

RFP Outline

Introduction/Background Information

The Special Projects Department of The Church of Jesus Christ of Latter-day Saints is involved in the construction of LDS Temples around the world. One of the department's responsibilities is to review the construction plans and documents for the construction of the temples to ensure that they follow the current code and fulfill the project requirements.

This LDS Temple Window Study is a general study and will not apply to a specific temple location. The report provided for this project will be used to help improve the quality of window system construction of future temples.

Project Description and Scope of Services

Window systems are required by code to resist the design loads and handle the expected deformations of the building. This is particularly important for LDS Temples where many of the windows are expensive stained glass windows. This project is a research paper that will study the interaction between LDS Temple window systems and the structural system to improve the performance of the window systems for wind and seismic loads. The window system includes such things as: a) the pane of glass, b) the frame that accepts the pane of glass, c) The structure of the frame to resist loads, and d) the connection of the frame to the structure.

The project will study current code requirements for window systems for out-of-plane loads and for in-plane deformation accommodation. In addition the project will study the current methods used by window system manufacturers to accommodate the required in-plane and out-of-plane deformations. It is expected that the members of the capstone team contact and discuss with multiple window and storefront manufacturers the methods and systems they use to design window systems to meet the project requirements.

The actual attachment of the window frames to the structure is many times not engineered or detailed on the construction documents. The students will also need to research the various ways that window frames and storefront systems can be attached to the temple structure and determine if the systems meet the current code and project requirements. The report should include a discussion of the best practice to ensure that this important detail receives the necessary engineering.

Each temple contains a number of different window shapes, sizes, and orientations within the structure. Part of the research should be to identify the load paths within

each unique window system and calculate the loads in each part of the system. Also include analyses of glass panes under out-of-plane loads. Include a summary of your calculations and analyses in the report and identify the critical cases.

The goal for this Capstone Project is to provide a report to the Special Projects Department that contains:

- 1) The current code requirements for windows and storefront systems.
- 2) A list of items that currently are meeting code requirements and a list of items that are not.
- 3) A summary of load path calculations and analyses of the window system members, identifying the critical cases.
- 4) Drawings, details, and specifications that could be included in an LDS Guideline to ensure that window systems are designed and installed to meet the code and LDS requirements.

To assist your research, the following items will be available for your use:

- 1) Architectural and structural Temple design guidelines
- 2) A list of window manufacturers who work on temples
- 3) A list of storefront manufacturers who work on temples
- 4) A list of project managers with experience in temple construction
- 5) Selected drawings from various temple projects.

Outcome and Performance Standards

Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work.

The expectation is that you will interact in a professional manner at all times with your mentor and project sponsor, treating them with the utmost respect and consideration of their busy schedules. While successful completion of the design project is fundamental to the outcome of the work, it is expected that you will also learn important team dynamics and leadership principles. This means that in the process of completing the project you are also seeking to help each member of your design team to grow and develop confidence in his/her engineering abilities.

Deliverables

The deliverables are:

- 1) A final report containing the items discussed above.

- 2) A poster reflecting a summary of your research project.
- 3) A presentation summarizing your research project.

All deliverables are due Friday April 1.

During the week of April 4th both a presentation to sponsors and poster session for students, faculty and other interested people will be organized.

Term of Contract

Undergraduate students are to work during winter semester, eight hours/week/student with at least 3 hours working together. Any class time or time spent on class assignments counts towards the eight hours.

Payments, Incentives, and Penalties

Much of the capstone work is graded by graduate student mentors, that include evaluations of the following components:

Team process (how well you work together to accomplish the goals)

Project proposal

Project Management Plan (PMP)

50% complete status report

Final report, poster, and presentation

Overall satisfaction of the client in meeting specific deliverables

Contractual Terms and Conditions

There will be no monetary compensation with respect to the work completed, and all work is completed and delivered on a "best effort" basis.

Each member of the undergraduate team will be asked to sign a non-disclosure agreement that simply states the work you do belongs to the project sponsor.

Evaluation and Award Process

3 different graduate students will evaluate proposals blindly, and the average of their scores will be the grade you are given on the proposal and used for granting awards where there is competition. They will be evaluating you from the exact rubric listed below.

Timeliness - 1 pt off per full hour late, up to 5.	5
Grammar/Spelling - 1 pt off per blatant error, up to 10.	10
Cover Page - Title, Data, Sponsor, Team Name, Team Members, Department of Civil & Environmental Engineering, Ira A. Fulton College of Engineering and Technology, Brigham Young University - 1 pt per piece of information included.	8
Cover Letter - brief letter of introduction that 1) states your intent to propose and 2) how you may be contact - 4 pts per piece completed.	8
Executive Summary (3/4 to 1 page that summarizes the contents of your proposal) - 7 points for completion, helpfulness - 3 pts max.	10
Team Abilities (Adjust the SOQ to make it relevant to the project) - Summary AS A TEAM of 1) relevant courses and experience, and 3) abilities to complete the work on time and in a professional manner, 4) including use of specific engineering tools/software. Include résumés. 2 pts for including résumés, 6 more points max, 2 per piece completed.	8
Key Personnel - 1) Identify which individuals will focus on which pieces of your potential tasks, and 2) some kind of organizational chart or visual describing how you will work together as a team. 5pts max per piece.	10
Project Understanding - 1) Did they address specific items mentioned in the RFP? 2) Do they repeat basic background in somewhat new terms to <i>demonstrate their understanding</i> of the project? 3) Do they mention key deliverables they may need to provide? 4) Did they articulate a <i>specific</i> approach for developing design alternatives and deliverables? 4 pts max per piece.	16
Formatting - Does it look professional? Consistent? Yes or no, 5 pts each.	10
Concise vs. Wordy , Meaningful vs. Fluffy, repetitive wording. 8 pts means concise, and accurate, and specific. 1 pt means often confusing, wordy, or vague.	8
Clear and professional flow of writing and style. 7 pts means that you would feel comfortable handing this in if it were your own; it is easy to read and understand; feels professional; 1 pt means it feels like it was cut-pasted, rushed, and done with little thought; hard to read; feels like a high school essay.	7
Video Interview - Message is clear and consistent with proposal, each member participates, professional but catches your attention. Leniency on video/audio quality will be given with a focus on the content and overall organization.	20
Total	120

Process Schedule

October 21, 4:00 pm - Request for Proposals will be available online:

<http://cecapstone.groups.et.byu.net/content/winter-2015-projects>

October 27, 4:50 pm - Question and Answer period with respect to the proposal and submission procedures. The period where you can register your intent to propose on a project will begin. Each team will need to identify the primary target of their proposal and three other alternatives (no proposal necessary). Public knowledge of an intent to propose should help distribute proposals more evenly.

*November 17, 4:00 pm - Three copies of the proposal must be submitted at the beginning of class. Team video interviews should be made available online or on disc and referenced in the proposal.

December 1 - Award notification.

*The review committee reserves the right to reject any proposal or presentation that is not submitted in a timely fashion or in accordance with the instructions given in this RFP.

Contacts

Project Sponsor

Brent Maxfield

Email: Maxfieldba@ldschurch.org

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Graduate Student Mentor

Blake Newbold

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Faculty Advisor

Dr. Paul Richards

Email: prichards@byu.edu

Submittal Requirements for the proposal

Turn in three copies of the proposal that should include

Cover letter

Executive summary, 1 page or less (by itself)

Work plan that outlines the approach to solving the problem, how the team will work together (including weekly work schedule that shows the hours each team member will work and the time block the team will be together, this is a necessary requirement).

Necessary tools, data, equipment, etc. A couple of paragraphs or a bullet list with one sentence explanation for each item.

Schedule indicating important milestones.

Engineering Design Budget. This is an estimate of the design phase cost.

Outcome and Performance Standards. Provide the following statement: "Teams will provide the work "as is" meaning that there is no engineering stamp certifying the work."

Statement of qualifications that outlines the background, experience, education, and organizational structure of the team. Include some discussion of how you plan to become a "high functioning" team in the course of completing the project.

Outside consultants (professors or others) that are necessary to "make this work."

Appendices:

Appendix A: 1 page resume for each member of the team

Appendix B: (if necessary)