Welcome to the sixth edition of our Building Partnerships newsletter, which is intended to provide our alumni with a summary of activities within the department. This past year has been a tremendous year of growth in the department; graduate and undergraduate student numbers are at all time high, research funding is at an all time high and we have recently made several key additions to our faculty team. Our faculty, students and alumni continue to win key awards and honours in all aspects of engineering and society. Many of these accolades are described in detail within the pages of this newsletter. Our students continue to be very active - not only in taking part in engineering activities, but in undertaking very worthwhile endeavours in the community. I am extremely proud of the work that many of our students are carrying out as volunteers and researchers in locations such as Sri Lanka, India, Indonesia, Peru, Nicaragua, China, Ghana and Nepal. The quality of our undergraduate students is exceptional, and each graduating class will no doubt make significant contributions to society. Many of the achievements of our students during the past academic year are highlighted inside this newsletter.

We are in the midst of implementing an innovative new curriculum for our undergraduate students to reflect the changes currently being experienced in the field of civil engineering. Starting this fall, the class of 2010 (yes it’s hard to believe) will be the first students to follow this new curriculum. We will be introducing new courses in chemistry for civil engineers, mathematics for civil engineers and economics for civil engineers, in addition to revamping our traditional courses in structural, hydraulic, geotechnical and environmental engineering. We are particularly thrilled to be offering Canada’s first programming in Population and Public Health Engineering, an emerging new field of strategic importance to the general public. We currently have over 285 undergraduates enrolled in second through fourth years and anticipate a graduating class in 2007 of over 100 students. We are the 3rd largest program in Applied Science. Additionally, we have the largest graduate program in Applied Science with over 125 graduate students enrolled this fall. This is also associated with record funding for faculty totaling over $5 million this year. These large numbers are taxing our classroom and research facilities; however, it is encouraging to see such interest in our program.

Three faculty members (da Silva, McDougall, Take) are being put forward for promotion, tenure or renewal. They are all extremely worthy and the department wishes them great success. We have just recently welcomed our first faculty member in Population and Public Health Engineering – Yes Filion. His research focuses on linking health concepts in the evaluation and assessment of water systems.

Our technical and support staff continue to be pushed beyond normal expectation, given the large student population and quantity of research programming and I am grateful that we have, without a doubt, the best group of individuals on campus who keep this place running smoothly with their dedicated effort and enthusiasm.

The department is in the midst of developing a five-year strategic plan, to chart our path forward. Bernie Kueper is running this initiative and we are investigating our teaching and research profiles, our facilities, marketing the department and overall operational issues. I am sure Bernie would welcome any ideas from our alumni. The Department is continuing to strengthen our relationship with industry through research and undergraduate teaching initiatives such as the Job Network, Industry Open House, Engineering Forum, Curriculum Development, Collaborative Research and a successful fourth year industry based design course.

If you didn’t take advantage of last years offer to give all our graduating engineers (past and present) an email address for life, in the format x.jones@civil.queensu.ca, it’s still not too late. Simply contact Bill Boulton at bill@civil.queensu.ca and he will arrange it.

I hope you enjoy the newsletter and if you have any ideas or suggestions about how you can help the department succeed or how the department can assist you in your endeavors, please contact me at halk@civil.queensu.ca or phone (613) 533-2127.
CONCRETE CANOE TEAM

Queen’s Concrete Canoe Team gives students of all faculties the chance to design, build, and race a canoe made entirely of concrete (yes, concrete floats). In the spring of 2006 the Queen’s concrete canoe team themed ‘Braveheart’ entered into the Canadian National Concrete Canoe Competition in Sherbrooke, Quebec and ended up placing an astounding 3rd overall in the competition. A first time design aspect of using shotcrete to apply the concrete to the mold was successfully used. This year the competition is being held on May 12, right here in Kingston, at the Kingston Rowing Club. A new canoe design is being developed along with research into a more compact version of the shotcrete machine, by using a stucco sprayer. The team is looking forward to the upcoming months of hard work, but having fun during the process.

More information can be found at the CNCCC website: http://engsoc.queensu.ca/canoe/
If you have any questions please don’t hesitate to contact the team at canoe@engsoc.queensu.ca

QUEEN’S DAYS OF THUNDER
CONCRETE TOBOGGAN TEAM 2005-2006

The Great Northern Concrete Toboggan Race (GNCTR) is an annual competition that brings together more than 500 engineering students from universities across Canada. It is the largest cross-Canada engineering student competition, and each year it is held in a different Canadian city. The GNCTR aims to challenge its participants to use technical skills and to be creative in designing and constructing a concrete toboggan. Students design and mix the concrete as well as design and build the superstructure of the toboggan. Teams are evaluated based on the toboggan design, speed, braking, aesthetics, a technical report, and also on team spirit. The main rules are listed below:

• The weight-bearing surface of the toboggan must be made of concrete.
• The total weight of the empty toboggan must not exceed 330 lbs.
• The toboggan must safely accommodate five riders.
• Each toboggan must include a safe braking system.
• Steering is not mandatory but is strongly recommended.

This year the GNCTR was in Montreal, Quebec from February 1st-5th. Twenty seven teams from twenty schools and seven provinces attended. This year we decided to build on the previous year’s design and focused on increasing our speed. Our toboggan consisted of two front skis attached to a foot steering mechanism and a back slab with interchangeable back skis. The interchangeable parts were designed to maximize our speed on different snow conditions. Our theme was Queen’s Days of Thunder, and all 30 members of our team were dressed as a pit crew for the duration of the competition. We were very pleased with our toboggan’s performance. We placed in the top six teams on Race Day and achieved the top speed on the curved track.

The Concrete Toboggan Team is an excellent opportunity for students to apply the technical skills they are learning in the classroom to a practical engineering problem. It also gives students the chance to develop interpersonal, fundraising, budgeting, and communication skills.

More information can be found on the Queen’s Concrete Toboggan Team website at http://engsoc.queensu.ca/toboggan.

We’d like to thank all of our sponsors – we couldn’t have made it down the hill without them.

www.civil.queensu.ca
QUEEN’S CSCE STUDENT CHAPTER
BRIDGE BUILDING 2006

This year, over 40 civil engineering students from Queen’s travelled to Montreal for the 22nd Annual Trestly Bridge Building Competition. Hosted each year by Concordia University, participants design and construct bridges approximately one metre in length using only popsicle sticks, toothpicks, glue, and dental floss. Bridges are evaluated based on originality and aesthetics, and then left to the mercy of “The Crusher”, which loads the bridges until failure. This year, one Queen’s bridge held over 1000 pounds.

Awards are given to teams for overall placement, as well as for the most innovative bridge design, the bridge with the best aesthetics, and also the most spectacular “crushing”. The Queen’s competitors were pleased with this year’s performances, and we look forward to competing again in March 2007.

Thank you to the following sponsors for their generous contributions:

- Queen’s Department of Civil Engineering
- Queen’s Engineering Society
- Queen’s Faculty of Applied Science
- LaPage
- Jarden Home Brands
- Zellers

CIVIL CLUB

is a council consisting of over a dozen students who are elected by their class to organize many of the undergraduate events throughout the school year. The club helps with intramural sports, industry open house, student orientation, curriculum review, faculty-student events, competitive teams, as well as many other events that help students to get their mind off class for a while.

One highlight the club would like to share is from Christmas time last year. We decided to do away with the ‘sacred Santa’ program usually run among the undergrads, and ask students to instead make a donation to the Boys and Girls Club of Kingston. Students eagerly participated in what is called the “Angel Tree Program” by purchasing a toy for a child of the club, given their age, sex, and name. Our students brought in a heart-warming 75 presents, which were collected under a tree in Ellis Hall and that Santa was later able to distribute to some of the Girls and Boys of Kingston. Civil club is hoping the people in our department can be an even bigger help this year.

The Civil Grad Club is hard at work putting together events primarily for grad students, but also for the entire department. Several annual departmental events occur throughout the year, such as the “Welcome Back” Fall barbeque, which is often a great chance for old and new students to meet and socialize over a hearty meal. There’s also a chance to shed the jeans and get a little dressed up for the forthcoming Winter Holiday Party. In the spring, it’s a little more low-key and laid back: there’s the departmental softball game in which two civil teams comprised of students, faculty and staff play against one another, followed by a barbecue. In the summer, a Civil Golf Tournament is held at one of the local golf courses and many exciting prizes can be won, generously donated by local businesses.

The Civil department grad students tend to be fairly physically active and so a new position, VP Recreation was created for the 2006/2007 election. Organized pick-up games such as basketball and soccer are popular in the department. For the fall and winter, we will be booking a scheduled gym time for people within the department to come out and play pick-up basketball or floor hockey.

Regular organized items such as Boys Nights Out/ Girls Nights Out and Potlucks happen sporadically, primarily based on time availability of organizers.

The Robert and Joyce Jones Speaker Series (or Engineering Forum) is a weekly event that boasts top speakers in the field and academics (featuring some of our very own students sometimes) and offers pizza, beverages and the chance to learn something new.

The month of October provides lots of chances to bring out the kid in all of us, such as a pumpkin carving competition and the Civil Grad Halloween party. Every year, a few of us try and get together a few car loads to go visit the Wolfe Island’s Maze of Maize.

The Civil Grad Club’s role is to help promote and foster community spirit and team-building within the department and will continue to do so in the coming years.
Luke Bisby received a Project Leader’s Award “in recognition for the outstanding contribution made to the engineering education profession and the transfer of ISIS technologies through the development of advanced educational modules for the application of fibre reinforced polymers, structural health monitoring to civil infrastructure, and life cycle costing and engineering.

ICE AWARD

Professor Emeritus J. William Kamphuis was honored this year at the International Conference on Coastal Engineering (ICCE) in San Diego. Dr. Kamphuis received this award for his outstanding leadership and development in the field of coastal engineering.

Building on the success and new collaborations resulting from last year’s sabbatical stay at Fudan University, Shanghai, Bruce Anderson spent the month of July 2006 as a Visiting Professor in the State Key Laboratory of Estuary and Coastal Research, East China Normal University, Shanghai. While there he gave a short course to graduate students in the laboratory (“Toward the Sustainable City - Water Quality Engineering”), and a research presentation at the Shanghai 2006 Chongming Eco-island International Forum (“Toward the Sustainable Ecological Island - Integrated Phytotechnology Applications for Water Environment Protection in Urbanized Areas”). Two research funding applications have been submitted to the Shanghai Science and Technology Commission, which may support graduate student research and exchange between Fudan, East China Normal and Queen’s. In addition, talks were held with Tongji University, Shanghai, and preliminary expressions of interest in research and student exchange were put forward - these will be explored in the coming year.

Born and raised in Kingston, Dr. Leon Boegman returned in 2005 as an Assistant Professor in the Hydrotechnical Engineering group. His appointment follows recent post-doctoral research positions at Scripps Institution of Oceanography and the Centre for Water Research at the University of Western Australia. Dr. Boegman’s performs both fundamental and applied research on environmental fluid dynamics with a particular emphasis on physical transport processes in stratified lakes and oceans. He is presently collaborating with scientists from Environment Canada on a source water protection study for eastern Lake Ontario and a project to determine the impacts of zebra mussels and nutrient loads on Lake Erie water quality. In the near future, experiments will be carried out at the Coastal Lab, to facilitate the parameterization of internal waves and turbulence in hydrodynamic lake and ocean models.
IMPROVEMENTS TO OUR LABS!

Thanks to the Canadian and Ontario governments and to the university we have been able to invest a half million dollars to upgrade a number of laboratories in Ellis Hall over the past year. We have completed a major reorganization of the space in the basement labs and as a result added and removed walls, removed asbestos ceiling tiles and added new facilities. The funds have allowed us to replace old plumbing and electrical and provide a much needed facelift to a number of laboratories. The simple architectural change of removing the ceilings and raising lights allowed for a new spacious feel to the labs as well as creating a passive teaching model by exposing the building system components. Similarly, several research labs in the Geomechanics area and the Materials Laboratory were redeveloped and air conditioning installed to allow for advanced testing of polymer materials. These renovations are just the beginning of rejuvenating our infrastructure with the attention now focused on the water, environmental, and structures areas and we are looking forward to realizing this goal with the support of our generous donors and industry partners.

WELCOME TO CIVIL!

Yves Filion has joined us as an Assistant Professor in October 2006. Yves research will be in the Public Health in Engineering area.

RENEWAL, TENURE AND PROMOTION

Richard Brachman and Amir Fam both received Tenure and Promotion to the rank of Associate Professor as of July 1, 2006. Kent Novakowski received Tenure as of July 1, 2006.

CONGRATULATIONS to Amir Fam who received a $178k research grant from Materials and Manufacturers Ontario (MMO) for the project “Experimental and Analytical Investigations of a Novel Light-Weight Composite Sandwich Wall Panel for Buildings”. Amir also received the Teaching Award for 2005/2006.
BRENDAN CALLERY

When I began civil engineering at Queen’s and chose the environmental option, I had big expectations. Initially, I felt the environmental option had little to do with sustainability; it seemed that the core subjects dealt with how to manipulate our environment for our own benefit, as opposed to how we could preserve it. However, in my third and fourth year at Queen’s, I noticed that students were given more liberty in their choices for project and report topics. I took this opportunity to begin customizing my undergraduate degree to better reflect my sustainable beliefs. For the fourth year design project, I was part of an eight person, multi-disciplinary team of structural, environmental and mechanical engineers. We submitted our own proposal for researching a self-erecting, telescoping wind turbine. My technical report in fourth year was on the dire need for a course in wind energy at Queen’s University, drawing the parallels between the subjects within the current civil curriculum and the fundamentals of wind and wind energy. The faculty within the civil department were both helpful and encouraging. After completing my undergraduate degree, I was eager to find a job involving renewable energy as quickly as possible. After searching madly, I discovered that I would either need a more focused graduate degree or some practical experience. I opted for the experience and joined a consulting engineering firm in Dublin, Ireland. After a year in Dublin, my passion for a green job could no longer be ignored. I figured I may have met the minimum requirement for an entry level position with an environmental company or organization, as I had familiarized myself with wind energy while at Queen’s and now had some professional experience. After a lengthy application process, I was offered a job in Glasgow, Scotland with Airticity as part of their Wind Analysis team. I realize that it was a bit lucky to have landed such a position, but my undergraduate experience definitely played a factor in being offered such a coveted position.

ANNUAL ISIS CONFERENCE
CALGARY, MAY 2006
AWARD WINNERS:

Student Poster Competition (Materials Science and Innovative Structures)
1st Place: Ershad Chowdhury, Xiumei Duan, Paul Burke
2nd Place: Yazen Qasrawi

Student Poster Competition (Structural Strengthening and Rehabilitation with FRPs)
3rd Place: Jimmy Kim, Brant Oldershaw

MSc Student Presentation Competition
2nd Place: Jason Fitzwilliam

Best Presentation Graphics
Yazen Qasrawi

Urs Meier Scholarship for Engineering Excellence
Hart Honickman
Industry Open House

This year’s OPEN HOUSE was a GREAT SUCCESS with 29 PARTICIPANTS!

Thank you to this year’s participants:

Aeon Civil and Utilities
Armit Epic Limited
Bilb Rude Structures
Canadian Armed Forces
Career Services - QUID
Champlain Bridge Canada Ltd.
Crucible Construction Ltd.
EBA Engineering Consultants LTD.
Ellis Don
Golder Associates Ltd.
Helicon Yokes
Halsall Associates Limited
Hatch Acres
J.L. Richards
Loyalist Township
Marshall, Maclean Monaghan
Materials and Manufacturing Ontario
McCorrwick Rankin Corporation
McIntosh Perry Consulting Engineers
Ministry of Transportation Ontario
Morrison Harshfield
O’Brien & Gara
O’Connor Associates
Peller Kiwi and Ston’s Co.
The Semaq Group Inc.
Shanec Consulting Ltd.
Terrajob Ltd.
Utilities Kingston
Taitan Sims & Hilsinki

Our 9th annual Industry Open House was held on January 26th, 2006 with 29 companies participating. The purpose of the Industry Open House is to provide an opportunity for the Department to continue its commitment to build strong linkages between industry and education. Through this Open House we provide an opportunity to update our industry partners on new and exciting initiatives in the department in addition to continuing activities. After an informal session highlighting student and faculty activities in the Department, including several excellent presentations by students, our industry partners engaged over 250 undergraduate students during the afternoon. The industry partners set up displays and welcomed student inquiries regarding career paths, interesting projects and potential employment opportunities. Several of the partners took this opportunity to set up anumber of job interviews with graduating students. The day is capped with an informal dinner at the University Club, sponsored by the Ontario Centres of Excellence.

We feel that this activity provides industry with access to our outstanding graduating class and undergraduates looking for summer and full time employment. For our students, the Industry Open House is an essential tool for them to meet with industry and see the wide variety of career opportunities that are to be found in Civil Engineering. Our students tell us this significantly increases the quality of education they receive.

This coming January we will be celebrating our 10th Industry Open House. Please contact Cathy Wagar (Industry Open House Co-ordinator) at 613-533-6000 (ext 74227) if you or your company would like to participate this year.

www.civil.queensu.ca
CONGRATULATIONS

Phyllis Cheung (MSc Eng) Sept '05
Currently working as a Research Assistant with Dr. Anderson and Dr. Watt

Ehsad Chowdhury (MSc Eng) Aug '05
Currently doing a PhD at Queen's

Britton Cole (MSc Eng) Aug '05

Xuefeng Zhang (MSc Eng) June '05

David Zhang (MEng) Apr '06

Mahmoud Elbanna (MSc Eng) Mar '06

Jeff Hashay (MSc Eng) Feb '06
Currently working as a Research Assistant with Dr. Novakowski

Krysta Paukyn (MSc) Apr '06
Currently attending Teacher's College

Jan Bielenberg (MSc Eng) May '06
Currently working for Hatch Aztec, Niagara Falls, ON

Anthony West (PhD) June '06
Currently working for Golder Associates in Ottawa, ON

Grace Yungwirth (MSc Eng) June '06
Currently working for Golder Associates in Toronto, ON

Tiiia Praamsma (MSc) July '06
Returning in January '07 to do her PhD

Sasha Richards (MSc Eng) July '06
Currently working for Golder Associates in Edmonton, AB

Jason Fitzwilliam (MSc Eng) July '06
Working in Barbados

Andy Binns (MSc Eng) July '06
Currently doing his PhD at Queen's

Scott Munn (MSc Eng) July '06
Currently working for Jacques Whitford in NS

Jimmy Kim (PhD) Aug '06
Currently working with Dr. Green

Issam Boujarade (MSc Eng) Aug '06

Ryan Krasnoltzky (PhD) Aug '06
Attending law school at U of A

Alex Derry (MSc Eng) Sept '06
Currently working for Golder Associates in Ottawa, ON

Sarah Howard (MSc Eng) Sept '06
Currently traveling in Ireland

Mike Tramner (MSc Eng) Oct '06
Currently working for Sandwell in Vancouver, BC

Keely Mundle (MSc Eng) Nov '06
Currently working for Golder Associates in Australia

Please send comments and or news to:
Hoyt Phyne, Associate Dean
hoyt@iothys.queensu.ca
Department of Civil Engineering
307 Hall
51 University Avenue
Kingston, ON
K7L 3N6