



State of Utah

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ADDENDUM NO. 2

Date: February 14, 2013

To: Design/Build Teams – Stage II

From: Brian Bales - Project Manager

Reference: New Juab County 4th Judicial District Courthouse
Administrative Office of the Courts – Nephi, Utah
DFCM Project No. 12271150

Subject: Addendum No. 2

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|-----------------------------|----------------|
| Addendum | 1 page |
| <u>Consultants Addendum</u> | <u>5 pages</u> |
| Total | 6 pages |

Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form, if applicable. Failure to do so may subject the Bidder to Disqualification.

While we contend that SB220 should only be potentially applicable to a contract issue after the effective date of said bill, this is to clarify that for purposes of this contract, regardless of the execution or effective dates of this contract, the status of Utah Law and remedies available to the State of Utah and DFCM, as it relates to any matter referred to or affected by said SB220, shall be the Utah law in effect at the time of the issuance of this addendum.

2.1 SCHEDULE CHANGES: There are no changes to the project schedule.

2.2 GENERAL: ETC Group - Please see attached pages.

February 14, 2013

Reference: Juab County Court Program Changes;

Section 3.1.3 BUILDING FORM AND MASS:

Add the following text:

*“The project should have a **maximum** window to wall ratio of 40%. Less than 35% is preferred. It is desirable to have office space located on the North to take advantage of daylight access. Minimize glazing on the East/West. External shading for South facing offices should be considered for occupant comfort.*

The purpose of this approach is to maximize indirect light from the north which will reduce artificial lighting costs while limiting HVAC heat load from natural light.”

Section 3.2.5 EFFICIENCY PERFORMANCE STANDARDS:

Replace the entire section with the following text:

“This facility will not be required to meet the State of Utah's High Performance Building requirements nor any LEED requirements.

This facility will be designed to provide better-than-code energy performance with the goal to achieve 50% energy savings over ASHRAE 90.1-2004. This shall be accomplished by following one of the following prescriptive path options:

1. *Follow requirements listed in the current edition of Advance Energy Design Guide (AEDG) for Small to Medium Office Buildings published by ASHRAE (last posted 9-27-2011).*
2. *Follow requirements listed in the current edition of Advance Energy Design Guide (AEDG) for Small to Medium Office Buildings published by ASHRAE (last posted 9-27-2011) except where other options or requirements are prescribed in sections:*
 - *3.5.3 MECHANICAL DESIGN CONSIDERATIONS*
 - *3.6.8 INTERIOR LIGHTING*
 - *3.6.9 EXTERIOR LIGHTING*
3. *Create an energy simulation following the modeling methodology outlined in ASHRAE 90.1-2004, informative Appendix G (without addenda) that predicts that the building will perform 50% better than ASHRAE 90.1-2004 on an energy basis. The model is subject to approval by DFCM.*

Section 3.5.1 MECHANICAL CODES AND STANDARDS:

Remove ASHRAE 90.1 – 2007 from the list of mechanical codes and standards. It confuses the goal of meeting 50% energy reduction from ASHRAE 90.1 – 2004 discussed in the AEDG and as incorporated elsewhere in this addenda.

Section 3.5.2 MECHANICAL DESIGN PARAMETERS, Design Criteria:

Summer design temperatures are changed to:

- *Outdoors: 98F db / 62F wb*
- *Indoors: 75F db*
- *Mechanical Spaces: 85F db*

Section 3.5.3 – MECHANICAL DESIGN CONSIDERATIONS,

Add the following new section: (between Existing Utilities and Air Handling)

“Utility Gas Meter Monitoring: A whole building gas meter shall be included in the design that is capable of connecting to the BAS and reporting gas energy consumption at 15 minute intervals.”

Section 3.5.3 – MECHANICAL DESIGN CONSIDERATIONS, Air Handling Systems:

Replace the entire Air Handling Systems section with:

“All air-side systems shall provide:

- *Filter placement with easy maintenance in mind*
- *A single zone, dedicated rooftop unit for the courtroom*
- *Courtroom noise levels less than NC-30*
- *Sufficient air flow in semi/non-heated spaces to avoid extreme high temperatures (ie. Sally Port and mechanical rooms)*
- *Building Automation System (BAS) connectivity*

The building shall be demarcated into reasonable thermal zones (total of 5 or more) based upon occupancy type, internal loads and space exposure. The primary building air handling systems may be high efficiency, single zone, rooftop units (RTUs) employing air cooled direct expansion cooling and indirect gas fired furnace for heating. Some advantages of RTUs are:

- *Energy efficient units are available*
- *Minimal mechanical space needs*
- *Low economic first cost when compared to other available systems*
- *Simple maintenance requirements*

If rooftop units are selected, they shall meet the following performance minimums - allowing for cash incentives from utility providers to be received by the owner:

- *CEE Tier I or CEE Tier II*
- *90% AFUE or better*

If rooftop units are selected, they shall include the following technologies:

- *Demand controlled ventilation with CO2 sensors – to reduce ventilation loads*
- *100% air-side economizer with dry-bulb temperature control*

*Additional technologies that **may be considered** for any air-side system are:*

- *Variable speed supply fans – to reduce energy and noise in courtroom*
- *Capacity modulation of heating and cooling resources such as staged or modulated compressors and burners*
- *Direct and indirect gas fired unit or radiant heaters in the Sally Port and mechanical room*

Dedicated computer and server rooms shall be conditioned by BAS integrated DX split systems. The building automation system will monitor status only. Condensing units will be located on the roof or on grade. Other rooms, i.e. electrical rooms, storage rooms, mechanical rooms, etc. will be heated and ventilated as required by code.

Rooms requiring exhaust air, i.e. toilet rooms and janitor closets shall be exhausted thru roof mounted exhaust fans.

Section 3.5.3 – MECHANICAL DESIGN CONSIDERATIONS, Temperature Controls:

Replace the entire Temperature Controls Section with:

“A web enabled BAS shall be included. All system components, licenses, workstations, etc., required for full access and customization shall be included and installed. The BAS shall integrate the following systems:

- *HVAC systems (monitor and control)*
- *Emergency generator (monitor only)*
- *Gas and electric utility meters (monitor only)*

The system shall include:

- *Unlimited secure web connectivity for monitoring and control through any network or security features the courts or the State of Utah currently have in place*
- *Graphical user interface that displays the floor plan with zone temperature and equipment status*
- *BACnet and LON compatible*
- *Zone thermostats with occupancy override capability and a digital display*
- *Scheduling and night setback capabilities for all controlled systems on the BAS*
- *Control point trend set up and display as specified by commissioning agent*
- *Memory sufficient to archive 15 minute data for all appropriate points for up to 1 year*
- *4 hours of training. Facility maintenance staff selects agenda topics from optional list provided by general contractor. (2 hours/session, 2 weeks apart)*

Technologies suggested for consideration:

- *Wireless sensors and controllers*

Expected control points include:

- *Global outside air temperature*
- *General status for all connected equipment including*
 - *Emergency generator*
 - *Split system*

- Unit and radiant heaters
- Primary air-side systems (i.e. RTU, heat pumps, RTU w/VAV, etc.)
 - General status
 - Conditioning status (heating, standby, economizer, cooling)
 - CO₂ concentration
 - Zone temperature
- Water-side systems (if applicable)
 - General status
 - Load
- Whole building gas meter
- Whole building electric meter

Special areas such as prisoner holding shall have ‘temperature only’ sensors offering no temperature control to the prisoner. Zone temperature set points shall be controlled via the BAS web site or an adjacent non-prisoner space.”

Section 3.6.3 – ELECTRICAL DISTRIBUTION SYSTEMS, Electrical Service:

Add the following Section between Electrical Service and Feeder Distribution:

Utility Meter Monitoring: *A whole building electric meter shall be included in the design that is capable of connecting to the BAS and reporting electric energy consumption and peak demand at 15 minute intervals.”*

Section 3.6.8 – INTERIOR LIGHTING, General Design Criteria:

Replace the first sentence in the first paragraph with:

“The interior lighting system will be designed in accordance with ASHRAE’s AEDG except:

- *Daylight harvesting is not required*
- *Automated lighting control system is not required*
- *Occupancy sensors shall be installed to ‘manual on, auto off’*
- *Dimming is not required unless required by the Program, Judicial design guideline or to meet needs of multimedia type rooms.*

Section 3.6.8 – INTERIOR LIGHTING, Lamps:

Replace the first paragraph of the Lamps section with the following:

“The number of different lamps that are used should be kept to a minimum so that replacement stock will be minimal and the opportunity for replacement errors will be reduced. The design should strive to utilize only one type of T8 or T5 fluorescent lamp and one type of compact fluorescent lamp; however, this requirement should not override the goals of maximizing energy efficiency and proper task illumination. T8 and T5 lamps should have an average rated life of 20,000 hours. Compact fluorescent lamps should have a rated life of 10,000 hours average at 3 hours per start. See ASHRAE’s AEDG for ballast, CRI, color temperature and other light fixture requirements.

All fluorescent lamps should comply with the Federal Toxic Characteristics Leaching Process (TCLP) test, and yield less than 0.2 mg of mercury per liter when tested according to NEMA LL 1.”

Section 3.6.8 – INTERIOR LIGHTING, Interior lighting Control:

Replace the last two sentences in the first paragraph of this section with the following:

“Lighting in common areas such as corridors and lobbies should be controlled by dual technology occupancy sensors and longer auto-off time delay should be used. Low voltage wall station override switches may be needed in convenient locations throughout the facility to allow for on / off override to suit the specific needs of the building occupants. Lighting zones and switching shall be designed to allow all occupants or groups of occupants to have access to lighting control for individual tasks, large areas, and common spaces.”

Section 3.6.9 – EXTERIOR LIGHTING, Design Criteria:

ADD the following as the first and second paragraphs of this section:

“The exterior lighting system will be designed in accordance with ASHRAE's AEDG except:

- *LED fixtures are required*

Light pollution is not acceptable but light trespass is acceptable. Fixtures should not direct light above the horizontal plane for any reason but permitting light to spill into the street or adjacent property is acceptable if significant care is taken to avoid annoyance, discomfort, distraction, or loss of visibility. The LEED Reference Guide for Green Building Design and Construction (2009), Sustainable Sites Credit 8 offers good information and techniques for reference.

Section 3.6.9 – EXTERIOR LIGHTING, Illuminance:

Delete the second sentence of this section which reads as follows:

“Total lighting load for the facility should not exceed the calculated lighting power budget as determined by ASHRAE 90.1 - 2007.”

Section 3.6.15 – SUSTAINABLE DESIGN - ELECTRICAL:

Delete this entire section.

Much of the content from this section is redundant with previous sections and ASHRAE’s AEDG. We believe removing it here adds clarity, reduces errors and document length. Much of this section has been relocated or redefined in this addenda