

March 11, 2014

State of Washington
Department of Enterprise Services
Olympia, WA

ATTENTION: JIM HAYES

**SUBJECT: INVESTMENT GRADE AUDIT PROPOSAL:
CAPITAL CAMPUS CHILLED WATER SYSTEM PHASE I – PRODUCTION SYSTEM UPGRADES**

Dear Mr. Hayes:

University Mechanical Contractors, Inc. (UMC), in association with FVB Energy, is pleased to provide the following proposal to perform an Investment Grade Audit (IGA) for upgrades to the production equipment serving the Capital Campus Chilled Water (CHW) System. All work associated with this effort will be developed in coordination with the State of Washington's Energy Services Performance Contracting (ESPC) program.

STATEMENT OF UNDERSTANDING & OBJECTIVES:

The purpose of the proposed IGA is to develop a detailed engineering study that will identify the scope of work, schedule, construction plan and financial basis for the execution of an Energy Savings Performance Contract. This IGA will also provide a turn-key implementation proposal that includes all associated guaranteed cost and savings.

The State of Washington has specific goals and development criteria that UMC will work to incorporate into this audit. These goals include the following:

- Reduce the overall energy, water and operational costs for the chilled water production systems in the Capital Campus CHW plant
- Review all campus CHW production loads for consideration of future connection to the central CHW plant. This will include all buildings currently served by the plant as well as those utilizing stand-alone cooling equipment.
- Review and facilitate the utilization of potential funding sources that may be available (including but not limited to capital funds, utility incentives, energy/operational savings and other state or federal grants as applicable)
- Planned payback criteria will be developed based on project measures that will target a simple payback of 15 years (including but not limited to incentives, grants, utility savings, operational savings & capital replacement dollars)
- Reduce carbon emissions in line with State carbon emission reduction mandates.
- Upgrade the equipment infrastructure located in the CHW plant. This will include the following priorities:

- Removal of two existing Trane Chillers
- Removal of one existing Cooling Tower
- Installation of a new chiller sized appropriately to serve existing and future load
- Removal of the existing 4160 volt electrical service (currently serving the Trane chillers) and installation of a new 480 volt service

The following facilities that will be included as part of this audit.

- Central CHW Plant (Powerhouse)
- Buildings with individual stand-alone Chillers

ACTIONS TO BE PERFORMED: UMC's Energy Services Group, with assistance from FVB Energy, will complete the following actions associated with the development of the Investment Grade Audit.

Utility Usage Analysis (UUA) & Utility Balance

- Collect and analyze 3 years of historical utility usage (electrical, natural gas, fuel oil, water/sewer and other utilities as applicable)
- Collect, Monitor and analyze seasonal CHW plant load production and distribution and the chilled water production from selected stand-alone building chillers
- Monitor and analyze applicable energy using equipment & systems to develop energy usage breakout of major systems in the plant
- Establish an energy baseline balanced with historical utility usage

Detailed Site Assessment and Energy Audit

- Perform a detailed audit of the facility infrastructure; including all systems that directly or indirectly affect the usage of energy (electricity, natural gas, fuel oil, etc) or water/wastewater
- Collect and analyze past studies, trends, drawings, plans and other information that provide insight into the operation of the plant
- Analyze and understand current and future planned campus plans that will affect the plant load. These include campus master plan, upcoming construction/remodels, other energy conservation retrofit's and facility occupancy/use changes.
- Measure and monitor the energy usage of select equipment to quantify actual operating parameters. This will be done through a combination of stand-alone measurement devices and trend loggers (provided by UMC), as well as utilization of trending options on the existing Building Automation System currently serving the facility.
- Interview facility/plant operating and engineering staff to understand & prioritize the following
 - Equipment issues or deficiencies that need to be resolved
 - Gain an understanding of past and current operation
 - Solicit infrastructure upgrade/modification recommendations
- Survey occupants to understand comfort issues or concerns
- Review facility design documents, specifications and O&M manuals
- Analyze, identify & recommend energy conservation measures that meet the project goals

- Identify available grants, utility incentives and other funding sources as applicable. Coordinate with the grant providers & local utilities to obtain these funds to help pay for the proposed project.
- Coordinate with facility personnel and staff to prevent disruptions to work schedules during audit and implementation
- Provide a report that is clear and concise and can accurately be used to further develop or implement the project and make informed financial decisions
- The equipment selection for the newly proposed chiller(s) will be coordinated to take into account the following parameters when deciding upon size and manufacturer.
 - Operates as the base load chiller within the optimum efficiency range for a majority of the cooling season.
 - Provides wide range of efficient operation for handling annual campus load variations.
 - Has flexibility to operate with future plant variable flow optimization.
 - Takes into account upcoming building modifications, renovations and new construction projects that may affect plant loads.
 - Takes into account future vision for campus plant operations that could incorporate heat recovery chillers, thermal storage, economizers, etc.
- Project future capital and operating costs of chilled water production

Turn-key Construction Proposal

- Develop and provide a guaranteed implementation cost and associated guaranteed energy savings
- Provide detailed project scope
- Identify proposed system/equipment selections, preliminary design, schematic drawings and control sequences for upgrades
- Develop a detailed project schedule that identifies the timeline and steps required to implement the project
- Identify maintenance requirements for the proposed equipment upgrades
- Coordinate options for financing of the project (through the state local loan program or 3rd party low interest financing) as appropriate and as requested by owner

PROJECT ASSUMPTIONS:

In developing the IGA, UMC assumes the following information will be provided as required.

- Access to facilities and equipment for site assessment
- 3 years of historical utility usage (electrical, natural gas, fuel oil, water/sewer, chemicals, and other utilities as applicable)
- As-built design documents
- Asbestos assessment reports as available
- Access to facility, HVAC systems & control systems
- Construction drawings, specifications & O&M manuals

TIMELINE:

The following timeline is based on UMC receiving a signed IGA proposal by Mar 21st, 2014:

- Investment Grade Audit: March –May 2014
- Proposal Delivery: May 2014
- Anticipated Construction Period: July – September 2014

AUDIT FEE: The fee to develop an Investment Grade Audit will be **Fifty Five Thousand and Six Hundred dollars (\$55,600)**. All fees assessed will be included in the final turn-key ESPC implementation costs. In the event that UMC provides a project that meets the project development criteria and the POS decides not to move forward with the project, this fee will be paid to directly to UMC.

We look forward to working with you on this project.

Sincerely,



Scott Locke, PE, LEED AP
Manager, Energy Services
University Mechanical Contractors, Inc.