

In the United States Court of Federal Claims

No. 99-294C

Filed: April 29, 2005

TO BE PUBLISHED

C. H. GUERNSEY & CO.,

Plaintiff,

v.

THE UNITED STATES,

Defendant.

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Anton J. Rupert, Geren T. Steiner, Oklahoma City, Oklahoma, for plaintiff.

Andrew P. Averbach, United States Department of Justice, Washington D.C., and **Carlton Arnold, Allen E. Sebastian**, United States Army Corps of Engineers, Louisville, Kentucky, for defendant.

MEMORANDUM OPINION AND ORDER

BRADEN, *Judge*

A subcontractor bid on an important Army training facility without reviewing the underlying Design Plans and Specifications. That act caused a substantial delay in the construction of the project that already was behind schedule because of inclement weather conditions. Rather than explaining the situation to the Army Generals waiting for the facility to be completed and face their displeasure, the United States Army Corps of Engineers decided to complete the project on time, without regard to cost, and then look for a scapegoat.

FACTUAL BACKGROUND¹

A. Design Of The Close Combat Tactical Training Facility, Fort Knox, Kentucky.

On June 6, 1994, the United States Army Corps of Engineers (“Army Corps”) awarded C.H. Guernsey & Co. (“Guernsey”), an architectural and engineering firm with its principal place of business in Oklahoma City, Oklahoma, Contract No. DACA27-94-C-0060 (“Contract”) for the design of a Close Combat Tactical Training Facility (“CCTTF”), to be located in Fort Knox, Kentucky. *See* Jt. Stip. ¶ 1.² Under the terms of Contract No. DACA27-94-C-0060, Guernsey was to provide the Army Corps design services, plans, and specifications in two phases: Concept/Preliminary Design, for a base amount of \$115,366.00; and a Final Design Phase Option for \$184,118.00. *See, e.g.*, JX 1 at B-1; *see also* TR at 127-28. Contract No. DACA27-94-C-0060 also provided that Guernsey would “design and detail a complete and usable facility[.]” *See* JX 1 ¶ C.1. at 3. Section 52.0236-23 therein sets forth the following specific responsibilities of the architect-engineer contractor:

- (a) [Guernsey] shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by [Guernsey] under this contract. [Guernsey] shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services.
- (b) Neither the Government’s review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under

¹ The relevant facts recited herein were derived from: Plaintiff’s May 12, 1999 Petition (“Petition”); Defendant’s September 21, 1999 Answer and Counterclaim (“Gov’t Answer”); June 28, 2004 Joint Stipulations (“Jt. Stip.”); Joint Exhibits (“JX”); Plaintiff’s Exhibits (“PX”); Defendant’s Exhibits (“DX”); and the transcript of trial held July 12-15, 2004 (“TR”).

² “The CCTTF was planned to house a series of networked units containing simulated vehicles and weapons systems of an armor battalion task force. The [Army] Corps wanted a pre-engineered metal building. The [Army] Corps also wanted the exterior of the building to have a red brick facade, to allow it to fit in on the Fort Knox campus. The standard practice within the pre-engineered metal building industry has been for the pre-engineered metal building manufacturer, to the extent permitted within the industry, to custom-design the building within any limitations supplied by the building owner. The building owner, or its designer, provides the metal building manufacturer with the metal building’s dimensions and other criteria, and the metal building manufacturer uses its software to design the steel skeleton that is sufficiently thick and wide, in the correct places, to meet those criteria.” Jt. Stip. ¶¶ 2-4.

this contract or of any cause of action arising out of the performance of this contract, and [Guernsey] shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by [Guernsey]'s negligent performance of any of the services furnished under this contract.

JX 1 at F-52 ("Architect-Engineer clause"). On June 6, 1994, Guernsey received a Notice to Proceed. *See* JX 24.

On October 10, 1994, Guernsey entered into a Consulting Services Contract with Fink, Roberts, and Petrie, Inc. ("Fink") to prepare studies and/or architectural and engineering design services, as required by Guernsey. *See* JX 50. On April 17, 1995, Guernsey submitted a 30% Design Submittal to the Army Corps. *See* JX 2; JX 51; *see also* TR at 363-65, 378. In July 1995, Guernsey submitted a 60% Design Submittal, but did not address in the Design Analysis Section specific lateral deflection values. *See* JX 3 at D.2 ("The supplier will also be directed to limit the lateral deflections to values compatible with the exterior cladding system for both wind and seismic loads. The specific values have not yet been determined."). The Calculations Section of the 60% Design Submittal addressed Deformation Compatibility as follows:

$$\begin{array}{l}
 \text{DEFORMATION CAPABILITY} \\
 \text{BRICK/BLOCK \& MOMENT FRAMES} \\
 - 3R_w/8 \times \Delta \text{ OF FRAMES} \\
 \begin{array}{r}
 \text{Limit supplier to:} \\
 \text{STEEL}
 \end{array}
 \end{array}
 \begin{array}{r}
 14 \\
 \frac{h}{400} \\
 420
 \end{array}
 \begin{array}{r}
 \frac{22(12)}{400} \\
 420
 \end{array}
 = \frac{.40}{.66}
 \begin{array}{r}
 .40 \\
 \frac{.66(3/6)}{8}
 \end{array}
 = \frac{.9''}{1.49''}
 \end{array}$$

MOVEMENT AT TOP OF
BRICK & CMU
CONNECTIONS MUST
ALLOW FOR THIS MOVEMENT

See JX 3 at C-9.

On July 6, 1995, Guernsey provided a Construction Schedule to the Army Corps that estimated 256 days to construct the CCTTF from Notice to Proceed through Project Completion, based on a normal 8 hours a day work week. *See* JX 57 at 7.

On August 18, 1995, Guernsey's Project Manager sent a Confirmation Notice No. 5 including Guernsey's responses to Army Corps' comments on the 60% Design Submittal. *See* JX 4. Confirmation Notice No. 5 also responded to an August 2, 1995 directive from Mr. Russell Boyd, a member of the Army Corps Technical Services Branch, Quality Assurance that directed Guernsey as follows:

Lateral deflection of the Pre-engineered structure *shall be limited to L/600* unless the masonry is isolated from the structure. Deflection is governed by the limits of the masonry.

See JX 4 ¶ 6 at 2 (emphasis added); *see also* TR at 62-63, 91.

Boyd testified that in making this directive he relied on a July 2, 1992 Army Corps Engineer Technical Letter 1110-3-439 for Engineering and Design, Masonry Veneer/Steel Stud Walls (Nonbearing Construction) lifting a moratorium that the Army Corps had imposed on the use of masonry veneer and steel stud systems on military construction projects, because of a continuing problem with brick veneer cracking resulting in rust damage to fasteners on the connections and the failure of those connections. *See* PX 53 ¶ 1; *see also* TR at 105-06. The purpose of the Engineer Technical Letter was to specify what the Army Corps required to solve that problem, *i.e.*, “the limitation of the deflection for the brick.” *See* TR at 120. The Technical Letter provided:

Information contained in this letter lifts the moratorium on the nonbearing wall systems.

* * *

- a. Wall construction. A well defined industry standard is not available for the design of masonry veneer and steel stud systems[.]
- b. Allowable deflection. Industry standards for an allowable service deflection criteria varies widely from L/140³ for tall slender reinforced walls, L/360 for steel studs as recommended by the Metal Lath/Steel Framing Association and L/600 or L/720 for steel studs as recommended by the Brick Institute of America, “L” being the height of the wall in inches.

PX 53 ¶¶ 1, 3a-b, *see also* TR at 103-04.⁴

³ Both the Engineer Technical Letter and the Brick Institute of America used “L” to represent the height of the wall in inches. *See* PX 53, 54. The parties in this case and the Guernsey Plans and Specifications used “H” to represent the same number. *See* TR at 34.

⁴ Contract No. DACA27-94-C-0060 required Guernsey to comply with Army Corps Engineer Technical Letters. *See* JX 1 at 8; *see also* TR at 104-05.

In addition, Boyd relied on February 1987 Technical Notes of the Brick Institute of America (“Brick Institute”) that recommended:

Stiffness Considerations. . . . Many design tables are based on a stud deflection of L/360. Using this stiffness of backup represented by an L/360 deflection may permit more deflection than the veneer is able to tolerate without cracking.

* * *

Stiffness Requirements. Based on observations, experience and judgment, the Brick Institute of America suggests that in order to obtain the stiffness necessary for performance, the maximum deflection that should be permitted for the steel stud backup, when considered alone at full lateral design load, be L/600 to L/720.

PX 54 at 3-4; *see also* TR at 109-10, 119-20.

Guernsey’s Plans and Specifications, however, did not include steel stud walls. *See* TR at 119. Nevertheless, Guernsey’s “action in response” to Boyd’s directive was “[w]ill comply.” *See* JX 4 at Conf. No. 5.

On April 25, 1996, Guernsey submitted a final 100% Design Submittal to the Army Corps that incorporated the H/600 lateral deflection criteria specified in Boyd’s August 2, 1995 directive. *See* JX 5 at D.2, II. Boyd testified that he reviewed the 100% Design Submittal to make sure it complied with what he had requested. TR at 114-15. The 100% Design Submittal also reported that: “[t]he repetitive bay spacing and regular layout of the training portion of the building lends itself well to a pre-engineered metal building. This system is always more economical as long as deviations from the pre-engineered standards are minimized.” *See* JX 5 at D.5, V.

In addition, the final 100% Design Submittal provided that:

Special Deflection Criteria Lateral deflection of pre-engineered building shall be limited to H/600 (.28") deflection for wind or seismic at a height of 14'-0" in the building, @ top of ridge lateral deflection shall be limited to H/125.

* * *

8. If modifications to foundations are required for preengineered building loads, contractor is responsible for redesign and additional construction cost. All column bases are assumed to be pinned.

9. Maximum depths of tapered columns shall be 3'-0".

JX 26 at S100.

B. Construction Of The Close Combat Tactical Training Facility, Fort Knox, Kentucky.

On May 21, 1996, the Army Corps issued Solicitation No. DACA27-96-B-0039 to construct the CCTTF, in accordance with the Guernsey Plans and Specifications. *See* Jt. Stip. ¶ 5; *see also* JX 56. The Army Corps' internal cost estimate for construction was \$5.4 million. *See* Jt. Stip. ¶ 6; *but see* PX 49 (reflecting that the Government's estimate was \$5,561,400). Although the Army Corps fielded questions from potential bidders after the Solicitation issued, no questions were asked about the deflection criteria. *See* TR at 136-37.

On June 25, 1996, the Army Corps received the following bids from general contractors:

MAC Construction & Excavating Inc.:	\$5,782,700
Howard W. Pence Inc:	\$5,344,728
DCO Construction Incorporated:	\$4,844,905

See Jt. Stip. ¶ 7; JX 56.

On June 28, 1996, the Army Corps awarded Contract No. DACA27-96-C-0085 to DCO Construction Incorporated ("DCO"), to function as general contractor and build the CCTTF, in accordance with Guernsey's Plans and Specifications ("DCO Contract"). *See* Jt. Stip. ¶ 8. Guernsey's Plans and Specifications required that the CCTTF metal building system be "an integrated set of mutually dependent components and assemblies that form a building including primary and secondary framing, covering, roofing, and accessories, which are manufactured to permit inspection onsite prior to assembly or erection. A metal building system does not include foundations, mechanical equipment, fire protection, electrical, etc." PX 102 ¶ 1.3.2. The Guernsey Plans and Specifications also provided that the CCTTF metal building system "shall be designed by the system manufacturer as a complete system." PX 102 ¶ 1.4. A notice to proceed was issued on July 18, 1996 and acknowledged by DCO on July 24, 1996. *See* DX 61 at 1. The DCO Contract required completion in 440 days, *i.e.*, by October 7, 1997. *See id.*

DCO selected Gulf States Manufacturers, Inc. ("Gulf States") as a subcontractor to manufacture the pre-engineered metal building. *See* Jt. Stip. ¶ 8; *see also* TR at 740, 742 (Gulf States submitted a bid to DCO to "design and fabricate the materials" for the pre-engineered metal building.). Gulf States's in-house engineer, however, failed to consult the Guernsey Plans and Specifications before submitting Gulf States' September 16, 1996 bid. Instead, "an overaggressive salesman went around the process in a hurry, putting an estimate together, and trying to impress the client." TR at 747; *see also* TR at 742. As a result, the H/600 deflection criteria required by the Guernsey Plans and Specifications was overlooked and Gulf States' estimate assumed a less-restrictive H/100 deflection limit that was much less expensive to implement. *See* TR at 742, 745,

747-48. Because the Guernsey Plans and Specifications were not reviewed, the option of changing to fixed-base columns to accommodate the stringent deflection requirement, was never considered by Gulf States.⁵ See TR at 748-49.

On October 9, 1996, DCO advised the Army Corps that Gulf States “overlooked the H/600 deflection requirement for brick but still insisted [that] using the existing contract design specifications is impractical and not economical.” JX 27 ¶ 1a; *see also* TR at 742, 747. On October 11, 1996, the Army Corps notified Guernsey of DCO’s critique and asked to discuss the H/600 deflection criteria. See JX 21.

On October 17, 1996, Fink forwarded Guernsey “some ideas” about the deflection criteria, but indicated that some of the information may be considered “propaganda” by the masonry industry and metal stud industry. See JX 6 at 1; *see also id.* at 3 (suggesting that they “could relax wind load deflections limit to $h/300$ $14' = .56''$ ”).

On October 21, 1996, the President of DCO sent a letter to Gulf States’ sales representative to proceed with preparation of shop drawings for the CCTTF although “the owner and engineers have not, as of today, resolved the issue of the H600 design requirements.” JX 53. The letter also stated: “I will assume the responsibility for the engineers time and shop drawing preparation cost if the owner decides to cause the requirement to remain at the H600 criteria.” *Id.*

On October 23, 1996, Guernsey’s Project Manager sent a letter to the Project Engineer of the Louisville District Army Corps to advise him about what Guernsey learned after consulting Star Building Systems (“Star”), a pre-engineered metal building manufacturer, about the feasibility of fabricating a rigid frame to meet the deflection criteria. See JX 7. Guernsey reported:

[Star] tested a frame with a 5'-0" depth at the haunch, an H/600 drift limitation at an eave height of 24' and a bay spacing of 24 feet. This resulted in a flange plate 12" wide with a thickness in the range of 1.5".

They also tested a frame with a 4'-0" depth at the haunch, an H/360 drift limitation at an eave height of 24' and a bay spacing of 24 feet. This resulted in a flange plate 10" wide with a thickness in the range of 1.5".

Taking into consideration the above, we recommend that the pre-engineered metal building note number 9 on sheet S100 be changed

⁵ Standard operating procedure required the columns to be pinned, it was rare to use fixed-base columns. See TR at 763. A fixed-base column would only “come back . . . as a suggestion to solve a deflection problem, such as this . . . perhaps you want to pursue going fixed base to solve that problem.” TR at 763.

to allow the depth of the tapered columns to be a maximum of 4'-0" in lieu of 3'-0". Also we recommend that the H/600 drift limitation at the eave be changed to an H/360.

JX 7.

On October 29, 1996, the Army Corps appears to have rejected Guernsey's and Star's advice and instead issued a Memorandum to the Resident Engineer at Fort Knox recommending a modification of the DCO Contract:

This office recommends that subject contract be modified as follows: Drawing S100, Pre-Engineered Metal Building Note #9, be changed to read "Maximum Depth of Tapered Columns shall be 5'-0"."

* * *

Other design options that the contractor may want to consider, such as foundation changes and masonry wall isolation, are welcomed by this office as Value Engineering proposals.

See JX 22 ¶¶ 1, 4.

On October 30, 1996, a meeting between the Army Corps and DCO was held to discuss the following:

1. H/600 will remain in the specifications as long as the metal building is tied to the brick. Block is H/200, Brick is H/600.
2. Check column encasement vs. footers to possibly decrease column size.
3. Option may be to talk with Star Metal Building.
4. Consider value engineering of masonry and separating it from the metal building. Then the buiolding [sic] movement can be reduced from H/600.
5. Guernsey can be used for structural engineering advise [sic] if contracting okay's it.

See JX 28 ¶¶ III.A.1-5.

On November 6, 1996, a bi-weekly progress meeting between the Army Corps and DCO was held. See JX 29; see also TR at 460. The agenda reflects that DCO approached Guernsey to discuss the deflection issue, but Guernsey declined citing a potential conflict of interest. See JX 29 ¶ II.A.1. The agenda also reported that DCO "contacted an engineer who will review the plans and try to separate the masonry from the metal building. There will be an answer within two weeks for design

criteria” and wanted to send engineering data to Guernsey to review the process and approve or disapprove. *See* JX 29 ¶ II.A.2-3.

On November 20, 1996, another meeting took place between the Army Corps and DCO at which the following was discussed: “New design ideas for separating the masonry from the building have been completed. Drawings and data should be ready for the next meeting. [DCO’s CEO] will submit the design change for approval before submitting the complete metal building submittal.” *See* JX 30 ¶ II.A.1. A December 4, 1996 meeting agenda indicated that DCO directly contacted Star to ascertain if Star could manufacture the metal building, because Gulf States had not responded to the proposed design changes. *See* JX 23 ¶ II.A.2.

On December 13, 1996, the Army Corps issued Modification No. P00003 to the DCO Contract, specifying, among other requirements, that drawing S100, Pre-Engineered Metal Building Note 9, be changed to read “Maximum Depth of Tapered Columns shall be 5'-0”.” JX 19 at 2. The Justification For Unpriced Notice To Proceed provided: “Normal procedures were not practicable because this was an *oversight by the designer*[.]” JX 19 at 3 (emphasis added).

On January 23, 1997, the Army Corps, DCO, and Gulf States met to discuss the difficulty of conforming to the H/600 deflection requirement, so the Army Corps offered DCO the option of using fixed-base columns. *See* JX 8. On January 29, 1997, Gulf States sent a letter to DCO reflecting concerns about proceeding in this manner:

1. Using fixed-base columns, the main frame columns along column lines 1 & 17 can be held to a deflection of .28" at the 14'-0 elevation using a column depth of 30" (the overall base plate dimension would be ≈ 40 ").
2. Using fixed-based endwall columns, however, would require a W36 x 300 column to provide the required moment of inertia (19345in^4 .) to maintain .28" deflection. The baseplate for this column would be ≈ 48 " deep. While this could be done, it is neither practical or economical.

To summarize our findings, the building can be built using fixed-base columns. However, . . . the depth of the endwall columns [do not] make it practical to use this method. The only other solution . . . is to isolate the masonry from the building columns, maintaining the H/600 requirement for the masonry, while allowing greater movement in the columns.

If you wish us to re-price the building using fixed-based design, please let us know. We will be happy to provide your foundation

designer with the reactions so he can re-design the footings. Also be aware that the delivery time for large hot-rolled columns such as the

W36 x 300 can be extremely long and unpredictable due to the fact that we are at the mercy of the steel mills' schedule.

JX 9.

On February 4, 1997, a Professional Engineer and Authorized Representative of the Army Corps' Contracting Officer sent a letter to advise Guernsey that: "We have determined that C.H. Guernsey has not met the standard of care reasonably associated with design of a pre-engineered metal building. Standard practice would include preliminary calculations or calculations by a pre-engineered metal building supplier that would verify typical column sizes." JX 10. The letter further stated:

C.H. Guernsey is hereby requested to provide design calculations, specifications and drawings to isolate the masonry wall from the pre-engineered metal building within 21 calendar days from receipt of this letter. I consider this effort to be within the scope of your contract therefore no additional payment is offered.

* * *

C.H. Guernsey's performance to resolve this design issue will be reflected in the final A/E evaluation process The current evaluation on this contract submitted during the design phase is "average" with "unsatisfactory" on the attribute of Quality Control Procedures and Execution.

Id.

On February 10, 1997, Guernsey responded:

[We] disagree that the design of the pre-engineered metal building cannot be met by the metal building suppliers. We have been in contact with our local representative and have been assured that the design does not present unrealistic expectations from either a constructability or cost stand point. They are currently working on structural calculations to show the feasibility of the design.

If their efforts show that the proposed solution would be unrealistic, we would certainly redesign the foundation systems to isolate the masonry wall as requested at no additional cost to the government.

JX 11.

On February 19, 1997, Star's Sales Engineer for Estimating Services sent a letter to American Contracting, another contractor, with a copy to the Army Corps and Guernsey, discussing the viability of the "Fort Knox job" and reporting that the latest specifications and load criteria were beyond Star's manufacturing capabilities. *See* JX 32; *see also* TR at 159. The letter also stated that "[t]he change in the interior column location coupled with the new HVAC unit loading and ASCE 7 wind criteria pushed the deflection of the wall beyond our frames capability to resist them. . . . The H/600 criteria is asking an engineered metal building to perform beyond its capabilities." JX 32. Star's Sales Engineer for Estimating Services testified that this letter discussed a pinned-base design and did not express an opinion as to a fixed-base design. *See* TR at 770.

On February 20, 1997, Fink forwarded Guernsey and the Corps of Engineers additional sketches and notes about the deflection criteria situation. *See* JX 14, 15. A telephone conference was convened thereafter.⁶ Fink also provided the Army Corps with follow-up materials, attaching a derivation for "allowing a cantilever to deflect H/300 is the same as allowing a simply supported beam to deflect H/600 at midspan." JX 13. On February 20, 1997, the Army Corps also sent a letter

⁶ On February 21, 1997, Fink summarized the February 20, 1997 telephone conference in a memorandum:

The structural drawings currently state the deflection shall be limited to .28 inches at a point 14'-0" above the slab on grade. The requirement was put on the drawings as a result of comments provided by the Corps of Engineers on the 60% submittal.

We discussed the intent of the L/600 and agreed this is normally used for a simple span condition with the limiting deflection applying to the midspan. The building drift is not the same as this.

It was agreed that limiting the deflection at the top of the wall to H/300 is the same as limiting the deflection at midspan of a simply supported beam to L/600.

The position was taken that if a deflection of L/600 is acceptable for a simply support beam then is [sic] would also be acceptable to limit the building drift to H/300.

JX 16.

to confirm that Guernsey agreed with the request to redesign the foundation systems to isolate the masonry wall at no additional cost and that such design calculations, specifications and drawings would be submitted by February 26, 1997. *See* JX 33.

On February 24, 1997, Army Corps' Project Engineer prepared a Business Clearance Memorandum reflecting that DCO requested an extension for contract performance of 52 calendar days for the period July 25, 1996 to December 31, 1996 because of abnormal rain and cold. *See* PX 68.⁷ On February 28, 1997, the Army Corps issued Modification P00005 extending DCO's period of performance by 52 days. *Id.*

On March 3, 1997, Guernsey answered the Army Corps' February 20, 1997 letter stating that the issue of constructability was the result of a misinterpretation of the design intent and subsequent misrepresentation or mis-application of the design parameters. *See* JX 34. Guernsey reported, however, that "all parties are in agreement that the facility can be constructed, given the revised interpretation of the Louisville District COE criteria, without further change to the current plans and specifications." *Id.*

On March 4, 1997, Fink provided Guernsey with calculations to revise the Plans and Specifications: "The special deflection criteria note [on S100] will read 'Lateral deflection of preengineered building frames and wind columns shall be limited to an H/300 (.56") deflection at a height of 14'-0" in the building.'" JX 17. On March 5, 1997, Guernsey confirmed that Gulf States could design and furnish a metal building, pursuant to this revised criteria. *See* JX 18. That same day, however, the Army Corps' Resident Engineer and Contracting Officer representative received a memorandum from the Engineering Division, A.E. Management Branch, recommending that Guernsey be issued an interim rating of "poor" for the construction phase of the DCO Contract. *See* JX 27.⁸

On March 26, 1997, the Army Corps amended DCO's Contract to include the following provision:

- d. Also, on Contract Drawing S100, the Lateral Deflection Criteria shall be changed to read "Lateral Deflection of Pre-Engineered Building frames and wind columns shall be

⁷ DCO reported to the Army Corps that 10 days of performance were lost in October 1996 and 31 days in December 1996 due to inclement weather or wet site conditions. *See* PX 67; *see also* TR at 834 (Mr. Walter Rives, Civil Engineer, Construction Division, Contract Administration Branch, Army Corps, Louisville District testified that two modifications were issued for a total of 104 calendar days for the period December 1996 - February 1997).

⁸ DCO previously advised the Army Corps that, due to inclement weather or wet site conditions on the project, DCO lost 31 days in January 1997, 28 days in February 1997, and 31 days in March 1997. *See* PX 97; *see also* TR at 834.

limited to an H/300 (0.56") deflection at a height of 14'-0" in the building." Refer to attached revised Drawing S100.

JX 20 at 2.

On May 9, 1997, the Army Corps once again amended the DCO Contract, granting an extension of an additional 52 calendar days due to unusually severe weather during the period January 1, 1997 through March 31, 1997. *See* PX 97; *see also* TR at 834.

C. DCO Construction Seeks Additional Compensation To Construct The CCTTF.

On July 22, 1997, DCO requested a change order and submitted a pricing proposal to the Army Corps requesting an additional \$1,136,240.38 to construct the CCTTF. *See* DX 56; *see also* TR at 507, 536.⁹ On September 11, 1997, DCO was advised that the pricing proposal contained inadequate information and requested itemized breakdowns. *See* JX 41. On October 14, 1997, DCO responded by submitting additional supporting documentation and requested to negotiate the claim no later than November 17, 1997. *See* DX 57.

On December 23, 1997, the Army Corps prepared a Construction Cost Estimate for the pre-engineered building changes in the amount of \$458,081.38. *See* DX 58 at 2-6. On January 8, 1998, a PreNegotiation Objective Price/Cost Analysis for "04- Pre-Engineered Building Changes" was prepared by the Army Corps indicating that DCO's proposal for the change order for delays and the redesign of the pre-engineered building was \$1,136,240.38, although the target objective was \$485,078 and the Government's estimate was \$485,081.38. *See* DX 59 at 1. The PreNegotiation Objective Price/Cost Analysis also indicated that a fair and reasonable settlement would be reached with the contractor in the \$440,000.00-\$485,078.00 range. *See* DX 59 at 2. Nevertheless, on January 12, 1997, the Army Corps prepared an additional Construction Cost Estimate for the pre-engineered building changes in the amount of \$706,181.99. *See* DX 58 at 12.

On April 8, 1998, Modification No. P00022 to the DCO Contract was issued, increasing the contract price by \$373,899.00 for all direct costs, including four months extended overhead, and extending the performance period by 121 days. *See* JX 43.¹⁰ This modification, however, represented only a partial settlement of DCO's claim for increased construction costs. Not surprisingly, on or about April 8, 1998, Guernsey also received a letter from the Army Corps advising Guernsey that it was responsible for a design deficiency that caused delay of the DCO

⁹ Sometime during contract performance in 1996-1998, however, Mr. Terry Childers took over ownership and control of DCO, because the former owner was "not doing a good job." PX 99; *see also* TR at 835.

¹⁰ The effective date of Modification P00022 was back-dated to December 13, 1996. *See* JX 43, Item 3.

Contract by 145 days of the actual 168 day delay. *See* JX 37. Guernsey was warned, however, that the total cost of the delay could not be determined until settlement was reached with DCO. *Id.*

On May 1, 1998, Guernsey requested the documentation discussed in the Army Corps's April 8, 1998 letter. *See* PX 33. On June 5, 1998, DCO's modification cost proposal was forwarded to Guernsey evidencing that the Army Corps had entered into a partial settlement with DCO in the amount of \$373,899.00. *See* JX 38. Guernsey was invited to participate in final negotiations "with the intent of [Guernsey] being willing to pay the contractor directly for the portion for which you are responsible." *Id.* On June 25, 1998, Guernsey declined and advised the Army Corps that all of this information was forwarded to Guernsey's attorney and insurance carrier. *See* PX 35.

On July 12, 1998, the Construction Division Chief for the Army Corps prepared a Memorandum to the Branch Manager of the Defense Contract Audit Agency in New Orleans requesting an audit of DCO's indirect costs. *See* DX 61 at 61/5-10. On July 28, 1998, a Memorandum also was sent to the Defense Contract Audit Agency requesting an audit of Gulf States. *See* DX 61 at 61/1-4. On August 5, 1998, the Defense Contract Audit Agency issued an Audit Report. *See* DX 62. The report stated that "the G&A expense rates claimed in the contractor's letter dated 12 June, 1998 include unallowable costs and have been calculated using an allocation base that does not allocate the costs on an equitable basis." *Id.* at 62/3. The audit resulted in Gulf States issuing a change order revising the total price to \$627,716.00. *Id.* at 62/31.

On August 5, 1998, Guernsey advised the Army Corps that the original requirements for the metal building in the design documents had been re-checked and confirmed that they were "correct and entirely constructable without design modification." JX 39. Guernsey also stated that the options presented in Guernsey's October 23, 1996 letter were not required to "correct" the original design requirements, but to accommodate DCO. *Id.* Therefore, Guernsey asserted that any delay or damage was the direct result of Gulf States' failure to consult and conform to the bid documents and the subsequent decision of the Army Corps to change the design requirements. *Id.* It is not clear from the record whether Guernsey was aware at that time of the extensions that the Army Corps gave to DCO because of inclement weather.

On August 14, 1998, the Army Corps requested that Guernsey supply the name of the manufacturer that could satisfy the original design requirements without modification and within fourteen days. *See* JX 40. The Army Corps also restated that Guernsey's negligence in the design of the pre-engineered metal building caused a 145 day contract delay and resulted in additional costs of \$486,000. *Id.* Guernsey was advised that if the requested information was not received within fourteen days, a final decision would be issued assessing Guernsey with the total cost of the delay. *Id.* Guernsey did not respond to the Contracting Officer's August 14, 1998 demand.

On February 11, 1999, the Army Corps' Contracting Officer issued a Final Decision on responsibility for DCO contract modifications for pre-engineered metal building changes concluding that, under the Architect-Engineer clause of Contract No. DACA27-94-C-0060, Guernsey was negligent in the design of the pre-engineered metal building and responsible for 145 days of contract

delay, *i.e.*, from October 11, 1996, the date Guernsey was notified of the problem to March 5, 1997, the date the changes were accepted by the Army Corps. *See* JX 21; *see also* Jt. Stip. ¶ 9. The Final Decision did not reflect that between July 25, 1996 and March 31, 1997 the CCTTF project was delayed by inclement weather. *See* PX 67, 68, 97; *see also* TR at 834. The total cost of the delay now was assessed at \$716,000, including DCO's extended overhead and material prices. *See* JX 21. Guernsey was advised, however, that the exact cost would be determined when final settlement was reached with the contractor. *See* JX 21.

On April 29, 1999, an additional Army Corps Construction Cost Estimate for the period October - March 1997 was prepared by Mr. Childs independent of DCO's proposal and was approved by Carroll D. Winslow, Contract Administrator. *See* DX 58 at 58/14-19. This Cost Estimate indicated a total revised cost of \$706,181.99 for material, labor, and impact for this period. *Id.* at 58/14.

On June 17, 1999, Modification No. P00046 was issued by the Army Corps increasing Modification No. P00022 by \$342,101.00, for a total final adjustment of \$716,000.00, and extending DCO's contract performance by an additional 90 calendar days for a total extension of 211 days. *See* JX 44. The effective date of Modification P00046 was back-dated to September 28, 1998. *See* JX 44, Item 3.

PROCEDURAL HISTORY

On May 12, 1999, Guernsey filed a Petition in the United States Court of Federal Claims seeking review of the Final Decision of the Army Corps' Contracting Officer, pursuant to 41 U.S.C. § 601 *et seq.*, assessing Guernsey with \$716,000.00 in delay damages. *See* Petition at ¶¶ 25-26.¹¹ The case was assigned to the Honorable Bohdan A. Futey. On September 21, 1999, an Answer and Counterclaim was filed claiming that the Government was entitled to recover from Guernsey the amounts paid by the Army Corps to DCO Construction, because of Guernsey's "negligent design in failing to design a building that could be built using a prefabricated metal building[.]" *See* Gov't Counterclaim at ¶ 37. On October 29, 1999, Guernsey filed a response.

* * *

Four years later, the case was reassigned to the undersigned judge on August 15, 2003. The court convened a status conference on September 24, 2003. On October 8, 2003, January 16, 2004, March 3, 2004, and April 7, 2004, the court entered Scheduling Orders establishing a pre-trial briefing schedule, trial date, and a pre-trial conference.

On May 10, 2004, Guernsey filed a Memorandum of Contentions of Fact and Law. On May 25, 2004, Guernsey filed a Motion for Leave to File an Amended Memorandum of Contentions of

¹¹ The parties stipulated that Guernsey timely appealed the Contracting Officer's Final Decision by filing an action in the United States Court of Federal Claims. *See* Jt. Stip. ¶ 9.

Law and Fact. On May 28, 2004, the court granted that motion. On June 3, 2004, Guernsey filed an Amended Memorandum of Contentions of Fact and Law. On June 24, 2004, the Government filed a Memorandum of Contentions of Fact and Law. On June 28, 2004, the parties' filed Joint Stipulations. The court held a pretrial conference on July 6, 2004.

A trial was held in Washington, D.C., on July 12-15, 2004, during which the court heard testimony from thirteen witnesses.¹²

On August 2, 2004, the court entered a Scheduling Order for post-trial briefing. On August 20, 2004, the Government filed supplemental materials requested by the court. On the same date, Guernsey filed a Motion to Submit Supplemental Demonstrative Exhibit 111.¹³

¹² The Government's fact witnesses were: Mr. Russell Boyd, Project Manager for Fort Knox Projects, Army Corps since 1999, and a former member of the Technical Services Branch, Quality Assurance of the Army Corps during 1994-95 and a former Project Architect in the Design Branch of the Army Corps during 1996-1999; Mr. Michael Goodman, Project Manager on Military Construction for the Army Corps since 2001, and a former Project Engineer, Army Corps, Engineering Division, Louisville District during 1994-1997; Ms. Janet Henderzahn, Branch Chief and Supervisory Contract Specialist for the Army Corps since 1992; Mr. Verle John Heindselman, Jr., Chief of the Cost Engineering Section, Local District, Army Corps since 2000, a former Cost Estimating Section Chief, Army Corps until 2000, and a former Cost Engineer, Cost Engineering Section, of the Army Corps from 1985-2000; Mr. James Arthur Childs, Construction Manager and Project Engineer for the Army Corps; Mr. Scott Rouse, Senior Project Manager and former Project Manager, Fink, Roberts and Petrie, Indianapolis, Indiana since 1991; Mr. James McCoy, Structural Engineer, Design Branch, Army Corps since 1996 and a former Structural Engineer for the AE Review Section, Quality Assurance, until that Section merged into the Design Branch in 1983; Mr. Walter Rives, Civil Engineer, Construction Division, Contract Administration Branch, Army Corps, Louisville District and employed by the Army Corps since 1982; and Mr. Pat Carroll, current Senior Vice President of C.H. Guernsey and employed with C.H. Guernsey since 1973.

Guernsey's fact witnesses were: Mr. Bobby Lindsey, Manager of Estimating, Gulf States Manufacturers, Starkville, Mississippi, and employed with Gulf States Manufacturers since 1972 and Mr. Richard G. Starks, Jr., Star Building Systems, Oklahoma City, Oklahoma.

The Government's expert witness was Mr. Donald L. Johnson, Consulting Professional Engineer, and a former Professional Engineer with Butler Manufacturing Company, Kansas City, Missouri, from 1956 until retirement in 1996.

Guernsey's expert witness was Mr. Robert Charles Zahl, a licensed Architect, Structural Engineer and Chairman of the Board and Corporate President, Zahl-Ford, Inc., Structural Consultants since 1980.

¹³ Plaintiff's Demonstrative Exhibit 111 is a compact disc containing a 4-½ minute video of plaintiff's counsel describing how Demonstrative Exhibit 106, a model of a steel moment frame, was used at trial. In the video, plaintiff's counsel discusses the east/west movement of the frame, north/south movement of the frame, "x" bracing, pinned and fixed columns, and end wall columns.

On August 30, 2004, the parties jointly filed Trial Exhibits.¹⁴ On September 8, 2004, the Government filed a response to Guernsey's Motion to Submit Supplemental Demonstrative Exhibit. At the request of the parties, the court amended the Scheduling Order to set post-trial briefing for September 23, 2004. On October 4, 2004, Guernsey filed a Post Trial Brief ("Guernsey Post Trial Brief") and the Government filed a Post-Trial Brief ("Gov't Post Trial Brief"). On October 22, 2004, Guernsey filed a Post-Trial Reply Brief ("Guernsey Post-Trial Reply") and the Government filed a Response to Guernsey Post-Trial Brief ("Gov't Post-Trial Reply").

DISCUSSION

A. Jurisdiction.

The United States Court of Federal Claims has "jurisdiction to render judgment upon any claim by or against, or dispute with, a contractor arising under . . . the Contract Disputes Act of 1978, including a dispute concerning termination of a contract, rights in tangible or intangible property, compliance with cost accounting standards, and other nonmonetary disputes on which a decision of the contracting officer has been issued under section 6 of that Act." 28 U.S.C. § 1491(a)(2); *see Alliant Techsystems, Inc. v. United States*, 178 F.3d 1260, 1270 (Fed. Cir. 1999) (holding that "the Tucker Act grants the United States Court of Federal Claims jurisdiction to grant nonmonetary relief in connection with contractor claims, including claims requesting an interpretation of contract terms.").

The Government argued that plaintiff's counsel's argument is not evidence, the video is slanted toward plaintiff's theory of the case, and the Government will be prejudiced for being denied the right to cross examination. All of the matters discussed on the video previously were discussed by witnesses at trial. Thus, the court has determined that Demonstrative Exhibit 111 is not relevant and, at best, cumulative. *See* FED. R. EVID. 403 ("Although relevant, evidence may be excluded by considerations of . . . needless presentation of cumulative evidence."). Plaintiff's motion is denied.

¹⁴ The following Government exhibits were admitted into evidence: DX 34, DX 55, DX 59, DX 60A, DX 60B, DX 60C, DX 60D, DX 60E, DX 60F, DX 61A, DX 61B, DX 62A. *See* Jt. Notice of Filing of Parties' Exhibits. In addition, the following Government's exhibits were admitted at the trial for a purpose other than for the truth of the matter asserted: DX 56-58, DX 58A. *Id.* In addition, the following Government's exhibit was introduced at the trial as a demonstrative exhibit: DX 70. *Id.*

The following plaintiff's exhibits were admitted into evidence: PX 42, PX 52-54, PX 86, PX 89, PX 102, PX 108. *See* Jt. Notice of Filing of Parties' Exhibits. In addition, other plaintiff's exhibits were admitted at the trial as demonstrative exhibits: PX 104-107, PX 109-110. *Id.*

The record also includes the following Joint Trial Exhibits that were admitted into evidence: JX 1-41, JX 43-44, JX 48-50, JX 56. *See* Jt. Notice of Filing of Parties' Exhibits.

Section 6 of the Contract Disputes Act provides that claims relating to a contract by a contractor or the Government shall be submitted to the contracting officer for a decision and that the contracting officer's decision shall be in writing and furnished to the contractor, stating the reasons for the decision and informing the contractor of its rights thereunder. *See* 41 U.S.C. § 605(a); *see also Alliant Techsystems, Inc.*, 178 F.3d at 1267. The Contract Disputes Act also provides that the "contracting officer's decision on the claim shall be final and conclusive and not subject to review by any forum, tribunal, or Government agency, unless an appeal or suit is timely commenced as authorized by this chapter." 41 U.S.C. § 605(b).

The United States Court of Appeals for the Federal Circuit has "enforced the strict limits of the [Contract Disputes Act] as 'jurisdictional prerequisites to any appeal.'" *England v. The Swanson Group, Inc.*, 353 F.3d 1375, 1379 (Fed. Cir. 2004) (citing *Sharman Co. v. United States*, 2 F.3d 1564, 1569 n.6 (Fed. Cir. 1993), *overruled on other grounds by Reflectone, Inc. v. Dalton*, 60 F.3d 1572 (Fed. Cir. 1995)). Accordingly, "jurisdiction over an appeal of a contracting officer's decision is lacking unless the contractor's claim is first presented to the contracting officer and that officer renders a final decision on the claim." *The Swanson Group*, 353 F.3d at 1379; *see also James M. Ellett Constr. Co. v. United States*, 93 F.3d 1537, 1541-42 (Fed. Cir. 1996) ("Thus for the [United States Court of Federal Claims] to have jurisdiction under the [Contract Disputes Act], there must be both a valid claim, a term the act leaves undefined, and a contracting officer's final decision on that claim.").

In this case, Guernsey seeks review of the Contracting Officer's February 11, 1999 Final Decision and a Declaratory Judgment. There is no dispute that a valid contract existed between Guernsey and the Government. *See* Jt. Stip. at ¶ 1. And, that the Government's claim against Guernsey was presented to the Contracting Officer and a Final Decision was rendered. *Id.* at ¶ 9; *see also* JX 21. Nevertheless, the court does not have jurisdiction to grant declaratory relief because plaintiff's contract claim was filed well after Contract No. DACA27-94-C-0060 with the Government had been awarded. *See Massie v. United States*, 226 F.3d 1318, 1321 (Fed. Cir. 2000) ("Except in strictly limited circumstances, there is no provision in the Tucker Act authorizing the [United States] Court of Federal Claims to order equitable relief.") (citations omitted).

The Government, however, has asserted a counterclaim or set-off for money damages for "negligent performance" of the services Guernsey provided under contract. *See* 28 U.S.C. § 1503 ("The United States Court of Federal Claims shall have jurisdiction to render judgment upon any set-off or demand by the United States against any plaintiff in such court."); *see also* 28 U.S.C. § 2508 ("Upon the trial of any suit in the United States Court of Federal Claims in which any setoff, counterclaim, claim for damages, or other demand is set up on the part of the United States against any plaintiff making claim against the United States in said court, the court shall hear and determine such claim or demand both for and against the United States and plaintiff."). Although the Tucker Act expressly prohibits the United States Court of Federal Claims from exercising jurisdiction over cases "sounding in tort," the United States Court of Appeals for the Federal Circuit has held that "where a tort claim stems from a breach of contract, the cause of action is ultimately one arising in contract, and thus is properly within the exclusive jurisdiction of the [United States] Court of Federal

Claims[.]” *Awad v. United States*, 301 F.3d 1367, 1372 (Fed. Cir. 2002); *see also Wood v. United States*, 961 F.2d 195, 198 (Fed. Cir. 1992) (quoting *San Carlos Irrigation and Drainage Dist. v. United States*, 877 F.2d 957, 960 (Fed. Cir. 1989)) (“If an action arises ‘primarily from a contractual undertaking,’ jurisdiction lies in the [United States] Claims Court ‘regardless of the fact that the loss resulted from the negligent manner in which defendant performed its contract.’”). Therefore, the Government’s counterclaim properly is presented as one for breach of contract, even though the breach is alleged to have occurred as a result of Guernsey’s negligence.¹⁵ Accordingly, the court has determined that it has jurisdiction to adjudicate the Government’s counterclaim in this case.

B. Standard Of Review.

The Contract Disputes Act provides that “any action under [the CDA] . . . shall proceed *de novo* in accordance with the rules of the appropriate court.” 41 U.S.C. § 609(a)(3); *see Renegotiation Bd. v. Bannerkraft Clothing Co.*, 415 U.S. 1, 23 (1974) (“*de novo* proceeding . . . is unfettered by any prejudice from the agency proceeding and free from any claim that the [prior] determination is supported by substantial evidence.”); *see also Wilner v. United States*, 24 F.3d 1397, 1401-02 (Fed. Cir. 1994) (“*De novo* review precludes reliance upon the presumed correctness of the [Contracting Officer’s] decision.”). No deference is afforded findings of fact in a contracting officer’s final decision. *See id.* at 1402 (“[T]he parties start in court . . . with a clean slate.”); *see also Assurance Co. v. United States*, 813 F.2d 1202, 1206 (Fed. Cir. 1987) (“[T]he Disputes Act itself suggests that, where an appeal is taken to a board or court, the contracting officer’s award is not to be treated as if it were the unappealed determination of a lower tribunal which is owed special deference or acceptance on appeal.”).

C. Choice Of Law.

The court requested that the parties brief the issue of what law governs a claim for negligent breach of contract. Federal law governs contracts to which the Government is a party, not the law of the state where the contracts are made or performed. *See Prudential Ins. Co. of America v. United States*, 801 F.2d 1295, 1298 (Fed. Cir. 1986)) (“To the extent existing federal law is not

¹⁵ Although the Contract Disputes Act does not define “claim,” that term is defined in the Federal Acquisition Regulation as “a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract.” 48 C.F.R. § 2.101. For claims exceeding \$100,000, the contractor must certify that: the claim is made in good faith; the supporting data is accurate and complete; and the amount requested accurately reflects the amount for which the contractor believes the Government is liable. *See* 41 U.S.C. § 605(c)(1). Government claims, however, do not require certification. *See Placeway Constr. Corp. v. United States*, 920 F.2d 903, 906-07 (Fed. Cir. 1990) (holding that Government claim seeking incidental and consequential damages for plaintiff’s alleged breach of contract did not require certification).

determinative of the issue and permits an area of choice between the merits of competing principles, the best in modern decision and discussion, including the general principles of contract . . . law, should be taken into account.”); *see also Dureiko v. United States*, 209 F.3d 1345, 1356 (Fed. Cir. 2000) (holding that release would be interpreted according to federal law where the federal government was a party to the release); *Ginsberg v. Austin*, 968 F.2d 1198, 1200 (Fed. Cir. 1992) (“Since federal law does not answer the issue, we look to general property and contract law principles as they are embodied in state law pronouncements.”); *Forman v. United States*, 767 F.2d 875, 879 (Fed. Cir. 1985) (holding that federal law governed interpretation of lease where lease involved general postal form adopted for reasons peculiar to the postal service). Therefore, the court has relied on federal law and where necessary, general contract law principles. *See Ginsberg*, 968 F.2d at 1200.

D. Applicable Law.

To recover for breach of contract, a party “must allege and establish (1) a valid contract between the parties, (2) an obligation or duty arising out of the contract, (3) a breach of that duty, and (4) damages caused by the breach.” *See San Carlos Irrigation and Drainage Dist. v. United States*, 877 F.2d 957, 959 (Fed. Cir. 1989).

The standard of care by which an alleged claim of negligence of an architect-engineer is evaluated is: “An architect must exercise such care, skill, and diligence as others who are engaged in the profession would ordinarily exercise under similar circumstances, and statutory provisions regulating the profession of architecture may expressly so provide.” 6 C.J.S. *Architects* § 16 (2004);¹⁶ *see also* John W. Hays, *Construction Defect Claims Against Design Professionals and Contractors*, 23 CONSTRUCTION LAWYER 9 at *1 (Spring 2003) (“The common law standard of care requires design professionals to exercise reasonable care in applying their skills, abilities, and judgment. . . . Proving reasonable care requires, at a minimum, that design professionals perform their duties in a way consistent with the way other design professionals would have performed under similar circumstances.”); Philip L. Bruner & Patrick J. O’Connor, Jr., BRUNER & O’CONNOR ON CONSTRUCTION LAW § 17:40, 631-32 (2002) (“BRUNER & O’CONNOR”) (“A designer must exercise

¹⁶ The Board of Contract Appeals recognizes the Architect Section of CORPUS JURIS SECUNDUM as the “applicable law” to interpret the “Responsibility of the Architect-Engineer” clause. *See, e.g., Ralph M. Parsons Co.*, 85-1 BCA ¶ 17,787, 1984 WL 13893 at 33 (1984) (citing *Clovis Heimsath and Associates*, 83-1 BCA ¶ 16,133, 1982 WL 7871 (1982)) (“[T]he issue before the Board was ‘whether [the architect] properly performed its contractual duty to exercise and apply its architectural skill, ability and judgment reasonably and without neglect in connection with the said design.’”); *see also Brunson Associates, Inc.*, 94-2 BCA ¶ 26,936, 1994 WL 226528 at 13 (1994) (“[The Architect-Engineer] is contractually obligated under the Architect-Engineer clause to exercise its architectural skill, ability and judgment with reasonable care and without negligence.”); *Swan Wooster Eng’g*, 87-2 BCA ¶ 19,894, 1987 WL 40990 at 17 (1987) (“[T]he correct standard to be applied in determining [architect/engineer] liability is that degree of ordinary and reasonable care, skill and diligence as would be expected from an average member of the profession.”).

reasonable care, technical skill and ability, and diligence, as is ordinarily required of similar designers in the locality in preparing plans and specifications.”). In addition, design compliance is “an essential element” in evaluating a claim for “negligently preparing defective plans and specifications.” BRUNER & O’CONNOR § 17:40 at 636; *see also Lafaye Associates, Inc.*, 89-1 BCA ¶ 21,270, 1988 WL 115898 at 40 (1988) (“An essential element required to demonstrate [architect/engineer] negligence in furnishing defective specifications, is a threshold showing that the government’s construction contractor complied with those plans and specifications in attempting to accomplish the work required by his contract with the government.”).

In the absence of an express agreement, “an architect, like a physician or lawyer, does not guaranty, imply, or warrant a perfect plan, or favorable or satisfactory results. It follows that an architect’s work can be inaccurate or imperfect without being an actionable deviation from the standard of care.” 6 C.J.S. *Architects* § 16; *see, e.g.*, BRUNER & O’CONNOR § 17:40 at 631 (“Unless they otherwise agree, designers are not required under the common law standard of care to prepare perfect plans and specifications.”); Murray H. Wright & David E. Boelzner, *Quantifying Liability Under The Architect’s Standard of Care*, 29 U. RICH. L. REV. 1471, 1484, 1486 (1995) (“In any sizable project, it is possible, indeed inevitable, that the architect will err without any volitional dereliction of duty. . . . In the context of an intricate project, errors and omissions inevitably arise despite the architect’s requisite level of skill and the exercise of that skill[.]”).

To determine whether an act is negligent and where neither the mandatory requirements of the contract nor applicable statutes delineate how to determine negligence, the act “must involve a risk which could or should have been foreseen by the actor.” *Elmore Moving and Storage, Inc. v. United States*, 845 F.2d 1001, 1004 (Fed. Cir. 1988); *see also* RESTATEMENT (SECOND) OF TORTS (1965) § 289 cmt. b (1965) (“Not only must the act involve a risk which the actor realizes or should realize, but the risk which is realized or should be realized must be unreasonable.”). A finding of negligence is “treated as factual in nature when it involves applying established law to the facts at issue without creating legal precedent.” *Lennox v. Principi*, 353 F.3d 941, 945 (Fed. Cir. 2003) (citing *Armstrong v. United States*, 756 F.2d 1407, 1409 (9th Cir. 1985) (“[T]he determination of negligence requires the testing of particular facts against a predetermined standard of conduct. The existence and extent of a duty of care are questions of law but whether such a duty has been breached [is a question of fact.]”); *Bryant v. Hall*, 238 F.2d 783, 787 (5th Cir. 1956) (“Where . . . not only the facts constituting the conduct of the parties, but also the standard of care which they should have exercised, are to be determined, the case is entirely one of fact[.]”); *see also* Arthur R. Miller, *The Pretrial Rush to Judgment: Are the “Litigation Explosion,” “Liability Crisis,” and Efficiency Cliches Eroding Our Day in Court and Jury Trial Commitments?*, 78 N.Y.U. L. REV. 981, 1083-84 (2003) (“Negligence is the paradigmatic mixed question of law and fact . . . in this context [*i.e.*, where the legal standard is certain], the [fact finder] is not simply determining ‘what happened’ – the historical facts – it is also determining the legal effect of its findings as to ‘what happened.’”).

E. The Arguments Of The Parties.

1. The Government's Argument.

The Government argued that Guernsey, as the engineer of record, was responsible for setting the H/600 deflection criteria in the Plans and Specifications, although the H/600 criteria originally was suggested by the Army Corps. *Compare* Gov't Post-Trial Brief at 7-9 *with* JX 4 ¶ 6. The Government also argued that Guernsey breached Contract No. DACA27-94-C-0060 by negligently failing to exercise professional judgment in setting overly-restrictive criteria for the pre-engineered metal building. *See* Gov't Post-Trial Brief at 7-11. The Government further argued that the overly-restrictive H/600 deflection criteria rendered the design submitted by Guernsey not constructable as a pre-engineered metal building, because the steel frames for the metal building could not be fabricated using an autowelder. *Id.* at 11-17. According to the Government, Guernsey was negligent in two respects: first, failing to design a building that could be constructed by the pre-engineered metal building industry, *i.e.*, the pre-engineered metal building manufacturer would use an autowelder to construct the metal building; and second, failing to ascertain whether the design submitted to the Army Corps could be constructed in fact. *See* Gov't Post-Trial Brief at 19-23; *see also* Gov't Post-Trial Reply Brief at 1-4. The Government also alleged that Guernsey's failure promptly to provide the Army Corps with a solution to Guernsey's design compounded Guernsey's negligence. *See* Gov't Post-Trial Brief at 23-27. The Government contended that the option Guernsey proposed of switching to fixed-base columns was not a solution, because the Plans and Specifications did not afford the contractor the option of making such a change. *See* Gov't Post-Trial Reply Brief at 4-8. Accordingly, the Government claimed that it suffered damages as a result of Guernsey's alleged negligence in supplying defective Plans and Specifications that caused the Army Corps to incur delay damages. *See* Gov't Post-Trial Brief at 27-30.

2. Guernsey's Argument.

Guernsey countered that the Plans and Specifications for the design of the CCTFF were "buildable" as submitted to the Army Corps. *See* Guernsey Post-Trial Brief at 9-12. Guernsey argued that by initially suggesting and subsequently accepting the H/600 criteria, the Army Corps waived any objection to such deflection criteria. *Id.* at 12-15. Further, Guernsey contended that the Plans and Specifications allowed the metal building manufacturer the option to switch from pinned columns to fixed-base columns, and if that option had been exercised a "buildable" design could be achieved. *Id.* at 10-11. According to Guernsey, the Government also failed to establish a meaningful standard of care and/or if so, the Government did not establish there was a breach caused by Guernsey's negligence. *Id.* at 8-11. Guernsey also argued that the Government failed to prove that any sums paid to DCO for delay were proximately caused by Guernsey's design of the CCTFF. *Id.* at 12-13. Instead, Guernsey asserted that DCO's subcontractor, Gulf States, was the cause of the delay and, as a result, the Government failed to establish a requisite element of their claim, that Guernsey was the sole cause of the delay. *Id.* at 13-14.

F. The Parties' Experts.

1. The Government's Expert Donald L. Johnson, P.E.

Donald L. Johnson is a Registered Professional Engineer in the State of Missouri with expertise in the pre-engineered metal building industry.¹⁷ *See* TR at 845-47; *see also* DX 55. From 1956 until retirement in 1996, Johnson was a Professional Engineer with Butler Manufacturing Company, Kansas City, Missouri, the largest manufacturer of pre-engineered metal buildings in the world. *See* TR at 844. Mr. Johnson advised the court that:

- A civil or architectural engineer or other entity providing professional architectural/engineering services conforming his conduct to generally accepted applicable standards of care would have investigated or researched available resources to determine whether a restriction of H/600 for frame drift and a maximum column depth of 36 inches was compatible¹⁸ or practical¹⁹ for a pre-engineered metal building before submitting its final design materials to the owner.
- A civil or architectural engineer or other entity providing professional architectural/engineering services conforming his conduct to generally accepted applicable standards of care would have utilized one or all of the following resources to insure the viability²⁰ of the deflection criteria when confronted with a frame deflection situation:
 - A. A review of readily available design guidelines;

¹⁷ Mr. Johnson testified that the pre-engineered metal building industry produces a package product that includes all of the essential items that go into a useable building. *See* TR at 848. All components arrive either by truck or rail car ready for the contractor to assemble a complete building, with the exception of the necessary electrical and plumbing components. *Id.*

¹⁸ Mr. Johnson defined “compatible” as the joining or “the attempt to couple the H over 600 [deflection criteria] with the [column] depth of 36 inches. If this project specifications had an H over 600 requirement without a depth limitation of 36 inches, this would have been much simpler. There would not have been a serious problem. So the compatibility of those two numbers is a problem.” TR at 903.

¹⁹ Mr. Johnson also testified that compatible and practical are components of an evaluation that is both technical and economic in nature. *See* TR at 904-05.

²⁰ Mr. Johnson testified that “viability” means practicality. *See* TR at 903.

- B. Consultation with any of a number of pre-engineered metal building manufacturers to determine if the industry could supply a pre-engineered metal building satisfying such a design. A call to the Research and Technical Director of the Metal Building Manufacturers Association would have given them the same information; and/or
 - C. Calculations performed in-house using readily available frame analysis programs to determine the viability of the criteria.
- C. H. Guernsey failed to comply with the applicable, generally accepted standard of care in preparing plans and specifications for the Simulator Module in this case, that could be practically and economically implemented by qualified fabricators in the pre-engineered metal building industry. Their failure to comply with these generally accepted applicable standards of care constituted negligence.

DX 55 (Johnson Direct) ¶¶ 1-3 at 55/2-3.

Mr. Johnson testified that the pre-engineered metal building industry is distinguished from other industries that use steel because of the importance of an autowelder, which allows a manufacturer to use tapered members to obtain the most efficient use of the steel. *See* TR at 849-51. Autowelders, however, do not accommodate all steel sizes and shapes and thereby force limiting parameters, the most prevalent of which is flange size. *See* TR at 850-51. Mr. Johnson admitted, however, that it is possible, if cost is no object, for a pre-engineered metal building manufacturer to fabricate steel by using a hand welder or by purchasing hot rolled steel. *See* TR at 852-53.

In Mr. Johnson's professional judgment, the applicable standard of care for a design engineer is found in "the typical engineering registration statutes promulgated by the states." TR at 896. Mr. Johnson stated that he did not consult any particular state standard in preparing his opinion but generally was familiar with the content of such standards and also relied on common sense. *See* TR at 898-99. Based on his experience, Mr. Johnson testified that an increase in cost of a design alone did not amount to negligence.²¹

²¹ THE COURT: All right. But if we're looking at the issue of negligence, which you concluded, what you're saying is that if someone made the wrong assessment for cost purposes, they could be negligent?

MR. JOHNSON: Well, I'm not so concerned about – at this point, and in the cost, as the constructability.

THE COURT: That was what I assumed. That's why I was pressing you a bit on –

Mr. Johnson prepared seven case analyses under which the CCTTF could be constructed and the cost, using different parameters, including those suggested by Guernsey, industry practice, and others that arose as the project progressed:

CASE NO.	DESCRIPTION	DESIGN CRITERIA	COST
1	Design as specified in Guernsey plans and specifications	ASCE 7; deflection H/600; max depth 36 inches	\$545,720.00 @ \$1,500/ton \$727,630.00 @ \$2,000/ton
2	Guernsey's October 23, 1996 letter – criteria reviewed by Star	ASCE 7; deflection H/600; max depth 60 inches	\$310,500.00 @ \$1,500/ton
3	AISC Design Guidelines ²²	ASCE 7; deflection H/100; max depth 36 inches	\$139,840.00 @ \$1,500/ton
4	DCO Contract specifications, as revised by Modifications P00003 and P00006	ASCE 7; deflection H/300; max depth 60 inches	\$199,320.00 @ \$1,500/ton
5	Guernsey's October 23, 1996 letter – criteria suggested by Guernsey	ASCE 7; deflection H/360; max depth 48 inches	\$256,820.00 @ \$1,500/ton

MR. JOHNSON: Yes.

THE COURT: – what were the components here. Because that would be a very rigid and possibly very subjective standard to hold someone to, a negligence standard, if it included an economic component, wouldn't you agree?

MR. JOHNSON: Yes, But I'm –

THE COURT: It would be highly subjective as to –

MR. JOHNSON: Now I'm emphasizing the word “practical” here.

THE COURT: Right.

TR at 905.

²² Gulf States' original bid met this criteria before its bidding error was discovered. See TR at 875-76.

CASE NO.	DESCRIPTION	DESIGN CRITERIA	COST
6	Industry practice	ASCE 7 (10 year wind); deflection H/60; max depth 36 inches	\$110,460.00 @ \$1,500/ton
7	Robert Zahl report	Deflection H/600; max depth 36 inches	\$556,520.00 @ \$1,500/ton \$742,030.00 @ \$2,000/ton

See DX 55 (Johnson Direct) at 55/11-12.

At trial, Mr. Johnson discussed the viability and practicality of each approach. Case 1 described the criteria set forth in the original Guernsey Plans and Specifications. See TR at 855. Because the Guernsey Plans and Specifications could not be implemented using autoweld equipment, Mr. Johnson concluded that it put the designer “in a box . . . that gave him no choice [and] was not doable.”²³ TR at 905-06. Mr. Johnson conceded that the Guernsey design could be implemented if a hand welder was used or the steel members were sent to a subcontractor, such as a bridge fabricator, although such an approach would be “very difficult.” See TR at 861-62.

Case 2 described the criteria, as discussed in the Guernsey October 23, 1996 letter, and resulted in a flange size of 12 inches by 1-¼ inches that would allow the use of an autowelder and was “doable” with pinned bases by most pre-engineered metal building manufacturers. See TR at 874.

Case 3 used an H/100 deflection criteria. See TR at 882. Mr. Johnson testified that he would have recommended Case 3 to the Army Corps, however, the deflection criteria ultimately was the customer’s choice, since it related to serviceability,²⁴ maintenance, and upkeep of the structure and did not impact the safety of the building. See TR at 882-83.

Case 4 assumed the design criteria, set forth in the March 1997 final modifications to the DCO contract and that ultimately was used to construct the CCTTF. See DX 55 (Johnson Direct) at 55/13. Case 4 resulted in a 8 inch by 0.625 inch flange with a frame weight of 13 tons per frame. *Id.* Most, but not all pre-engineered metal building manufacturers could build a pre-engineered metal building to meet this design criteria. *Id.*

²³ “[I]t was assumed that this was going to be a pre-engineered metal building, and with those two variables, anchored at 600 and 36, there was just no way that a pre-engineered manufacturer could work that in to his system. So all of the benefits disappear.” TR at 906.

²⁴ “Serviceability” concerns the likelihood and frequency of cracks in the mortar, not that whether a building will stand. See TR at 107-08; see also TR at 199-200, 393-94, 883.

Case 5 assumed a 48 inch column depth and a deflection limit of H/360, the criteria suggested to the Army Corps in the October 23, 1996 Guernsey letter. *See* DX 55 (Johnson Direct) at 55/13. Mr. Johnson testified that Case 5 was within the realm of Butler's capability; he was unsure whether it was within Gulf States' capability. *See* TR at 875. Case 5 resulted in a flange size of 15 inches by 1-½ inches and could be implemented by a pre-engineered metal building manufacturer as it allowed the use of an autowelder. *See* TR at 878.

Case 6 utilized the industry standard deflection criteria of H/60 and a ten year recurrence interval for wind velocity. *See* DX 55 (Johnson Direct) at 55/13. Each frame would weight 7 tons each. *Id.* Mr. Johnson concluded that the design criteria in Case 6 is "close to what was used in the original bid by Gulf States." *Id.*

Case 7 assumed the original design criteria contained in the Guernsey Plans and Specifications, with a lateral deflection criteria of H/600 and column depth of 60 inches. Case 7 was not significantly different than Mr. Johnson's Case 1 and the same as Case 1 of Guernsey's expert Mr. Robert Zahl. *See* DX 55 (Johnson Direct) at 55/14. The design criteria in Case 7 and Case 1 "exceed the capabilities of essentially all the Pre-Engineered metal building fabricators and are inconsistent with the stated goal of an economic structure[.]" *Id.*

According to the American Institute of Steel Construction ("AISC"), most metal buildings with masonry facades attach the masonry to the steel.²⁵ Mr. Johnson disagreed that occurred "in almost all cases." *See* TR at 886-87. Mr. Johnson agreed, however, that the AISC recommendation to isolate the masonry from the steel frame was another way to address the compatibility between masonry and steel. *Id.* Mr. Johnson also testified that the Brick Institute's recommendation for a deflection criteria of H/600 related to a steel stud system, but agreed that system was not at issue in this case. *See* TR at 863-64.

Mr. Johnson testified that Note 8 of Guernsey's Plans and Specifications was a fairly common boilerplate for specification and allowed for minor variations. *See* TR at 869-70. In Mr. Johnson's judgment, a change from a pinned-base column design to a fixed-base column design would be considered a major variation. *See* TR at 870-71.

2. Guernsey's Expert Robert C. Zahl, P.E.

Robert C. Zahl is a Registered Professional Engineer in Oklahoma, Alabama, North Carolina, and Minnesota, and a licensed architect in Oklahoma. *See* TR at 1072; *see also* PX 86 at 1. Since 1980, he also has been Chairman of the Board and Corporate President of Zahl-Ford, Inc., Structural Consultants. *See* PX 86 at 2. Mr. Zahl testified that:

²⁵ The AISC stated that "in almost all cases" the masonry is supported by the steel frames for lateral stability. *See* TR at 886.

- The H/600 lateral deflection stated in the Guernsey design plans and specifications is clearly within the tolerances normally specified for buildings that have a masonry veneer exterior wall tied to and supported by the main building.
- A contractor bidding the project could not reasonably interpret the design criteria to require anything other than the H/600 deflection limitation. The contractor did not submit a design that would meet this criteria, rather the contractor demanded relief from the H/600 deflection criteria.
- In the absence of a specified H/600 deflection limitation criteria, many pre-engineered steel moment-resisting frame buildings are not designed for a deflection criteria this stout; however, there is no standard of practice in the industry that permits a pre-engineered steel building manufacturer to neglect or ignore design criteria specified in bid documents.
- There is no support for the argument that a steel building of the kind specified in the Guernsey Plans and Specifications could not be built. Several variations were designed from the specified criteria with relative ease. Fabrication may be more or less difficult depending on the skill of the builder's designer, the available design option chosen, and the resources of the bidder in meeting the contract obligations.
- The original design deflection criteria could be met while staying within the 3'-0" maximum depth limitation on the tapered main members. The resulting structural frame sizes, which are not at all fine-tuned, have 18" wide by 1.875" thick flanges. This size may not be the most economical member size, but is a size which is capable of fabrication and construction by a bidder prepared to meet the bid criteria.
- The contractor had other options available to meet the design criteria if unprepared to fabricate the initially sized members, including utilizing the option specified in the construction document to "fix" the bases of the columns. The resulting member sizes would be 1.375" thick by 12" wide flanges and within a 3'-0" depth. The option to switch to fixed base columns is a common and feasible engineering technique.
- The contractor also could have employed the common technique of introducing supplementary braced frames into the frame run, along with a horizontal truss configuration in the plane of the shed roof, that would have allowed further reduction in member sizes. This technique would require some architectural modifications to the plans.

- There is no engineering basis or industry practice that prevented the Contractor from meeting the requirements of Guernsey's Plans and Specifications.
- There is no basis to fault Guernsey's original Plans and Specifications.
- An H/600 lateral deflection limitation criteria is not unusual for a building surrounded by a masonry veneer, and was definitely a performance criteria which was in the best interest of the Owner and achievable for the Owner's benefit.
- Guernsey provided design criteria that were appropriate for the circumstances and achievable by aware and prepared bidders and no relaxation of the design criteria was required to build what was bid by DCO.

See PX 89 (Zahl Direct) at 1-3.

Mr. Zahl discussed three alternative scenarios in his report and testified that all could be constructed:

CASE NO.	DESCRIPTION	DESIGN CRITERIA
1	Design as specified in Guernsey Plans and Specifications	Maximum depth of tapered columns 3'-0"; H/600 deflection for wind or seismic at top of masonry; H/125 lateral deflection at top of ridge; pinned columns
2	Same as Case 1 with fixed columns except TS column	Maximum depth of tapered columns 3'-0"; H/600 deflection for wind or seismic at top of masonry; H/125 lateral deflection at top of ridge; fixed columns
3	Design as discussed in October 23, 1996 Guernsey Letter	Maximum depth of tapered columns 4'-0"; H/360 deflection for wind and seismic at top of masonry; H/125 lateral deflection at top of ridge; pinned column bases

See PX 89 (Zahl Direct) at 1-3; *see also* TR at 1077-79, 1117-18.

With respect to the H/600 lateral deflection criteria, Zahl testified that H/600 is a typical design criteria for a metal building with brick veneer, but is not typical for a metal building with metal siding. *See* TR at 1122-23. He also testified that Guernsey's Plans and Specifications, depicted in Case 1, could be constructed using pinned-base columns,²⁶ although such a design would

²⁶ According to Mr. Zahl, the resulting flange width of the columns would be 18 inches, the flange thickness would be 1.875 inches, and the web thickness would be one inch. *See* TR at 1076.

require hand welding and cost more. *See* TR at 1077, 1121. Although the pre-engineered metal building industry typically uses an autowelder, hand welding is employed if the pre-engineered metal building manufacturer has a frame that it cannot build. *See* TR at 1118-19.

Mr. Zahl testified that Case 2 was a design that could be constructed by a pre-engineered metal building manufacturer using an autowelder.²⁷ *See* TR at 1078-79, 1117-18.

According to Mr. Zahl, when a decision is made to use a pinned-base column design to achieve a lower deflection criteria, there are two options: either increase the flange thickness or fix the base of the columns. *See* TR at 1098-99. Changing to a fixed-base design allows the use of thinner steel, resulting in a decrease in cost. *See* TR at 1099. This design change, however, puts different forces on the foundation and requires a redesign of the foundation to include extra concrete and steel reinforcement and offset the decrease in cost of using thinner steel. *See* TR at 1099-100. In addition, there are several different options available for an allowable deflection criteria, but that the deflection in the brick surrounding the structure controls, regardless of what supports the brick. *See* TR 1105-06.

Mr. Zahl testified that metal buildings usually are designed with pin connections, because that is what pre-engineered metal building companies want to build. *See* TR at 1108. The language of Note 8 of the Guernsey Plans and Specifications was standard boilerplate to alert the contractor that, if the manufacturer decided to use a fixed-base column design, the foundation would have to be redesigned to accommodate the fixed base. *See* TR at 1108. In Mr. Zahl's opinion, Note 8 did not prevent a pre-engineered metal building manufacturer from switching to a fixed base, but rather allows such a change to be made. *See* TR at 1109.

G. The Court's Determination Of Issues In This Case.

1. Guernsey Owed A Contractual Duty To The Army Corps To Provide Design Services Without Negligence.

Contract No. DACA27-94-C-0060 required Guernsey to provide design services without negligence. *See* JX 1; *see also* Jt. Stip. ¶ 1. Specifically, Section 52.0236-23 provided that the architect-engineer contractor:

shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services furnished under this contract.

JX 1 at F-52.

²⁷ Case 2 was the same as Case 1, but utilized fixed-base columns. The resulting flange width would be 12 inches and flange thickness would be 1.375 inches. *See* TR at 1078-79.

Since the Army Corps suggested the H/600 deflection criteria with columns limited to three feet and subsequently approved this design, Guernsey argued that any claim of negligence with respect to preparing final Plans and Specifications was waived.

Contract No. DACA27-94-C-0060, however, provides:

Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract[.]

JX 1 at F-52.

Therefore, the Army Corps' direction, review, and approval of Guernsey's Plans and Specifications, including the H/600 deflection criteria and three feet column size, did not waive the Army Corps' right to seek relief from Guernsey, if design services were performed in a negligent manner. For this reason, the court has determined that Guernsey owed the Army Corps a contractual duty to provide design services without negligence and there was no waiver of that duty.

- 2. Guernsey Was Not Negligent In Providing Design Services To The Army Corps.**
 - a. The CCTTF Could Be Constructed Utilizing Guernsey's Plans and Specifications.**

To establish negligence, the Government must prove that the CCTTF could not be constructed utilizing Guernsey's Plans and Specifications. The record in this case established that the CCTTF could be constructed per Guernsey's Plans and Specifications, by using the option of a fixed based, rather than a pinned base.

Both experts agreed that by switching to a fixed-base design, the CCTTF could be constructed according to the Guernsey Plans and Specifications by a pre-engineered metal building manufacturer, utilizing an autowelder. *See* TR at 874-75, 1079-80. The parties' experts disagreed, however, about whether a design requiring a pre-engineered metal building necessarily required the use of an autowelder and whether Note 8 in Sheet S100 of Guernsey's Plans and Specifications allows a pre-engineered metal building manufacturer the option to switch to a fixed-base design. *Compare* TR at 849-53, 869-71 *with* TR at 1077, 1108-09, 1118-19.

Contract No. DACA27-94-C-0060 did not require that the CCTTF be constructed using an autowelder. The Guernsey Plans and Specifications also did not expressly require the use of an autowelder. Nor did the Government establish that a pre-engineered metal building cannot be ascertained without the use of an autowelder. Although there was testimony that an autowelder may produce economies, the record in this case establishes that the Army Corps was more concerned

about the serviceability of the building after construction, *i.e.*, cracks in the masonry and possible resulting water damage from such cracks. *See* TR at 89 (“We’d had issues with brick problems on with the metal building deflecting and cracking bricks and moisture problems in the wall because of the cracks, so [the deflection criteria] was a highlighted item that we looked for in any of our designs to make sure the proper criteria was incorporated.”); *id.* at 107-08 (Because of the Army Corps’ past moratorium on buildings with brick veneer over steel and the cracking problems, the Army Corps followed the Brick Institute H/600 recommendation concerning “the cracks of the masonry joints or whatever in the more rigid wall. And once you establish that crack, then the wall is no longer impervious to moisture.”); *see also id.* at 111 (Guernsey’s 60% Design Submittal stated that “deflection is governed by the limits of the masonry [because of] worrying about protecting the masonry.”). For this reason, other buildings constructed on the Fort Knox Base utilized a deflection criteria of H/600. *See* TR at 89-90 (“We have an area office there that uses the same criteria, L over 600, that we constructed a steel structure with a brick facade on it. That’s a one-story structure, it’s not the eave height of this building, but we utilized the same criteria.”); *see also id.* at 120 (“We’ve done just what’s done here in other buildings. Maybe the other buildings are not as large or they don’t have the same height requirements or things like that, but in terms of deflection criteria for the brick, we’ve incorporated the L over 600 with fill studs and with the structural steel planning.”). Therefore, because of the Army Corps’ serviceability concerns, Guernsey was not negligent for utilizing stringent H/600 deflection criteria in the Plans and Specifications.

Although the original Guernsey design could not be constructed using an autowelder with pinned column bases, nevertheless it could be constructed. Moreover, the additional cost of hand-welding or utilizing a steel fabricator would not exceed the Army Corps’ overall estimated contract price for the CCTTF. *See* TR at 852-53. And, the Government’s expert testified that increase in cost of a design alone was not enough to constitute negligence.

COURT: But if we’re looking at the issue of negligence, which you concluded, what you’re saying is that if someone made the wrong assessment for cost purposes, they could be negligent?

MR. JOHNSON: Well, I’m not so concerned about – at this point, and in the cost, as the constructability.

TR at 905.

Guernsey’s expert testified that Note 8 expressly allowed a change from a pinned-base design to a fixed-base design. *See* TR at 1108-09. Although the Army Corps’ Construction Manager and Project Engineer, Mr. James Arthur Childs, acknowledged that utilizing a fixed-base design was resisted by Gulf States, that solution allowed the CCTTF to be constructed utilizing Guernsey’s Plans and Specifications:

GOV'T COUNSEL: I direct your attention to the paragraph above. [JX 9 at 1.] Did they [Gulf States] make any other comments regarding whether or not they thought the use of a fixed base was a good idea?

MR. CHILDS: Well, they [Gulf States] just made the statement that it -- they thought this wouldn't be practical or economical for us to admit to build this building using these size flanges and bases and columns.

GOV'T COUNSEL: What did you do with this [January 29, 1997] letter, upon your receipt of it?

MR. CHILDS: I turned this over to Mike Goodman and Jim McCoy, our structural engineers, to see if they confirm what Gulf States is saying.

ARMY CORPS' COUNSEL: Ultimately, was the problem with the design criteria resolved and the building was capable of being built?

MR. CHILDS: Yes.

TR at 477-78.

Since the CCTTF could be constructed utilizing Guernsey's Plans and Specifications, the court has determined that Guernsey was not negligent in providing design services to the Army Corps.

b. The Delay Caused By Guernsey Was Not Unreasonable Nor Negligent.

On October 23, 1996, fourteen days after the Army Corps was notified of a possible design problem by DCO and twelve days after Guernsey was first notified of the issue, Guernsey proposed a solution of lowering the deflection criteria and changing the column size, a solution later adopted by the Army Corps that allowed the CCTTF to be constructed. Both Guernsey's expert and the Government's expert agreed this solution was acceptable. *See* TR at 874, 878, 1079-80.

If the Army Corps would have followed Guernsey's October 23, 1996 recommendation, the delay would have been approximately two weeks; not an unreasonable delay, given the fact that contract performance at that time already had been delayed 10 days in October 1996 due to inclement weather. *See* PX 67; *see also* *P.R. Burke Corp. v. United States*, 277 F.3d 1346, 1360 (Fed. Cir. 2002) (“[C]ontractors can recover delay damages against the government only if there is government-caused delay and it was unnecessary or unreasonable in duration.”); *PCL Const. Servs. Inc. v. United States*, 47 Fed. Cl. 745, 801 (2000) (holding that “the court [will] award delay damages only for the unreasonable portion of a government-caused delay”) (quoting *Mega Const. Co., Inc. v. United States*, 29 Fed. Cl. 396, 425 (1993)). Instead, the Army Corps did not decide to follow Guernsey's advice until March 26, 1997. *See* JX 20.

For these reasons, the court has determined that the delay caused by Guernsey was not unreasonable nor negligent.

3. Guernsey Did Not Breach Any Implied Warranty To Provide Design Services Free From Defect.

A core issue in this case is whether “Special Deflection Criteria” in Guernsey’s Plans and Specifications was a “design” or “performance” specification.

Special Deflection Criteria Lateral deflection of pre-engineered building shall be limited to H/600 (.28") deflection for wind or seismic at a height of 14'-0" in the building, @ top of ridge lateral deflection shall be limited to H/125.

* * * * *

8. If modifications to foundations are required for preengineered building loads, contractor is responsible for redesign and additional construction cost. All column bases are assumed to be pinned.

9. Maximum depths of tapered columns shall be 3'-0".

JX 26 at S100. And, if the “Special Deflection Criteria” was a “design” specification, did Guernsey breach the implied warranty that the specification be free from design defects.

Design specifications require that a contractor strictly to adhere to specification, with no deviation or modification. Therefore, an implied warranty attaches that the specifications are free from design defects. *See White v. Edsall Constr. Co., Inc.*, 296 F.3d 1081, 1084 (Fed. Cir. 2002) (“This implied warranty attaches only to design specifications detailing the actual method of performance. . . . Because the implied warranty protects contractors who fully comply with the design specifications, contractors are not responsible for the consequences of defects in the specified design.”); *see also Blake Construction Co., Inc. v. United States*, 987 F.2d 743, 746 (Fed. Cir. 1993) (“Design specifications . . . describe in precise detail the materials to be employed and the manner in which the work is to be performed. The contractor has no discretion to deviate from the specifications, but is ‘required to follow them as a road map.’”); *Zinger Constr. Co. v. United States*, 807 F.2d 979, 981 (Fed. Cir. 1986) (holding that the labels “design” or “performance” “do not independently create, limit, or remove a contractor’s obligations.”).

In contrast, performance specifications set forth an objective but do not specify the a method that must be followed to obtain the objective. Therefore, performance specifications do not incorporate an implied warranty. *See Blake Construction Co., Inc.*, 987 F.2d at 745 (quoting *J.L. Simmons Co. v. United States*, 188 Ct.Cl. 684, 689, 412 F.2d 1360 (1969)) (“Performance specifications ‘set forth an objective or standard to be achieved, and the successful bidder is expected

to exercise his ingenuity in achieving that objective or standard of performance, selecting the means and assuming a corresponding responsibility for that selection.”).

The Government argued that requiring the CCTTF to be constructed as a “pre-engineered metal building” necessarily entailed the use of an autowelder and rendered the specification of a “pre-engineered metal building” to be a “design specification.” *See* Gov’t Post-Trial Reply at 1-2. The Government, however, failed to establish that a “pre-engineered metal building” can only be constructed by using an autowelder. First, the Guernsey Plans and Specifications did not expressly require the use of an autowelder. *See* JX 26; *see also* PX 120. In addition, as the Government’s expert, Mr. Johnson, confirmed:

GOV’T COUNSEL: Now you don’t deny that it’s possible for a pre-engineered metal building manufacturer to fabricate steel using hand welding or by purchasing hot rolled steel, do you?

MR. JOHNSON: Anything is possible, if cost is not object.

TR at 852-53.

In addition, as Guernsey’s expert testified, constructing a “pre-engineered metal building” did not always require the use of an autowelder.

GOV’T COUNSEL: Is it your understanding that an autowelder is typically employed in the pre-engineered metal building industry?

MR. ZAHL: Yes.

GOV’T COUNSEL: Is hand welding typically employed in the pre-engineered metal building industry?

MR. ZAHL: It’s typically used in structural steel fabrication.

GOV’T COUNSEL: Is structural steel fabrication the means through which the pre-engineered metal building industry operates?

MR. ZAHL: If they have a moment frame they can’t build, it is.

TR at 1118-19.

Therefore, specifying that a building must be a “pre-engineered metal building” necessarily does not address how to achieve the fabrication of the building, nor does it require that an autowelder must be utilized. Since a “pre-engineered metal building” manufacturer has the discretion on how

to accomplish the task *ipso facto*, simply designating that a building must be a “pre-engineered metal building” does not make it a “design” specification imposing an implied warranty.²⁸

In the alternative, the Government argued that Guernsey’s requirement that the CCTTF be a “pre-engineered metal building” with an H/600 lateral deflection criteria and 3'-0" maximum tapered columns is a “design specification,” from which DCO and Gulf States were not free to deviate. *See* Gov’t Post Trial-Reply at 1-4. *See Blake Construction Co., Inc. v. United States*, 987 F.2d 743, 746 (Fed. Cir. 1993) (“Design specifications . . . describe in precise detail the materials to be employed and the manner in which the work is to be performed. The contractor has no discretion to deviate from the specifications, but is ‘required to follow them as a road map.’”).

At trial, Gulf States’ Manager of Estimating, Mr. Bobby Lindsey testified that standard operating procedure in the pre-engineered metal building industry was for the columns to be pinned. *See* TR at 763. If a manufacturer is faced with a stringent deflection criteria, like H/600, a fixed-base design could be used. *Id.* In fact, when faced with a requirement to adhere to a stringent deflection, such as the H/600 lateral deflection criteria at issue in this case, Gulf States had used a fixed base for the support column.

GUERNSEY’S COUNSEL: When you’re getting dissimilar materials, has it had an impact on the deflection criteria that you’re seeing come in-house at Gulf States?

MR. LINDSEY: Yes. The serviceability issue with dissimilar materials is something that’s grown and is a topic of discussion almost on a daily basis in our industry right now.

GUERNSEY’S COUNSEL: I take it from that, when you’re getting more requests for pre-engineered metal buildings with the dissimilar material, you’re seeing more stringent deflection requirements?

MR. LINDSEY: In some cases, more stringent deflection requirements, yes.

GUERNSEY’S COUNSEL: Has Gulf States ever designed and fabricated a pre-engineered metal building with an H over 600 deflection requirement?

MR. LINDSEY: Probably a few, but that is an extremely stringent.

* * *

²⁸ “The standard practice within the pre-engineered metal building industry has been for the pre-engineered metal building manufacturer, to the extent permitted within the industry, to custom-design the building within *any limitations* supplied by the building owner.” *Jt. Stip.* ¶ 4 (emphasis added).

GUERNSEY'S COUNSEL: As an engineer with Gulf States, when you get a very stringent deflection requirement, such as H over 600, is going to a fixed base something you would consider doing as an option to resolve it?

MR. LINDSEY: That is - fixed base often is a solution to stringent deflection requirements.

TR at 738-39, 749.

* * *

COURT: Who makes the decision, in your experience, as to whether the columns are fixed or pinned? Is it the metal contractor, or is it the architect?

MR. LINDSEY: Normally, that would be – let me say, 99 percent of the cases are going to come to [the contractor] pinned [from the architect-engineer]. . . . I can very rarely remember seeing a project come to us requesting fixed-base columns from very, very special cases. . . . But more often than not, [changing to fixed base] will come back from us as a suggestion to solve a deflection problem, such as this, is – perhaps you want to pursue going fixed base to solve that problem.

TR at 763.

Gulf States had discretion in deciding how to accomplish that task and, indeed, exercised that discretion in the past. *See Blake Construction Co., Inc.*, 987 F.2d at 745 (quoting *J.L. Simmons Co. v. United States*, 188 Ct.Cl. 684, 689, 412 F.2d 1360 (1969)) (“Performance specifications 'set forth an objective or standard to be achieved, and the successful bidder is expected to exercise his ingenuity in achieving that objective or standard of performance, selecting the means and assuming a corresponding responsibility for that selection.’”). For these reasons, the court has determined that the lateral deflection criteria and column size in the Guernsey Plans and Specifications were not “design” specifications that imposed an implied warranty to be free from defects.

4. Guernsey Did Not Breach The Standard Of Care For A Design Professional.

As a matter of law, the applicable standard of care for a design professional does not require a perfect or flawless design. *See Ralph M. Parsons Co.*, 85-1 BCA ¶ 17,787, 1984 WL 13893 (1984) (holding that Architect-Engineer clause in government contract “nor any other portion of the contract imposes upon architect strict liability for mistakes, ambiguities or so-called ‘defects’ in the specification it prepared.”); *see also R.G. Wood and Associates, Ltd.*, 85-1 BCA ¶ 17,898, 1985 WL 16387 (1985) (citing *Clovis Heimsath and Associates*, 83-1 BCA ¶ 16,133, 1982 WL 7871 (1982)) (“An architect must exercise the degree of competence ordinarily exercised by reputable members of the profession. If he has done so, he will not be held accountable for every mistake or defect.”);

6 C.J.S. *Architects* § 16 (“[A]n architect, like a physician or lawyer, does not guaranty, imply, or warrant a perfect plan, or favorable or satisfactory results. It follows that an architect’s work can be inaccurate or imperfect without being an actionable deviation from the standard of care.”).

There was much testimony at trial that a deflection criteria of H/600 was a “stringent” or “stout” requirement.²⁹ The witnesses, however, agreed that there is a wide difference of opinion in the industry about the appropriate deflection criteria to use in constructing a metal building, particularly when the metal building has masonry siding. *See, e.g.*, TR at 107-08, 200-01, 370-72, 738-39, 884; *see also* PX 53, 54. Although requiring the lateral deflection to be H/600 coupled with maximum column depths of 3'-0" made the construction of the CCTTF more difficult, Guernsey’s incorporation of these requirements, as a matter of law, did not breach the relevant standard of care, because it does not require that a design be easy to implement.

One additional point. The Government’s expert testified that Guernsey would not have breached the standard of care if Guernsey and/or Fink consulted with another pre-engineered metal building manufacturer during the preparation of the Guernsey Plans and Specifications. *See* TR at 900-02; *see also* DX 55 at 55/2. The record reflects, however, that Star was contacted for this purpose. *See* TR at 788.

Therefore, the court has determined that Guernsey did not breach the standard of care for a design professional.

5. The Additional Costs Incurred By The Army Corps Were Not Sufficiently Documented To Be Attributed Guernsey.

The additional costs incurred by the Army Corps were not sufficiently documented to be attributed to Guernsey. As the Army Corps’ Construction Manager and Project Engineer confirmed:

THE COURT: -- you’re saying it’s kind of a back of the envelope analysis, you had decided that for whatever reasons that DCO had been unable to begin this work and complete it for a number of months?

MR. CHILDS: Yes.

THE COURT: There had been a claim that had been placed out for that, which was not insubstantial. . . . [Y]our way of looking at this was to try to offset or mitigate that delay amount, which you didn't know exactly what it was at this time –

MR. CHILDS: That’s correct.

²⁹ “Stringent” means “marked by rigor, strictness, or severity, esp. with regard to rule or standard.” MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 1162 (10th ed. 2001). “Stout” means “physically or materially strong” or “sturdily constructed.” *Id.* at 1156.

THE COURT: -- by the analysis that you did on Defense Exhibit 59, which includes your handwritten --

MR. CHILDS: That's correct.

THE COURT: -- documents, which more or less is fairly close to what became the Joint Exhibit 43?

MR. CHILDS: That's correct.

THE COURT: It kind of morphed into this document with some variations in the theme. While you may have had some backup data from the suppliers, et cetera, truthfully My mother could have written that letter to you on that stationery and said, this is . . . the cost for different things.

MR. CHILDS: That's correct.

THE COURT: Because you didn't go out independently and audit that, you didn't want to see the invoices, the checks to match it up because there was a cost benefit analysis made in your office It's just a judgment call.

MR. CHILDS: Probably yes.

THE COURT: Is that correct?

MR. CHILDS: That's correct.

THE COURT: Whether it's right or wrong, it's kind of just the way the government has gone about doing its business in your experience?

MR. CHILDS: Yes.

THE COURT: Okay. You do understand from the perspective of the counsel for the Plaintiff, their argument now is, but if you want me to pay . . . we would like to see some backup, just like the IRS would? I want to see your shoe box of receipts.

MR. CHILDS: That's correct.

THE COURT: Okay. That's really where you say, but we don't do business that way, because if we did, we could [not] do [any]thing else? We would be running around [looking at] shoe box invoices, and that's why you didn't ask for an independent audit at that time?

MR. CHILDS: That's correct.

TR at 562-65.

6. The Additional Costs Incurred By The Army Corps Were Not Caused By Guernsey.

Even assuming *arguendo* that Guernsey had breached Contract No. DACA27-94-C-0060 by negligently performing design services, the Government did not establish by a preponderance of the evidence that the additional costs incurred were caused by Guernsey.

a. The Additional Costs Incurred By The Army Corps Were Caused, In Part, By Gulf States.

The Government argued that the construction of the CCTTF was delayed 211 days because the pre-engineered metal building designed by Guernsey could not be constructed by a pre-engineered metal building manufacturer, using an autowelder. *See* Gov't Post-Trial Brief at 11-13, 29. In fact, Gulf States' failure to review Guernsey's Plans and Specifications, resulting in a bid that did not anticipate the H/600 deflection criteria and maximum three foot column requirement, caused part of the delay and additional costs incurred by the Army Corps. *See* TR at 742, 747.

b. The Additional Costs Incurred By The Army Corps Were Caused, In Part, By Inclement Weather.

The record reflects that the CCTTF project was delayed because of inclement weather conditions between July 25, 1996–March 31, 1997. *See* PX 67-68, 97; *see also* TR at 834. Therefore, the additional costs incurred by the Army Corps were caused, in part, by inclement weather.

c. The Additional Costs Incurred By The Army Corps Were Caused, In Part, By The Decision To Complete The CCTTF On Time, Without Regard To Cost.

The Army Corps' decision to complete the CCTTF on time, without regard to cost, also contributed to the additional costs incurred. As the Construction Manager and Project Engineer stated:

MR. CHILDS: We were now a couple of months behind schedule, and any more delay would be disastrous. The end user felt comfortable with -- which is the military -- and they felt comfortable with that schedule. Originally, this job was supposed to be completed in October of 1997. And six months from that date, the military was

going to move in their equipment, and honestly, you know, each month we lose, we're getting closer and closer to the military date, and you do not want to get the military upset, because they don't believe in excuses.

TR at 476-77.

* * *

THE COURT: What I'm trying to [confirm] is, [your supervisor has] got a bunch of [G]enerals coming in with equipment and . . . [h]e wants to give them the building.

MR. CHILDS: That's correct.

THE COURT: Okay. So in order to give them the building, there [are] some [decisions] that he had to make . . . , and then we'll have to sort out later on whether those were correct or not, and who, if anybody, pays [for] the cost of those decisions.

GUERNSEY'S COUNSEL: Do you know when the building was completed?

MR. CHILDS: Around October, '98, I believe.

THE COURT: But . . . was [it] completed [in time] so that the [G]enerals didn't get mad at you[?]

MR. CHILDS: Yes.

THE COURT: I figured that.

MR. CHILDS: I -- strike that.

THE COURT: All right.

MR. CHILDS: I don't know when it was completed. I have to look that up.

THE COURT: But you completed it according to schedule more or less?

MR. CHILDS: Yes.

THE COURT: So that there was not a major --

MR. CHILDS: Well, no. We --

THE COURT: -- confrontation between --

MR. CHILDS: There was a major confrontation.

THE COURT: There was?

MR. CHILDS: Yes.

THE COURT: Let's just hear a little bit about that. I would like to know about that, because you were trying to avoid that.

MR. CHILDS: Yes.

THE COURT: I can well understand.

MR. CHILDS: Yes. Well, I forgot the [G]eneral's name, but -- or who it was at the time at Fort Knox, but he ranted and raved about he's got over \$100 million worth of equipment coming in here and where in the heck [is he] going to put it? And, basically, he said this to my boss, . . . , not me.

THE COURT: I'm sure he had a suggestion about where he could put it.

MR. CHILDS: Right, and he -- when my boss came back . . . to tell me about it, he looked like a whipped dog. So I really don't know what all they said, but my boss understood, and he said, Jim, we've just got to do our best. We've got to get this thing done as quickly as possible.

TR at 565-67.

And, they did. But, the additional costs that the Army Corps incurred to construct the CCTTF on schedule were not caused by Guernsey.

CONCLUSION

For the foregoing reasons, the court has determined that C.H. Guernsey & Co. was not negligent, did not breach any implied warranty, and therefore did not breach Contract No. DACA27-94-C-0060. In addition, the court has determined that the Government did not establish that C.H. Guernsey & Co. breached the standard of care of a design professional. Accordingly, C.H. Guernsey & Co. is not liable to the United States Army Corps of Engineers for the \$716,000.00 that the United

States Army Corps of Engineers paid to DCO Construction Incorporated to complete the Close Combat Tactical Training Facility on schedule. C.H. Guernsey's August 2, 2004 Motion to Submit Supplemental Demonstrative Exhibit 111 is denied.

The Clerk of the Court will enter judgment consistent with this Memorandum Opinion and Order.

IT IS SO ORDERED.

SUSAN G. BRADEN
Judge