

THE MOMENT



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Welcome

The Ohio State University American Society of Civil Engineers Student Chapter 2011-2012 academic year has been a successful one for the chapter with an increase in membership through a variety of student chapter events and socials. Our student project teams all did outstanding at the OVSC in Pittsburgh, PA this year with four of our eight teams placing in the top three.

Our chapters had the opportunity to host a variety of great speakers including Brierley Associates, the Army Corps of Engineers, S&ME, Acrow Bridge, WD Transportation, Stantec, Corna-Kokosing, Turner Construction, and Burgess and Niple. Our chapter truly enjoys these speaker events as they give our students a great opportunity to learn about some of the great companies in our area as well as allowing for great networking. Our chapter was also able to co-host a luncheon with the Engineers Club of Columbus here on Ohio State's Campus at the Ohio Union.

Because of all of our wonderful sponsors, we were able to send forty students to participate at the OVSC and even more were able to participate on campus. Our Sustainability and Balsa Wood Bridge Teams both finished in first place while our Technical Paper took second and Surveying took third.

Continue reading to find out how our team captains prepared for competition and for more details about the year for OSU's ASCE Student Chapter.

2011-2012 Officers



Back Row: Jonathon Leonard (Webmaster), Evan Mutch (OVSC Chair), Joshua Otworth (President), Andrew Helser (E-Council and Alumni Council Rep), Dr. Chaturvedi (Faculty Advisor)

Front Row: Michele Kingrey (Treasurer), Will Cheng (Secretary), Andrea Mobley (Fundraising Chair)

Not Pictured: Cheryl Shafer (Practitioner Advisor)

OVSC Results

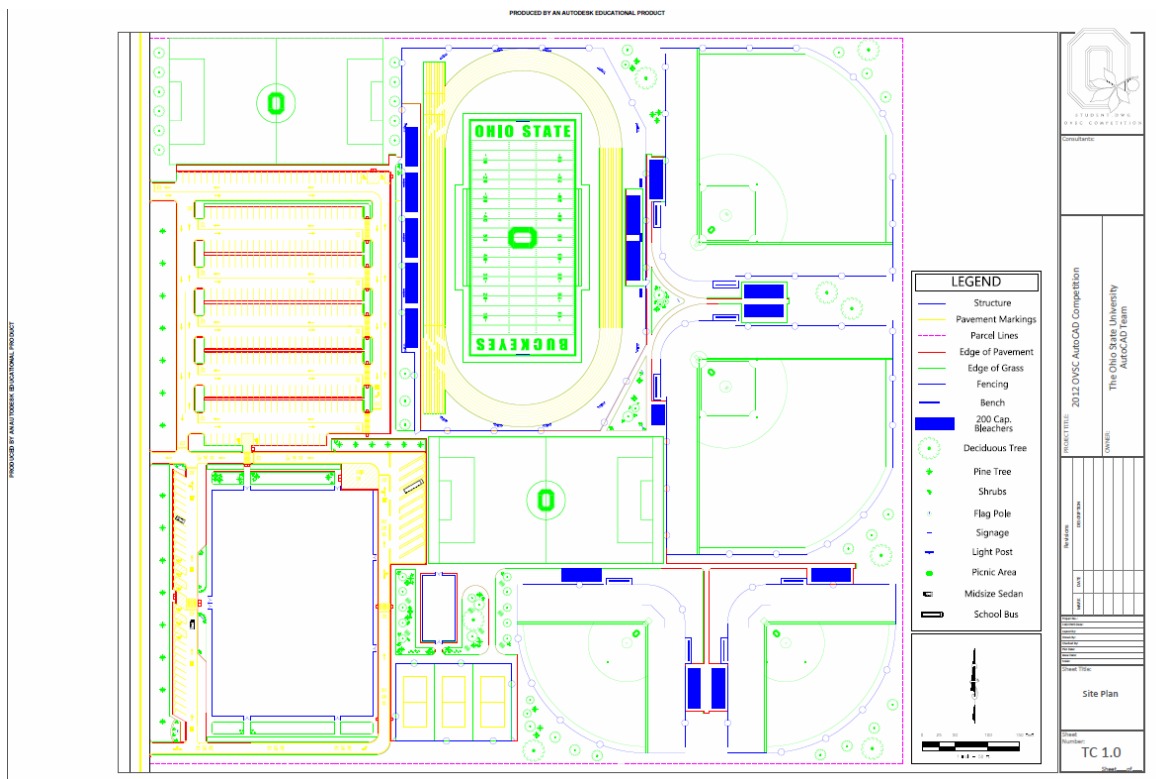
Auto CAD	4th Place
Balsa Wood Bridge	1st Place
Concrete Canoe	6th Place
Environmental Design	10th Place
Steel Bridge	5th Place
Surveying Team	3rd Place
Sustainable Design	1st Place
Technical Paper	2nd Place

Auto CAD – 4th Place

By Jonathon Leonard

Each AutoCAD team was to be made up of four students from the respective schools. This year’s competition consisted of a team portion to be submitted one month before the competition and an individual portion to be completed at OVSC. The individual portion consisted of one member from each team competing in a timed contest to complete a change order to their team’s design, as designated by the proctors.

Jonathon Leonard represented Ohio State for both the team and individual portions of the AutoCAD competition. The team portion asked teams to design a site layout for a high school based on a given plot of land. The objective was to minimized cost based on a set price per acre, but to achieve efficient placement of all major features. Features included baseball and softball diamonds, football stadium complete with seating and lighting, recreational fields, tennis courts, and minimum quantities of parking and facility sizes. Standard dimensions were required and any other details that teams wanted to add were optional, such as landscaping and field markings. This year, our Auto CAD team placed first in the individual portion and fourth in the team contest. It is Jonathon’s hope that other students will take the reins and continue success in future AutoCAD events.



Balsa Wood Bridge – 1st Place

By Andrew Helser

This year was the first year for Ohio State to participate in the Balsa Wood Bridge Competition. The team consisted of five members: Andrew Helser (team captain), Phoebe Low, Josh Otworth, Kim Perkins, and Yunlan Zhang. On the day of the competition, the team was given 20 – 1/8”x1/8”x36” balsa wood sticks, two 4-fl oz bottles of super glue, and 90 minutes to construct the bridge. The bridge was judged based on architecture (30%) and weight ratio (70%). We finished 1st out of 11 for the weight ratio and 8th out of 11 for architecture. Our team placed 1st overall with a total of 82 points with Western Kentucky (71.23 points) in second and Youngstown State University (61.42 points) in third. The team members would like to thank all of OSU’s ASCE Student Chapter sponsors for their support and hope that they will continue to support ASCE in the future.



A Special Thanks to Our Top Sponsors



Civil Engineering Alumni Association



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Concrete Canoe – 6th Place

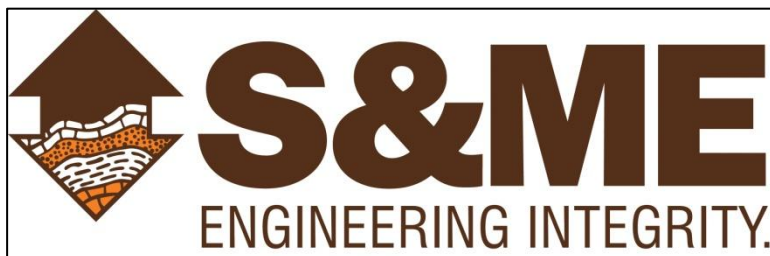
By Elizabeth Fisher, Andrew Gort, and James Maham

This year The Ohio State Concrete Canoe team took the theme to new heights with aviation. As the year progressed and OSU football news made headlines the team decided to stay relevant to current events and named the canoe “Meyer Flyer” after OSU's new head football coach, Urban Meyer.

For the first time the Canoe Team became a student organization with the Ohio State Student Union, which granted the team access to supplies and resources as well as a table at the fall involvement fair, which aided in recruitment of new members.

After successful recruitment of members, the academic year started with material research, selection of project teams, and batching of test mix designs. Early trouble with securing a construction site set the schedule behind. With the help of Dr. Merry, chair of the Civil Department, and Dr. Shearer, chair of the Agricultural Engineering Department, lab space in Lab 116 at the Agricultural Engineering building was secured at the beginning of winter quarter. This left just enough time in the schedule for construction of the canoe.

The canoe this year was poured in a female mold using a fluid cohesive mix that allowed for the application of thin layers between the lightweight flexible reinforcement making for thinner, more consistent walls. The mix design incorporated sustainable materials such as granulated blast furnace slag and fly ash. The aggregates were primarily glass spheres manufactured from recycled materials. The canoe mix achieved a 14-day compressive strength of 2065 psi. With sufficient strength achieved before the full 28-day cure time, it was feasible to remove the canoe from the mold 3 days early to grant more time for the aesthetics. After surface patchwork and sanding, the canoe staining had to occur over spring break in order finish in time for competition, the first weekend after break.



Concrete Canoe – 6th Place

At competition, the canoe scored 75 points out of 100 in aesthetics, with the only deduction being 25 points for failure during the swamp test. Where the team was hurt the most was the races; however, the team did take fourth place in the coed sprint. Overall, OSU placed sixth out of the seven teams present. The density issue was analyzed and modifications to the mix design along with paddling practice will provide future teams a competitive edge.

The team was funded heavily by the OSU ASCE student chapter, with other contributions coming from the Civil Engineering Alumni Association and Schottenstein Center cleanups. These cleanups were a first for the team and will give future teams an additional source of funding.

The majority of the construction materials for the canoe were donated by local companies. Without the support of Anderson Concrete Corporation, Ohio Ready Mixed Concrete Association, Reitter Stucco and Supply, Grace Construction Products, and 3M the canoe would not have been a possibility. The team would especially like to thank our advisor, Steve Risser, who provided the team with technical guidance and moral support.



Environmental Design

By Andrea Mobley

The Ohio State Environmental Design Team consisted of five members: Phoebe Low, Michael Opitza, Bethany Puthoff, Matthew George, and Andrea Mobley. During winter quarter, the team designed and constructed their apparatus to remove barium, turbidity, and maintain a neutral pH in hydraulic fracturing flowback water. The treatment methods were limited to chemicals that could be purchased from a grocery or drug store, which really challenged the team to think differently than in class and lab where all chemicals are normally at one's disposal. The team had some more challenges with lowering turbidity as many of the chemicals used actually raised turbidity. The team did not place this year but they did score high in barium removal, sustainability, and creativity. The team hopes to do better next year with the gained knowledge of this year and wants to thank their advisor Dr. Zuzana Bohrerova and Doug Davis for providing hydraulic fracturing water for experimentation.



Steel Bridge – 5th Place

By Laura Sanders

The Ohio State Steel Bridge Team had an excellent team this year and improved upon last year's scores. The team had twenty active members helping with the design and fabrication. The members who participated in competition included the team captains: Laura Sanders, Jesse Lesniak, Paul Frey and other active participants: Alec Sichko, Cory Hopwood, Kristin Ober, Nick Lazar, Tommy Lazar, Bobby Nevers, and Clay Tietjen. The Steel Bridge Team place placed 5th overall. Our team unfortunately did not pass the vertical deflection along with seven other teams; however, our team was the closest to the passing line with only five steel angles remaining.

The team made a few changes from previous years. The first major change was the software, the team decided to use Bentley STADD Pro instead of SAP 2000 to design our bridge.



tutorial on how to construct a steel bridge model; this was found very useful. This year's team went a little outside of the box with their design and decided to have a structure that had a space truss underneath. This space truss design helped the bridge with the lateral deflection that eliminated many competition teams last year. The design held up as hoped at competition, there was almost no lateral deflection.

The second major change for the team was the implementation of a new captains system, where the senior captain chose a junior captain for a smoother, guaranteed transition. Last year and previous years, there were some problems in passing down knowledge. With the new system, the team will be able to avoid this scenario. The team's two juniors who participated in competition will return as senior co-captains and it was decided that three captains, a new junior being the third, would be the optimal choice to allow for the large amount of tasks to be dispersed amongst them all.

Steel Bridge – 5th Place

The largest change this year was exporting the fabrication. The joint fabrication was done by the ISE and ME departments. For three weeks, students had shifts to make sure the joints were completed on time. Jon Edwards Steel donated the steel and welding. The Steel Bridge Team learned a valuable amount of experience dealing with fabricators and learning communication to ensure that all the details were understood properly. In the end, the fabricators did a fantastic job.

Overall, the team had a great experience and everyone agrees that this project was a hands-on experience similar to the engineering world. From the design phase to fabrication phase, students were immersed in real world constraints, especially when it came to the fabricator. The experience gained from communication with fabricators is something you cannot find in the classroom. The team would like to thank our major donators: Jon Edwards Steel, Jones Stuckey, and the OSU Civil Engineering Alumni Association.



Surveying Team – 3rd Place

By Luke Hemmelgarn

This year the Survey Team was made up of 6 members, all of whom participate in the student chapter of Professional Land Surveyors of Ohio. The members of the 2012 team were Luke Hemmelgarn, Tim Stadt, Josh Ginnett, Tommy Knott, Cassie Bast, and Phil Mazzarella. The competition consisted of four parts, which were the building layout, turning angles, determining elevations of benchmarks, and pacing. We placed 1st in the first two and 3rd in the second two activities. We finished 3rd overall. This year the competition differed from the past. This year we needed six members instead of three and a few of the events were changed. It was a very good experience and we now know what to expect and get ready for next year. We would like to thank Bob Mergel for being our advisor and taking the time to coach us during the practices and everyone else that helped make this weekend possible.



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YEARS
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G R E S H A M
S M I T H A N D
P A R T N E R S

BURGESS & NIPLE

Sustainable Design – 1st Place

By Evan Mutch

This year there was a brand new competition, The Sustainable Design Competition. Being so new, the rules and specifics were pretty vague, allowing for a lot of creative and innovative ideas. The challenge was simple; “to create an innovative product for existing buildings (residential and commercial) that will reduce the demand for energy from non-renewable sources while exhibiting a payback time of one year or less.” The competition was sponsored by the Mascaro Center for Sustainable Innovation at the University of Pittsburgh and was open to any student in the Pennsylvania, Ohio, and Kentucky regions, regardless of ASCE affiliation. In October, an initial proposal had to be submitted and was judged; from there they picked five teams to receive a \$1500 grant to develop their idea. In addition to this, the OVSC held their own judging and awards during the usual conference in March for any ASCE team in our conference that wanted to participate in the competition.

Our team, consisted of Evan Mutch a third year civil student, Carly Maggio a third year architecture student, Ricky Baylis a third year biomedical engineering student and Mike Taricska a fifth year civil student. Our concept was called the Hidrosis Roof System; the idea was to use evaporative cooling and thermal convection on rooftops to keep them cool in the summer. The concept was very similar to the way people might spray down their roof in the summer to cool it or even the way we sweat to stay cool. The system was automated and recycled its own water not evaporated as well as captured rainwater.

While we felt like this was just the innovative product they were looking for, unfortunately we did not move on in the competition. Even though we did not have the opportunity to further develop our idea, at the OVSC competition, we were judged to be the best submission from any of the ASCE affiliated teams and ended up taking first place!



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Technical Paper – 2nd Place

By Andrian Lee

The Technical Paper Competition was an individual challenge consisting of two parts: a paper to be submitted before the regional competition and a presentation to be given on the first day of the competition. Each paper was required to be written by one undergraduate student who was both an ASCE Student Organization member and an ASCE national student member. The topic of the Technical Paper for 2012 was “Ethics and Globalization.” Students were required to write a maximum of 2000 words on the increasing globalization in today’s global economy and the ethical implications it holds for civil engineers. Students were encouraged to cite the ASCE Code of Ethics.

My essay focused on the potential ethical conflicts, responsibilities, and opportunities civil engineers in the U.S. in international projects, especially in developing communities. Conflicts may arise from different cultural and business practices. However, the Code of Ethics calls for engineers to support the professional development of other engineers and to maintain the prestige and competence of the engineering profession. International projects offer unique opportunities to uphold this mandate. Some specific examples and personal anecdotes from China, El Salvador, and Ghana were included to support the essay’s arguments. The combined score of the paper and the presentation placed me in second place overall.

Chili Cook-Off

The ASCE Annual Beat Michigan Chili Cook-Off was another great success as the chapter’s first fundraiser of the year, having five contestants of both students and staff. The winning contestants are pictured, who were voted on by the sampling faculty, staff, and students. Each winner received a gift card for his or her top recipe and cooking skills. ASCE would like to thank all the contestants for participating, Penner Bread for donations, and all the faculty, staff, and students that stopped by to support the event. We hope to bring an even larger crowd next year!



Workshop for Student Chapter Leaders

Two of our students, Evan Mutch and Michele Kingrey, as well as our practitioner advisor Cheryl Shafer had the opportunity to attend the ASCE Workshop for Student Chapter Leaders (WSCL). Our students collaborated with ASCE students from all over the country as well as received formal training on how to most effectively run our organization. With both of these students returning next year as President and Vice President, the ASCE Ohio State Student Chapter can more efficiently continue to build next year.



2012-2013 Officers

Evan Mutch	President
Michele Kingrey	Vice President
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