



SAN FRANCISCO UNIFIED SCHOOL DISTRICT
PROPOSITION A 2011 BOND PROGRAM

REQUEST FOR QUALIFICATIONS (RFQ)

FOR COMMISSIONING SERVICES

JUNE 22, 2012

REQUEST FOR QUALIFICATIONS NOTICE
PROPOSITION A 2011 BOND PROGRAM
COMMISSIONING SERVICES

The San Francisco Unified School District wishes to retain a commissioning agent to provide services as needed for the 2011 Proposition A Bond Program and is seeking SOQs from firms that provide such services. **Statements of Qualifications (SOQs) are to be submitted to Room 207 at 135 Van Ness Avenue, San Francisco, on Wednesday, August 8, 2012 no later than 2:00 P.M.**

This request for SOQs seeks the following type of service providers:

The third-party commissioning agent will support the San Francisco Unified School District's (SFUSD) efforts to ensure that select systems in major modernization and new construction projects are well designed, complete and functioning properly upon occupancy, and that the Owner's staff has adequate system documentation, and training.

Commissioning firms should be familiar and experienced with all procedures and requirements with respect to California public schools, particularly the Collaborative for High Performance Schools (CHPS) and High Performance Incentive (HPI) rating systems. Firms will be expected to demonstrate the ability to provide services to rigid schedule requirements.

Request for Qualification information is available at the District Website:

<http://www.sfusd.edu/en/doing-business-with-sfusd/current-rfps-rfqs-and-rfis.html>

and at the Bond Program Office Room 208, 135 Van Ness Avenue, San Francisco, beginning **June 22, 2012.**

The provisions of Public Contract Code Sections as defined in the State Allocation Board regulation for implementation of Disabled Veteran Business Enterprise Goals shall apply to these projects.

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I. INTRODUCTION TO RFQ SUBMITTAL PROCESS

The third-party Commissioning Agent will support the San Francisco Unified School District's (SFUSD) efforts to ensure that select systems in major modernization and new construction projects are well designed, complete and functioning properly upon occupancy, and that the Owner's staff has adequate system documentation, and training.

Commissioning firms should include LEED Accredited Professionals (BD+C or Schools specialty) and experience with review of building design and construction documents. Firms should also have had experience with all procedures and requirements affecting California public schools, particularly the Collaborative for High Performance Schools (CHPS) and State of California High Performance Schools (HPI) rating systems, as well as Division of the State Architect (DSA) code requirements (including CalGreen). Firms will be expected to demonstrate the ability to provide services to rigid schedule requirements.

Request for Qualification information is available at the District Website:

<http://www.sfusd.edu/en/doing-business-with-sfusd/current-rfps-rfqs-and-rfis.html>

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All participating Sustainability Review Consultants must have an existing working business location within a 50-mile radius of the city limits of San Francisco, CA.

Applicants shall submit Qualifications by 2:00 PM, August 8, 2012.

Late submittals will not be considered.

1. Commissioning Services and Basis of Fees

The Commissioning Agent will be asked to review a subset of 2011 Bond schools each year, with the estimation that all work shall be completed over a four or five-year time frame. Only those projects that 1) meet size and cost minimums laid out in the SFUSD standards, 2) contain sufficient scope to make commissioning a worthwhile exercise, as determined by a yet-to-be-developed commissioning rubric, and 3) are approved by the Chief Facilities Officer will be commissioned.

Fees shall be based on the firm's standard billing rate as submitted in the SOOs and shall be a **fixed fee contract with a not to exceed amount for the determined scope of work at each school project.**

2. Insurance Requirements

Each firm awarded a contract will be required to maintain, in full force and effect and at its own expense, insurance policies with companies certified with the California Insurance Commission. Please include the name of your insurance providers in your response. The following minimum insurance is required in order for your firm/joint venture group to qualify for participation in these projects:

- Worker's Compensation Insurance (\$1 million)
- General Liability Insurance (\$1 million/per occurrence)
- Automobile Insurance (\$1 million/per occurrence)
- Professional Liability Insurance (\$1 million per occurrence and \$2 million aggregate)

If any policy is written on a Claims Made Form, the consultant must provide a project specific policy to continue the coverage for two (2) years beyond the date of the individual project completion.

Prior to issuance of a 'Notice to Proceed', each firm must provide the District with original "wet signature" certificate(s) of insurance that includes the following:

- a. The San Francisco Unified School District and its Board, Officers and employees shall be named as additional insured parties on General Liability and Automobile policies. Endorsements must be submitted with the certificate(s);
- b. Should any of the above described policies be canceled before the expiration date thereof, the issuing company will provide written notice to the certificate holder a minimum of 30 days prior to said cancellation.

3. Description of Projects and Scope of Work

A list of the 2011 Prop A Bond Program school projects is included in *Appendix A* of this package. Most of the projects include accessibility, life safety and seismic improvements such as ramps, walkways, new elevators, fire sprinklers, fire alarm and structural upgrades. Some will also include HVAC, lighting, plumbing, and other building system upgrades that make commissioning a worthwhile endeavor.

The objective of commissioning is to provide documented confirmation that a facility fulfills the functional and performance requirements of the building owner, occupants, and operators. To reach this goal, it is necessary for the commissioning process to establish and document the owner's criteria for system function, performance, and maintainability (Design Intent); and also to verify and document compliance with these criteria throughout design, construction, start-up, and the initial period of operation. In addition, complete operation and maintenance (O&M) manuals, as well as training on system operation, should be provided to the building operators to ensure the building continues to operate as intended.

The commissioning agent (CA) should be involved throughout the project from the end of schematic design through the warranty phase. Note: The primary role of the CA during the overall design phase is to develop detailed commissioning specifications and review the design to ensure it meets the Owner's objectives. During construction, the CA develops and coordinates the execution of a testing plan, which includes observing and documenting all systems' performance to ensure that the systems are functioning in accordance with the owner's Design Intent (DI) requirements and the contract documents. The CA is not responsible for design or general construction scheduling, cost estimating, or construction management, but may assist with problem-solving or resolving non-conformance issues or deficiencies.

SCOPE OF WORK

The CA shall be responsible for carrying out the following tasks. The proposer is free to suggest changes and improvements to the following task list. For this proposal, it is assumed by the owner that all of these tasks will be completed, unless any proposed changes to the following task list are "clearly" highlighted and noted in the respondent's proposal.

Design Phase

- Assemble commissioning team, hold a scoping meeting, and identify responsibilities.
- Attend commissioning meetings as needed with project manager and design team.
- Review the design intent documentation for clarity and completeness.
- Develop the written Owner's design intent requirements for the following features: mechanical, electrical, irrigation, plumbing, lighting, energy consumption, and commissioning. This will be accomplished by the Commissioning Agent by extracting salient concepts from the Owner's existing programming report and/or conducting interviews with owner stakeholders. The Owner's design intent requirements will be general in nature but include specific performance criteria for some concepts.
- Coordinate the commissioning work during design.
- Develop or update the design phase commissioning plan.
- Perform focused reviews of the design, drawings and specifications at various stages of development (during schematic design, design development and contract document phases), as described in *Appendix B*.
- Assist and review the development and updating of the Design Record documentation by design team members (Design Intent, Design Narrative, Design Basis).
- Develop a draft construction phase commissioning plan using an Owner-approved outline.
- Develop full commissioning specifications for all commissioned equipment. Coordinate this with the architect and engineers and integrate the commissioning specifications into the overall project specification package. One or more of the following documents can be used as a guide for content, rigor and format: 1) Model Commissioning Plan and Guide Specifications, USDOE/FEMP; Portland Energy Conservation, Inc. (PECI), 2) The HVAC Commissioning Process, ASHRAE Guideline 1-1996. The Peci Document can be downloaded free at www.peci.org and a copy of the ASHRAE document can be obtained by contacting ASHRAE at 404-636-8400.
- The commissioning specification will include a detailed description of the responsibilities of all parties, details of the commissioning process; reporting and documentation requirements, including formats; alerts to coordination issues, deficiency resolution; construction checklist and start-up requirements; the functional testing process; specific functional test requirements, including testing conditions and acceptance criteria for each piece of equipment being commissioned.
- Coordinate a controls integration meeting where the electrical and mechanical engineers, owner's representative, and the Commissioning Agent discuss integration issues between equipment, systems and disciplines to ensure that integration issues and responsibilities are clearly described in the specifications.

Bid Phase

- Respond to RFI's from bidders.

Construction Phase

- Perform the tasks and functions in the specifications ascribed to the commissioning agent as identified in the specifications.
- Coordinate and direct the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
- Coordinate the commissioning work with the contractor and construction manager, to ensure that commissioning activities are being incorporated into the master schedule.
- Revise, as necessary, the construction phase commissioning plan developed during design, including scope and schedule.

- Attend regular project meetings to discuss commissioning issues as needed.
- Request and review additional information required to perform commissioning tasks, including O&M materials, contractor start-up and checkout procedures. Before start-up, gather and review the current control sequences and interlocks and work with contractors and design engineers until sufficient clarity has been obtained, in writing, to be able to write detailed testing procedures.
- Review normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the A/E reviews.
- Review requests for information and change orders for impact on commissioning and owner's objectives.
- Review coordination drawings to ensure that trades are making a reasonable effort to coordinate.
- Write and distribute construction checklists for commissioned equipment.
- Develop an enhanced start-up and initial systems checkout plan with contractors for selected equipment.
- Perform site visits, as necessary, to observe component and system installations. Attend selected planning and job-site meetings to obtain information on construction progress. Review construction meeting minutes for revisions/substitutions relating to the commissioning process. Assist in resolving any discrepancies.
- Witness sufficient HVAC piping pressure test and flushing to be confident that proper procedures were followed. Include testing documentation in the Commissioning Record.
- Witness sufficient ductwork testing and cleaning to be confident that proper procedures were followed. Include documentation in the Commissioning Record.
- Document construction checklist completion by reviewing completed construction checklists and by selected site observation.
- Document systems start-up by reviewing start-up reports and by selected site observation.
- Approve air and water systems balancing by spot testing, reviewing completed reports and selected site observation.
- With necessary assistance and review from installing contractors, write the functional performance test procedures for equipment and systems. This will include manual functional testing, energy management control system trending, and may include stand-alone data logger monitoring.
- Analyze functional performance trend logs and monitoring data to verify performance.
- Coordinate, witness, and document manual functional performance tests performed by installing contractors. Coordinate retesting as necessary until satisfactory performance is achieved. 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 start-up, 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 construction check listing by the installing contractors, and spot-checked by the commissioning agent during functional testing. 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. 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 commissioning agent and the Owner.
- Prepare test plans for, assist with execution of, and document tests of commissioned equipment overseen by regulatory authorities and ensure that such tests meet the testing rigor desired by the Owner.
- Maintain a master issues log and a separate record of functional testing. Report all issues as they occur directly to the Owner's Representative. Provide written progress reports and test results with recommended actions directly to the Owner's Representative.
- Review equipment warranties to ensure that the Owner's responsibilities are clearly defined.
- Oversee, review, and videotape the training of the Owner's operating personnel.
- Review and review the preparation of the O&M manuals for commissioned equipment.
- Compile a Commissioning Record, which shall include:
 - A brief summary report that includes a list of participants and roles, brief building description, overview of commissioning and testing scope, and a general description of testing and verification methods. For each piece of commissioned equipment, the report should contain the disposition of

the commissioning agent 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
- Operator training.
- All outstanding non-compliance items shall be specifically listed. 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.
- Also included in the Commissioning Record shall be the issues log, commissioning plan, progress reports, submittal, and O&M manual reviews, training record, test schedules, construction checklists, start-up reports, functional tests, and trend log analysis.
- Compile a Systems Manual that consists of the following: Owner's Project Requirements (by owner); Design Narrative and Basis of Design (by designer); Performance Metrics, if completed during design; space and use descriptions, single line drawings and schematics for major systems (by designer); control drawings, sequences of control (by contractor); and a table of all set points and implications when changing them, schedules, instructions for operation of each piece of equipment for emergencies, seasonal adjustment, start-up and shutdown, instructions for energy savings operations and descriptions of the energy savings strategies in the facility, recommendations for recommissioning frequency by equipment type, energy tracking recommendations, and recommended standard trend logs with a brief description of what to look for in them (all by commissioning agent).

Warranty Period

- Coordinate and supervise required opposite season or deferred testing and deficiency corrections and provide the final testing documentation for the Commissioning Record and O&M manuals.
- Return to the site 10 months into the 12-month warranty period and review with facility staff the current building operation and the condition of outstanding issues related to the original and seasonal commissioning. Also interview facility staff and identify problems or concerns they have with operating the building as originally intended. Make suggestions for improvements and for recording these changes in the O&M manuals. Identify areas that may come under warranty or under the original construction contract. Assist facility staff in developing reports and documents and requests for services to remedy outstanding problems.

Systems to Be Commissioned

- Central building automation system.
- All equipment of the heating, ventilating and air conditioning systems.
- Scheduled or occupancy sensor lighting controls.
- Daylight dimming controls.
- Refrigeration systems.
- Electrical.
- Domestic and process water pumping and mixing systems.
- Irrigation.
- Plumbing.

II. PROCESS FOR CONSULTANT SELECTION

All Statement of Qualifications will be scored through a preliminary screening process that will include scoring outlined in Part III below as well as reference checks. Those firms who qualify for the short list through the preliminary screening process may be invited to participate in the final screening process, which may include an interview.

The District will accept written questions and comments from prospective consultants up to July 20, 2012.

III. SOQS AND EVALUATION CRITERIA

Please provide the following information in the order given below. Responses to the RFQ will be carefully evaluated for completeness and ability to perform the work indicated based on the information provided in the following categories:

1. Introductory/Cover Letter (maximum length: 1 page, 5 points)
 - a. Describe what sets your firm apart from other commissioning firms.

2. Professional Qualifications and Experience, Project Approach (5 pages, 15 points max.)
 - a) The full name and address of the firm or team. Confirm that the office is within 50 miles of the SFUSD facilities office located at 135 Van Ness Avenue in San Francisco.
 - b) Name, email address and phone number of a designated contact person
 - c) A brief description of the firm including a description of typical services to clients of the firm. Use the format in *Appendix C*.
 - d) Describe the firm's professional qualifications and experience, including those of any sub-consultants, in order to clearly demonstrate your ability to successfully furnish the services described in this Request for Qualifications.
 - e) Discuss your firm's understanding of the services required for these projects (primarily renovation and modernization scope) and provide an outline or description that clearly demonstrates:
 1. Describe your proposed approach to managing the project expertly and efficiently, including distribution of tasks, travel, and duration of which staff will be on site during what periods of time, etc. Describe what approach you will take to integrate the commissioning into the normal design and construction process in order to minimize potential time delays. Describe what you will do to foster teamwork and cooperation from contractors and design team and what you will do to minimize adversarial relationships. Describe how you intend to determine the appropriate level of commissioning effort for the various systems and equipment.
 2. List of representative **K-12 school projects (minimum of 5 projects)** undertaken in the last five years. Include project title, description of services provided, project duration, owner contacts and telephone numbers. Use the format in *Appendix D*.

The District may or may not contact those listed on the reference list.

3. Project Staffing Approach (2 pages, 10 points max.)

- a. Please provide information regarding the size of your firm, and include any sub-consultants or subcontractors that you intend to include in your project team.
- b. Provide a narrative discussing your approach to staffing, sub-consultant management and delivering timely and quality service on five or more project assignments running concurrently.
- c. Staffing - Provide the names and brief (one-paragraph) resumes of the principal-in-charge, the assigned project manager and/or other key staff members who will comprise the core of your firm's project team. Identify the number of licensed/certified members on your staff.
- d. Provide brief resumes for any identified sub-consultants.

4. Billing Rates and Fees (1 page, 10 points max.)

- a. This project will be set up on a time-and-materials basis. Provide both an hourly rate for each team member, along with rates and fees for all other costs the Owner could incur from the proposer in this contract (travel, mileage, per diem, communications, etc.). For each phase, provide the percentage level of effort for each of the primary team members.

5. Work Product Sample (Exhibit A, 25 points max.)

- a. As an attachment, provide the following work products that the Commissioning Agent of record developed for another K-12 educational client seeking commissioning services.
 - o Commissioning plan that was executed (the process part of the plan);
 - o Commissioning specifications; and
 - o An actual functional test procedure form that was executed

6. Insurance (1 page, 5 points max.)

Provide copy of current insurance coverage issued by Consultant's Insurance carrier that meets minimum District requirements (see section I.2).

EVALUATION CRITERIA SCORING SHEET

Evaluation Criteria	Points	Score
1. Introductory and Cover Letter	5	
2. Professional Qualifications and Experience Project Approach	15	
a) Describe the firm and its typical services b) Distance from SFUSD and contact information c) Describe the professional qualifications and experience d) Discuss your firms understanding of services e) Provide a list of representative projects (min of 5) undertaken in the last 5 years demonstrating your team's K-12 public school experience.	<i>Poor: 0-3</i> <i>Marginal: 4-7</i> <i>Acceptable: 8-11</i> <i>Exceeds: 12-15</i>	
3. Project Staffing Approach	10	
a) Firm size b) Describe your firms staffing approach c) Provide Names and Resumes	<i>Poor: 0-2</i> <i>Marginal: 3-5</i> <i>Acceptable: 6-8</i> <i>Exceeds: 9-10</i>	
4. Billing Rates	10	
a) Provide fee Schedule hourly rates	<i>Poor: 0-2</i> <i>Marginal: 3-5</i> <i>Acceptable: 6-8</i> <i>Exceeds: 9-10</i>	
5. Work Product Sample (as Exhibit 1)	25	
a) Work product sample (Failure to provide these samples may result in the response being rejected as "non-responsive".)	<i>Poor: 0-6</i> <i>Marginal: 7-12</i> <i>Acceptable: 13-18</i> <i>Exceeds: 19-25</i>	
6. Insurance	5	
a) Provide a copy of current insurance coverage that meets minimum District requirements: <ul style="list-style-type: none"> • Workers Compensation Insurance - \$1 million • General Liability Insurance - \$1 million/occurrence • Automobile Insurance - \$1 million/occurrence • Professional Liability Insurance - \$1 million/occurrence and \$2 million aggregate 		

MAXIMUM LENGTH OF PROPOSAL/SUBMITTAL:

10 pages + Exhibit 1

3 copies, DOUBLE-SIDED

Maximum Points Possible: 70 points

IV. RFQ SCHEDULE (Subject to change)

- Post RFQ to Website: June 22, 2012
- Written Questions Accepted: July 20, 2012
- Addenda Posted to Website By: July 23, 2012
- Proposals Due no later than: August 8 at 2:00 P.M.
- Shortlist Notification: August 17, 2012

NOTES

- The District reserves the right, at its sole discretion, to modify RFQ requirements, and/or cancel interviews if selection can be made based upon written SOQ received, cancel the selection process, amend the schedule, or select two or more "pools" of firms.
- Firms responding to this RFQ shall not be reimbursed for any costs associated with the preparation of SOQ in response to this RFQ.

APPENDIX A

PROPOSITION A 2011 BOND PROJECT SITES

Argonne Elementary School	680 18th Avenue
Bret Harte Elementary CDC	950 Hollister Avenue
Cesar Chavez Elementary School	825 Shotwell Street
Daniel Webster Elementary School & CDC	465 Missouri Street
El Dorado Elementary School	70 Delta Street
Enola Maxwell Campus (ISA)	655 De Haro Street
Frank McCoppin Elementary School & CDC	651 6th Avenue
Garfield Elementary School & CDC	420 Filbert Street
George Moscone Elementary School	2576 Harrison Street
George Peabody Elementary School	251 6th Avenue
Gordon J Lau Elementary School	950 Clay Street
Guadalupe Elementary School	859 Prague Street
Ida B Wells High School	1099 Hayes Street
James Lick Middle School	1220 Noe Street
Jean Parker Elementary School & CDC	840 Broadway Street
John Yehall Chin Elementary School	350 Broadway Street
Jose Ortega Elementary School	400 Sargent Street
Junipero Serra Elementary School & CDC	625 Holly Park
Lafayette Elementary School	4545 Anza Street
Las Americas CDC	801 Treat Avenue
Longfellow Elementary School	755 Morse Street
McAteer Campus (School of the Arts)	555 Portola Drive
McKinley Elementary School	1025 14th Street
Miraloma Elementary School	175 Omar Way
Mission Annex Child Development Center	421 Bartlett Street
Monroe Elementary School & CDC	260 Madrid Street
Paul Revere Annex	610 Tompkins Street
Paul Revere Elementary School	555 Tompkins Street
Philip & Sala Burton High School Campus	400 Mansell Street
Presidio Middle School	450 30th Avenue
Redding Elementary School & CDC	1421 Pine Street
Robert Louis Stevenson Elementary School	2051 34th Avenue
Rooftop Elementary School - Nancy Mayeda Campus	500 Corbett Avenue
Roosevelt Middle School	460 Arguello Street
Sarah B. Cooper Child Development Center	940 Filbert Street
Sheridan Elementary School	431 Capitol Avenue
Starr King Elementary School	1215 Carolina Street
Sunnyside Elementary School	250 Foerster Street
Tule Elk Park Child Care Center	2110 Greenwich Street
Visitacion Valley Elementary School	55 Schwerin Street

Visitacion Valley Middle School	450 Raymond Street
Yick Wo Elementary School	2245 Jones Street
Willie L. Brown, Jr. School	2055 Silver Avenue*
Former San Miguel Elementary School	300 Seneca Street
Children's Center Administration Building	20 Cook Street
McLaren School	2055 Sunnydale Avenue
Florence Martin Center*	1155 Page Street
Central Office Annex*	601 McAllister Street
Student Nutrition Center*	841 Ellis Street

*TO BE DETERMINED FOR REVIEW ASSIGNMENT

APPENDIX B

FOCUSED DESIGN REVIEW SCOPE

The following list includes but will not exceed activities in the 'Scope of Work' (SOW) that will be Required from the Commissioning Agents (CA), and will be determined on a case-by-case basis.

Design Area	Review Description	Schematic Design Review	Design Development Review	Contract Document Re view #1	Contract Document Re view #2
Design narrative and design basis	Ensure that design narrative and basis of design are clear, complete, and meet the original Owner's Project Requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commissioning facilitation	Review to facilitate effective commissioning. For example, sufficient accessibility, test ports, and monitoring points.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy efficiency	Review for adequacy of the effectiveness of building layout and efficiency of system types and components for building shell, HVAC systems and lighting systems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control system and control strategies	Review HVAC, lighting, fire control, emergency power, security control system, strategies and sequences of operation for adequacy and efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operations and maintenance (O&M)	Review for effects of specified systems and layout toward facilitating O&M. For example, equipment accessibility, and system control.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Indoor environmental quality	Review to ensure that systems relating to: <ul style="list-style-type: none"> <input type="checkbox"/> thermal, <input type="checkbox"/> visual, <input type="checkbox"/> acoustical, <input type="checkbox"/> air quality comfort, and <input type="checkbox"/> air distribution maximize comfort and are in accordance with the Owner's Project Requirements. (See Exhibit 3 for IAQ checklist).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
O&M documentation	Verify adequate building O&M documentation requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training	Verify adequate operator training requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commissioning specifications	Verify that bid documents adequately specify building commissioning, including testing requirements by equipment type.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Owner's design guideline or standard	Verify that the design complies with the owner's own design guideline or standard.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental sustainability	Review to ensure that the: <ul style="list-style-type: none"> <input type="checkbox"/> building materials, <input type="checkbox"/> landscaping, <input type="checkbox"/> use of water, and <input type="checkbox"/> waste management create less of an impact on the environment and are in accordance with Owner's Project Requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mechanical	Review the mechanical concepts/design for enhancements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Electrical	Review the electrical concepts/systems for enhancements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Design Area	Review Description	Schematic Design Review	Design Development Review	Contract Document Re view #1	Contract Document Re view #2
Envelope	Review envelope design and assemblies for thermal and water integrity, moisture vapor control and assembly life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Structural	Review the structural concepts/design for enhancements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Functionality	Ensure the design maximizes the functional needs of the occupants.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Life cycle costs	Perform a life cycle assessment of the primary competing mechanical systems relative to: <ul style="list-style-type: none"> <input type="checkbox"/> energy efficiency, <input type="checkbox"/> O&M, <input type="checkbox"/> IEQ, <input type="checkbox"/> functionality, and <input type="checkbox"/> sustainability. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX C

COMMISSIONING FIRM EXPERIENCE

Fill out a separate form for each firm on the team.

Company Name	Contact Person
	Title
Street Address	City
State/Province	ZIP/Postal Code
Telephone	FAX
E-mail address	
Description of Business	

Commissioning Activities

Percentage of overall business devoted to commissioning services:	_____	%
How long has the firm offered commissioning services?	_____	years
Average number of commissioning projects performed each year:	_____	projects

Systems or technologies for which the firm has provided commissioning services (check all that apply):

- Pkg. or split HVAC
- Chiller system
- Boiler system
- Energy Mgmt. Sys.
- Variable Frequency Drives
- Lighting Controls
- Daylighting
- Electrical, general
- Plumbing
- Commercial refrigeration
- _____

Number of registered engineers on staff who have directed commissioning projects: _____

APPENDIX D

COMMISSIONING TASK EXPERIENCE

Project Name, Date, Bldg Size & Type (New/Existing)	City & State, Owner Contact, Title and Phone	Name & Role of Persons(s) Assigned to Project by Firm (identify any sub-consultants)	Systems Commissioned (Identify if tested by sub-consultants)	(Enter "X" if by own firm, "S" if by sub-consultant)													
				Commissioning Tasks Performed									Mgmt.				
				Design Review	Commissioning Plan	Specifications	Functional T. Plans	Witnessed FT	Hands-on Tests	Data & Trending	Training	Review O&Ms	CA in firm	Supervised CA	Worked w/CA		

The following abbreviations are used in this form:

- *Design Review:* Reviewed design and provided comment during design phase.
- *Data & Trending:* Used data loggers or EMS trend logs for testing.
- *Commissioning Plan:* Wrote the commissioning plan.
- *Training:* Developed or approved staff training.
- *Specifications:* Wrote commissioning specifications for construction team.
- *Review O&Ms:* Reviewed completed O&M manuals.
- *Functional T. Plans:* Wrote functional test procedures.
- *CA in firm:* Commissioning agent was part of the firm.
- *Witnessed FT:* Witnessed and documented functional tests.
- *Supervised CA:* Supervised commissioning agent sub-consultant to the firm.
- *Hands-on Tests:* Performed functional tests (hands-on).
- *Worked w/CA:* Worked with a commissioning agent hired by others.