October 30, 2013

Re: Request for Proposals- Commissioning Services
UI Project Number 0418001
John and Mary Pappajohn Biomedical Discovery Building Fit-out Central Vivarium Space
University of Iowa

The University of Iowa, located in Iowa City, Iowa, intends to retain the services of a qualified Design Professional to provide Commissioning (Cx) Services for the above project. Qualified Commissioning Agents (CxA) are invited to submit a proposal based on the scope of services described below.

The initial scope of services and fee will be for Design Phase Commissioning only.

The proposal shall include qualifications for the Design, Construction, and Acceptance Phases of the project. The Owner reserves the right to negotiate Construction and Acceptance Phase Commissioning services with the selected firm once the project design is complete and the appropriate scope is established.

1.0 Background

The fit-out for the central vivarium in PBDB is approximately 35,000 gross square feet and will house large and small animals, centralized cage wash, autocalves, behavioral rooms and the necessary support facilities. This project also includes a built in cage wash equipment, renovation of the MERF cage wash space, and renovation of the BSB cage wash area.

2.0 Scope of Work

The primary role of the successful Design Professional is to develop and coordinate the execution of a quality assurance plan pertaining to commissioned equipment and systems, observe and document performance, and determine whether systems are functioning in accordance with the Owner’s Project Requirements and the Contract Documents. Additionally, the successful Design Professional will assist in identifying solutions to non-conforming work. Final resolution will remain the responsibility of the Contractor and Design Professional. Refer to ASHRAE Guideline 0-2005 and NIBS Guideline 3-2012 for acceptable standard of care.

Commissioning Tasks

The Commissioning Agent (CxA) shall complete the following tasks during the Design, Construction, Acceptance, and Occupancy/Operations Phases of the project.

Systems to be Commissioned and Sampling Rate

A. GENERAL: The list below is intended to provide a guide for determining the types of systems and equipment to be commissioned. The final commissioning schedule will be determined by the Owner based on the selected systems and equipment.

B. MECHANICAL SYSTEMS

1. Extension of Air Distribution Systems, including terminal units and associated controls and dampers. Test 25% or Ten (10) units, whichever is greater, of like terminal units.
2. Exhaust Systems, including equipment and dampers. Conduct 25% sampling or One (1) unit, whichever is greater, of like systems.
3. Utility Metering and Reporting Systems. Conduct 100% check of reporting points.
4. Humidity Control System. Conduct 100% check of central equipment.
5. Hydronic Equipment (pumps, exchangers, boilers, chillers, condensers, well fields, etc.) and associated controls and metering. Conduct 100% check of central equipment, controls, and interlocks.
6. Animal room exhaust system
7. Full integration with existing systems.

C. ELECTRICAL SYSTEMS

1. Extension of Emergency Power Systems (ATS, UPS, etc.) and associated controls, distribution, and metering. Conduct 100% check of equipment, controls, and interlocks.
2. Utility Metering and Reporting Systems. Conduct 100% check of reporting points.
3. Lighting Controls. Conduct 100% check of Lighting Control Systems
4. Variable Frequency Drives. Conduct 100% of Control System Interlocks.
5. Full integration with existing systems.

D. PLUMBING SYSTEMS

1. Extension of domestic central equipment, including Water Heaters and Pumps (booster, sump, ejector, etc.). Conduct 100% check of equipment, controls, and interlocks.
2. Full integration with existing systems.

E. BUILDING CONTROLS

1. Conduct a 25% sampling of like terminal equipment, including analog sensor calibration, point-to-point and mapping to workstation graphics, proper control of operating sequences and alarm management functions.
2. Utilizing setpoint override and adjustment at the Operator Work Station (OWS), verify the remaining 75% of like terminal equipment performs as required.
3. Conduct a 100% check of major equipment and monitoring points, including analog sensor calibration, point-to-point and mapping to workstation graphics, proper control of operating sequences and alarm management functions.
4. Conduct a 100% check of each unique system or equipment control sequence.
5. Control Points: Verify that the control system was checked and that it is commanding, reporting and controlling as specified in the construction documents. Verification must include verification of each control point.
6. Sensors: Verify that all sensors have been calibrated so that the value reported in the control system represents the actual local value.
7. Actuators: Visually verify that all actuators have been adjusted to fully close and open dampers and valves.
8. Verify all graphic control screens are provided as required and accurately depict the equipment, system and associated floor plans. Verify proper operation of links between graphic screens.
9. Review trend information of all major control setpoints to ensure stable and accurate control.
10. Verify control and monitoring points/devices have been properly labeled.

F. SPECIALTY SYSTEMS

1. Laboratory compressed air system
2. Laboratory vacuum system
3. Laboratory water system
4. Oxygen distribution system
5. Air quality monitoring
6. Animal room control system
7. Water treatment system
8. Animal watering system
9. Cart wash system
G. UTILITY INFRASTRUCTURE

H. SYSTEMS TO BE COMMISSIONED BY UI PERSONNEL
   1. The Contractor shall provide assistance and participate in the commissioning of the following systems:
      a. Access Control
      b. Fire Protection and Fire Alarm

Design Phase

Commissioning during the Design Phase is intended to ensure that the Owner’s Project Requirements are documented and captured within the Contract Documents. The CxA shall complete the following:

1. Coordinate with the Owner’s Representative and supervise the commissioning process during design.
2. Assist with review and development of the Owner’s Project Requirements (OPR).
3. Perform a quality control design review of the Design Documents, focusing on commissioned equipment and systems. Submit review comments on the form provided by the Owner’s Representative. Refer to ASHRAE Guideline 0-2005, Annex N and addendum, for expected standard of care. Include the following, as applicable:
   a. Opportunities for making the building easier to commission.
   b. Opportunities for making building operations and maintenance easier (i.e.: Equipment Accessibility, System Control, etc.).
   c. Opportunities for decreasing utility usage and/or increasing indoor environmental quality.
   d. Verify compliance with OPR.
   e. Reviews should be completed at the following benchmarks:
      i. Interim MEPT Construction Documents
      ii. 95% Construction Documents
5. Perform a back-check of each subsequent design submittal to verify the agreed upon commissioning related corrections were implemented.
6. Edit University Of Iowa standard Specification Section 01 91 13 COMMISSIONING. The commissioning specifications shall be transmitted to the Design Professional in electronic form and shall include review of the following:
   a. List of systems being commissioned
   b. Cross references to all applicable and related sections
   c. References for inclusion into individual equipment and systems specification sections
   d. Acceptance testing criteria
   e. Deferred testing requirements
8. Conduct Design Phase Cx meetings as required by the University (minimum of two (2) meetings).
9. Attend Pre-Bid Meeting.
10. Identify Commissioning activities to be integrated in to the project schedule.

Construction Phase

The Construction Phase scope of work will be established at final design. Anticipated scope of work is as follows:

Commissioning during the Construction Phase is intended to assure that the Owner’s Project Requirements, as expressed by the contract documents, are met and achieve their specific objectives. The CxA shall complete the following tasks:

1. Conduct a kick-off meeting with the Contractor, including installation subcontractors, to discuss Commissioning scope, plan, coordination and schedule. Prepare and distribute meeting minutes.
2. Coordinate the Commissioning work with Owner’s Representative and Contractors to ensure that Commissioning activities are included in the master construction schedule. As a minimum, identify the following:
   a. Commissioning Team Meetings;
b. Start and completion of each project phase;
c. Key system and assembly completion and testing;
d. Training sessions;
e. Substantial completion;
f. Warranty start dates;
g. Occu- pant move-in dates;
h. Warranty walkthrough date (two (2) months prior to end of warranty);
i. Lessons learned meeting.

3. Review applicable Contractor submittals concurrent with the Design Team reviews.
4. Review 50% Construction Operation and Maintenance Manuals.
5. Develop project specific Construction Checklists. Verify that the manufacturer pre-start and start-up checks are incorporated into, or augment, the Construction Checklists.
6. Verify Construction Checklists are completed and submitted prior to functional acceptance testing.
7. After receipt of the Controls Submittal, participate in a meeting with the Owner’s Representative, Design Professional, Contractor, Controls subcontractor, Mechanical subcontractor and Electrical subcontractor to review the submittal and mechanical/electrical systems. Focus will be on how the selected sequences of operation interact with the mechanical/electrical systems. Additional focus will be on defining and assigning responsibilities for construction activities; i.e. control installation, control programming, and equipment start-up that will allow the pre-functional testing and start-up of mechanical/electrical systems.
8. Coordinate with and assist the Construction Team in developing a start-up plan for each piece of equipment and system to ensure all recommended procedures are incorporated in the appropriate sequence. This coordination may be best performed by the CxA’s participation in regularly scheduled MEP coordination meetings conducted by the Contractors.
9. Prepare Functional Performance Test procedures/scripts/checklists for the commissioned equipment and systems. Submit for Owner’s Representative and Contractor review two (2) months prior to functional testing in the field.
10. Perform site visits as needed, but at least monthly, during construction to observe component and system installations. Attend planning and job-site meetings to obtain information on construction progress as requested by Owner. Review construction meeting minutes for revisions and substitutions relating to the Owner’s Project Requirements. Assist in resolving any discrepancies identified during regular site inspections. Begin site visits at onset of MEPT rough in.
11. In conjunction with required site visits, conduct on-site Cx meetings to review progress, coordination, and issues resolution.
12. Coordinate with the contractor to witness startup of the following equipment:
   a. Variable Frequency Drives.
13. Review the following third party and/or manufacturer representative certified test reports to verify the test results meet the applicable industry standards and project requirements:
   a. Variable Frequency Drive set-up / start-up for each piece of equipment having a VFD.
14. Review Request for Information (RFI), Instruction to Contractor (ITC); and Change Orders for impact on commissioning and the Owner Project Requirements.
15. Maintain Commissioning Issues Log containing any items that do not meet the OPR or Contract Documents. The log must be detailed enough to provide clarity and point of future reference for the comment. CxA shall update and issue the Issues Log within two (2) days following a site visit and two (2) days prior to Cx meeting.

Acceptance Phase (Prior to Substantial Completion)

Commissioning during the acceptance phase is intended to demonstrate the performance of the equipment and systems installed during the construction phase meet the requirements of the Contract Documents. The acceptance phase must occur prior to Substantial Completion. The CxA shall complete the following:

1. Update commissioning schedule and plan with Owner’s Representative and Contractor.
2. Conduct functional testing to demonstrate that systems and components are operating according to the Owner’s Project Requirements, University Design Standards, Contract Documents and applicable industry standards. Functional testing shall include operating the system and components through each of the written sequences of operation, and verification of proper integration to other system or systems as required.
3. Verify building controls.
4. Review the preliminary and final Testing, Adjusting and Balancing (TAB) report to verify all equipment is included and performance of each is per contract requirements.
5. With assistance and collaboration of the TAB and controls contractors, perform the following:
   a. Utilizing the trend data captured, optimize static and differential pressure control setpoints and reset limits.
   b. Verify calibration of airflow monitoring stations
   c. Verify the re-circulating flow balance and maintenance accessibility.
6. Update Commissioning Issues Log with any acceptance testing items that do not meet the OPR or Contract Documents. Provide the log and acceptance test results and recommendations to the Owner’s Representative and Contractors.
7. Coordinate retesting as necessary. One retest of each major system will be provided as part of normal checkout. Additional retests will be considered outside the normal scope of work.
9. Submit electronic copy of Commissioning Process Progress Report at Substantial Completion. Report to include, at a minimum, the following:
   a. List of incomplete commissioning milestones with anticipated completion dates. Include seasonal and/or deferred testing milestones.
   b. List of systems and equipment successfully commissioned to date. List should not include systems or equipment with outstanding issues.
   c. Updated Commissioning Issues Log. Include anticipated resolution date for open items.
   d. Recommendations for continuous commissioning activities for verifying on-going energy conservation.
11. Transmit to the Contractors one (1) electronic and three (3) hard copies of Commissioning Documentation to be inserted into the Operation and Maintenance (O&M) Manuals.
   a. The intent of this requirement is to provide a combined O&M and Commissioning Systems Manual for use by the Owner’s personnel for Operations and Existing Building Commissioning activities. A separate Commissioning Systems Manual will not be required.
   b. Coordinate format and organization of O&M Manuals with Contractor. Like systems are to be submitted together under a single binder tab or heading. Refer to standard Specification Section 01 78 23 OPERATION AND MAINTENANCE DATA.
   c. Commissioning Documentation for a given system or piece of equipment is to be modeled after ASHRAE Guideline 4-2008 and should include, as applicable:
      i. Executive summary of system and major components.
      ii. Completed functional test reports, including as-commissioned setpoints, sequence of operation, operating parameters, etc.
      iii. Operating procedures for all normal, manual, and emergency modes of operation.
      iv. Ongoing optimization guidelines and detailed, equipment specific maintenance recommendations.
      v. Completed test reports, startup reports, etc.

**Occupancy / Operations Phase**

Commissioning during the Occupancy / Operations Phase is intended to assist the facility operating staff in identifying any defects in the installed equipment or system operation. The CxA shall complete the following:

1. Schedule and attend seasonal and/or deferred testing of HVAC systems. Submit reports to Owner for inclusion into O&M Manuals.
2. Participate in Lessons Learned meeting.
3. Schedule and attend warranty walkthrough two (2) months prior to end of warranty period.

### 3.0 Schedule

The project is currently in the CD Document phase.

To review the current documents, please send an e-mail request to facilities-dcs@uiowa.edu

The e-mail must include the subject line: **UI# 0418001 PBDB Central Vivarium Fit-Out**

The project anticipates the following schedule (Dates subject to change):
4.0 Test Equipment

The Contractor shall provide all tools required to start, checkout, and functionally test equipment and systems. CxA shall provide specialized testing equipment, such as supplemental portable data loggers.

Data logging equipment, monitoring devices, specialized equipment, and software not required to be provided by the Contractor in the Contract Documents, and provided by the CxA to monitor, confirm, or verify the contractor’s testing procedures, shall remain the property of the CxA. Equipment provided shall meet the minimum accuracy, calibration, and performance standards required by the performance test.

5.0 Statement of Qualifications

It is the Owner’s intent that the person designated as the commissioning authority (CxA), and the key staff members, exhibit the following:

1. Acted as the principal Commissioning Authority for similar vivarium or animal holding projects.
2. A bachelor’s degree in Engineering is strongly preferred. P.E. license is desired. Other technical training, past commissioning, and field experience will also be considered.
3. Hold ASHRAE CPMP Certification, NEBB BSC Accreditation, University of Wisconsin CxAP, or BCxA CCP Certification.
4. Exhibit extensive experience in the operation and troubleshooting of HVAC systems and energy management control systems.
5. Exhibit extensive field experience. A minimum of five full years in this type of work is required.
6. Exhibit extensive knowledge in testing and balancing of both air and water systems. NEBB, AABC or TABB certification preferred.
7. Exhibit experience in energy-efficient equipment design and optimization.
8. Exhibit direct experience in monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment.
9. Exhibit excellent verbal and writing communication skills. Highly organized and able to work with both management and trade contractors.

6.0 Proposal Requirements

The Proposer shall:

Provide a written proposal on the University of Iowa Letter of Proposal form found on the University’s Facilities Management/Consultants web site.

http://www.facilities.uiowa.edu/pdc/consultants/agreement-form.html

Include the following:
1. List the individual who will be the CxA.
2. Provide an organization chart indicating proposed project team.
3. Provide resumes for key staff members.
4. Briefly describe relevant experience of the proposed team in the following areas. List each person’s direct involvement in:
   a. Similar Projects.
   b. Testing and Balancing.
5. Describe your proposed approach to managing the project.
6. Limit submittal to twenty (20) total pages.
7.0 Proposal Evaluation and Award

1. The Owner will consider and evaluate the following proposal components:
   a. Design Professional experience and qualifications.
   b. CxA qualifications and accreditations.
   c. Key support personnel experience and qualifications.
   d. Project approach.
   e. Design Professional location.
   f. Proposal quality.
   g. Proposed fee.

2. The Owner reserves the right to negotiate and accept any proposal, or to reject all proposals, and to offer to accept any proposal subject to the deletion of any item or group of items of work from the scope of work.

3. The Proposer shall be prepared to attend an interview as part of the evaluation process. The Proposer shall bear all costs associated with preparing the RFP and subsequent interviews.

Respondents’ proposals are due **no later than 12:00 pm (Noon) on Wednesday November 13, 2013**. Submitted electronically to the addresses listed below. Combine all requested materials in a single *.pdf file format.

Should you have any questions or comments, please contact:

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