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WINFLUENTS

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Small Systems & Rural Ontario

PLUS

**WEAO TECHNICAL
SYMPOSIUM AND
OPCEA EXHIBITION
RECAP**

**IN THE SPOTLIGHT:
ED ROLOSON**

WEAO STUDENT DESIGN COMPETITION ENTHUSIASTIC STUDENTS SHOW OFF DESIGNS

Student teams from three universities in Ontario enthusiastically participated in the 2008 WEAO Student Design Competition, showcasing commendable design and presentation skills.



This year marked the inaugural WEAO Student Design Competition (SDC) open for students registered in an Ontario university, who are interested in pursuing a career in water and wastewater engineering and sciences.

This year's design project was generously provided by the Regional Municipality of Durham. The project involved the final design of a new sewage pumping station (SPS) to replace the existing Rosebank SPS for the Regional Municipality of Durham, Ontario. The design also established the route and recommended a method of construction for the sewage forcemain crossing a creek in a mixed urban/natural setting. Key deliverables for evaluation included the following:

- Pumping station design criteria
- Layout of the pumping station
- Noise and odour controls
- Emergency power supply
- Forcemain design
- Capital and life cycle costs
- Implementation schedule
- Rehabilitation of affected areas

Outstanding presentations and designs

The teams completed comprehensive final design outlines, well-documented in a substantial design notebook – each submission was more than 100 pages with appendices – and a presentation with slides.

Oral presentations were made during the 38th Annual WEAO Technical Symposium and OPCEA Exhibition at the Westin Harbour Castle on April 5, 2009.

And the winner is...

The end projects surpassed the organizers' expectations, and the judges had the difficult task of picking the winning team. The University of Toronto scored first, followed by the University of Windsor and McMaster University. All teams received a recognition plaque, a monetary award, and one-year free WEF student membership from WEAO. The monetary award for the winning team includes WEAO's support to represent Ontario at the WEF SDC in Orlando, Florida in October of 2009. While the honour of representing the Ontario water environment profession this year falls to the University of Toronto, any of the teams would have been a credit to WEAO in Orlando, and it is to be hoped that they and other schools will compete again in 2010.



University of Toronto Team (From left to right: Rafiq Qutub, Lucy Gafarova, Sherif Kinawy and Tony Tsui).



McMaster University Team (From left to right: Freesia Waxman, Jack Hellinga, Joshua VanRavenswaay, Sandrina Rodrigues and Alvin Pilobello)



University of Windsor (Clockwise from top left to right: Joe Lepera, Monica Feghali, Holly Lafontaine, Neil Brockman)

Table I. WEO Student Design Competition - Participating Teams

| University | University of Toronto | University of Windsor | McMaster University |
|----------------------|---|---|---|
| Student Team members | Tony Tsui (team leader), Rafiq Qutub, Sherif Kinawy and Lucy Gafarova | Neil Brockman (team leader), Monica Feghali, Holly Lafontaine, and Joe Lepera | Alvin Pilobello (team leader), Andrew Evans, Freesia Waxman, Joshua VanRavenswaay, and Sandrina Rodrigues |
| Faculty Advisor | Dr. Barry Adams | Dr. Rajesh Seth | Dr. Carlos Filipe |
| Industry Advisors | Hugh Tracy, P.Eng., Delcan | Clarence Jubenville, P.Eng. & Jian Li, Ph.D., P.Eng., Stantec | Jack Hellinga, C.E.T., CH2M HILL |

Acknowledgements

This year's project would not have been possible without the enthusiastic support of the Regional Municipality of Durham. Special thanks to John Presta, John Thompson and Thom Sloley for their overall support, and, in particular, to Marek Krynski and Chuck Hudsonroder for the two site tours and the many answers and additional information provided for the students.

Many thanks to the four judges for their time to evaluate the designs submitted by the participating teams and their valuable feedback to improve future competitions:

- James Ricker of Stantec in Ottawa
- Frank Ferrie of ITT- Flygt in Toronto
- John Himanen of GENIVAR in Markham
- Marek Krynski of Durham Region

Special thanks to the faculty advisors, industry advisors and all team members (Table 1), for their enthusiastic participation and support throughout the competition.

What's next?

The SDC committee wishes all the best to the University of Toronto team in their participation at the WEF SDC in Orlando, FL.

Stay tuned for the **2009 WEO Student Design Competition**, which will be announced in July or August in the WEO website and through the WEO Student Chapters throughout Ontario. For this second competition, the Region of Durham has graciously offered the **Port Darlington Water Pollution Control Plant (WPCP) expansion project**, as design project for the competition. For more information contact Rina Kurian (rkurian@rvanderson.com) or Bernardo Majano (bmajano@rvanderson.com), the New Professionals Committee – SDC Coordinators. ♦

Edgardo Tovilla, P.Eng., is a Senior Water Engineer with the Ministry of the Environment and the WEO SDC sub-committee Chair. Bill White, P.Eng. is an Associate Engineer with CH2M HILL and the Student Chapter Program Manager for the WEO New Professionals Committee.








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INSPIRED BY SANITARY SEWAGE, UNIVERSITY STUDENTS SHARE THEIR EXPERIENCE ON SDC AND WEAO TECHNICAL SYMPOSIUM

Rafiq Qutub, Lyutfiye (Luccia) Gafarova, Tony Tsui and Sherif Kinawy, University of Toronto Design Team



Water and wastewater engineering is an exciting field that offers rewarding career opportunities.

While strong academic education is essential, obtaining practical experience is equally important for students interested in the field. Design competitions and industry conferences provide valuable experience and insight into prospective careers. In this article, we share our experience in the first annual Student Design Competition (SDC) as well as the 38th Annual WEAO Technical Symposium and OPCEA Exhibition.

The focus of this year's SDC was the design of a replacement sanitary sewage pumping station for the Regional Municipality of Durham. In November 2008, the SDC sub-committee organized a tour of a number of pumping stations in Durham Region. The tour was helpful in providing us with a 'real world' experience of pumping operation in action. In working on the design problem, our team consulted with a

number of professionals, including academic and industrial advisors. Having no previous experience in municipal projects, our team conducted a literature review to understand the principles of pumping station design and operation. Some key components involved in design included pumping station layout, pump sizing and environmental rehabilitation.

The SDC was an extremely valuable experience for us. Too often in engineering and science education at university, students work on clean-cut problems taken out of textbooks, without the complications found in real world. What is usually lacking are the 'little things' that determine whether a design succeeds or fails. These practical engineering tips can be obtained by site visits and advice from experienced engineers and operators. We believe that our team would not have been able to present a feasible design relying only on the literature. Hence, the SDC was a complementary experience for water and wastewater engineering education and we encourage more student groups to participate in it in the future.

All competing teams presented their final designs at the recent 38th Annual

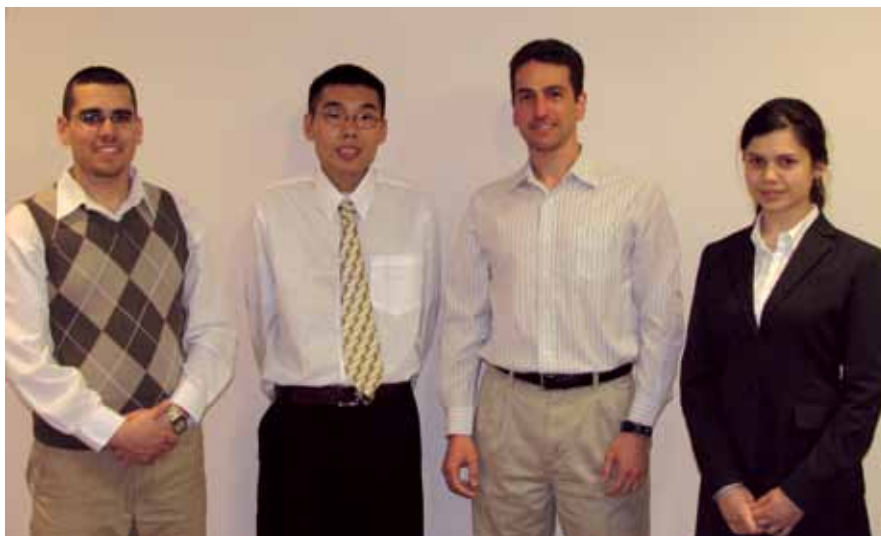
WEAO Technical Symposium and OPCEA Exhibition. The SDC presentations event was a great opportunity to network with industry professionals and meet young professionals in the environmental industry. The ice-breaker that followed the presentations was a pleasant event to meet new and seasoned professionals in the field.

The WEAO Symposium was valuable in providing us with an introduction to the environmental industry in Ontario. In particular, the New Professionals technical sessions were quite valuable. They featured professionals from various consulting companies who shared their experiences on some of the projects on which they are working. The awards luncheon was another chance to meet leaders of the water environment industry in Ontario and recognize their contributions.

What we liked about the WEAO Symposium was the close-knit community that characterizes the water environment industry in Ontario. Although professionals work for different companies and agencies, they all cooperate together under the WEAO umbrella to enhance the status of the industry and improve environmental infrastructure in the province.

In the next few months, our team will be preparing for the upcoming SDC at WEFTEC'09 in October. The competition will showcase competing teams throughout North America, and we expect to come across a variety of designs that follow different standards for different jurisdictions, climates and infrastructures. In addition, the WEFTEC'09 SDC will extend our exposure beyond sanitary sewage pumping stations to include other environmental projects.

In closing, we would like to sincerely thank all the individuals who helped make the SDC and WEAO Technical Symposium a success, as well as our academic and industrial advisors who provided continuous support to our team. ♦



University of Toronto Design Team
From left: Rafiq Qutub, Tony Tsui, Sherif Kinawy and Lyutfiye (Luccia) Gafarova