

University of California (Berkeley)
Berkeley Art Museum and Pacific Film Archive
Project No. 12259A

Request for Qualifications for Geotechnical Engineering Services

The University of California, Berkeley, requests your statement of qualifications to provide geotechnical engineering services for the *Berkeley Art Museum and Pacific Film Archive*. The University wishes to engage a firm willing to commit to work closely with the design consultants in a team effort to optimize the project design and value. Key objectives include a thorough understanding and cost efficient resolution of geotechnical design and construction issues.

PROJECT DESCRIPTION

In 1997, BAM/PFA's building on Bancroft Way received a seismic rating of "very poor" in a campus survey. In 1999 the Trustees decided to construct a new visual arts center at a new location at the gates of campus rather than retrofit the current structure. This project will demolish the UC Printing Plant Building and UC Parking Structure and construct a larger museum facility to house the collections of the Berkeley Art Museum and Pacific Film Archive. It will allow BAM/PFA to consolidate the University and art museum's community service mission based on shared goals of research and teaching excellence. The comprehensive nature of the program on this site will enable BAM/PFA to more directly and efficiently achieve the goal of completely integrating our facility, collections, and programs with the academic mission of Cal.

The building site encompasses the site of the existing UC Printing Plant Building and the University Hall Parking Structure, located on the west side of Oxford Avenue opposite the Campus West Crescent. The University anticipates that the proposed facility will comprise 130,000 to 150,000 outside gross square feet (OGSF).

Materials of construction are not yet selected but concrete and/or steel construction is anticipated. The structure will likely include two levels above grade and one or more basement levels. Seismic base isolation is a distinct possibility.

See the following attachments posted below this RFQ on the Capital Projects website:

Geotechnical Engineering Study (May 2001)

UC Berkeley Seismic Guildelines: Probabilistic Ground-Motion Analysis for Central Campus

UC Berkeley Seismic Guildelines: Ground-Motion Time Histories for the UC Berkeley Campus

UCB - Ground Motion Spectra (Normal to Fault), S_{b-c} Soil

PROJECT PERSONNEL

The Design Architect for the project is Toyo Ito & Associates Architects of Tokyo and the local Architect of Record is EHDD of San Francisco. The consulting Structural Engineer for design is Sasaki Structural Consultants of Tokyo and the local Structural Engineer of record is Forell/Elsesser of San Francisco. The Project Manager for the University is Alicia Rosenthal, AIA. The Seismic and Structural Engineering Consultant for the University is Craig Comartin.

SCOPE OF WORK

The general scope of geotechnical services required for the project by design phase is as follows:

Concept/Schematic Design Phase

Assembly and review of relevant existing data

Orientation meeting with Capital Projects and appropriate consultants

Initial field investigations and testing

Confirm and/or modify Campus seismic ground motion parameters as appropriate for the site.

Laboratory testing

Development of design alternatives

Schematic Design (SD) period coordination and meetings with design consultants

SD level geotechnical report draft

- Site characterization

- Summary of key geotechnical issues

- Seismic design parameters

 - Dynamic force-deformation characteristics of foundation components in accordance with the nonlinear inelastic procedures of FEMA 356 and 440 for seismic soil stiffness and strength and soil-structure interaction effects

- Site classification

 - Geologic site hazards discussion as applicable e.g. liquefaction, surface faulting

Presentation and discussion of foundation design alternatives based on coordination with the design team

- Shallow spread footings

- Drilled piers and caps

- Mat footing

- Tie-downs and pin piles

- Other as may be appropriate

Preliminary recommendations for construction

- Shoring

- Excavation and backfill

- De-watering

- Other as may be appropriate

Recommendations for supplemental investigations or testing
SD presentation to Campus Seismic Review Committee (SRC)
SD response to comments and questions

Design Development Phase

Supplemental investigations and testing

Design Development (DD) period coordination and meetings with design consultants

Finalization of foundation design recommendations including:

- Coefficient of sub grade reaction and recommendations for calculation of soil stiffness (spring) values

- Service and ultimate vertical and lateral load capacities for each type of foundation element proposed.

- Service and ultimate load capacities for soil anchors resisting seismic uplift forces.

- Active and passive earth pressures (static and dynamic) on walls that are fixed against lateral translation at the top and at floors. Similar information for cantilever retaining walls.

- Hydrostatic uplift earth pressures assuming below-grade structures below water table.

- Estimate of differential and total settlements including seismically induced settlements for each foundation type.

- Friction coefficients for resistance of lateral loads by footings or mat-type foundations, if applicable.

Finalization of construction recommendations

- Investigation, documentation, and range of expected elevations of the water table across the site. Include recommendations for long term monitoring of the water table and recommendations for temporary and permanent dewatering systems.

- Recommendations for slab-on-grade design.

- Other information, as appropriate, is needed to provide criteria for the design of excavation, de-watering, site shoring, backfill, compaction, and drainage of the walls and sub-slab areas.

Review of DD drawings and specifications

DD level revisions geotechnical report draft

DD presentation to SRC

DD response to comments and questions

Construction Documents Phase

Construction Document (CD) period coordination and meetings with design consultants

Review of CD drawings and specifications

Final geotechnical report

Construction Administration Phase

Review and commentary on selected bid documents

Construction observation and reports

SUBMITTAL REQUIREMENTS

Capital Projects requires that submittals include the following elements.

Review and commentary on geotechnical issues for specific project

This section should respond to the initial list provided above with a basic understanding of project objectives and site conditions. Proposing firms should confirm or modify the issues as they see fit in an effort to demonstrate understanding and creative thinking for this specific project.

Qualifications of proposed lead engineer related specifically to the current project

The assignment and qualification of the lead engineer is the most critical factor in selecting a geotechnical consultant. Others proposed for work on the project should also be identified including personnel qualifications. It is important that qualifications be specifically related to the needs of this project.

Three references with familiarity with past performance of firm and lead engineer

These may be contacted to assess past performance on similar projects.

SUBMITTAL DEADLINE

Questions may be addressed by e-mail to Diane Mayo (dmayo@cp.berkeley.edu).

Submittals must be received at the address below no later than 4:00 pm, Monday, March 19, 2007. Six (6) copies of the submittal are requested. Please address submittals to:

Alicia Rosenthal AIA, Project Manager
UC Berkeley, Capital Projects
1936 University Avenue, 2nd floor
Berkeley, CA 94704-7027

EVALUATION CRITERIA

The selection of the geotechnical engineer for the project will be based upon the following criteria:

- Basic understanding and creative response to key project issues
- Qualification and past performance of lead engineer and project staff
- Demonstrated capability to produce effective and economical design and construction recommendations

The successful firm will be required to sign the University's Professional Services Agreement, which is available for review at <http://www.cp.berkeley.edu/PSA.pdf>. It will also be required to provide evidence of professional liability insurance with limits

of \$2 million per claim and \$2 million in the aggregate, using the University's current insurance certificate and instructions, which is available for review at <http://www.ucop.edu/facil/fmc/facilman/volume3/part1/psaexd.pdf>.

The University of California is an Equal Opportunity Employer. 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.