



Professional Engineers
Ontario

Mississauga
Chapter

5th ANNUAL BRIDGE BUILDING CHALLENGE 2012



WELCOME & AGENDA



Professional Engineers
Ontario

Mississauga
Chapter

On behalf of the PEO Mississauga Chapter and the organizing committee, I would like to welcome you to the 2012 Bridge Building Challenge. This event has grown significantly over the past five years and we look forward to it growing even more in the years to come. Thank you and let the challenge begin!

Khaled El-Rahi, P. Eng., Chair, Mississauga Chapter

Agenda: Bridge Building Challenge 2012

8:30 AM - 9:00 AM	Registration
9:00 AM - 9:10 AM	Opening Note by Amr Kaoud, PEO Education Committee Chair
9:10 AM - 9:15 AM	Welcome Note by Khaled El-Rahi, PEO MC Chair
9:15 AM - 9:30 AM	Contest Procedures: Art Kirnichansky, PEO MC Vice Chair
9:30 AM - 12:00 PM	Bridge Busting
12:00 PM - 1:00 PM	Lunch
1:00 PM - 1:15 PM	Guest Speakers Message, Sponsors And School Boards Acknowledgment
1:15 PM - 1:30 PM	Awards And Certificates Ceremony
1:30 PM - 1:45 PM	Group Photographs And Closing Note

CHALLENGERS

Team Number	Member	Member	Team Number	Member	Member
Team 1	Taijus Aggarwal	Lavy Raghav	Team 30	Peter Song	Justin Amin
Team 2	Kalli Bonin	-	Team 31	Saloni Pandya	Jasmine Bhatti
Team 3	Sheetal Cheetu	Avani Rishi	Team 32	Melanie Banerjee	Michelle Sun
Team 4	Apurva Dixit	Payal Jani	Team 33	Raam Sivakumar	-
Team 5	Sukhsahij Gill	Sneha Singh	Team 34	Avikshit Hasija	William Young
Team 6	Rachita Gupta	Uswa Zahoor	Team 35	Prasiddha Parthasarathy	Irene Chong
Team 7	Zahra Hasan	Anya Jacksteit	Team 36	Nandini Bansal	Logan Rhee
Team 8	Grayson Hunter	Amanda Yang	Team 37	Nubain Soomro	Zachary Larmour
Team 9	Harmeet Jhite	Jason Liu	Team 38	Helen Tang	Rachel Shadoff
Team 10	Sam Kim	Daniel Liang	Team 39	Xavier Naraine	-
Team 11	Dhruv Mathur	Ash Suri	Team 40	Tu-Anh Nguyen	Kelly Clark
Team 12	Jacob Slous	-	Team 41	Alec Ramnarine	-
Team 13	Sunny Shin	Rebecca Butler	Team 42	Sisi Chen	Sabrina Hundal
Team 14	Moyukh Syeed	Shahaan Shah	Team 43	Gurjot Dhillon	Nihar Sheth
Team 15	Karan Tibriwal	-	Team 44	Jack Xu	Eric Li
Team 16	Arjun Venkat	-	Team 45	Karman Cheema	Jackie Pan
Team 17	Sharmeen Ali	Carman Tang	Team 46	Steven Li	-
Team 18	Ahnaf Aziz	Aditya Gupta	Team 47	Nizar Albarghouthi	-
Team 19	Kristal Cerga	Olivia Leung	Team 48	Noor El-Rahi	Linnea Campbell
Team 20	Kanika Chopra	Gabrielle Tran	Team 49	Anja Lazarevic	Fatimah Areola
Team 21	Somalee Garg	Kiera Tate	Team 50	Gabrielle Ching-Johnson	-
Team 22	Damaris Ghinga	Gabriel Yeung	Team 51	Umar Ahmed	Yahia Nassab
Team 23	Pallak Gupta	Twinkle Mehta	Team 52	Muhammad Arsal Siddiqui	-
Team 24	Arion Law	Uvraj Sandhu			
Team 25	Aiden Locke	Joel Silas			
Team 26	Ashwin Singh	Talha Surangiwala			
Team 27	Tyler Dhaliwal	Pei pei Liang			
Team 28	Osman Hung	Jitu Khiani			
Team 29	Jonathan Lam	-			

MESSAGE FROM THE EDUCATION COMMITTEE CHAIR



Amr Kaoud
Education Committee Chair

5th Annual Bridge Building Challenge

The Education Committee is actively working to promote the engineering profession among youth and encourage all students to discover their inner-engineer. We do this by reaching out to the community and holding events with the help of countless volunteers.

National Engineering Month (NEM) is Canada's biggest celebration of engineering. Over 500 events take place from coast to coast for young Canadians to learn about the exciting, fun and rewarding world of careers in engineering. In the Mississauga district and in this occasion, PEO Mississauga Chapter is bringing this exciting event to celebrate with our local community.

Our team organizes several events throughout the year. The Bridge Building Challenge is one of the exciting events that is held every year. The Bridge Building Challenge helps students develop "hands on" skills. They get a feeling of what it is like to be an engineer. They design and build the bridges to a set of specifications. In the end it is a very rewarding process because they get to see how their bridge performs when we test it on our bridge busting machine. Another event that attracts many students in Mississauga is the Mathletics Challenge. It is a unique challenge which provides the opportunity to students that are willing to compete and assess their math skills. In the end we hope to spark their interest to pursue an exciting career in engineering.

I would like to thank all the students for their participation in the BBC 2012 and wish them all the best. I hope you enjoy it, have an exciting day and have a lot of fun! I would also like to thank all volunteers who were committed and did a great job organizing this event. Our volunteers really make the difference!

Best Wishes,

Amr Kaoud
Education Committee Chair
PEO Mississauga Chapter
amr.kaoud@peo-mc.ca



OFFICE OF THE MAYOR



March 3, 2012

Dear Friends:

On behalf of members of Council and the residents of the City of Mississauga, I am pleased to extend greetings to the Mississauga Chapter of the Professional Engineers of Ontario on the occasion of their 5th Annual Bridge Building Challenge.

National Engineering Month is one of Canada's biggest celebrations in engineering. With over 500 events taking place across Canada, young Canadians are able to learn about the exciting, fun and rewarding world of engineering.

One of the goals of the Mississauga Chapter of the Professional Engineers of Ontario is to foster a culture of professional development in the engineering profession. A well designed bridge is the mark of great engineering that combines inventiveness and creativity with the laws of physics. This challenge will bring Mississauga students together to create their own bridge design and construct it to be judged based on their design, creativity and construction technique.

Once again, on behalf of my colleagues on Council and the residents of the City of Mississauga, best wishes for a successful challenge.

Sincerely,

HAZEL McCALLION, C.M., LL.D.
MAYOR



ENGINEERS CANADA



engineerscanada

Engineers Canada is the business name
of the Canadian Council of Professional Engineers

Established in 1936, Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the practice of engineering in Canada and license the country's more than 234,000 professional engineers. PEO being the largest provincial association in Canada has five directors on the Engineers Canada Board of Directors. Engineers Canada delivers national programs that ensure the highest standards of engineering education, professional qualifications and professional practice. Engineers Canada coordinates the development of national policies on behalf of the engineering profession. It also promotes greater understanding of the nature, role and contribution of professional engineers and engineering to society, and undertakes federal government relations and national media relations on behalf of, and in consultation with, its constituent associations.

Engineers Canada accredits Canadian undergraduate engineering programs that meet the profession's high education standards. Graduates of those programs are deemed by the profession to have the required academic qualifications to be licensed as professional engineers in Canada. It also assesses the equivalency of the accreditation systems used in other nations relative to the Canadian system, and monitors the accreditation systems employed by the engineering bodies which have entered into mutual recognition agreements with Engineers Canada. Engineers Canada also publishes the Engineers Canada examination syllabus and the Engineers Canada List of Foreign Engineering Educational Institutions and Professional Qualifications.

Engineers Canada sponsors insurance and investment products for Canada's engineers, from RRSPs to professional liability insurance, as well as special discounts on car rentals.

For more information visit: www.engineerscanada.ca

THE CALLING OF AN ENGINEER

THE CALLING OF AN ENGINEER

The Calling of an Engineer dates back to 1922, when seven past-presidents of the Engineering Institute of Canada attended a meeting in Montreal. One of the speakers was Professor Herbert Edward Terrick Haultain, head of Mining Engineering at the University of Toronto. He felt that an organization was needed to bind all members of the engineering profession in Canada more closely together and that an obligation or statement of ethics should be developed.

"The Ritual of the Calling of an Engineer has been instituted with the simple end of directing the newly qualified engineer toward a consciousness of the profession and its social significance and indicating to the more experienced engineer their responsibilities in welcoming and supporting the newer engineers when they are ready to enter the profession."
--- Rudyard Kipling

THE MYTH OF THE IRON RING

On August 29, 1907, as the Pont de Québec Bridge neared completion, it collapsed, killing 76 people. A Royal Commission set up to study the incident reported that this tragedy was the result of an error in judgment made by the bridge's principal engineers.

A second attempt to span the river resulted in another disaster. On September 11, 1916, the centre span of the bridge fell, killing ten more people. The bridge was finally completed in October 17, 1917. The story is that the early rings given to engineers during the Calling of an Engineer were made from the iron from the collapsed bridge. Today's iron rings are a reminder of the Québec Bridge that collapsed.

Another meaning for the Iron Ring can be found in Kipling's writings. Taking his cues from history, he saw iron as a symbol of power. People that developed iron tools and weapons had an advantage over groups still using bronze or stone implements. An engineer wears the Iron Ring to symbolize his or her power and acceptance of the responsibility that comes with power.

BECOME AN ENGINEER!

For more information on Engineering, please contact us at: 416-224-1100 or 1-800-339-3716.
Visit: www.peo.on.ca



Professional Engineers Ontario Council

PEO is governed by a Council, the composition and operation of which is dictated by Regulation 941 under the Professional Engineers Act. Seventeen Councillors are elected by PEO's licensed membership. Twelve Councilors are appointed by the Lieutenant Governor of Ontario. Currently five appointed Councilors are lay members and not professional engineers. Council must comply with the objects of PEO as stated in the letters patent or articles of incorporation and the bylaws of PEO. Council must also comply with the relevant provisions of the Professional Engineers Act (the Act). Council is responsible for the management of PEO. In general terms, this means supervising the CEO/Registrar, providing strategic planning, and developing and implementing corporate policy. The PEO Registrar / CEO is responsible for staff implementation of PEO Council decisions and policies.

Licence Presentation Committee

The Licence Presentation Ceremony is an event dedicated to newly licensed Professional Engineers. The Mississauga Chapter conducts two licence presentation ceremonies on an annual basis; one of these ceremonies is held in the spring and the other in the fall. Obtaining the P.Eng. designation means that the recipient has successfully met the demanding standards of the Professional Engineering License and is now a fully licensed member and a registered engineer. At the ceremony, newly licensed members will have their certificate presented to them by the Mississauga Chapter Chair in a wonderful evening that also highlights their accomplishments so far in their career. Furthermore, it is an opportunity to meet other new Professional Engineers as well as guest speakers from local companies.

PEO Mississauga Chapter Board of Executives

- Galal Abdelmessih, P. Eng.
- Katherine Diep, EIT
- Brett Chmiel, P.Eng.
- Art Kirnichansky, P.Eng.
- Amr Kaoud, EIT
- Wafik Sunbaty, P.Eng.
- Danny Ciasullo, EIT
- Fawad Mehmud, EIT
- Mark Zimny, P.Eng.
- Khaled El-Rahi, P.Eng.
- Lisa MacCumber, P.Eng.
- Pappur Shankar, P.Eng.
- Jana Havard, P.Eng.
- Phil Maka, P.Eng.
- Colin Moore, P.Eng.
- Mirko Manojlovic, P.Eng.
- Rishi Kumar, P.Eng.

PEO MISSISSAUGA COMMITTEES

The Professional Engineers Ontario Mississauga Chapter is made up of various committees involved in different areas effecting the Mississauga community.

Award and Nomination Committee

Purpose: To provide recognition and acknowledgement to the members of the PEO Mississauga Chapter

License Presentation Committee

Purpose: To organize and perform P.Eng. licence presentation.

Communication Committee

Purpose: To ensure efficient communication to the chapter, from the chapter, and within the chapter.

Education Committee

Purpose: To promote the engineering profession among youth and encourage all students to discover their inner-engineer. We do this by reaching out to the community and holding events with the help of countless volunteers.

Environmental Committee

Purpose: To emphasize environmental problems and concerns.

Government Liaison Program Committee

Purpose: To administer Government Liaison Program that was created by PEO to let government hear the voice of engineers.

Mentoring Committee

Purpose: To provide guidance and advice to the candidates for professional engineering license.

Women in Engineering Committee

Purpose: To further the initiatives of the Ontario Society of Professional Engineers - Women In Engineering Advisory Committee in the Mississauga area.

Engineers In Training (EIT) Committee

Purpose: To organize Engineers In Training at a chapter level.

ALL ABOUT BRIDGES

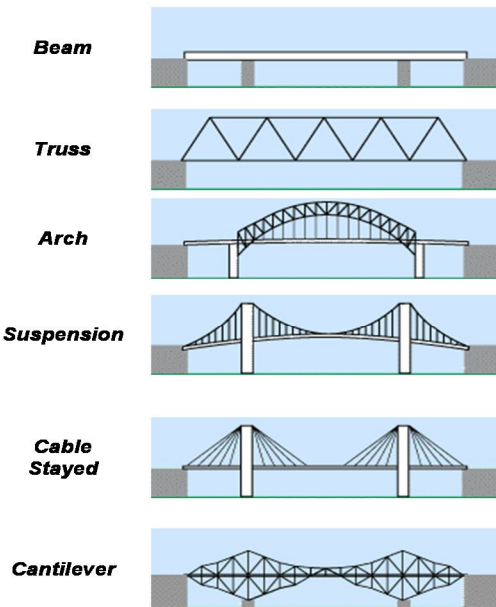
What is a Bridge?

A bridge is a structure that spans a gap to connect two points. These gaps can be waterways, valleys, canyons, fields, roads, or any other obstacles. By passing over the obstacles, rather than on them or around them, a bridge saves considerable time and makes places more accessible.

A Brief History

The first bridges were simply fallen logs that were laid across streams or rivers, forming simple beam bridges. Ancient Greeks and Romans constructed stone arch bridges, which elegantly distribute the load on the bridge through arches, while ancient Chinese and Indian builders used wood, stone, and iron chain. With advances in materials technology in the 19th and 20th centuries, iron and concrete were used for large truss bridges. Beginning in the 21st century, steel and pre-stressed concrete became the materials of choice, allowing the construction of massive suspension, cantilever, and cable stayed bridges around the world.

Popular Types of Bridges

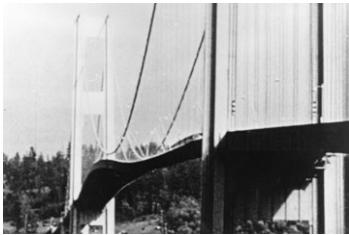


The common elements of every bridge are the *bridge supports* (which connect the bridge to solid ground), and a *bridge deck* (which allows people and vehicles to pass on). The essential principle of all bridges is to distribute the load to the bridge supports, which in turn dissipate the load into the ground.

ALL ABOUT BRIDGES

What Can Go Wrong?

Even though they look solid, bridges can fail as well. What can cause such a large structure to collapse? Apart from a heavy load, bridges must also cope with nature. Bad weather (ice, rain, storms) can cause rusting and cracks, and earthquakes can damage the structure, while heavy winds can create torsion forces (twisting). One of the most famous examples of bridge failure is the collapse of the Tacoma Narrows Bridge near Seattle, Washington. A 60km/h wind caused the bridge to vibrate at its natural frequency, causing the bridge to oscillate so violently that it tore itself apart. (see the video on Youtube)



Unique Designs

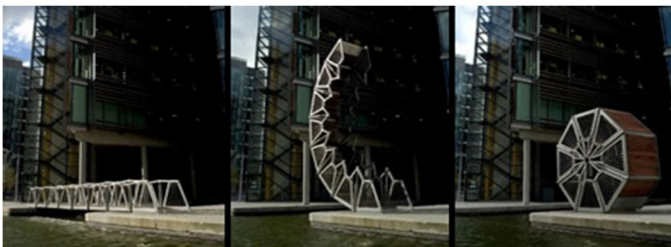
Who says Bridges are boring? Some creative designs from around the world include:



The JK Bridge in Brasilia



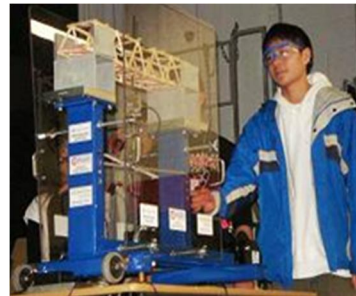
Henderson Waves Bridge, Singapore



The Rolling Bridge, London

BRIDGE BUILDING CHALLENGE 2012

BBC PHOTOS & SPONSORS



Event Coverage By:



MATHLETICS 2011 RECAP

Mathletics–2011: Emotions High at Mathletics Challenge

When high-fives, cheering, sighs of relief and ear-to-ear grins are involved in competition it usually signals a sporting event. Not today (Saturday, Nov. 12). These were the raw emotions felt by a group of math whizzes during the 2011 Mathletics Challenge at Tomken Road Middle School. More than 80 grade 6-8 students from Peel competed in the day-long challenge, organized by the Professional Engineers of Ontario (PEO) Mississauga chapter and the Peel District School Board. In the junior division (Grade 6) Victor Wang won first place, William Wang, second and Nicola Lawford was third. Senior division (grade 7-8) saw Hermish Mehta in first place, Nadini Bansal, second and Anya Jacksteit, third. Amr Kaoud, PEO education committee chairman, said the questions help students become familiar with engineering terminology while solving mathematical questions. Students are given a number of questions with one-and-a-half minutes to answer each question in the first round. In the second round of questions, that is reduced to one minute. *"We want to create a passion in the application of mathematics in solving day-to-day, scientific and engineering problems,"* Kaoud explained. For Grade 8 Homelands Public School student Linda Li it was stressful but fun. "I was excited when I got the right answer," Li said, adding she wasn't nervous. *"I'm not really good at math, but I think I did pretty well."*

Mississauga News

jslack@mississauga.net



FAREWELL & THANK YOU



Professional Engineers
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Chapter



On behalf of the PEO Mississauga Chapter and PEEL District School Board, I would like to personally thank all of our sponsors, volunteers and participants of the 2012 Bridge Building Challenge. This event could not have been possible without their dedication, support and most importantly, the interest of the students. It brings me a lot of happiness to see so many young people show an interest in engineering and I hope this event continues to grow. Once again, thank you for your participation and support.

Sincerely,

A handwritten signature in black ink, appearing to read "Amr Kaoud".

Amr Kaoud
Education Committee Chair

A special thanks to our sponsors whose contribution has made this a very successful event.



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