King's Daughters

KD-CC-0181-25

VITALITY CENTER RENOVATION

ADDENDUM # 03

04/10/25

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY 04/22/2025 @ 3:00 PM EST. OFFEROR SHOULD ACKNOWLEDGE RECEIPT OF THIS AND ANY ADDENDUM AS STATED IN THE FORM FOR PROPOSAL.

ITEM #1: NOTICE TO BIDDERS:

- Refer to the Mechanical Specifications Section 25 02 00 – CONTROLS – DIRECT DIGITAL

  A. Changed verbiage of existing system in section 1.C. Refer to specification.
  B. Added verbiage for licensing in section 1.D. Refer to specification

END OF ADDENDUM 03

OFFICIAL APPROVAL
UK KING'S DAUGHTERS MEDICAL CENTER

Becky Pyles

Becky Pyles/ Contract Manager

SIGNATURE

_____

_____
Typed or Print Name

SECTION 250200 - CONTROLS – DIRECT DIGITAL

1. GENERAL

A. The Contractor shall furnish all labor, materials, equipment and services required to provide a complete temperature control system as specified and as shown on the plans.

B. Prior to the installation of or payment for any work, the Contractor shall prepare submittals which shall be reviewed by the Architect and Engineer. These submittals shall include a complete control diagram and sequence of operation of the entire system, plus engineering data on all devices used.

C. The Contractor shall be a licensed installer of **Distech Controls** ~~Trane Tracer HVAC temperature~~. All controls for this project shall be integrated into the existing building's **Distech Controls via Niagara protocol system** ~~Trane Tracer system~~. The installer shall have 5 years experience and installed a minimum of 8 systems of similar size. Their offices shall be within 150 miles of the project site.

D. When providing a JACE or equivalent tier-1 controller, the licenses for ALL available points must be purchased by the installing contractor. It will not be acceptable for an installing contractor to install a JACE in a manner in which only part of the licenses for the available capacity have been purchased. Any contractor who is required to utilize an existing JACE to accomplish his final Tie-in to the front end software, must include the cost to accommodate his additional points BOTH at the local JACE level as well as the head-end level.

E. The system herein specified shall be free from defects in workmanship and material under normal use and service if, within twelve (12) months from the date of acceptance by the Engineer, any of the equipment herein described is proved to be defective in workmanship or material, it will be adjusted, repaired, or replaced free of charge by the Contractor.

F. All equipment, unless specified to the contrary, shall be fully proportioning and adjustable. The Control System shall consist of all room thermostats, air stream thermostats, valves, damper operators, relays, freeze protection equipment, dampers, panels, and other accessory equipment not provided with the equipment to fill the intent of the specifications and drawings.

G. Complete freeze protection equipment shall be provided at all required locations. Freeze protection thermostats shall have twenty-foot elements and be capable of de-energizing the circuit when any point along the element reaches the set point of the thermostat. Freezestat elements shall be placed on the leaving side of each heating coil, so that every square foot on the heating coil is protected. On heating coils larger than eighteen (18) square feet, provide multiple freezestats wired in series. The Contractor shall ensure that all freeze protection devices and equipment has been fully tested prior to the heating season and shall so certify in writing to the Engineers. The cost of replacement of equipment damaged by freeze-up caused by improper freeze protection or faulty control equipment shall be borne by the Contractor.

H. All units, controls, equipment, heat pumps, etc., and controls shall reset automatically when power is restored after an outage.

I. All control wiring concealed in walls and exposed in mechanical rooms, closets, etc., shall be in conduit. Provide plenum rated wiring where cable is concealed above ceilings. Do not paint wiring. The Contractor is responsible for protecting wiring from paint. Any painted cabling shall be replaced.

J. All dampers shall be capable of operating properly with the system pressures encountered. This shall include modulating and shut-off functions.

K. The Contractor shall also refer to the mechanical maintenance, HVAC equipment, and all other sections of the specifications for additional control requirements.

L. Provide smoke detectors and shut down control for all air handling units and combined air systems as required by the KBC and IMC Section 606.

M. All DDC controllers or control modules shall have covers to protect the circuit boards. All wiring shall be anchored securely within 6" of the controller.

N. Provide all control dampers, etc. not supplied with the equipment or required to accomplish the sequences specified.

O. The Contractor shall provide all refrigeration control and interlock wiring as recommended by the equipment manufacturer.

P. Wiring and required conduit in connection with the control system(s), including power wiring of any voltage, shall be installed by the Contractor. The Contractor may, at their option, engage the Electrical Contractor to accomplish this work. It is emphasized however, that the Contractor is finally responsible for all such work.

Q. Electric power for the control panels, modules, unit controller, damper motors, etc., shall be derived from the building electric system. Power shall not be derived from the HVAC equipment power source or equipment low voltage transformers (internal or integral).

R. The electrical work required for the installation of the control system(s), shall be provided by the Contractor in accordance with all National and Local Electrical Codes. All wiring shall be concealed except in Mechanical Rooms. All electrical work specified under this division of the specifications shall also comply with Division 26 of these specifications.

S. All exterior electrical work, equipment, etc. shall be waterproofed.

T. Controls system and all related components shall comply with ASHRAE Standard 135 (BACnet protocol).

2. OWNER'S TRAINING

A. The Contractor shall provide full instructions to designated personnel in the operation, maintenance, and programming of the system. The training shall be specifically oriented to the system and interfacing equipment installed. Four hours of Owner Training shall be provided at substantial

completion, again after 6 months and again 1 year after substantial completion. The Owner Training shall include an overview of the entire HVAC system operation, temperature sensor setpoint manipulation, critical alarm training and graphics display overview. Subcontractors shall be present during Owner training sessions.

B. The Contractor shall provide a Sign-in Sheet and Meeting Minutes of the training. The Contractor shall also video record the initial training sessions. Complete Operations and Maintenance Manuals shall be reviewed by the Contractor during training.

3. CONTROL SYSTEM CHECKOUT AND TESTING – BY CONTROLS CONTRACTOR PRIOR TO DEMONSTRATION AND ACCEPTANCE

A. Startup Testing. Complete startup testing to verify operational control system before notifying Owner of system demonstration. Provide Owner with schedule for startup testing. Owner may have representative present during any of all startup testing.

(1) Calibrate and prepare for service each instrument, control, and accessory equipment furnished under Section 250200.
(2) Verify that control wiring is properly connected and free of shorts and ground faults.
(3) Enable control systems and verify each input device's calibration. Calibrate each device according to manufacturer's recommendations.
(4) Verify that binary output devices such as relays, solenoid valves, two-position actuators and control valves, and magnetic starters, operate properly and that normal positions are correct.
(5) Verify that analog output devices such as I/Ps and actuators are functional, that start and span are correct, and that direction and normal positions are correct. Check control valves and automatic dampers to ensure proper action and closure. Make necessary adjustments to valve stem and damper blade travel.
(6) Prepare a log documenting startup testing of each input and output device, with technician's initials certifying each device has been tested and calibrated. Submit log to Engineer for review.
(7) Verify that system operates according to sequences of operation. Simulate and observe each operational mode by overriding and varying inputs and schedules. Tune PID loops and each control routine that requires tuning.
(8) Alarms and Interlocks.
   a. Check each alarm with an appropriate signal at a value that will trip the alarm.
   b. Trip interlocks using field contacts to check logic and to ensure that actuators fail in the proper direction.
   c. Test interlock actions by simulating alarm conditions to check initiating value of variable and interlock action.

4. EQUIPMENT

A. CONTROL PANEL(S)

(1) Each system shall be provided with a local panel for mounting of all relays, switches, controllers, and thermometers associated with that system. Where one cabinet will not accommodate all the equipment necessary for one system, a second cabinet shall be mounted and bolted adjacent to it.

Cabinets shall be provided with a 2/3's door. All devices shall be provided with lamacoid plastic nameplates for identification.

B. THERMOSTATS

(1) General

a. All thermostats shall have a "warmer-cooler" knob. This control shall allow the space occupants to reset the temperature up or down a predetermined amount. This amount, or no amount at all, shall be settable thru the BAS.

b. The thermostat shall have an unoccupied override button and an integral communications port.

c. The thermostat shall have no integral thermometer.

d. All thermostats provided for the project shall be similar in size and appearance.

e. Provide tamper-proof guards for all wall mounted thermostats selected by Owner.

f. All thermostats shall be mounted on a plastic base or other insulating material to prevent wall coupling effect.

g. Thermostats shall be mounted with the top at a maximum of 48" A.F.F. and shall be mounted to comply with A.D.A.

h. Thermostats shall provide temperature dead band of 5° F as required by IECC 2012.

i. Thermostat, or any other DDC sensor back box in rated walls shall be a minimum distance apart as allowed by code to maintain the rating. If closer, provide rated box or fireproofing in code approved manner.

C. DAMPERS

(1) Several louvers of practical widths shall be provided for larger dampers. Modulating dampers shall have opposed blades. Dampers shall have edge and end seals. Dampers shall be Ruskin CD-60 or better. Maximum leakage rate shall be 2 CFM per square foot at 1" W.G. pressure differential for dampers greater than 12" wide. Leak rate for dampers 12" and less shall be 3 CFM per square foot. NOTE: Do not mount outside air dampers so close to water coils, piping, etc., that freeze-up may occur due to a leaky damper.

D. RELAYS AND SWITCHES

(1) Relays and switches shall be of the positive and gradual acting type and shall be furnished and installed as required for the successful operation of the system. All switches shall have suitable indicating plates.

E. VALVES

(1) All valves shall be of the fully modulating and silent type unless otherwise specified. They shall provide accurate control of the heating or cooling medium under all load conditions. All valves 2-inches or smaller shall have brass or bronze bodies with screwed ends. Valves 2-1/2 inches and larger shall have iron bodies, brass or bronze trimming with flange ends. Valves shall be normally open or normally closed as required. Valves shall be installed with the stem in the upright position or as recommended by the valve manufacturer.

5. DEMONSTRATION

A. A complete demonstration and readout of the capabilities of the monitoring and control system shall be performed. The contractor shall demonstrate on -site with the Owner and Engineer that all points and sequences operate as designed.

The warranty does not start until all controls, graphics, points, etc. are functioning.

All controls functioning on _____ Date

Witnessed by _____

END OF SECTION 250200