sound transmission from the Activity Center to the Worship Center, through the movable partition. **Although this project is an addition/renovation, the design includes the movable partition, which is one of the many ASD salient features. The User can usually improve the situation; however, they cannot necessarily fix the problem. A potential solution to this problem might be to install acoustical wall panels in the Worship Area and Activity Center to reduce the level of sound within the rooms. Observations made of the partition during our walk-thru shows a considerable gap at the floor, near the sill of the movable partition.**

2.16 The bell tower does not have any bells/equipment to issue sound. User stated it would be nice if the structure were to allow them to announce service with bell tones. **The 2004 ASD contains information regarding the carillon system; however, this language was not included in the RFP. The COS will do a better job at providing the ASD salient language for non-Wizard RFPs.**

2.17 User stated there was a missing water fountain. **The DOR should provide fixture counts based on UFC 3-420-01 and the International Building Code (IBC).**

(Furniture, Appliances, and Equipment Items)

2.18 There is a weighted curtain below the stage in the Activity Center to conceal the storage; however, there is no curtain above the stage. **This problem appears to be a project specific issue that the ASD does address; the ASD requires a stage curtain. However, the addition/renovation at this facility presents a unique challenge to provide all the salient features of the ASD.**

2.19 The new Worship Center has windows along two walls with 1” aluminum blinds. The blinds are typically down so the windows are rarely used, but the windows have not interfered with the A/V system. **The addition/renovation at this facility presented a**

**unique opportunity to the DOR to improvise the ASD; typically, the Worship Center is windowless. The COS is delighted the sunlight does not interfere with the A/V system.**

2.20 New furniture was included in the new construction areas of this building. **The furniture and fabrics have held up nicely so far and they are not having problems with size of furniture or soiling of fabrics.**

(Equipment Rooms and Systems)

2.21 Another issue discussed was the temperature control of the Worship Area and Activity Center. Each area uses its' own temperature sensor with associated heating and cooling system. The Chaplains described the systems as being on separate control networks, and that occasionally one area would be cooling while another would be heating. Whether the systems integration is into the same building control system is probably irrelevant, it was apparent that each space had its own control. The sensors did not have a user input, although there was an auto/off/on control switch for the Activity Center air handler. **The use of separate space controls for each area is part of the standard design and exists on several in-house designs projects. Although many of the in-house design projects used a single system to serve both areas, the ability to have simultaneous heating and cooling was present as this would be a desired feature. For example, on a cold day an empty Worship Area may require heating while a heavily populated Activity Center would require cooling. With the space partition open, the areas may "fight" each other, but should not lead to comfort problems. The issue is most likely the thermostat set points in each area. If alignment of the set points is not correct, simultaneous heating and cooling could occur at the same temperature in each area. This is not desirable and usually the reason the occupants would not have adjustment control in each space (DPW controls temperature settings through the DDC).**

2.22 The Local Operators Console (LOC) is in a locked cabinet. **Per UFC 4-021-01 paragraph, 4-5 the LOC should be accessible to building occupants.**

2.23 User is very pleased with the lighting system. **This is gratifying evidence of the forethought put into the 2004 ASD.**

(Site Issues)

2.24 The accessibility ramp from the parking lot to the main entrance is difficult to snow plow because the angle leading from the landing is too acute to accommodate the snowplow machine. Additionally, installing trench drains to collect runoff from the parking lot above the ramp would help mitigate tracking mud into the facility and lessen

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the potential for icing at the bottom of ramp. **This problem appears to be a project specific issue that the ASD may not address.**

### PART THREE, UNIQUE ISSUES

2.25 The Fort Drum Project Delivery Team (PDT) expressed that the contractor was very responsive to the User's concerns regarding issues, both before and after construction. Before construction, there was concern that the construction start date would disrupt daily building operations. The contractor earned the praise of the PDT by meeting the contract starting and stopping dates, with minimal disruption to daily building operations. **This is gratifying evidence of successful collaboration between the Contractor and Owner.**

2.26 The addition/renovation doubled the existing capacity of the facility; the Main Post Chapel is now the largest facility on the Installation. **This appears to be a project specific issue that is gratifying evidence of programming, planning, and execution by the OCCH, COS and the Garrison.**

### PART FOUR, THE REVIEW PROCESS AND PARTICIPANTS

The following team of participants gathered at the Fort Riley Chapel on March 26, 2015. The review process began with a meeting and continuation of previous discussions of lessons learned related issues, building operations, descriptions of what congregations are being served and their usage patterns, etc. Once general discussion reached an appropriate point, the team shifted to a tour of the facility with further items brought up as we went.

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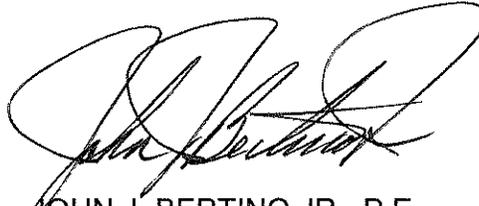
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Any other questions, comments, or concerns on the aforementioned items may be directed to Mr. Askelon Parker, (402) 995-2173 or email address at [Askelon.M.Parker@usace.army.mil](mailto:Askelon.M.Parker@usace.army.mil).

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