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CORPS OF ENGINEERS, OMAHA DISTRICT
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CENWO-ED-DG

10 July 2013

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: End State Technical Review Report, Phase II, construction completed 2012. Fort Hood, TX, Chapel Complex and Religious Education Facility (PN 25033)

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, discussed in the order observed. 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.

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 ASD should increase the number of power circuits and power outlets in the Chapel Complex, not enough for large fellowship activities. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again. (This comment is the same as 2.10)**

1.2 No data connection located for the soundboard in the Worship Center. User runs a long cable from a different room to get a network connection. No data connection located for the soundboard in the Activity Center. User runs a long cable from a different room to get a network connection. **The process of procuring and coordinating these systems is very difficult. The**

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ASD will include more information regarding the coordination of the design and specifications to include the testing and commissioning of the A/V system, prior to completion. (This comment is the same as 2.13)

1.3 The current A/V system is complex and at times difficult to use. It is a good system but almost too complex according to the Chaplain. Most users do not know how to utilize the complex system. **Managing the A/V console is a challenge due to the skill set and number of different users. The ASD will include more information regarding the coordination of the design and specifications to include training the staff, prior to project completion. (This comment is the same as 2.14)**

1.4 The ASD should increase the number of power circuits and power outlets in the Chapel Complex, not enough for large fellowship activities. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again. (This comment is the same as 2.15)**

1.5 The sinks are too shallow and water splashes even with medium water pressure in the Chapel and REF. The sinks need to be deeper. **The will COS will look at adding language to the ASD to include deeper sinks. (This comment is the same as 2.16)**

1.6 The Sacristy does not have enough storage space for multiple vestments, vessels, and books. Currently, only one denomination is using it, the Catholics. Another vestment heavy denomination could overtax the space. **Additional appropriate verbiage to the ASD text could improve the problem for other facilities. (This comment is the same as 2.18)**

1.7 The door hardware function frustrates the users; it is desirable that the interior doors that have key locks also have a push button unlock on the interior side of the space. Currently, the only way to lock and unlock doors is with the key. The end users have taken to putting tape over the bolt to prevent accidental locking. Interior doors should be designed to be able to leave unlocked without a key. **The ASD does not include this level of detail; however, additional appropriate verbiage to the ASD text could improve the problem for other facilities. (This comment is the same as 2.19)**

1.8 Increase the number of power circuits and power outlets in the REF, not enough for large activities. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again. (This comment is the same as 2.20)**

1.9 Walls in the REF classrooms show damage from the chair backs rubbing and hitting them. **Consider adding chair rail requirement to the ASD for REF classrooms. (This comment is the same as 2.22)**

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1.10 User prefers upper cabinets with doors above base cabinets in REF classrooms instead of open shelving. **The CoS will consider providing additional verbiage to the ASD. (This comment is the same as 2.21)**

1.11 The movable partitions, in a constructed pocket, pose a child safety issue if they are not sealed with a pocket door, when the partition is not in use. Either providing a pocket with a door or not enclosing the partition were suggested solutions. **The CoS will consider providing additional verbiage to the ASD. (This comment is the same as 2.24)**

1.12 There was difficulty in finding small refrigerators that could fit between the casework countertop and the wall cabinet casework overhead. Locating the refrigerator above the reach of children, on the counter top is best. **The ASD text will include additional information regarding refrigerators in child watch areas. (This comment is the same as 2.28)**

1.13 Some entrance doors to both the REF and Chapel are frequently broken. The vertical rod locking hardware overextends and drags on the concrete slab. This appears to be an issue with the manufacturer; the manufacturer has since gone out of business. **The ASD text will include additional information regarding heavy door use at the vestibules and main entrance. Additionally, DPW needs to address the hardware deficiencies with the contractor. (This comment is the same as 2.30)**

1.14 The storefront entry doors, at the vestibules, are experiencing problems with the vertical rod latching/locking device. **The ASD will include language to address different door options to accommodate the full function and intent of the facility. Additionally, DPW needs to address the hardware deficiencies with the contractor. (This comment is the same as 2.31)**

1.15 The door hardware function frustrates the users; it is desirable that the interior doors that have key locks also have a push button unlock on the interior side of the space. Currently, the only way to lock and unlock doors is with the key. The end users have taken to putting tape over the bolt to prevent accidental locking. Interior doors should be designed to be able to leave unlocked without a key. **The ASD does not include this level of detail; however, additional appropriate verbiage to the ASD text could improve the problem for other facilities. (This comment is the same as 2.33)**

1.16 The restrooms in the chapel could have a greater capacity in number of fixtures; the user suggests verifying fixture count requirements or expanding the minimum requirement. Additionally, the size of restrooms is not adequate for the capacity of utilization. **While the ASD was careful to program/include higher fixture counts than what the codes indicate, it appears that a larger “cushion” is advisable. Possibly a flexible toilet room (in addition to having a men’s and women’s in each grouping) might allow for widely varying loads of users. The CoS will work with the OCCH to evaluate this. (This comment is the same as 2.36)**

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1.17 A porcelain floor finish was selected for the nursery/toddler spaces (the ASD calls for carpeting or resilient flooring but allows some latitude for local preference). In hindsight, they feel that it is too “hard” a finish. An appropriate sheet vinyl flooring with chemically or heat welded seams (to eliminate soiling at seams) would have been more appropriate. **The ASD text has been modified to encourage more care with this. (This comment is the same as 2.38)**

1.18 An overall comment was for simpler building systems that could be user maintained without outside help. An example given was the replacing of light bulbs in the Worship Center. **The ASD text does not describe specific building system requirements. Most private sector religious facilities include relatively standard systems that allow for some similar functions in use by the ASD. Additionally, private sector religious facilities sometimes include raising and lowering controls that allow for easy lamp changes. The CoS is exploring various techniques to provide a variety of solutions; however, the current ASD only refers to a raising and lowering lighting system. (This comment is the same as 2.42)**

1.19 The drinking fountain in the REF does not have a floor drain. Water was splashing from the fountain and pools on the floor. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD. (This comment is the same as 2.43)**

1.20 The paint finish on the interior of the Chapel is not robust enough for temporary hooks and fasteners. The paint is stripped and chipped by removable hooks. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD. (This comment is the same as 2.45)**

1.21 A request was for permanent banner / sign / wreath holders to be installed on the exterior of the building at the entrances. The Fort Hood Chapel had resorted to attaching wreathes to the interior pane of windows, which conflicts with the blinds. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD. (This comment is the same as 2.46)**

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 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.

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PART TWO, ALL OBSERVATIONS AND DISCUSSIONS

This portion of the Memorandum will address each observation discussed in the order observed. 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 number of staff far overtaxes the administrative space provided for in the ASD resulting in converting a number of classrooms into offices. The Fort Hood Chapel staff already recognizes that they have too little office and storage space. This issue is partly due to the Garrison excluding them from their previous office space, forcing them to fit their entire Garrison-based department inside the facility, when that was not the intent of the project. The user said that they needed offices for 16 personnel, just for those directly associated with this chapel. **The 2012 ASD will improve on this situation. Still, the Fort Hood Chapel facility shows that even the 2012 ASD will probably still be somewhat inadequate to address unique situations.**

(The Worship Center)

2.2 The projector screens in the Worship Center are too close to the edges of the space, hindering sight lines. Angling the screens, moving them closer to the centerline of the room, or replacing them with one larger screen centered on the space might be preferable. **The ASD, of necessity, allows for some flexibility in this; different users have preferences, different designers have preferences.**

2.3 A faith group wants the "Stations of the Cross" devices to be an integral component of the facility, as part of the construction. The issue of faith groups that value visually rich environments with some amount of religious imagery and devices is often part of the discussion. **It is unfortunate in some ways, but keeping the ASD fully compatible with all faith groups and keeping the cost of the ASD appropriate to good stewardship will always be a limitation; the local congregation may be able to gain some assistance from portable features. The COS understands that this is still just not the same.**

2.4 The users suggest that a center-of-space location for the audio control equipment might be better than having it slightly to one side. **The desire to not to have it dominate visually in the center of the space led to the decision to locate it to one side.**

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2.5 The functionality of the movable partitions outweighs any acoustical considerations. **The goal of the ASD is to allow each congregation or community group the optimum usable features for their activities in an environment where all share the benefits of a relatively flexible and extremely functional facility.**

2.6 The Worship Center stage does not have enough stage lighting, making the stage not bright enough. **Lighting levels for all chapels shall be in accordance with all applicable criteria and will take into consideration the functional needs of the spaces. The ASD does not address specific light levels at the Worship Center platform.**

2.7 Dimming controls in the Chapel do not immediately reach the desired lighting level and needs adjusting again as lamps warm up. **While the ASD stresses comprehensive good design, it does not include this level of detail. Any facility such as this is inherently complicated enough to make addressing every feature difficult for the designer/contractor.**

2.8 The acoustics of this room perform well when the A/V system is set correctly. **This is gratifying evidence of the intent of the ASD, providing enough flexibility for user's preference of building finish materials and products.**

(The Activity Center)

2.9 The projector screens in the Activity Center were too close to the edges of the space, hindering sight lines. Angling the screens, moving them closer to the centerline of the room, or replacing them with one larger screen centered on the space might be preferable. **The ASD, of necessity, allows for some flexibility in this; different users have preferences, different designers have preferences.**

2.10 The ASD should increase the number of power circuits and power outlets in the Chapel Complex, not enough for large fellowship activities. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again.**

2.11 The Activity Center stage is too short for the storage of tables and their dollies underneath. **The introduction of under-stage storage began in 1985 but this sort of interpretation conflict, miss-coordination of storage dollies and other issues has led to the decision to discontinue their use in the current ASD.**

(The Baptistery Suite)

2.12 The amount of space allocated for the Baptistery Suite is underutilized; the users expressed a desire to repurpose some of this area, especially the changing rooms. **The congregation needs of faith groups vary widely and that other groups do use all of the stalls for this event regularly and have even requested more of them.**

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(Audio/Visual System Issues)

2.13 No data connection located for the soundboard in the Worship Center. User runs a long cable from a different room to get network connection. No data connection located for the soundboard in the Activity Center. User runs a long cable from a different room to get network connection. **The process of procuring and coordinating these systems is very difficult. The ASD will include more information regarding the coordination of the design and specifications to include the testing and commissioning of the A/V system, prior to completion.**

2.14 The current A/V system is complex and at times difficult to use. It is a good system but almost too complex according to the Chaplain. Most users do not know how to utilize the complex system. **Managing the A/V console is a challenge due to the skill set and number of different users. The ASD will include more information regarding the coordination of the design and specifications to include training the staff, prior to project completion.**

(The Kitchen Suite)

2.15 The ASD should increase the number of power circuits and power outlets in the Chapel Complex, not enough for large fellowship activities. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again.**

2.16 The sinks are too shallow and water splashes even with medium water pressure in the Chapel and REF. The sinks need to be deeper. **The will COS will look at adding language to the ASD to include deeper sinks.**

2.17 Kitchen window is not large enough to get food through quickly for events; they are using tables in the Activity Center to allow easy access to food. **The congregation needs of faith groups vary widely. Other groups use the Kitchen window and find it adequate.**

(The Blessed Sacrament Space)

No comments.

(The Sacristy and Robing Suite)

2.18 The Sacristy does not have enough storage space for multiple vestments, vessels, and books. Currently, only one denomination is using it, the Catholics. Another vestment heavy denomination could overtax the space. **Additional appropriate verbiage to the ASD text could improve the problem for other facilities.**

2.19 The door hardware function frustrates the users; it is desirable that the interior doors that have key locks also have a push button unlock on the interior side of the space. Currently, the

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only way to lock and unlock doors is with the key. The end users have taken to putting tape over the bolt to prevent accidental locking. Interior doors should be designed to be able to leave unlocked without a key. **The ASD does not include this level of detail; however, additional appropriate verbiage to the ASD text could improve the problem for other facilities. (Same comment as 2.33)**

(Multi-purpose/Classroom Spaces)

2.20 Increase the number of power circuits and power outlets in the REF, not enough for large activities. **The CoS will consider providing additional verbiage to the ASD.**

2.21 Walls in the REF classrooms show damage from the chair backs rubbing and hitting them. **The current ASD adds verbiage to include more outlets and circuits, so to avoid having this happen again.**

2.22 User prefers upper cabinets with doors above base cabinets in REF classrooms instead of open shelving. **Consider adding chair rail requirement to the ASD for REF classrooms.**

2.23 The classroom storage space is inadequate. **The storage restrictions hampering this facility will not exist in future facilities; the 2012 ASD will significantly improve this situation.**

2.24 The movable partitions, in a constructed pocket, pose a child safety issue. Either providing a pocket with a door or not enclosing the partition were suggested solutions. **The CoS will consider providing additional verbiage to the ASD.**

(The Toddler Nursery Accommodations)

2.25 An end user request is for more childcare space in the Chapel. **The CoS recognizes that this facility has a high demand for a robust child watch system. The goal of the ASD is to provide optimum usable features for all users activities in any environment, where all share the benefits of a relatively flexible and extremely functional facility.**

2.26 Child appropriate fixtures are not available in the restrooms in the Chapel and REF. More fixtures for kids are desirable. **The currently developing ASD will include child scaled features and fixtures.**

2.27 A comment stating that the Office of the Chief of Chaplains is currently promoting the idea of designing the childcare space to a Child Development Center (CDC) level of criteria. There was a modification to the contract to request that the toddler toilet door be revised to match CDC criteria. **This will need to be investigated to determine if this is a new official position from the OCCH. While there are differences of opinion about whether this is**

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necessary, information regarding the door type is an easy change to include in the ASD and will be incorporated.

2.28 There was difficulty in finding small refrigerators that could fit between the casework countertop and the wall cabinet casework overhead. Locating the refrigerator above the reach of children, on the counter top is best. **The ASD text will include additional information regarding refrigerators in child watch areas.**

(Vestibules/Lobbies/Corridors/Stairways)

2.29 Doors at main entrance of Chapel and REF need automatic door openers for visitors that need assistance. **While this problem exists in some of the 2004 ASD projects, the current 2012 ASD text includes appropriate verbiage that will improve the problem for most facilities.**

2.30 Some entrance doors to both the REF and Chapel are frequently broken. The vertical rod locking hardware overextends and drags on the concrete slab. This appears to be an issue with the manufacturer; the manufacturer has since gone out of business. **The ASD text will include additional information regarding heavy door use at the vestibules and main entrance. Additionally, DPW needs to address the hardware deficiencies with the contractor.**

2.31 The storefront entry doors, at the vestibules, are experiencing problems with the vertical rod latching/locking device. **The ASD will include language to address different door options to accommodate the full function and intent of the facility. Additionally, DPW needs to address the hardware deficiencies with the contractor.**

(Storage Spaces)

2.32 The intention of this facility is to support a full range of Chaplaincy programs and military community activities; however, storage capacity in the facility for ecclesiastical equipment and furniture is at a shortage with very few options or alternatives. Additionally, the shape of the room is not optimal for maximum storage capacity. **The storage restrictions hampering this facility will not exist in future facilities; the 2012 ASD will significantly improve this situation.**

2.33 The door hardware function frustrates the users; it is desirable that the interior doors that have key locks also have a push button unlock on the interior side of the space. Currently, the only way to lock and unlock doors is with the key. The end users have taken to putting tape over the bolt to prevent accidental locking. Interior doors should be designed to be able to leave unlocked without a key. **The ASD does not include this level of detail; however, additional appropriate verbiage to the ASD text could improve the problem for other facilities. (Same comment as 2.19)**

(Toilet Rooms and Janitor's Closets)

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2.34 Undesirable odors are emitting from the restroom and the building users suspect the floor drains are the cause. **Water needs to be provided into the floor drains weekly and the toilets, and the sinks all ran for 10 minutes once a week to keep the traps primed with water. Additionally, automatic trap primers are required by International Code Council (ICC) code and should be provided on all traps, along with every trap including floor drain being provided with vents through the roof per code. Note: Vegetable oil can also be provided on the floor drains after filling with water to provide a film that keeps the water from evaporating.**

2.35 Waterless urinals in restrooms are not a good idea. **The Army does not require waterless urinals anymore. Additionally, waterless urinals do not need any type of deodorizing devices provided, they are cartridge type urinals without any water and need to be wiped down daily, and have their cartridges replaced every six months. Please do not put water in the urinals.**

2.36 The restrooms in the chapel could have a greater capacity in number of fixtures; the user suggests verifying fixture count requirements or expanding the minimum requirement. Additionally, the size of restrooms is not adequate for the capacity of utilization. **While the ASD was careful to program/include higher fixture counts than what the codes indicate, it appears that a larger “cushion” is advisable. Possibly a flexible toilet room (in addition to having a men’s and women’s in each grouping) might allow for widely varying loads of users. The CoS will work with the OCCH to evaluate this. (This was also addressed during the Ph 1 ESTR.)**

(Building Features and Finishes)

2.37 The User prefers hard-surface flooring, such as porcelain tile, in corridors and multi-purpose rooms. Hard-surface flooring is easier for them to maintain than carpet in heavy use areas such as corridors and in areas (multi-purpose rooms) where food is allowed. **(This was also addressed during the Ph 1 ESTR.)**

2.38 A porcelain floor finish was selected for the nursery/toddler spaces (the ASD calls for carpeting or resilient flooring but allows some latitude for local preference). In hindsight, they feel that it is too “hard” a finish. An appropriate sheet vinyl flooring with chemically or heat welded seams (to eliminate soiling at seams) would have been more appropriate. **The ASD text has been modified to encourage more care with this. (This was also addressed during the Ph 1 ESTR.)**

2.39 In both the Chapel and REF, user would prefer having lockable built-in cabinets in classrooms, multi-purpose rooms, and resource center. **(This was also addressed during the Ph 1 ESTR.)**

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2.40 While going into all the history and explanation is not appropriate, the ASD upon which this facility is based requires carpeting in the primary corridors. During the review of the design for this specific facility, the CoS did (raise concerns about the carpet color being selected and) encourage a color and pattern that would better hide wear and soiling (at two separate times). For many good reasons, Garrison Project Delivery Team (PDT) members are allowed some (over-ruling) discretion regarding color and finish selection. For this facility, the result is that the actual wear-and-tear-abilities exhibited by facility users have over-powered the carpeting's ability to sustain it. Carpet wear and soiling have become a serious problem. The locations that have been finished in porcelain tile are doing well and have proven to be aesthetically "equal" to the wear-and-tear of actual use. **The CoS will attempt to persuade other PDT members on future projects. In addition, the Office of the Chief of Chaplains (OCCH) has authorized that the ASD requirements be modified to finish corridor floors in porcelain tile as the "default". (This was also addressed during the Ph 1 ESTR.)**

2.41 Overall, the User is pleased with both the exterior and interior appearance of the building. **(This was also addressed during the Ph 1 ESTR.)**

2.42 An overall comment was for simpler building systems that could be user maintained without outside help. An example given was the replacing of light bulbs in the Worship Center. **The ASD text does not describe specific building system requirements. Most private sector religious facilities include relatively standard systems that allow for some similar functions in use by the ASD. Additionally, private sector religious facilities sometimes include raising and lowering controls that allow for easy lamp changes. The CoS is exploring various techniques to provide a variety of solutions; however, the current ASD only refers to a raising and lowering lighting system.**

2.43 The drinking fountain in the REF does not have a floor drain. Water was splashing from the fountain and pools on the floor. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD.**

2.44 The number of doors, especially double doors, is not adequate for the capacity of utilization. The ASD needs to accommodate approximately (3X) as many people using the building. A general comment was that the mission of the chapel has increased to include a greater conference center role, due to the excellence of the facilities and due the current budget climate. **The COS recognizes that the use of this facility is in high demand. The goal of the ASD is to provide optimum usable features for all users activities in any environment, where all share the benefits of a relatively flexible and extremely functional facility.**

2.45 The paint finish on the interior of the Chapel is not robust enough for temporary hooks and fasteners. The paint is stripped and chipped by removable hooks. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD.**

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2.46 A request was for permanent banner / sign / wreath holders to be installed on the exterior of the building at the entrances. The Fort Hood Chapel had resorted to attaching wreathes to the interior pane of windows, which conflicts with the blinds. **The CoS will investigate various options and will consider adding the appropriate verbiage to the ASD.**
(Furniture, Appliances, and Equipment Items)

2.47 User is continuing to experience problems with Chapel pew kneelers. The kneelers are constructed with plastic supports that are failing. The local Corps representatives will coordinate with the DPW office and provide the CoS with a point of contact for the name of the pew manufacturer so this can be researched further for future projects. The CoS is awaiting information from the local Corps representative. **These standard features should not be failing at such a high rate. It may be due to a problem with the specific manufacturer and an investigation will help diminish this risk on future projects and resolve the problem for this facility, if possible. (This was also addressed during the Ph 1 ESTR.)**

2.48 When the local life safety “authority having jurisdiction” made the decision to require fire sprinkling in the space under the Activity Center raised platform (usually not deemed necessary) changes had to be made in the furniture dollies selected for use that resulted in an upright dolly that is inherently difficult to maneuver around corners when exiting and entering spaces. Larger turning spaces might have mitigated that issue. **The specific RFP, the ASD, and the efforts of numerous parts of the Project Delivery Team were all consistent in requiring and facilitating the proper coordination of the furniture dollies. Unexpected decisions along the way can always cause it to fail. The under-platform storage idea has proven to generate multiple points of conflict and the decision has been made not to use this concept in current ASDs development. (This was also addressed during the Ph 1 ESTR.)**

2.49 Signage in the Fort Hood Chapel and REF is not flexible, as are the directories. (According to the ASD, the signage should be changeable in all but a few cases.) This has led to issues with changing personnel. New personnel have had to cover original signage with other signage, which does not match the existing signage. **The ASD addresses this properly, but for this facility, something accidentally failed in the process.**

(Equipment Rooms and Systems)

2.50 When we arrived, the air conditioning system was not working in the Chapel or the Religious Education Center. A work request was provided to DPW. Several minutes later, the conference room in which the meeting was being provided was starting to be cooled. **The ASD text does not describe specific building system requirements; this is likely a project specific issue.**

2.51 The Chapel’s override to operate the building after hours does not allow for the air conditioning of the REF. **The ASD text does not describe specific building system requirements; this is likely a project specific issue.**

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2.52 Rooms in the Chapel do not equally cool; the sacristy area is especially warm concerning the remaining portions of the building. Some rooms in the Chapel are 10 degrees colder other rooms. **The ASD text does not describe specific building system requirements; this is likely a project specific issue.**

2.53 Vestibules are warmer than normal. **Provide diffusers in some locations such as the breezeway—position the diffusers immediately next to the end of the corridor and the beginning of the vestibule so that this infiltration effect is at the source. The other possibility is to provide cooling in the vestibules in this climate; however, the vestibule is an air break and is not intended to be heated or cooled.**

2.54 A concern by the end user was whether having a highly energy efficient HVAC system was negatively affecting HVAC response time. **This may be a specific project issue. No energy efficient cooling system will adjust quickly to a massive change in load (hundreds of people arriving in a short time). A highly wasteful system might do it, but this would not be an appropriate use of Army resources.**

2.55 Noise from the mechanical equipment vents can be disruptive in the Meditation Garden, disturbing users. **The ASD text does not describe specific building system requirements; this is likely a project specific issue.**

(Site Issues)

2.56 Landscaping around the building becomes easily overgrown and hard to maintain; in this climate, it is a fire hazard. The users would prefer to increase the number of low maintenance landscaping, such as rock beds and minimize the amount of high maintenance landscape beds. **While the ASD does not directly affect this issue and many competing Army goals push this kind of design decision in several opposing directions, it seems important to acknowledge the impact on the people that use the completed facilities we produce as a coordinated Army team.**

2.57 Heavy rains do not drain away from the main entrance to the chapel and tend to pool instead, making the exterior concrete slabs become very slick when wet. **The ASD stresses comprehensive good design and it does address the affect of storm drainage on the building site. Consider early on the type of roof drainage, how it will flow across the site**

2.58 The number of parking stalls is inadequate. A desire for increased parking spaces was expressed. Currently, parking is shared between the Chapel, REF, and Family Life Center. A question as to the methodology of how USACE calculated parking. **The ASD allows the installation to estimate the number of parking stalls necessary, based on how many people drive to the facility or 30% of the seating capacity. Due to underestimating, site limitations, or funding constraints, the site developer did not plan for an adequate number of parking stalls.**

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PART THREE, UNIQUE ISSUES

No issues to report.

PART FOUR, THE REVIEW PROCESS AND PARTICIPANTS

The following team of participants gathered at the Fort Hood Chapel on July 10, 2013. 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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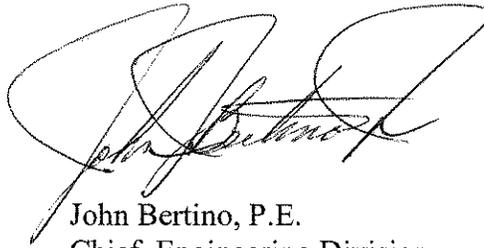
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SUBJECT: End State Technical Review Report, Phase II, construction completed 2012. Fort Hood, TX, Chapel Complex and Religious Education Facility (PN 25033)

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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.

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