



Oregon State University

School of Civil and Construction Engineering

AMERICAN SOCIETY OF CIVIL ENGINEERS
STUDENT CHAPTER

2015 ANNUAL REPORT

SUBMITTED: FEBRUARY 1ST, 2016





Contact Information

OSU ASCE Student Chapter

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President: Andy Truong

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Faculty Advisor: Tom Miller

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Student Chapter Executive Officers

From (June 2014) to (May 2015)

President: James Desmond

desmondj@oregonstate.edu

Vice President: Andy Truong

truonand@oregonstate.edu

Secretary: Aaron Weidman

weidmana@oregonstate.edu

Treasurer: Patrick Mahedy mahedyp@oregonstate.edu

Executive Chair: Caleb Lennon

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Student Chapter Executive Officers

From (May 2015 – March 2016)



President: Andy Truong

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Treasurer: Caitlin Drost drostca@oregonstate.edu



Vice President: Nathan Jones

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Executive Chair: Naghmeh Kia

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Secretary: Joshua Yun

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Advisors

Faculty Advisor:

Tom Miller Thomas.Miller@oregonstate.edu

Concrete Canoe Team Advisor:

Jason Ideker idekerj@oregonstate.edu

Practitioner Advisor Emeritus:

Ken Archibald kjarchibald@yahoo.com

Practitioner Advisors:

Dusty Andrews <u>dusty.andrews@kniferiver.com</u>

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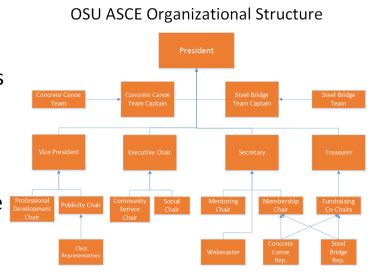
Chapter Reorganization

Description

- The constitution was updated in 2015 to:
 - Reflect current officer duties and roles.
 - Clarify eligibility for running for office and terms served.
 - Moved officer elections from mid-Spring to late-Winter term to allow a better transition from one set of officers to the next set.
 - Establish guidelines for electing Concrete Canoe and Steel Bridge Captain(s).
 - Establish a hierarchical organization structure for officers.

Participation & Results

 Helped everyone know the officer roles and made sure people are working together to accomplish tasks efficiently. Will allow a smoother officer transition for the following year.







Financial Summary

- Dues: \$15 one-time fee
- As of December 31st, 2015
 - 2015 Income: \$26,347.90
 - 2015 Expenditures: \$27,211.07
 - 2015 Cash Balance: (\$863.17)
 - Accounts Receivable: \$19,500
 - Accounts Payable: \$0





Goals and Objectives

• The objectives of the OSU ASCE Student Chapter are the advancement of the art and science of engineering, the professional improvement of its members, the encouragement of civil responsibility of its members and the encouragement of professional and social interaction between students of civil engineering and between such students and practicing engineers.





Goals and Objectives

- 1. Increase membership by 30%
- 2. Accomplish 8 service projects
- Qualify both Steel Bridge and Concrete Canoe teams for nationals at PNW Student Conference
- 4. Host at least 12 speaker meetings
- 5. Achieve national recognition for Annual Report
- 6. Hold 7 joint events with other clubs





Increase Membership 30%

Detailed Description of Goal: Chapter membership increase with the focus on juniors and sophomores. The membership at the end of 2014 was 152 students on average during the year. The goal for 2015 was to have 100 upperclassmen, 75 underclassmen, and 25 graduate students, for a total of 200 students.

Action Plan: Have roster checklist and applications at meetings. Proactive membership chairs with incentives for joining. More recruiting events at the beginning of each term, including social events and CC and SB team building.

Assessment: Partially achieved. A total of 173 students, with 109 upperclassmen, 31 underclassmen, and 33 graduate students on average for 2015. An increase of 14%. However, we failed to meet the underclassmen membership quota.

Follow-up: Have membership chairs set up a booth with membership forms & cash box at CCE 101 in Fall term. Check membership at all meetings. Require all officers to be involved freshmen and sophomore mentoring system. Require ASCE membership to join Steel Bridge and Concrete Canoe teams. Promote a family environment with benefits to all members.





8 Service Projects

Detailed Description of Goal: 8 service projects to improve OSU, the campus and community. The goal is to have students apply their engineering skills and give back to the community.

Action Plan: Continue outreach efforts in schools and engineering competitions. Contact OSU Capital Planning & Development to investigate potential construction projects. Work with different clubs in these efforts.

Assessment: Achieved. Accomplished 8 service projects that used student's engineering skills and knowledge, including Habitat for Humanity, the Country Club Bridge project, Timber Bridge project, CH2M Bridge Contest, OSU Sidewalk project, Mentoring, BBORA project on OSU Classroom Building and Can Drive.

Follow-up: Seek local opportunities and plan events early so that students can sign up at general meetings to help. Use the Google calendar to coordinate with speaker meetings and concrete canoe/steel bridge meetings. Continue oversight and encouragement by Executive Chair.





Detailed Description of Goal: Qualify both Concrete Canoe and Steel Bridge Teams for National Competitions at the PNW Student Conference.

Action Plan: Work closely with captains during Spring term to establish scope, budget, and schedule to hit the ground running in Fall term.

Assessment: Partially achieved. Steel Bridge Team placed 2nd in the PNW conference and went on to nationals and placed 15th! Concrete Canoe placed 2nd at the PNW conference.

Follow-up: Teams should focus on targeting engineering firms to sponsor teams for the PWNSC or donate materials in order to send more than 10 members to regionals. Continue to set up a detailed and aggressive schedule and reasonable budget during Spring term for organization. Strive to complete bridge and canoe as early as possible winter term. Continue to search for an improved location for fabrication for both teams.





Host at least 12 Speaker Meetings

Detailed Description of Goal: 12 meetings where professionals discuss technical topics, and their firms along with current and future projects from different CE disciplines.

Action Plan: Invite speakers for weekly meetings. Create a schedule early and regularly update the website to encourage students to attend.

Assessment: Achieved. 23 speaker meetings were held in 2015!! The most ever! Many students were given the opportunity to speak with professional engineers, learn and ask questions.

Follow-up: Continue to thank the professionals for their input and contributions to the students. Continue to work with Publicity Chairs to post events 1 week in advance. Work with school's industry liaison to set up meetings.





Achieve Recognition for the Annual Report

Detailed Description of Goal: Annual report that highlights the chapter's accomplishments effectively and in a clear and concise format.

Action Plan: Keep the formatting as simple as possible without sacrificing key information. Have all officers keep record of their events and meetings. Improve fundraising to benefit the teams and overall chapter, and further expand community service opportunities and chapter events.

Assessment: Achieved. The student chapter received a Certificate of Commendation for the 2014 annual report!

Follow up: Continue to record our chapter's progress and events for our reports. Increase the number of active members and the level of service that we provide to our campus and community. Have students attend more branch/section meetings. Plan additional field trips.





OSU Chapter History of Excellence

The OSU ASCE Student Chapter was first established in 1921, and only six other student chapters are older. They were established in 1920. We have been recognized consistently as one of the top chapters in the country:

<u>Certificates of Commendation</u> (1972, 1978, 1979, 1987, 1992, 1993, 1994, 1995, 1996, 1998, 2002, 2003, 2004, 2005, 2006, 2008, 2011, 2013, 2015) for the annual report of the prior year.

<u>Letters of Honorable Mention</u> (1999, 2000, 2001, 2007, 2009, 2010 and 2012)

Outstanding Community Service Award (1996)

Service Certificate of Commendation (2004 and 2008)

Service Award (2010)

Distinguished Chapter Award for Region 8 (AK, AZ, HI, ID, MT, OR, UT, WA) (2014)

Richard J. Scranton Community Service Award for the top chapter in the nation in community service activities (2014)





Hold 7 Joint Events With Other Clubs

Detailed Description of Goal: Participate in a minimum of 7 joint activities/meetings with other engineering clubs.

Action Plan: Coordinate with leaders in other clubs in planning joint meetings and events to create different ways to engage and involve students. Have regular meetings with AGC and ITE.

Assessment: Achieved. 13 joint meetings were held in 2015 with various engineering clubs around campus!

Follow-up: Improve communication between presidents or other executive officers. Have joint speaker meetings and work with the OSU Engineering Student Council for engineering club coordination and sharing of ideas. Explore new possibilities with SWE and Chi Epsilon. Mentoring of pro-school students is one possibility that has been requested by the CCE School.





Membership Statistics

Total number of Members = 173 (Average for the Year)

Total number of ASCE National Society-level Members = **173**

Percent of Members who are Society-level members (Society-level/total members) = 100%

Number of Members with Jr/Sr status = 109 (Average for the Year)

Number of Juniors and Seniors eligible to join ASCE (CE declared majors) = 216

% of eligible Jrs & Srs that are members (Jrs & Srs members/ Jrs & Srs eligible) = **50**%





Meeting Statistics

- Number of professional meetings with an invited speaker = 24
- Number of meetings with student presentations and/or paper(s) presented = <u>4</u>
- Number of professional licensure meetings and/or ethics topics presented = <u>2</u>
- Number of field trips = 1
- Number of social functions = 9





Successful Meetings

- Industry Insights on Self-Confidence (Curtis Youngren)
 - 2/18: 8 students
 - Very enthusiastic!!
- Resume Building and Peer Review Session (Nathan Jones, OSU ASCE)
 - 4/8: 33 students
 - Helpful advice from student peer
- ASCE Capital Branch Panel Discussion What do CE's Really Do?
 - 5/12: 45 students
 - PE's from a range of firms/agencies w/ panel and then small discipline groups
- ASCE First General Meeting
 - 9/30: 125 students!!
 - Presentation about ASCE and upcoming activities, then ice-breaker/social





Successful Meetings

- Keiwit Speaker Meeting (ASCE/AGC)
 - 10/5: 50 students
 - Followed "Great Builders" talk by Paul Giroux
- Mentors 360: Transition from Student to Professional
 - 10/26: 37 students
 - Advice from experience, including ethics in the workplace
- Urban Cities and How they Developed: Paddy Tillet, ZGFA Architects (ASCE/ITE)
 - 11/2: 62 students
 - Great talk on how Portland developed in terms of architecture and transportation
- Knife River Prestressed Concrete
 - 11/19: 48 students
 - Strong supporter of Big Beam contest at OSU and Concrete Canoe team
- Cosmic Bowling!
 - 11/20: 35 students





Engineering Expo: May 2015

Description

 Concrete Canoe and Steel Bridge teams displayed their designs in front of Kelley Engineering Center at OSU

- <u>20</u> students participated
- Spoke with interested civil engineering students, high school students and parents and discussed plans for next year's designs.
- New members expressed interest in joining ASCE to participate on the teams.







Cookies and Clubs: Sept 2015

Description

 Concrete Canoe and Steel Bridge teams displayed their designs and talked to incoming Freshman about the benefits of joining a team.

- <u>12</u> ASCE members attended the event
- Students were recruited to join the teams and help out at the next regional competition.







Resume & Cover Letter/Workshop: 10/15/2015

- This event incorporated a presentation from the OSU Career Development Center (CDC), as well as time designated for peer review of résumés. The event was created to prepare students prior to the OSU Career Fair the following week.
- Attendance included <u>16</u> ASCE chapter members as well as <u>2</u> representatives from the CDC.
- This meeting allowed students to interact with professionals and improve their resumes before the annual Fall Career Fair.





ASCE and the OSU Career Development Center Presents...

Career Development Center

Résumé and Cover Letter Workshop

Thursday, October 15th 5:00 PM Kearney 212

The Career Development Center is hosting a presentation to help students create a quality résumé, as well as sharpen their cover letters! Bring your current drafts to take advantage of both peer and expert review!

This is a prime opportunity to work with your peers and others experienced with creating and editing résumés... just in time for the CAREER FAIR!

University Career Fair: Oct. 21st

Engineering Career Fair: Oct. 22nd





Meet a CE Day: 11/7/2015

Description

- In Klamath Falls w/the Oregon Section and OR schools (hosted by OIT)
- Connected students with professional civil engineers at the dinner
- Talk by Port Authority of New York on need for coordination and public policy understanding.
- Field Trip to Seismic Retrofit of HS and Geothermal Energy Plant
- Participation
- 4 OSU Students participated
- One practitioner advisor attended as well as our faculty advisor







ASCE Cosmic Bowling: 11/20/15

Description

 ASCE officers hosted a night of free bowling and food for all Civil Engineering students at the OSU Memorial Union.

- 30 students attended the event
- Many students signed up to join ASCE!







ASCE VS. AGC SPORTS

Description

 Friendly competition between the ASCE student chapter and the Associated General Contractors (AGC) student chapter

- The ASCE teams swept the competitions in 2015!
- In the winter term basketball game, an ASCE team of <u>12</u> students prevailed against the AGC squad.
- In the fall football game, ASCE had <u>13</u>
 students play and others watch as they
 handily defeated the AGC squad in the 7-v-7
 game. Score was 56-6!







ASCE Intramural Sports

Description

- ASCE students form teams to participate in OSU-wide intramural leagues
- Played flag football during Fall term 2015



- The ASCE team was comprised of <u>11</u> students ranging from Freshmen to Grad Students, which provided fun and healthy comradery.
- The ASCE team competed in the Men's A league.
- •Social directors encourage the formation of teams in various sports to encourage friendships among ASCE members.





PNW Student Conference

- Held at Idaho State University in Pocatello, ID
- April 16th -18th, 2015
- 24 students and the faculty advisor represented OSU at the conference
- OSU received 1st place in the overall conference performance!







Steel Bridge Team

Captains: Nathan Jones, Jessee Bogenoff, Peter Mercer







Steel Bridge Team

PNW Conference Results:

2nd – Construction Speed

 2^{nd} – Lightness

2nd – Display

2nd – Stiffness

2nd – Economy

2nd – Efficiency

2nd - Overall









Steel Bridge Nationals



- Returning for the 2nd year in a row!
- University of Missouri, Kansas City
- May 22nd & 23rd, 2015
- OSU Placed 15th of 47 Teams!
- <u>5</u> ASCE members attended







Concrete Canoe Team

Captain: Andy Truong







Concrete Canoe Team

PNW Conference Results:

1st – Oral Presentation

2nd – Design Paper

3rd – Final Product

6th – Races

2nd - Overall









Concrete Canoe Team Leaders



Oversaw planning. implementation, and tracking of project from beginning to end. Assigned leads to manage various aspects of project & responsible for successful project completion within schedule and budget.



Name (Year in School, # of Years in CCC, # of years as registered participant) Example: John Doe (Sr, 3, 3)



Kristin Jones (Jr.1.1)



Joshua Yun (ir.2.1)



Arlan Sterpa (Jr.1.1)



Stacev Lin (Jr.1.0)



Caleb Lennon (Jr.3.2)



Jason Pech (So.2.2)

Updated Safety Manual, led safety meetings before construction meetings. and compiled engineering notebook

Developed mix design for final canoe through the testing of differing mix es in sample specimens.

Directed construction of form work. carrying case, drip system, the mockup canoe, and of the final canoe.

Designed artwork for the project including the canoe design, canoe stand and team shirts. Procurem ent of graphic materials.

Compiled technical paper and served as the conference chair for OSU ASCE

Acquired practice canoe and equipment, conducted paddling practice, and demonstrated appropriate paddling techniques.

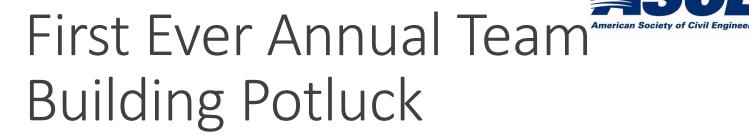
Jakob Walter (Sr, 3, 2) Anthony Quinn (Jr,1.0) David Stys (Jr.1.1)

Assistant Engineers: Rachel Mau (Jr. 1.0) Richelle Mockler (So. 1,1) Adnaen Alkamati (Jr.1.0) Cody Beairsto (So.1.1) Wyatt Morris (So.1.1) Christine Baker (So.1.0) Cadell Chand (Fr.1.1) Kiera Usagawa (So. 1.1) Wyatt Hoag (Fr.1.0)

A special thanks to our engineering advisors: Dr. Thomas Miller Dr. Jason Ideker

Paddlers

Men Wom en Caleb Lennon (Jr.3.2) Staci Sherer (Sr.2.2) David Stys (Jr,1,1) Kiera Usagawa (So.1,1) Jason Pech (So.2.2) Richelle Mockler (So.1.1) Cadell Chand (Fr.1.1)





Description

- Social get-together for concrete canoe and steel bridge teams
- The goal was to improve the relationship between concrete canoe, steel bridge and ASCE officers.

- 32 students attended
- Members were able to participate in team building activities to build better relationships with each group.







PNW Student Conference

Other Events:

Environmental Competition:

Participants: Caleb Lennon, Amber Meeks, Wyatt Morris.

Scope: Design an economical filtration device to rid water of clay particles without the use of sands or charcoal.

2nd - Overall

<u>Technical Paper and Presentation Competition:</u>

Participants: James Desmond and Peter Mercer

Scope: Write and present a Technical Paper on "Construction Safety and its Relation to Engineering Reliability"

2nd – Overall







PNW Student Conference

Other Events

Food Drive Design Competition:

Participants: Kiera Usagawa, Nathan Jones, Richelle Mockler-Martins

Scope: Design a can food structure out of collected can food items for the local food bank. These students designed a fire hydrant as it deals with roadway infrastructure.

3rd - Overall

Concrete Horseshoes Competition:

Participants: Cody Beairsto and Caleb Lennon

Scope: Design and create 3 horseshoes to compete in a

friendly horseshoe tournament







Workshop for Student Chapter Leaders

- Bellevue, WA
- February 20-21, 2015
- 9 students attended and 1 faculty advisor







Workshop for Student Chapter Leaders

- Leadership development
- Professional and academic networking
- Learn how ASCE works nationally
- Advice for planning future ASCE events
- Opportunity to meet professionals and students from the west coast







Leadership Development (Officer Retreat)

Description

 New ASCE officers spent a weekend retreat at Pacific City, OR to discuss strategies for fundraising, member retention and overcoming other challenges for the coming academic year in ASCE.

Participation & Results

- **17** officers attended the retreat
- <u>1</u> practitioner advisor attended the retreat as well as <u>1</u> faculty advisor
- Effective plans were made and it was a great team-building and friendshipbuilding time.









2015 Special Projects

- OSU Sidewalk Replacement
- CH2M/OSU High School Bridge Contest
- Timber Bridge
- Habitat for Humanity
- Country Club Bridge
- LINC and BOORA Architects
- Mentoring
- Can Drive (PNW Conference)





Description

Spring 2015

- Goals of the project were to:
 - Complete another successful design-build project while more than doubling the previous project scope.
 - Provide students with hands-on construction and engineering experience, with ASCE and AGC working together.
 - Maintain a working relationship with OSU facilities by performing construction on campus.
 - Raise awareness about ADA accessibility issues on the OSU campus.

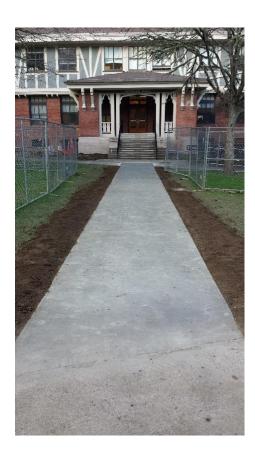
















Engineering Component

- Surveying was done of the job site area with a corresponding 3D model.
- Project management and engineering were used to schedule demolition, construct formwork, pour the concrete mixture, and provide finishing touches for the project
- Cost estimating and material procurement.
- •Soft engineering skills such as city and ADA code compliance.
- Communication and meetings with both the City of Corvallis and OSU.

Project impact

- Accessibility improvement of a section of sidewalk for pedestrians, cyclists, and those with disabilities.
- Those who participated in the project gained valuable knowledge in design, construction and planning.
- This project was a continuation of ASCE/AGC student chapters working together with the University.





Participation

- 46 Civil and Construction Engineering students (27% of ASCE membership)
- 12 faculty members and staff helped or were consulted during this project
- 300 person-hours were spent on this project







46th OSU/CH2M Bridge Contest

Description

- February 28th, 2015
- Goals of the project were to:
 - Involve and engage local high school students in a structural engineering contest to expose them to engineering principles in a fun way.
 - Introduce the students to OSU and civil engineering, and perhaps attract some to our profession and university.







46th OSU/CH2M Bridge Contest

Engineering Component

- Structural engineering by high school students who designed and constructed small wooden bridges to maximize strength/weight ratio within a set of specifications.
 - 129 bridges were tested
 - The winning bridge carried 5,000 times its own weight of 9.4g

Project Impact

 Developed relationships among high school students, teachers, professional engineers from CH2M and Kniferiver Prestressed, OSU students and faculty. Introduced students to OSU and civil engineering while having lots of fun breaking bridges!





46th OSU/CH2M Bridge Contest

Participation

- <u>21</u> student volunteers (12% of ASCE membership)
- **2** ASCE practitioner advisors
- 1 ASCE faculty advisor







Timber Bridge

Description

- Goal of the project was to:
 - Design and build a pedestrian bridge out of wood to be placed in a local park
 - 20 foot long by 5 foot wide bridge capable of supporting 100 psf
 - Maximum bridge deflection of 0.3 inches







Timber Bridge

Engineering Component

• The project relies heavily upon fundamental structural engineering principles, most notably beam design and connection design.

Project Impact

- The project combines classroom principles with a critical "hands on" component to reinforce important lessons for the students involved.
- Students build the structure they design and test it to see the results of their design.
- Communication and project management are essential for a successful bridge and students apply these skills in the group effort.

Timber Bridge

Participation

- 32 students overall worked on various parts of the bridge (18% of ASCE membership)
- <u>2</u> faculty members were involved
- <u>200 person-hours</u> were spent to complete the bridge



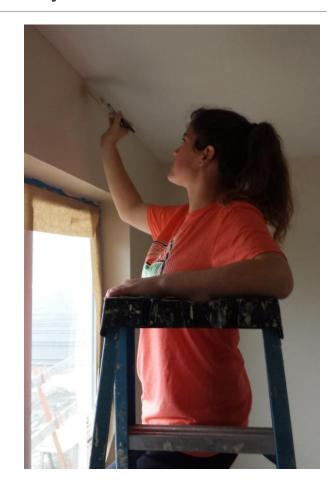




Habitat for Humanity

Description

- Goals of the project were to:
 - Help with progress towards the completion of one of the two Habitat houses that are built in Corvallis each year.
 - As a group, students worked with a construction manager to paint the upstairs and downstairs of the Habitat house.
 - This project clearly aligns with our chapter goals of service and involvement in the community.







Habitat for Humanity

Engineering component

- Group dynamics were very important to these tasks as well as in the engineering field.
- Construction experience and mentors are invaluable for young engineers learning to make their designs feasible.

Project impact

- Helped provide families with affordable homes in which they are a large part of the building process.
- Strengthened ties between Oregon State ASCE and the Corvallis community







Habitat for Humanity

Participation

- Completed projects in February and October, with a total of <u>18</u> students (10% of ASCE membership)
- 90 person-hours were spent on the Habitat for Humanity projects









Country Club Bridge

Description

Goals of the project were to:

- Survey damage to the country club's bridge
- Record findings and create detailed drawings
- Analyze options for repair



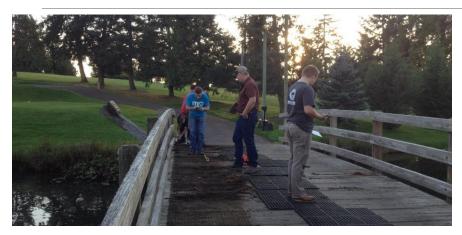
Engineering Component

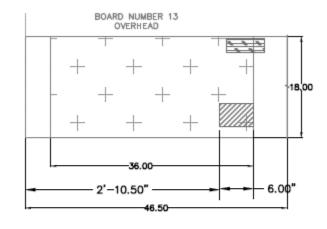
- Provided students with an opportunity to practice fieldwork and CAD software.
- Reviewed design elements of wooden structures and their constraints/limitations.
- Developed possible timeline and work schedule for a replacement project.

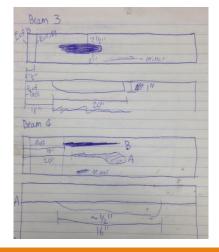




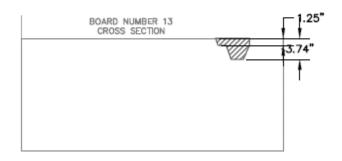
Country Club Bridge







Convert field sketches to CAD drawings







Country Club Bridge

Project Impact

- Helped club with decision process for replacement..
- Created closer ties to the Corvallis community that uses the country club.

Participation

Completed survey and drawings with <u>9</u> students over the course of 3 months (5% of ASCE membership)







LINC and BOORA Architects

- ASCE helped to initiate a working relationship between students at OSU and the
 designers of the new Learning Innovation Center (LINC) Building on campus.
 Students attended and set up the initial meeting and a follow-on field trip to the
 construction site. In the end, a number of non-engineering students helped BOORA
 Architects to illustrate for visitors to the building the sustainability aspects of the
 building.
- 15 person-hours were spent in pre-project involvement.

Meeting and field trip gave students the opportunity to collaborate with architects

and peers to emphasize sustainability on campus.









Mentoring Q and A Event

Description/Engineering Component

- Pro-school ASCE students answered underclassmen's questions about their future studies at OSU.
- Discussed topics on internships, academics, research, and study abroad for civil engineering students.

Participation & Project Impact

- <u>18</u> members participated in the event (10% of ASCE members).
- Freshman were able to connect with students who had experienced what was ahead for them.







Can Drive for PNW Conference

Description/Engineering Component

As part of the PNW conference, the chapter collected cans for a local food bank and then used their knowledge of structural engineering "canology" and designed a sculpture from the cans. The sculptures were evaluated for stability and aesthetics. The OSU team came in 3rd place with their design.

Participation & Project Impact

- <u>3</u> members participated in the event (2% of ASCE members).
- Provided food for those in need in Corvallis.







Summary and Questions

Major Accomplishments for 2015:

- Chapter reorganization and leadership structure development
- Improved yearly officer to officer transition
- Established a more regular speaker meeting schedule and system
- Placed 1st overall at the Pacific Northwest Student Conference
- 15th place at Nationals for Steel Bridge Team
- Variety of community service projects (Sidewalk Repair at OSU, Timber Bridge, Habitat for Humanity, OSU/CH2M Bridge contest, etc.)

Significant Challenges for 2016:

- Fundraising from donors outside of Oregon State University (alums, firms)
- Growing concrete canoe and steel bridge teams > requires more coordination and increased expenses for conference
- Increasing officer productivity -> more events planned -> higher expenses