



REPLY TO
ATTENTION OF

CENWO-ED-DG

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

15 April 2013

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: End State Technical Review Report, Phase I & II, construction completed 2011.
Fort Rucker, AL, Chapel (PN 10903)

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, the building layout allows great flexibility. All agreed that the completed facility is (Awesome, spectacular, wonderful, beautiful) and performing well in many ways. 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 installation of the baptismal pool did not include handrails. **The ASD text will include additional information regarding handrails at this location.**

(This comment is the same as 2.4)

1.2 A piano and organ might not fit the need of every congregation, due to use or maintenance; this equipment might require special humidification. The user indicates that the purchase of an organ and grand/baby piano are not necessary and that keyboards/synthesizers similar to a Clavinova 904, typically will meet the requirements of a Chapel since they offer a wide variety

of musical sounds. In addition, keyboards/synthesizers are available at a much more reasonable price. **The intention of this facility is to support a full range of Chaplaincy programs and military community activities and the COS recognizes the needs of the congregation might change overtime; therefore, the ASD is intended to provide a range of furnishings to meet the needs of present and future congregations. However, a discussion with the OCCH will verify equipment requirements for future projects. (This comment is the same as 2.7)**

1.3 The current Audio/Visual (A/V) system is complex and at times difficult to use. It is a good system but almost too complex. **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 2.9)**

1.4 The Fort Rucker Garrison did the procuring for the A/V system and A/V equipment. **It is pleasing to know that procuring the A/V system is not a problem at all installations; nonetheless, the COS will create an ASD document describing this process for future projects. (This comment is the same as 2.11)**

1.5 Automatic door openers at the main entrance provide an added convenience for a wide range of users. **The ASD does not specifically address this issue; however, adding appropriate verbiage can improve this situation for other facilities. (This comment is the same as 2.18)**

1.6 The folding chairs specified and purchased have 2” thick padded seats and are too heavy for easy storing and reconfiguration. The tables specified and purchased are also too heavy for easy storing and reconfiguration. **The COS will review the ASD and add verbiage to require folding chairs and multipurpose tables that are lighter weight. The most recent ASD does not have folding chairs so this should not be an issue for projects based on the newer design. (This comment is the same as 2.24)**

1.7 Stacking chairs appear to have wall saver legs (the legs hit the wall before the chair back does). This feature is nice since it prevents the chair back from damaging the wall. **The COS will research to find out whether this is a common feature for stacking chairs on a GSA Schedule and if it is, the COS will add to the ASD. (This comment is the same as 2.25)**

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.

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 Administrative Space functions well and serves the Unit Ministry Team as intended. **Although the Administrative Space in this facility functions well, the Administrative Space is significantly larger in the 2012 ASD and provides more square footage in the group office location.**

(The Worship Center)

2.2 The light switches for the Worship Center are in the Activity Center; the switch locations and circuiting do not permit turning on/off the lights to the Worship Center without affecting the Activity Center and vice-versa. Additionally, there are no lighting zones in the Worship Center. **The ASD does address this item; this space needs to include features that allow for the control of light, sound, and temperature with a maximum of ease and flexibility. Lighting requirements for the 2012 ASD insists this space receive special attention.**

2.3 Expandable folding partitions, separating the Worship Center and the Activity Center, did not function properly. Soon after the building was operational, closing the operable partition doors was not an option. Currently, the doors operate properly and this problem no longer exists. **The operable partitions serve a very important role in the function of the Chapel facility; they separate the Worship Center from the Activity Center to optimize the buildings' flexibility. The 2012 ASD does not include operable partitions separating the Worship Center and Activity Center.**

(The Activity Center)

(The Baptistery Suite)

2.4 The installation of the baptismal pool did not include handrails. **The ASD text will include additional information regarding handrails at this location.**

2.5 The Baptistery Suite itself is very nice and large. The changing rooms are great; however, the doors, leading from the Baptistery Suite corridor to the baptistery, are very narrow. **This might be a result from a dimensional error on the drawings; the ASD does not address this issue specifically.**

2.6 There are no microphones over the baptistery. **The ASD requires a single permanently mounted microphone on the wall above the front of the baptistery pool with a low-and-reachable-from-the-entry-side-of-the-area, on and off switch.**

(Audio/Visual System Issues)

2.7 A piano and organ might not fit the need of every congregation, due to use or maintenance; this equipment might require special humidification. The user indicates that the purchase of an organ and grand/baby piano are not necessary and that keyboards/synthesizers similar to a Clavinova 904, typically will meet the requirements of a Chapel since they offer a wide variety of musical sounds. In addition, keyboards/synthesizers are available at a much more reasonable price. **The intention of this facility is to support a full range of Chaplaincy programs and military community activities and the COS recognizes the needs of the congregation might change overtime; therefore, the ASD is intended to provide a range of furnishings to meet the needs of present and future congregations. However, a discussion with the OCCH will verify equipment requirements for future projects.**

2.8 Projectors at the back of the Worship Center vibrate due to the manner of the connection to the structure. Currently, the projector connections are to the same structural members that support the air handlers in the catwalk area above the ceiling. The biggest issue with this is that the air handlers cause enough vibration to vibrate the projectors less than 0.01". This is not much vibration at the projector; however, when the image is cast onto the screens at the front of the worship center (80' away); the image moves as much as 1/4" on the screen. This issue was one of the most important issues brought up due to its impact on the congregation. **During the ESTR tour, we saw a demonstration of this problem. It is still possible to mitigate the vibrating by using drop pole mounting projectors. There is additional information in the 2012 ASD regarding A/V projectors. Using ceiling/wall mount projectors might require more investigation, prior to design and construction, to avoid this situation.**

2.9 The current A/V system is complex and at times difficult to use. It is a good system but almost too complex. **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.**

2.10 A/V system can record audio; however, cannot record video. **The ASD requires a complete A/V system that will provide some connections for television type cameras to hook up to while recording presentations.**

2.11 The Fort Rucker Garrison did the procuring for the A/V system and A/V equipment. **It is pleasing to know that procuring the A/V system is not a problem at all installations; nonetheless, the COS will create an ASD document describing this process for future projects.**

(The Kitchen Suite)

2.12 Plans are in the works to change the infrared sensors on the kitchen faucets to faucets with manual operations. **To meet LEED, the design includes sensors on the faucets in the kitchen to conserve water. Design goals for sustainability are project specific.**

2.13 The water at the kitchen sink is not hot, which is not acceptable for washing dishes, nor appropriate for the dishwasher. **Installing an under counter instantaneous water heater to provide adequate domestic hot water heating to the kitchen sink will assist in eliminating this issue. The ASD suggest using a dedicated hot water heater for the kitchen area.**

2.14 The pass-through counter between the Kitchen and the Activity Center does not function at all properly. **This occurs in most of the recent facilities; the currently developing ASD does include more text to avoid having this happen again.**

(The Blessed Sacrament Space)

(The Sacristy and Robing Suite)

(Multi-purpose/Classroom Spaces)

2.15 Electrical controls in these rooms include motion sensors to control the on/off switch for the lights; however, the sensors do not function properly. **To meet LEED, the design includes sensors on the lighting circuit to conserve energy. Design goals for sustainability are project specific.**

2.16 Movable partitions in the classrooms work really well. **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.**

(The Toddler Nursery Accommodations)

2.17 The congregations using this facility have a child watch program and a population of small children for Sunday school, which the users say this facility is able to accommodate adequately. **The COS recognizes that some facilities have a high demand for a 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.**

(Vestibules/Lobbies/Corridors/Stairways)

2.18 Automatic door openers at the main entrance provide an added convenience for a wide

range of users. **The ASD does not specifically address this issue; however, adding appropriate verbiage can improve this situation for other facilities.**

(Storage Spaces)

2.19 The intention of this facility is to support a full range of Chaplaincy programs and military community activities. However, an unintended consequence of having such a featured facility is that the military community is using it far more often and in far larger numbers than ever envisioned in its design. While the Unit Ministry Team and the volunteers have been able to increase their managing tools to respond to this, some of the “fixed” features cannot keep up. Storage capacity in the facility is full with very few options or alternatives. The storage issue is causing the chaplains to use rooms not intended for storage as storage rooms. **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)

2.20 Lithium batteries failed and were too expensive to purchase during the first six months of building operations, the users eventually replaced the infrared battery-operated sensor flush valves with manual flush valves. **Using manual flush valves or hard-wired connections is a viable solution. Plumbing requirements shall be in accordance with the criteria package provided with the specific design.**

2.21 Water leaking from the toilets, ran under the floor slab and filled some of the electrical wiring conduit in the Worship Center. **Fortunately, the water did not cause any damage to the electrical equipment. This issue is no longer a problem.**

(Building Features and Finishes)

2.22 Building finishes, interior design, and the color scheme are some of the items the users and congregants really enjoy and elevate the appearance of the facility. **Appearance characteristics and special items are prescriptive features in the ASD, which provide the guideline for creating a facility most everyone will enjoy.**

2.23 Hardware locksets for the doors in the Kitchen with Pantries do not have a locking function; this arrangement does not allow the users to secure the contents in this area. **The ASD does not specify the lockset function for the Kitchen with Pantry area; coordinating these details during design allows the users some flexibility to address their specific needs.**

(Furniture, Appliances, and Equipment Items)

2.24 The folding chairs specified and purchased have 2” thick padded seats and are too heavy for easy storing and reconfiguration. The tables specified and purchased are also too heavy for

easy storing and reconfiguration. **The COS will review the ASD and add verbiage to require folding chairs and multipurpose tables that are lighter weight. The most recent ASD does not have folding chairs so this should not be an issue for projects based on the newer design.**

2.25 Stacking chairs appear to have wall saver legs (the legs hit the wall before the chair back does). This feature is nice since it prevents the chair back from damaging the wall. **The COS will research to find out whether this is a common feature for stacking chairs on GSA Schedule and if it is it, the COS will add to the ASD.**

2.26 The effort to provide maximum capacity and meet code limitations led to the use of two diagonal access paths in the rank of pews that only go partially through the rank of pews. While technically appropriate, the psychological impact is an irritant to users of the space. **The currently developing ASD does not use this arrangement.**

(Equipment Rooms and Systems)

2.27 Lighting levels are adequate in all areas of this facility. **Lighting levels for all chapels shall be in accordance with all applicable criteria and will take into consideration the functional needs of the spaces.**

2.28 Heating and cooling systems (21 zones of equipment and energy recovery unit) are working fine. In the past, the control boards did not always function properly, causing the user to change as many as 11 control boards. Additionally, thermostats are working for all heat pump systems. **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.**

2.29 Language in the RFP was vague on providing connections to the Chapel from the post Energy Management & Control System (EMCS). The post EMCS for the Combat Readiness Center will provide a connection to the Chapel, as part of a future project (LonWorks compatible Direct Digital Control (DDC) is providing management at the building level). Mobile District Project Manager will provide feedback on the problems. **The ASD does address this issue; the language in the ASD is as follows: “The possible requirement for a future connection to an installation-wide EMCS shall be investigated and appropriate provisions made in accordance with specific criteria provided for the project.”**

(Site Issues)

2.30 The location of this facility is in close proximity to family and Advanced Individual Training (AIT) housing; however, the automobile is the primary mode of transportation to and from this facility. As part of the site amenities, the congregations and staff using this facility

have two very large parking areas, which the users enjoy very much and say is more than adequate. **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.**

2.31 Some questions and concerns exist regarding the low-emitting/fuel-efficient vehicle parking for 5% of the total vehicle parking capacity of the site, to meet LEED. **The ASD will further define low/emitting/fuel efficient vehicle parking signs. At project award, posting on sign at the entrance to the parking area, for a minimum of two years, met the requirements for LEED. For future projects, the sign should be changed to Zero Emission Vehicles (ZEV) by the California Air Resources Board or annual vehicle rating guide American Council for an Efficient Economy (ACEE), rating of 40. The sign could read ZEV, and ACEE preferred parking only, where so stripped/marked. At the Fort Rucker Chapel, the sign can be removed and still meet LEED, since the two-year period is over.**

PART THREE, UNIQUE ISSUES

2.32 The installation needs to provide more input in paragraph 6 in the RFP.

2.33 The PM enjoyed working with the local Chaplains.

PART FOUR, THE REVIEW PROCESS AND PARTICIPANTS

The following team of participants gathered at the Fort Bliss Chapel on February 20, 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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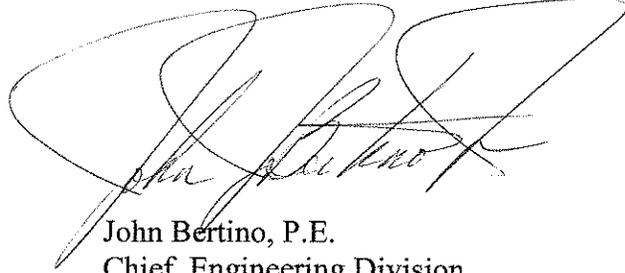
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Any other questions, comments, or concerns on the aforementioned items may be directed to Mr. Askelon Parker, (402) 995-2173 or email address at Askelon.M.Parker@usace.army.mil.

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