

REQUEST FOR QUALIFICATIONS

COMMISSIONING AGENT, STUDENT ATHLETE HIGH PERFORMANCE CENTER

The Berkeley campus of the University of California requests that interested firms submit written proposals to provide commissioning services for construction of the Student Athlete High Performance Center project.

The project is a \$102 Million 2 level, 142,000 sf facility that includes training rooms, locker rooms, offices and other support spaces for the Football and Olympic Sports programs, The current schedule indicates that the project will start bidding building systems in November '07 and start construction in early '08. Substantial completion is planned for mid 2010. The proposal shall include all bidding and construction phase commissioning services outlined in this RFP.

1.0 COMMISSIONING PROCESS

The following list of 13 steps is a summary of the commissioning process, which the University intends to have implemented on this project.

- 1.1 The commissioning agent (CX) reviews the Contract Documents to confirm that the design objectives and intent are clearly documented. Comments will be discussed with the design team and the University representative, (URS).
- 1.2 CX prepares a Commissioning Specification which clearly defines the level of effort of the URS, CX and the contractor related to commissioning.
- 1.3 CX develops a Commissioning Plan.
- 1.4 CX conducts a scoping meeting where the commissioning process is reviewed with the Project Team. CX will conduct additional meetings, as necessary, throughout the bidding and construction phases, to plan, coordinate, and schedule future activities and resolve problems related to commissioning.
- 1.5 CX reviews all normal equipment submittals, including detailed start-up procedures.
- 1.6 CX develops a start-up plans, start-up documentation formats and pre-functional checklists to be completed by the subcontractors before functional testing during the start up process.
- 1.7 CX manages overall commissioning process, including checkout and performance verification, from component level to equipment to systems and intersystem levels. Commissioning is completed before Substantial Completion.

- 1.8 Subcontractors, under their own direction, execute and document the pre-functional checklists and perform startup and initial checkout. The CX documents that the checklists and startup were completed in accordance with the Contract Documents. The CX witnessing startup of selected equipment, including all critical electrical, HVAC and controls systems.
- 1.9 CX develops specific equipment and system functional performance test procedures. The subcontractors review and execute the procedures under the direction of, and documented by the CX.
- 1.10 Items of non-compliance are corrected in accordance with the Contract Documents, and the system retested.
- 1.11 The CX reviews the O&M documentation for completeness.
- 1.12 The CX reviews, pre-approves and coordinates the training provided by the subcontractors and verifies that it was completed.
- 1.13 The CX prepares final Commissioning Report.

2.0 SYSTEMS TO BE COMMISSIONED

The following building systems, including all equipment, components and controls are to be commissioned:

- HVAC System - Section 15975 – Mechanical System Commissioning
- Building Management System – Section 01800 – Commissioning
- Fire Protection Systems – Section 01810 – Functional Performance Testing Procedures
- Electrical Systems – Section 16945 – Electrical System Commissioning
- Security Systems – Section 17995 – Building Automation System Commissioning

3.0 LEVEL OF EFFORTS

The following outlines the level of effort expected for each commissioned system:

- 3.1 The CX shall review the complete Contract Documents of completeness and clarity to confirm the responsibilities of subcontractors is clearly defined and includes all necessary work related to startup and commissioning. The CX shall review the Commissioning Specification, including pre-functional checklists for the installing contractors to include in their startup and initial checkout and detailed written test procedures for guiding and documenting performance during functional testing.
- 3.2 The functional testing shall include operating the system and components through each of the written sequences of operation, and other significant modes and

sequences, including startup, shutdown, unoccupied mode, manual mode, staging, miscellaneous alarms, power failure, security alarm when impacted and interlocks with other systems or equipment. Sensors and actuators shall be calibrated during pre-functional check listing by the installing contractors, and spot-checked by the CX during functional testing.

- 3.3 Tests on respective HVAC equipment shall be executed, if possible, during both the heating and cooling season. However, some overwriting of control values to simulate conditions shall be allowed. The central plant shall have its efficiency bench-marked for later use by operations staff. Functional testing shall be done using conventional manual methods, control system trend logs, and read-outs or stand-alone data loggers, to provide a high level of confidence in proper system function, as deemed appropriate by the CX and the University.

4.0 DESIRED QUALIFICATIONS

The person designated as the Commissioning Agent (CX) should have:

- 4.1 Acted as the principal CX for at least three (3) projects over 50,000 sf.
- 4.2 Extensive experience in the operation and troubleshooting of HVAC systems, energy management control systems, security systems, and Building Automation Management system.
- 4.3 Extensive experience as a CX. A minimum of five (5) full years in this type of work is required
- 4.4 Knowledge of building operation and maintenance of O&M training.
- 4.5 Knowledge of test and balance of both air and water systems.
- 4.6 Experience in energy-efficient equipment design and control strategy optimization.
- 4.7 Direct experience in monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment.
- 4.8 Excellent verbal and writing communication skills. Highly organized and able to work with both management and trade contractors.
- 4.9 Experienced in writing commissioning specifications.
- 4.10 A bachelor's degree in Mechanical Engineering is strongly preferred, and P.E. certification is desired, however, other technical training, past commissioning experience and field experience will be considered.

- 4.11 Membership of the Building Commissioning Association will be considered a plus.

The required expertise for this project will be based on skill and experience of the firm making the proposal and the individual proposed as the CX. The CX must be fully qualified to commission most of the above listed systems. If the CX or prime firm does not have sufficient skills to commission a specific system, the prime shall subcontract with a qualified party to do so. That party's qualifications shall be included and clearly designated in the response to this RFP.

5.0 SCOPE OF SERVICES

The CX is not responsible for design concept, design criteria, compliance with codes, design or construction scheduling, cost estimating, or construction management. The CX is expected to assist with the problem-solving and resolving non-conformance of deficiencies, but ultimately the responsibilities for design and construction reside with the A/E and Contractor respectively. The primary role of the CX is to develop and coordinate the execution of a testing plan and observe and document performance, that is, determine whether systems are functioning in accordance with the Contract Documents. The Contractor will provide all tools or the use of tools to start checkout, and functionally test equipment and systems, except for specified testing with portable data-loggers, which shall be supplied and installed by the CX.

Specific Tasks the CX shall be responsible for include:

- 5.1 Manage the overall commissioning process, including coordinating and directing all commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation and clear and regular communications and consultations with all necessary parties.
- 5.2 Review the complete contract Documents to confirm all necessary startup and commissioning tasks are clearly defined.
- 5.3 Develop commissioning specifications and the functional tests, checklists and other requirements to define responsibilities and level of effort of all parties related to commissioning.
- 5.4 Review Contractor submittals applicable to systems being commissioned for compliance with commissioning needs.
- 5.5 Gather and review the current control sequences and interlocks, and work with contractors and design engineers until sufficient clarity has been obtained to be able to write detailed testing procedures.
- 5.6 Develop an enhanced start-up and initial systems checkout plan with subcontractors.

- 5.7 Perform site visits, to confirm HVAC controls are ready to be commissioned. Review construction meeting minutes for issues relating to the commissioning process. Assist in resolving any discrepancies.
- 5.8 Witness the HVAC piping test and flushing procedures, sufficient to be confident that proper procedures were followed. Document this testing, and notify the University Representative of any deficiencies in results or procedures.
- 5.9 Witness ductwork testing and cleaning procedures, sufficient to be confident that proper procedures were followed. Document this testing and notify the University Representative of any deficiencies in results or procedures.
- 5.10 Approve pre functional tests by reviewing pre functional checklist reports or by direct site observation.
- 5.11 Approve air and water systems balancing by spot testing and by reviewing completed reports and by selected site observation.
- 5.12 With necessary assistance and review from installing contractors, write the functional performance test procedures for equipment and systems. This may include energy management control system trending, stand-alone data-logger monitoring or manual functional testing. Submit to the University Representative for review.
- 5.13 Analyze any functional performance trend logs and monitoring data to verify performance.
- 5.14 Coordinate, witness and approve manual functional performance tests performed by installing contractors. Coordinate re-testing as necessary until satisfactory performance is achieved.
- 5.15 Maintain a master deficiency and resolution log and a separate testing record. Provide to the PM written monthly progress reports and test results with recommended actions during the commissioning period.
- 5.16 Oversee and approve the training of the Owner's operating personnel.
- 5.17 Review and approve the O&M manuals.
- 5.18 Provide a final commissioning report, which shall include:
 - 5.18.1 An executive summary, list of participants and roles, brief building description, overview of commissioning and testing scope, and a general description of testing and verification methods.

5.18.2 For each piece of commissioned equipment, the report should contain the disposition of the commissioning authority regarding the adequacy of the equipment, documentation and training meeting the contract documents in the following areas:

- Equipment meeting the equipment specifications.
- Equipment installation
- Functional performance and efficiency
- Equipment documentation and design intent, and
- Operator training. All outstanding non-compliance items shall be specifically listed.

5.18.3 Recommendations for improvement to equipment or operations, future actions, commissioning process changes, etc. shall also be listed. Each non-compliance issue shall be referenced to the specific functional test, inspection, trend log, etc., where the deficiency is documented.

5.18.4 The functional performance and efficiency section of each piece of equipment, shall include a brief description of the verification method used (e.g. manual testing, BAS trend logs, data loggers, etc.) including observations and conclusions from the testing.

5.18.5 Appendices shall contain acquired sequence documentation, logs, meeting minutes, progress reports, deficiency lists, site visit reports, findings, unresolved issues, communications, etc. Pre-functional checklists and functional tests, along with blanks for the operators, and monitoring data and analysis will be provided in a separate labeled binder.

6.0 PROPOSAL CONTENT

Proposal must not exceed 50 pages and shall provide sufficient information to allow the University to evaluate the Consultant's approach, experience, staff and availability. Proposals shall include the following information:

- Discussion of Consultant's approach to the Project. For example, what information is needed, how functional tests are developed, and what test equipment is typically used for this type of Project.
- Description of relevant at least three (3) Projects of 50,000 sf or larger where the Consultant(s) has accomplished including a client contact and phone number for at least three (3) projects.
- Resumes of staff to be assigned to the Project and a statement regarding availability of staff to begin the Project.
- Cost to accomplish the scope of work, (Hourly rates and maximum fee).

The respondent must submit five (5) copies of the proposal, each signed by an authorized representative of the Consultant. Proposal must be submitted to arrive no later than close of business, **5:00 p.m.** on November 15, 2007 to:

Dave Bautista, AIA, Program Manager
URS Corporation
100 California Street
San Francisco, California 94111
E-mail: dave_bautista@urscorp.com

7.0 SELECTION PROCESS

The University will review all proposals and select and rank the three most qualified Consultants. The selection and ranking shall be based on the criteria listed below. The order in which the criteria appear does not indicate the importance, ranking or weighting that will be used in the evaluation.

1. Proposed approach to the project
2. Past experience of the firm and the CX in performing similar projects.
3. Experience of other staff to perform the services required by the Project.
4. Cost and projected timeline to accomplish the scope of work.

The University shall negotiate with the highest ranked Consultant on the tasks, staffing, schedule and a maximum not-to exceed fee. Negotiations may be formally terminated if they fail to result in a contract within a reasonable amount of time. Negotiations will then ensue with the second ranked Consultant, and if necessary, the third ranked Consultant. *The cost will not be part of the selection criteria and should be placed separately from the proposal submitted.*

The successful firm will be required to sign the University's Professional Services Agreement, which is posted for review at <http://www.cp.berkeley.edu/PSA.pdf>.

The University of California is an Equal Opportunity Employer – Minorities and women are encouraged to apply. Every effort will be made to ensure that all persons, regardless of race, religion, sex, color, and national origin have equal access to contracts and other business opportunities with the University. Each candidate firm will be required to show evidence of its equal employment opportunity policy.