



REPLY TO  
ATTENTION OF

CENWO-ED-DG

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
106 SOUTH 15<sup>TH</sup> STREET  
OMAHA NE 68102-1618

31 May 2012

## MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Fort Leavenworth, KS, Chapel Complex (PN 70156 and PN 70157), End State Technical Review Report, construction completed 2010

### 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 was excellent (spectacular, wonderful, beautiful) 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 congregations using this facility have an especially robust religious education program and high volume of small children. To properly support these features, the number of secondary and contracted for staff and volunteers have far overtaxed the administrative space provided for in the ASD. Regulations that require that special records be kept and special safety features be included in the planning of every activity aggravate this problem. While they (at Fort Leavenworth) have been astonishingly creative in adjusting to this situation, it is also true that this facility example dramatically demonstrates the inadequacy of this aspect of the 2004 ASD.

**The 2004 ASD was hampered by outside restrictions that have recently been relaxed. The 2012 ASD will improve on this situation. Still this facility example shows that even the 2012 ASD will probably still be somewhat inadequate for a program as robust as this one. (This comment is the same as 2.1)**

1.2. The specific light fixture and installation used in the Worship Center raises and lowers with a key operated switch (the fixtures raise and lower in groups of four-in-a-row-from-front-to-back). Each has a small access door at the ceiling for maintaining the drive motor which is almost invisible to a viewer standing on the floor. These fixtures are extremely nice and the raise and lower feature is working just as we had hoped; it is saving them from much operation trouble. The single complaint made is that the operation takes about 5 minutes and trying to hold a key against a spring for that time is horrible on the hands. And the keys are constantly getting misplaced. A push-button-code-and-switch device would be more appropriate. **This is a specific fixture and installation success (except for the key operation) that can't be guaranteed for all projects, but was wonderful to see succeed as we have been trying to accomplish this on other projects. The ASD will be modified to correct the switch problem. (This comment is the same as 2.3)**

1.3. The congregations being served by this facility are so large that they are using the flexibility provided by the operable partitions to adjust/increase the capacity of the Worship Center at every primary worship activity and laud the ability to do so. Contrarily, they also recognize that the partitions are showing failure from so much use. **The Garrison is pursuing repair assistance from the manufacturer in the short term and their repeated assistance over time may allow the operable partitions to continue to function for some years to come, however this is a burden on maintenance staff. The CoS and OCCH have eliminated this form of flexibility from the currently developing ASDs based on on-going lessons learned, however ALL forms of providing this kind of flexibility have their weaknesses and penalties. The system used in the 2004 ASD (and this facility) has shown superior performance to some others that have been tried. The serious need for some form of flexibility has been dramatically demonstrated at ALL ASD chapel facilities. (This comment is the same as 2.4)**

1.3. The raised platform appears to low to the facility users and does not provide optimum line-of-sight for all members of the congregation. **The raised platform height was an our-eyes-were-wide-open compromise to balance to ensure easy raised platform access by the physically handicapped without creating miles of ramp. The currently developing ASD does include longer ramp length and more raised platform height, although it too represents a compromise with what would be ideal. (This comment is the same as 2.6)**

1.4. The congregations that use this facility (possibly only one of them) do a great deal of standing during their worship activities. This makes it impossible for the A/V control person to see everything he needs to see to properly control the media portions of the activity.

They have raised the control console at this facility to solve that problem. Unfortunately, this has completely blocked the view for people seated behind the console... **The currently developing ASD has placed the console at the front of a balcony.**  
**(This comment is the same as 2.9)**

1.5. The afternoon we arrived to take pictures of the building (the day before the actual meeting), the facility was swarming with congregation members preparing the Activity Cent for a religious drama performance (for the next evening or two). The full Activity Center raised platform and several sections of portable platform extension were going to be used. This was a major, regular, activity of their religious education program and their enthusiasm for this feature and the building (the stage-like raised platform with rear access for “actors”, etc.), generally was clearly expressed to us at numerous times while we were in that area of the building. People continually came up to us to “rave” about the building and what a difference it had made to their congregation’s ministry (we couldn’t have gotten a better reaction had we paid them for it). **This was gratifying evidence of the forethought put into the 2004 ASD and this specific project (and perhaps, evidence of the stress created by too few chapel facilities generally).**  
**(This comment is the same as 2.11)**

1.6. The current and past ASDs (back to 1985) have required rectangular multi-purpose tables for their flexibility in accommodating widely varied functions. At Fort Leavenworth, they have recognized the need for a supply of round tables also and have purchased them. They feel that they are a significant benefit to certain kinds of ministry activities that the rectangular tables simply cannot provide. **The CoS will bring this to the attention of OCCH for direction.**  
**(This comment is the same as 2.13)**

1.7. The operating period has demonstrated (just like past projects) that this facility type needs more and larger classrooms. **This was understood by all parties developing the ASD. However, the need to target a size and cost of facility that would compete better in the regular military appropriation for Army resources, led to the eyes-wide-open (deliberate) compromise to include fewer and smaller classrooms than the known need. Older ASDs tried to hope for a separate project for classrooms; as these almost never materialized, the 2004 ASD was deliberately supplied with some classrooms to try to keep from falling further behind Army-wide. The classrooms in the 2004 ASD are getting intense use.**  
**(This comment is the same as 2.21)**

1.8. The congregations using this facility have an especially robust religious education program and high volume of small children. To properly support these features, the amount of storage space necessary has far overtaxed the storage space provided for in the ASD. While they (at Fort Leavenworth) have been astonishingly creative in adjusting to this situation, it is also true that this facility example dramatically demonstrates the inadequacy of this aspect of the 2004 ASD. **The 2004 ASD was hampered by outside restrictions that have recently been relaxed. The 2012 ASD will significantly improve on this situation.**  
**(This comment is the same as 2.26)**

**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 (keeping in mind that there were deliberate compromises made to target specific facility size and cost) 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 congregations using this facility have an especially robust religious education program and high volume of small children. To properly support these features, the number of secondary and contracted for staff and volunteers have far overtaxed the administrative space provided for in the ASD. Regulations that require that special records be kept and special safety features be included in the planning of every activity aggravate this problem. While they (at Fort Leavenworth) have been astonishingly creative in adjusting to this situation, it is also true that this facility example dramatically demonstrates the inadequacy of this aspect of the 2004 ASD. **The 2004 ASD was hampered by outside restrictions that have recently been relaxed. The 2012 ASD will improve on this situation. Still this facility example shows that even the 2012 ASD will probably still be somewhat inadequate for a program as robust as this one.**

(The Worship Center)

2.2. Because (partly) (we surmise) one of the congregations came from a fire-destroyed historic facility that was rich in aesthetic features, and further, was from a faith group that traditionally builds on such aesthetic features, the "plainness" of the 2004 ASD was initially a serious shock and disappointment to them (we have often heard this as a comment before with other facilities, but not quite so intensely). By making creative selections in separately funded ecclesiastical accessories that hide all religious symbolism when not in use (a requirement), they have significantly enhanced the aesthetics of the space. While it is still much plainer than what they were used to, the changes/improvements have helped them to adjust. **The OCCH recognizes the necessity of being extremely conservative in its use of Army resources. They do strive to add aesthetic touches and the various design and construction agents that have applied the 2004 ASD have been very careful to do a fine balance with this. That extra care is clearly warranted. For many faith groups the resulting level of plainness is always going to**

seem inappropriate for a facility supporting the religious side of the soldier, but this tension also shows that the ASD is, in fact, being an excellent steward of the Army resources entrusted to it.

2.3. The specific light fixture and installation used in the Worship Center raises and lowers with a key operated switch (the fixtures raise and lower in groups of four-in-a-row-from-front-to-back). Each has a small access door at the ceiling for maintaining the drive motor which is almost invisible to a viewer standing on the floor. These fixtures are extremely nice and the raise and lower feature is working just as we had hoped; it is saving them from much operation trouble. The single complaint made is that the operation takes about 5 minutes and trying to hold a key against a spring for that time is horrible on the hands. And the keys are constantly getting misplaced. A push-button-code-and-switch device would be more appropriate. **This is a specific fixture and installation success (except for the key operation) that can't be guaranteed for all projects, but was wonderful to see succeed as we have been trying to accomplish this on other projects. The ASD will be modified to correct the switch problem.**

2.4. The congregations being served by this facility are so large that they are using the flexibility provided by the operable partitions to adjust/increase the capacity of the Worship Center at every primary worship activity and laud the ability to do so. Contrarily, they also recognize that the partitions are showing failure from so much use. **The Garrison is pursuing repair assistance from the manufacturer in the short term and their repeated assistance over time may allow the operable partitions to continue to function for some years to come, however this is a burden on maintenance staff. The CoS and OCCH have eliminated this form of flexibility from the currently developing ASDs based on on-going lessons learned, however ALL forms of providing this kind of flexibility have their weaknesses and penalties. The system used in the 2004 ASD (and this facility) has shown superior performance to some others that have been tried. The serious need for some form of flexibility has been dramatically demonstrated at ALL ASD chapel facilities.**

2.5. The effort to provide maximum capacity and meet code limitations has 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.**

2.6. The raised platform appears to low to the facility users and does not provide optimum line-of-sight for all members of the congregation. **The raised platform height was an our-eyes-were-wide-open compromise to balance to ensure easy raised platform access by the physically handicapped without creating miles of ramp. The currently developing ASD does include longer ramp length and more raised platform height, although it too represents a compromise with what would be ideal.**

2.7. More A/V cameras in the Worship Center would allow for better function of the space. The original cameras and the original speaker package needed to be supplemented later for adequate performance. **The A/V system can only indirectly affect the A/V package, but additional text will be included in the currently developing ASD.**

2.8. The ventilating characteristics of the projector recesses (in the partition) are insufficient for the needs of the equipment. Access panels meant for maintenance access are being left open to allow for more air flow and this shows up as an obvious flaw to room inhabitants. **The ASD does not get into specific working drawing but some additional text may assist in avoiding this problem.**

2.9. The congregations that use this facility (possibly only one of them) do a great deal of standing during their worship activities. This makes it impossible for the A/V control person to see everything he needs to see to properly control the media portions of the activity. They have raised the control console at this facility to solve that problem. Unfortunately, this has completely blocked the view for people seated behind the console... **The currently developing ASD has placed the console at the front of a balcony.**

2.10. The stepped risers intended for use by a seated choir appear too shallow to the facility users. They are not using them. **The currently developing ASD does not use this arrangement.**

(The Activity Center)

2.11. The afternoon we arrived to take pictures of the building (the day before the actual meeting), the facility was swarming with congregation members preparing the Activity Cent for a religious drama performance (for the next evening or two). The full Activity Center raised platform and several sections of portable platform extension were going to be used. This was a major, regular, activity of their religious education program and their enthusiasm for this feature and the building (the stage-like raised platform with rear access for “actors”, etc.), generally was clearly expressed to us at numerous times while we were in that area of the building. People continually came up to us to “rave” about the building and what a difference it had made to their congregation’s ministry (we couldn’t have gotten a better reaction had we paid them for it). **This was gratifying evidence of the forethought put into the 2004 ASD and this specific project (and perhaps, evidence of the stress created by too few chapel facilities generally).**

2.12. Multi-purpose tables are best if light in weight and sturdy. The industry does manufacture sturdy tables that are still light in weight. The industry also provides sturdy tables that are rather heavy and, unfortunately, the original table provided for this facility was of that type. This created so many difficulties, injuries, and near injuries that all of the tables were replaced later with an appropriate type. **The CoS intends to check with Huntsville about table suppliers being used and adding additional appropriate verbiage to the ASD text to require (current verbiage says “consider”) the light weight tables.**

2.13. The current and past ASDs (back to 1985) have required rectangular multi-purpose tables for their flexibility in accommodating widely varied functions. At Fort Leavenworth, they have recognized the need for a supply of round tables also and have purchased them. They feel that they are a significant benefit to certain kinds of ministry activities that the rectangular tables simply cannot provide. **The CoS will bring this to the attention of OCCH for direction.**

(The Baptistry Suite)

2.14. While this facility includes a pre-manufactured baptismal pool, the unit does exhibit some troublesome characteristics. No handrail has been included to assist people in getting in or out. The water level is governed totally by presets in the controls and the placement of drains/floats. The presets for this particular unit are not actually filling the unit with quite enough water for the optimum intent. Still, this arrangement has kept there from being any water spillage issues from occurring (a problem at some other facilities) and the congregations have not considered it as a significant problem. One puzzling omission in the installation was a reachable means of opening and closing the drain. The control was in an equipment room accessible only by DPW personnel. **Additional appropriate verbiage to the ASD text could improve the problem for most facilities.**

(Audio/Visual System Issues)

2.15. The performance of the completed A/V system has been excellent and the customer representatives are very happy with it except for a recent problem with the local service provider who has become unresponsive regarding some small but nagging problems in a small part of the system. **This is encouraging, the process of procuring and coordinating these systems is very difficult, but a successful system supports successful ministry in countless ways. The Army regulations that separate this system from the MCA portion of the facility did create some significant problems for the DPW folks and nuisance problems for the building construction contractor. For this facility, the DPW staff was able to turn the final result into a significant success and the congregations really appreciate and make heavy use of every part of the system (when it is all working).**

(The Kitchen Suite)

2.16. This project kitchen has some successes and failures; some aggravated by the MCA and OMA separation of responsibilities, some caused by misapplication of ABA requirements for the handicapped, and some caused by a misunderstanding of the kitchen intent by the designer (and/or funding challenges); the ABA errors were probably aggravated by worries over litigation or at least accusation. The appearance of the completed kitchen is close to the intent, but most of the countertops are not suitable for use by average or tall individuals, the low countertops have forced the use of expensive specialty (under-the-counter) equipment items and the pass-through window does not function at all properly (wrong height). **Aside from the unchangeable MCA versus OMA item issues; these are all areas we have been modifying the language on projects to avoid having this happen again.**

2.17. The kitchen is very short on electrical support and outlet capacity. **The currently developing ASD does include more text to avoid having this happen again.**

(The Blessed Sacrament Space)

2.18. The specific chaplain currently operating the Blessed Sacrament functions would prefer not to have a door between the Blessed Sacrament room and the Reconciliation/Meditation room.

**The CoS has not come across this comment before and the room arrangement is one that was specifically directed by the Roman Catholic consultants to the OCCH. The CoS will check with them about any new direction we are not aware of.**

(The Sacristy and Robing Suite)

2.19. Because the casework in this space was also treated as though only handicapped persons would be using it, a reasonably priced under-counter refrigerator was not available and this function (for wine and juice) is not available as intended. Work surfaces are too low to be comfortable for some staff. Other aspects of the space are functioning as intended. **The CoS has been adding additional verbiage in the ASD text to try to avoid this problem.**

(Multi-purpose/Classroom Spaces)

2.20. The A/V system in one Multi-purpose Room is where the customer is experiencing problems that the equipment supplier has not been responsive about. When the equipment was working the customer very much appreciated it as an asset. The rooms themselves are also considered an excellent and heavily used asset. **Fort Leavenworth staff persons are continuing to work on resolution to this issue and it is hoped that will come about.**

2.21. The operating period has demonstrated (just like past projects) that this facility type needs more and larger classrooms. **This was understood by all parties developing the ASD. However, the need to target a size and cost of facility that would compete better in the regular military appropriation for Army resources, led to the eyes-wide-open (deliberate) compromise to include fewer and smaller classrooms than the known need. Older ASDs tried to hope for a separate project for classrooms; as these almost never materialized, the 2004 ASD was deliberately supplied with some classrooms to try to keep from falling further behind Army-wide. The classrooms in the 2004 ASD are getting intense use.**

2.22. Providing operable partitions between classrooms provides extra flexibility, but the partitions themselves can present problems as well. Some of the partitions have pulled out of the wall at their fixed end and it seems like a better installation/detail might have avoided this. **The CoS team and OCCH continue to monitor the advantages and disadvantages of operable partitions.**

2.23. Providing operable partition storage surrounds does provide benefits, but it also limits visibility in the spaces more greatly than when the partitions are left exposed when rooms are joined. **The currently developing ASD does not use this arrangement.**

(The Toddler Nursery Accommodations)

2.24. The demand for toddler and infant space to support the congregations using this facility far outstrips the expectation of the ASD. The flexibility provided by other classrooms and an adjacent shared classroom building are allowing them to operate their program well, but seeing their operation definitely shows the need for more space for these age levels in the ASD. **The CoS will consult with the OCCH for direction.**

(Vestibules/Lobbies/Corridors/Stairways)

2.25. The staff at this facility did an interesting experiment with the main lobby. In spite of knowing that it would hinder the flow of people in and out of the facility, they added extra seating furniture in the space. The response by congregation members has been significant and this feature has proved to be a significant asset to many of the less formal interactions that add effectiveness to fellowship and ministry. **This was a feature always assumed to be beneficial, but deliberate compromises in space kept it from being a part of the 2004 ASD. It has already been added to the current ASD.**

(Storage Spaces)

2.26. The congregations using this facility have an especially robust religious education program and high volume of small children. To properly support these features, the amount of storage space necessary has far overtaxed the storage space provided for in the ASD. While they (at Fort Leavenworth) have been astonishingly creative in adjusting to this situation, it is also true that this facility example dramatically demonstrates the inadequacy of this aspect of the 2004 ASD. **The 2004 ASD was hampered by outside restrictions that have recently been relaxed. The 2012 ASD will significantly improve on this situation.**

2.27. The storage area under the Activity Center raised platform works very well per se. The doors function well; the carts go in and out smoothly, etc. Contrarily, the door design (wide solid panels between each set of doors) means that only one storage cart can be used where there appears to be space (behind the doors and panels) for two. **These doors appear to be the best operating on any we have seen and it is possible (but uncertain) that the extra solid panel width has produced more strength or something to allow for better function. It is just as possible that a narrow solid panel width would have worked just as well and allowed for much more productive storage. The currently developing ASD does not use this arrangement.**

(Toilet Rooms and Janitor's Closets)

2.28. The toilet rooms are considered to be a major success according to the people using this facility. **The currently developing ASD attempts to maintain or improve upon this level of provision.**

(Building Features and Finishes)

2.29. While ASDs normally try to avoid hardware details, this facility would have benefited by an automatic opening feature at the primary doors such as is usually provided on other Garrison facilities. **While the Garrison provided requirements for RFP's may have been overlooked or gotten changed along the way, it would also be an easy change to include in the ASD and will be incorporated.**

2.30. The RFP translation of the ASD provides guidance about steeple height. The particular height and selection at this facility was complicated by the need to coordinate it with an adjacent facility and differences of opinion. The first steeple selected was deemed too small after it was installed and was changed during construction. In addition the selection of a fiberglass steeple (one of two standard options in the industry) causes the need for some form of fire suppression system for that feature which entails more complexity and maintenance challenges; limiting the steeple to aluminum fabrication (the other standard option in the industry) would be better. **The CoS has seen other examples where differences of opinion and after-the-fact perception have complicated the issue of proper steeple selection. There is no fool-proof formula and there will occasionally need to be adjustments at specific projects. The currently developing ASD does limit steeple fabrication to aluminum.**

2.31. Some of the original light fixtures in the facility had a destructive flaw missed during the pre-manufactured design. The lamp “socket” material was not resistant enough to heat and in normal use the lamps “weld” themselves to the fixture assembly; by the time the lamp wears out, the whole fixture must be replaced. **This problem is quite rare and beyond the scope of the ASD requirements to solve.**

2.32. The facility windows did not come with insect screens. There have been many times when the weather was nice enough they would have liked to open the windows, but have not because of the problem of insects getting in. **The currently developing ASD will be modified to mention screens as a requirement on operable windows.**

2.33. Because of the restrictions on storage space in the 2004 ASD too much of the furniture is traveling through the corridors to get where it is needed. It is aggravated by the high volume of ministry and community activities taking place in the building (although that is, after all, what the purpose of the building is). The corridor partitions are experiencing considerable impact damage and consequent repair procedures. **The currently developing ASD provides much more appropriate quantities of storage and additional requirements for partition protection.**

2.34. The interior colors (which are consistent with CoS provided guidance) appear to be a great success with those people making use of the building and other viewers. **The interior color schemes are always subject to a great many opinions. Consensus is not always possible. This facility demonstrates the benefits of good consensus among interiors professionals and other Project Delivery Team Members.**

2.35. Vinyl Composition Tile (VCT) was selected for the flooring material in many spaces for which the ASD directed otherwise. While that selection functions well in most spaces it does create acoustic problems in the Worship Center. **The currently developing ASD (like the 2004 ASD) requires different (not VCT) flooring finishes for most chapel spaces. For a number of very good reasons, some latitude in choice is always necessary (the different wear characteristics of trainee and family congregations, costs of different materials, etc.). This quantity of VCT flooring is relatively unusual, but for a rare number a facilities it may still provide benefits over other choices.**

(Furniture, Appliances, and Equipment Items)

2.36. The misapplication of ABA requirements (and weaknesses in the ABA itself) has left the customer with insufficient space for standard appliances (not all types). This creates a large financial penalty that should never have occurred. The separation of MCA and OMA responsibilities also caused problems... **Current ASDs contain text that should eliminate the first problem.**

2.37. Various items of furniture are already failing because of weakness in construction, inappropriate fabric (solid color fabric instead of patterned fabric as always recommended by the Interiors professionals with the CoS) or finish (hardwood wear surfaces) choices. The CoS Interiors representative considers these items to be substandard to what would be “normal” for any commercial military facility. **The CoS will check further with Huntsville regarding the suppliers, etc. for these kinds of items (and encourage different suppliers be used or that appropriate quality items be selected when they do purchasing).**

2.38. A digital piano was selected for this facility that has both a piano setting and an organ setting. The facility users are extremely pleased with how it is performing. **The ASD does not directly influence this decision but the CoS will encourage this choice to other Garrisons involved in purchasing chapel items.**

(Equipment Rooms and Systems)

2.39. The building equipment spaces for this facility appear to be excellent for size and arrangement. General project history demonstrates that this is very difficult to accomplish with all of the mutually exclusive variables forced onto ASDs. **The history of Equipment spaces and this ASD is too complex to repeat here, but the CoS was encouraged by the results of many difficult decisions that led to this good result.**

2.40. The Worship Center is experiencing regular incidents of insufficient cooling in warm weather for ideal comfort, especially on days when congregation sizes are at their greatest. **This may be a specific project issue, but the probability is that the solution is simply to change the operating procedure to pre-cool the space to a slightly lower temperature in the few hours before it is to be used. No energy efficient cooling system can be designed to adjust quickly to a massive change in load (hundreds of people arriving in a short time). A highly wasteful system could be designed to do it, but this would not be an appropriate use of Army resources. As an aside, Garrison staff did note that the significant efforts/confrontation by CoS team members about this system design probably avoided a much more serious problem. The same (private company engineering) designer has another building at Fort Leavenworth that is experiencing extreme problems.**

2.41. The particular recessed outlets installed at this facility are experiencing high rates of breakage at the outlet cover/door. **This appears to be a project specific problem that the ASD may not be able to impact. The CoS will look at providing additional verbiage to see if that will help.**

2.42. The places where electrical service is inadequate experience regular tripping of the circuit breakers. Since these are not placed in an accessible location, Garrison staff persons have to be called in for each occurrence. This creates considerable disruption for all involved. **There are rules about access to electrical controls for good reasons; adequate circuits alone might alleviate this conflict but this is not a certainty. The currently developing ASD does include more text to avoid having this happen again.**

2.43. The Army Standard Design requires that the people that use the building have a specific level of control over the HVAC system (to accommodate changes in occupancy load, etc.). At this facility, the people that use/manage the building have not received training to do so or have access to do so. **The ASD's ability to ensure that the whole range of detailed decisions that go into a facility are fulfilled exactly as intended is limited by the sheer volume of them and complexity of the process. This particular situation may yet be remedied.**

(Site Issues)

2.44. This facility was unique in that it was developed in response to the devastating loss of an extremely old historic structure at a nearby location. The emotional attachment to the original site was understandably strong, but that site was small and hemmed in on every side. After some very sensitive and creative design and study efforts it was decided to add this facility to an existing pair of (a chapel building and classroom building) facilities and form an extended "campus". While every facet of what makes an ideal site/building combination was not possible at the selected location (there are drawbacks), experience has shown that the benefits accrued definitely outweigh the drawbacks. The three buildings working together have clearly provided enhanced opportunities for successful ministry. The original site was developed into a simple but beautiful memorial (to the destroyed historic building) park. **While the whole PDT contributed to this success, representatives from the Garrison and the Geographic District (Kansas City District) exercised special leadership in providing this success.**

2.45. The landscaping selection for the lawn areas was ideal for LEED points and sustainability, but the poor initial appearance proved to be a significant source of grief to the facility users and Garrison. This was aggravated by the dramatically different appearance of the other half of the shared "campus". **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.**

### PART THREE, UNIQUE ISSUES

No issues surfaced that are not already recorded elsewhere in this report.

Not Used.

## PART FOUR, THE REVIEW PROCESS AND PARTICIPANTS

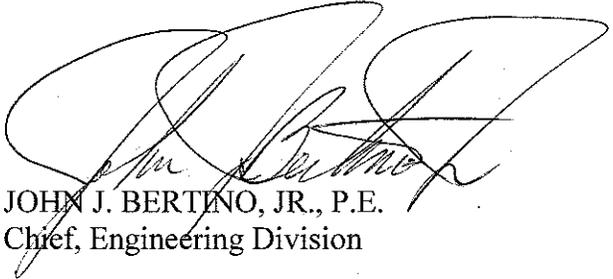
The following team of participants gathered at the Chapel Complex on March 21, 2012. The review process began with a meeting and discussions of lessons learned related issues, descriptions of what congregations are being served and their usage patterns, etc. Once general discussion reached an appropriate point, the team shifted to a tour of the facility with further items brought up as we went.

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