

SKANSKA



Associated Schools of Construction

Student Competition - Sparks, NV
February 8 - 11, 2012

National Problem Statement:

Sustainable Construction





Introduction

Welcome to the 2012 ASC National Problem Statement focusing on Sustainable Construction and Leadership in Energy and Environmental Design (LEED®) projects.

As one of the top Contractors of sustainable construction projects, Skanska USA Building has strived to create projects that have minimal, if any, impacts on the environment throughout their construction and lifecycle. Utilizing the programs set forth by the U.S. Green Building Council, along with forward-thinking project teams and design partners, we have sought to move farther down the path of “green building” using any and all methods available. With your help and participation in this problem statement, we hope that you will gain understanding and appreciation of the green building methods that the construction industry can employ in our day-to-day operations. More than that, we hope that you will look to implement these ideas into your daily lives outside the workplace.

Problem Statement

Our problem statement this year will look to analyze and develop a LEED certification program for a renovation and addition to a 259,000 square foot, 6 level historic building (three above grade, one partially below grade and two below grade) on a campus setting in the western United States. The project will improve building circulation, provide increased natural lighting and ventilation, remove existing hazardous materials and increase energy efficiency. The building uses include: student activities and organization offices, dining facilities, ballroom, auditoriums, meeting areas, recreational areas and student services.

The project includes demolition of approximately 80% of the existing structure and finishes and abatement of all hazardous building materials. The construction includes new structure, windows, roofing, mechanical and electrical systems, interior finishes, and restoration of the historic building façade.



This problem involves the identification, analysis, comparison and proposed recommendation for five or more aspect points or alternates considered for the project; and presentation and defense of the proposed points and recommendations.

The problem you are working on is a real project in the construction phase. The decisions made during a project have a great impact and often determine the feasibility and overall success of a project. Your team's review and recommendations to the project team will be instrumental in determining the overall success of the project.

At a minimum, these required skills and tasks will be involved:

- Knowledge of the requirements of the **LEED 2009** certification systems for both renovations and new construction.
- Rudimentary knowledge of constraints placed on projects registered as historic by the National Parks Service.
- Attendance at a LEED charrette for the project. Recognize and implement from the charrette the Owner goals, aspirations, limitations and overall objectives for the project.
- Provide a thorough evaluation of identified points per the project conditions, drawings and specifications. Detail and assess the accuracy of each point. Verify and substantiate whether each point will likely be "Awarded" or "Denied" through the formal certification process.
- Provide an item-by-item determination of costs associated with each specified point and its components, above and beyond typical construction costs and methodologies. Detail the path used to develop these costs and be able to explain clearly how costs were developed.
- Develop insight and proposals for additional points that may be awarded to the project at little to no cost to the Owner.
- Detail opportunities for innovation credits.

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- Present a detailed explanation, for presentation to the project Owner, as to how and why the costs of sustainability are, or are not, outweighed by the benefits of the sustainable features that have been incorporated into the project.
- Clearly note LEED activities and impacts on the project schedule, budget and logistics plan.
- Detail the assignment of responsibility for each selected point - Owner vs. Architect vs. Contractor. Develop methods of tracking and submitting those areas that you, as the General Contractor will be in control of. Determine who has the greatest control of achieving the desired points.

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Scoring

The judging panel will be made up of four or more members from the project architect, engineers and general contractor. Point scales will be assigned to several elements of the written and oral presentations.

The final point and scoring system has not yet been developed. The written work product created during the competition will be worth approximately 75 percent of the available points. For review and use in your preparation, a previous year's problem utilized a point and scoring system as follows:

	<u>Available</u> <u>Points</u>
• <u>Prequalification</u> : Your team's ; actual resumes personnel, experience and commitments to sustainable design and green building, presented as a pre-conference submittal.	5
• <u>Problem Statement 1</u> – Materials and resources evaluation as a percentage of materials reused.	15
• <u>Problem Statement 2</u> – Water Use and Savings with Rainwater Collection used as Gray Water.	20
• <u>Problem Statement 3</u> – Renewable Energy Installations and Historic Buildings.	15
• <u>Problem Statement 4</u> – Evaluation of project Sustainability and Performance indicators.	10
• <u>Problem Statement 5</u> – Calculation of embodied carbon in the construction process and analysis of alternate material suppliers.	15
• <u>Oral Evaluation</u> : - Prepare and present a persuasive argument and recommendation for a problem unrelated to the written problems	20
Total Possible Points	100

Additional details and requirements for this Prequalification Statement will be communicated later in 2011.