Development of the New Hasslein CAED Collaborative

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This paper outlines the development and execution of the new Hasslein CAED Collaborative student competition which engages students of all five majors in the College of Architecture and Environmental Design in a Request for Proposal style competition. CAED houses students studying Architecture, Architectural Engineering, City and Regional Planning, Construction Management, and Landscape Architecture. There is little opportunity for interdisciplinary collaboration within the CAED, despite our future career paths being heavily intertwined. This competition followed research by Greta Stout, class of 2022, on the benefits and support of interdisciplinary collaboration at Cal Poly SLO in CAED. The competition is named after George Hasslein, the founding dean of CAED in 1968, who advocated for an interdisciplinary curriculum. This paper focuses on the administration of the competition, writing the problem statement, and seeking industry support from the Alliance Foundation and Cal Poly SLO faculty. Participants were asked to compile a proposal for the provided problem statement and present their solution to a panel of judges. The competition was created to expose students to collaboration in our industry and prepare students for their careers in the industry.

Key Words: Proposal, Competition, Interdisciplinary, CAED, Collaboration

Introduction

The construction industry involves the collaboration of professionals across different specialties. Once dominated by the traditional Design-Bid-Build method, the industry is seeing a rise in Design-Build projects which enhances the collaboration between design professionals and builders from the beginning stages of a project. Currently, Design-Build is the leading project delivery method in America and continues to grow. Recent research predicts that "design-build will account for 47% of construction spending and 22.5% growth in total design-build spending by 2026" ("New Design-Build Research Shows Continued Growth + Opportunities to Mitigate Market Challenges," 2023). With this rise in collaboration, students studying related disciplines in universities need to be prepared to enter the ever-changing industry. At California Polytechnic State University, San Luis Obispo, the College of Architecture and Environmental Design consists of five majors: Architecture, Architectural Engineering, City and Regional Planning, Construction Management, and Landscape Architecture.

Despite being under the same advisory, these majors rarely get the opportunity to interact with each other in class, nevertheless all five majors together.

Background

In the author's time at Cal Poly, they were involved with the Associated Schools of Construction Design-Build competition team, and the Design-Build Institute of America competition team. On these teams they had the opportunity to work with students in Architecture and Architectural Engineering. This experience proved to be a very valuable learning opportunity for all students involved as team members were able to experience areas where their disciplines overlap. As far as official school sponsored activities go, these competition teams are the only opportunity for interdisciplinary collaboration within the CAED, but is mainly dominated by Construction Management majors. Greta Stout (class of 2022) also competed on these teams with the author and led the research on the benefits of interdisciplinary collaboration and how it prepares students for the industry.

The Alliance Foundation is a group that supports interdisciplinary studies within the CAED. Similar to the new Hasslein CAED Collaborative, the Alliance Foundation was formed in honor of George Hasslein. Michael Schussel, a Board Member of the Alliance Foundation, took on a major supporting role in the development of this project and was in close correspondence with the author throughout the development of the project.

The Competition

Development

The competition was conducted as a Request for Proposal style competition that catered equally to all five disciplines' knowledge. Teams were to act as a cohesive firm and deliver their solution and proposal for the new development. In order to provide an accurate problem statement, the author sent out a survey to all students in CAED to gauge interest and gain a better understanding of what their disciplines focus on in their labs and lectures.

The survey gathered the following information from participants:

1. Name
2. Cal Poly email
3. Major
4. Year
5. Have you ever competed in an on campus competition related to your course of studies at Cal Poly? (Structural Design, Design Village, Timber Bridge, EERI Seismic Design)
6. Have you ever competed in an off campus competition related to your course of studies at Cal Poly? (ASC, NAHB, DBIA, MCAA)
7. If you answered yes to either, what competition did you participate in?
8. Have you had an internship? If yes, what did you do?
9. Are you interested in competing in the new CAED Hasslein CAED Collaborative?

The survey then asked participants to rank their knowledge in the following topics with answer options of “I have no experience with this”, “I have learned about this before”, and “I know a lot about this!”

1. Engineering Mechanics
2. Material Strengths
3. Building Design
4. Building Layout
5. Urban Design
6. Sustainability
7. Land Use/Environmental Planning
8. Project Estimating
9. Project Scheduling
10. Project Management

The author drew these key words from each department’s website and from short, informal interviews conducted by the author of students in each discipline. The author received 41 survey responses from students across all five disciplines which helped them frame the problem statement to each discipline and highlight their strengths.

Problem Statement

The author issued the problem statement on Friday April 7, 2023, to the teams. The teams were given 10 days to work on their deliverables, and an additional 5 days after to prepare their presentation. The problem statement read “the city of San Luis Obispo, through the Hasslein Alliance Inc. (HAI) agency, is looking to add a new residential community in the South end of the city at Tank Farm Road and Orcutt Road. The parcel of land measures 50 acres and is designated as an R-1 zone. The city would like to gauge further development of this area after the success of this project. Your team is invited to submit a proposal for the new Elk Summit neighborhood community. San Luis Obispo residents have expressed desire for newer developments in this area as well as more exclusive communities. Elk Summit should include at least 75 homes with a community outdoor space that is accessible only for residents. When submitting your proposal, please consider the layout of the neighborhood and provide input on your team’s strategy to provide a successful and impactful development”. A full version of the problem statement can be found in the Appendix.

Team Formation

The intention of the competition was to have teams of five, with one student from each major. In forming the teams this way students are thrown into a collaborative experience where they discover how their individual knowledge aids their team in problem solving in a realistic industry scenario. Of the 41 original responses, the author was able to compile four teams of five, with representatives from each major. Participants were given the option to sign up with a team partially or fully formed, or they could sign up as individuals and be placed on a team. Most participants signed up alone, with the exception of one team signing up with four out of five members already selected and looking to be paired up with their fifth member.

Deliverables

Given the turnaround time of the competition, scope exclusions were identified, including a budget and considering existing site conditions. The table below illustrates the programming requirements

that the teams were to deliver in their final package. Teams were also provided with 3 attachments showing the site location, a sample structural diagram, and a sample schedule.

Table 1

Programming requirements

Requirement	Description
Executive Summary	Please provide an executive summary providing information on your firms' history and strategy in approaching this project.
Team Profile	Please provide a team profile with each team members name, major, and year.
Site Conditions	Identify locations for site facilities such as trailers and portable restrooms. Layout the path of traffic flow throughout the neighborhood with consideration of the phasing build out.
Architectural	3 different models should be identified for Elk Summit. A floor plan for each model with square footages should be provided. Homes may range from 2500 sq ft to 3500 sq ft with 3-5 bedrooms. Please provide sketches of the front elevation of the house with each floor plan.
Neighborhood Layout	A map of the neighborhood should be provided with locations of the homes, community spaces, and roads and sidewalks. Consider how the models are mixed throughout the development, and if any premium lots will be identified. Please use attachment A for this layout.
Structural	Select any structural system and material that meets applicable structural and fire codes and work with the architect to identify column locations, any exposed structural elements, architectural intent. Considerations should be taken into the seismic capability and element spacing. Please a narrative explaining your choice, and a framing plan that calls out the location of supportive elements for each model including beams, columns, etc. See attachment B for an example.
Community Integration / Landscaping	The proposed complex shall include outdoor community spaces and parks which will be accessible only to the residents. Great consideration should be taken into the landscaping of the neighborhood as well. Include a narrative with your approach to this community space and appearance, as well as sketches/plans of the space. Provide a layout of the park and outdoor community spaces and discuss the environmental planning and approach to the land usage. Consider incorporating plants and species native to the area, or that are appropriate for the climate.
Schedule	Provide a phasing schedule and a level 2 WBS schedule for one of the models. Include all necessary activities. Use the following dates as guides. Refer to attachment C for an example of the phasing schedule. Project Start: 05/01/23 Project Completion: 07/01/2024

The author did not assign any specific requirements to each major. The intent of the competition is to encourage collaboration among different disciplines, so the teams had to come up with their own strategy to complete all the requirements.

Judging the Competition

The author reached out to Mike Schussel to identify judges for the judging panel. The panel consisted of Mike Schussel, Tully Wyatt, and Deborah Lesnefska, all who were selected due to their rich and extensive backgrounds in the industry. Table 2 shows the rubric for scoring.

Table 2

Rubric for scoring

Category	Percentage of score
General (executive summary, team profile)	5%
Project Management (site plan, schedule)	20%
Design and Structural (floor plans, elevations, structural systems)	20%
Neighborhood Layout	20%
Community Integration and Landscaping	20%
Presentation	15%

Some notes that were considered when scoring each team's submission are as follows:

- Did the executive summary cover their firm's history and strategy in approaching the project?
- Are various site facilities identified on the site plan? Is the flow of traffic through construction clear? Does the schedule fit within the dates? Is both a phase built out and level 2 schedule for a typical model provided?
- Are 3 different models identified with floor plans? Are front elevation views provided? Is the structural system appropriate? Are the element spacings realistic?
- Does the development follow the R-1 zoning code regulations? Are the models well-spaced out throughout the development?
- Are the parks and neighborhood areas easily accessible within the neighborhood and do they take into account the needs of the residents?
- Is the presentation around 20 minutes? Is there a cohesive team dynamic? Were all the points covered? Did they have strong answers to the Q&A portion?

Competition Day

The presentations were held on April 22nd, 2023, in the KTGY Gallery on campus. The 4 teams' presentations were followed by a catered lunch and the presentation of the awards. Each team displayed excellence in different areas and demonstrated the benefits of interdisciplinary collaboration. Due to scheduling conflicts, not all team members could be present on the day of the presentations.

Figure 1. Team 1 presenting

Figure 2. Team 2 presenting

Figure 3. Team 3 presenting

Figure 4. Team 4 presenting

Figure 5. All team members, judges, and the author next to George Hasslein

Lessons Learned

Taking on this new competition came with challenges of its own. The author experienced handicaps in developing the problem statement due to a lack of interaction with the other disciplines outside of Construction Management. This was navigated through the survey sent out and contacting students that weren't competing, to avoid bias, to get a better understanding of experiences they've had with internships and areas that they focus on in classes at Cal Poly. The RFP written for this competition was specifically based off the knowledge the author picked up from their brief interviews and the survey.

The 'plus-delta' session immediately following the competition allowed for participants to share their thoughts on the competition from team selection to presentations. One 'delta' that was brought up by one of the participants was that this truly was their first time working with some of the other

disciplines within CAED. This presented an obstacle initially while team members learned what the other disciplines were able to take on. Another ‘delta’ from the participants was that they wanted more time to work on their deliverables. Given the author’s experience competing in the ASC competition with 16-hour deadlines, the author believed that 10 days would have been sufficient for the Hasslein CAED Collaborative, but due to the competition being during school activities, the timeline will be revised in future years.

Alternatively, a ‘plus’ that was common among all participants was that they would compete in this competition again next year. Team members shared their experience working with other disciplines and how much they learned from each other in the short time they had together. Participants also commented on how they felt more prepared for internships in the industry after having this initial opportunity to work with other disciplines.

Moving forward, the competition will continue to be led and organized by students until it is officially picked up by the CAED. The author hopes that the number of teams competing grows every year as more students share their experience with their peers. The goal of the competition remains to encourage interdisciplinary collaboration and leave students feeling confident and prepared to enter the industry.

References

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