



# SEABC NEWSLETTER

## CONTENTS

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February 2012

TITLE	PAGE
Message from the President.....	2
IStructE News .....	2
Vancouver Island Branch .....	3
Young Members Group .....	4
Haiti Reconstruction .....	6
2012 Election Statements.....	7
SEABC Scholarship.....	10
Communications Committee .....	10
Green Concrete .....	11
YMG Tour of Fraser Heights Bridge.....	12
BCIT and CSCE Update.....	13
2012 Membership Survey.....	14
On the Web.....	15
Ask Dr. Sylvie .....	16
Advertising.....	16
Mark Your Calendars.....	16

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## Message from the President

February 2012

By Cameron Kemp, P.Eng.;  
SEABC President



Our AGM is coming up next month on Thursday, March 8, 2012 at the Sutton Place Hotel and I encourage all of you to attend.

This will be an opportunity for you to network with your colleagues, enjoy a meal, get an update on the past and future activities of the SEABC and listen to our keynote speaker, Bill Baker of Skidmore Owings and Merrill (SOM).

Bill is the partner responsible for the practice of structural engineering at SOM and has many high-profile projects to his credit, most notably, the Birj Khalifa, the world's tallest building in Dubai, UAE. We are very excited that Bill has agreed to travel to Vancouver to speak to us and I'm sure his presentation will be both enlightening and inspiring.

At the AGM we will also report back to you on the results of our recent web-poll seeking your input and feedback on the various committees of the SEABC and the Board, it's effectiveness in communicating with you and the areas/issues you would like the Association to focus its efforts on in the future.

We will also announce the winner of a recent Young Members Group competition to make a technical presentation to a panel of judges on a topic of their choosing. These presentations allow young engineers to practice their writing and presentation skills in a simulated, but realistic, environment with valuable coaching and feedback on how they did.

As of the last report I have received approximately 70% of you have renewed their membership for this upcoming year. I would encourage those of you that have not yet renewed your membership with SEABC to please do so right away. It is easy to do and can be done online at the SEABC website ([www.seabc.ca](http://www.seabc.ca)). As well as allowing us to stay connected with you, your

membership fees go towards the many educational courses and seminars we sponsor, the research we support and the website we maintain as a resource to you. We strive hard to ensure that we provide you good value for your continued investment in your Association.

At the AGM we will also reconfirm our Board for 2012, provide a brief annual financial statement and let you know about our new policy of holding upcoming Board meetings in exotic, tropical locations with all expenses paid by the SEABC..... just kidding..... I wanted to make sure I still have your attention as I'm never quite sure whether anyone actually reads the President's message all the way to the end.

Now that you are paying attention again I encourage you to sign up early for the AGM as the room has a capacity of only 120 people and we are expecting a sellout attendance.

I'm looking forward to seeing as many of you as are able to make it on March 8. It will be a fun evening!

## IStructE News

By Bill Alcock, P.Eng. Struct.Eng.



The IStruct E meetings in London, on January 13, 2012 were my first opportunity to represent SEABC on the IStructE Council, having taken over this duty from David Harvey. I actually attended three meetings: the International Group Meeting, the IStruct Council Meeting, and the incoming President's Inaugural Address. It was interesting to find that across the globe, we struggle with many of the same issues.

At the International Group Meeting, presentations were made on "Sustainability" by Elizabeth Green and on the "Education Project" by Dr. Graham Owens.

Following Elizabeth's presentation, there was considerable discussion about IStructE's role: Should it confine itself to the relatively narrow field of structural engineering or should it be a leader, promoting sustainability amongst all engineering disciplines? We tend to think of sustainability in terms of the current

impact a facility has on the environment. Another aspect of sustainability that I have never considered is deconstruction, i.e. how can the deconstruction of a structure be made more environmentally sustainable by incorporating environmentally sustainable materials and processes for its' subsequent deconstruction into the design.

Dr. Owen's presentation on the Education Project discussed the impact of recent UK surveys of graduating civil/ structural engineers which found that the knowledge level of core structural engineering design concepts has significantly declined over the last 20 years. Together with the Institution of Civil Engineers, IStructE sits on the UK board that determines university curriculums. Over the next few years there will be a big push in the UK "to get back to basics".

Following the handing over of the reins as president from Dr. Roger Plank to John Nolan, the focus of the afternoon council session was on structural engineering research. Five short presentations were made on how research affects the core values of IStructE, specifically how does research:

1. Raise the profile of the Institution?
2. Reinforce its' commitment to high standards?
3. Raise the support offered to members?
4. Increase the number of members?
5. Help the Institution secure its' future?

Considerable discussion followed. Some of the key ideas to come out of this discussion included:

- The Institution needs to make known what research the profession needs.
- The Institution should target doubtful knowledge.
- The Institution has an opportunity to be a catalyst for research.

The day was concluded with President John Nolan's Inaugural Address. Mr. Nolan started his engineering career working on a motorway construction site, learning many of the skills which he would use in later life (such as remembering how difficult construction can be when you are working in the cold and rain). A Chartered Engineer, he has worked as a labourer, contractor's engineer, consulting engineer, business owner, property developer and client. In his address on "Cost versus Value", Mr. Nolan, highlighted the effect

of UK owners who have competitively driven down engineering fees during this economic downturn and the impact this has had on the ability of engineers to properly perform their jobs. As an example, he took a simple rectangular warehouse and showed how lack of funding would prevent an engineering firm from determining the most economical framing solution for the owner. For those of us in BC, who lived through the Station Square collapse, many of John's comments hit very close to home. John's unique perspective on structural engineering and business will be of great value to the Institution in coming year as president.

His address can be found on the website below:

[www.istructe.org/events](http://www.istructe.org/events)



*John Nolan*

## Vancouver Island Branch

By Thor A. Tandy, P. Eng, Struct.Eng.



### Mission:

To provide a focal point for SEABC members on the Island to meet, discuss SEABC issues and to take benefit in the form of exchange items of technical interest.

### 2011 Branch Delegates:

Thor Tandy will steer the Branch with assistance from Brian McClure and Sharlie Huffman.

## Branch Demographic:

- 1) A group of approximately 15 members in the local Victoria, Gulf Islands area.
- 2) A central Island group centered on the Nanaimo, Port Alberni area.
- 3) A small North Island group.

## ASCE Membership:

The Chapter has renewed membership with ASCE for 2012 and we are monitoring webinars of interest.

## Proposed Events:

- 1) Seminar on the Christchurch EQ – this has been picked up to some extent by a working group within the re-vamped Regional Emergency Planning and Advisory Committee. To be confirmed as to who is the contact. Possibly Rob Johns (Victoria Emergency Coordinator).
- 2) ATC 20 to be run March 20, 2012. Contact: Thor Tandy
- 3) General meetings.

## Member Participation:

Not getting feedback or opinion from the membership. We are still looking for someone with the time resources to breathe life back into the Branch.

## Contacts:

Victoria/Gulf Islands:	Thor A. Tandy, Brian McClure, Sharlie Huffman
Central Island:	Dan Fell
North Island:	Ralph Watts

## Young Members Group

By Ilana Danzig, EIT, LEED AP



The last few months have been an exciting time for the YMG. We have been ramping up for the first ever Young Engineer Presentation Competition, called "So You Think You Can Give a Seminar". We had 5 excellent presentations:

Nick de Ridder, EIT: BIM - Is It Really the Future of Design and Construction

Nazli Azikimor, EIT: Out-of-Plane Stability of Reinforced Masonry Shear Walls

Michael Roberts, P.Eng: An Innovative Glass Fin & Beam Entrance Facade

Alistair Russell, GIPENZ: Seismic Assessment and Retrofit of Unreinforced Masonry Buildings

Adam Patterson, EIT: BC Place Stadium Base Building Structural Upgrades

This event was created to show the engineering community what the young structural engineers among them have to offer, and to encourage engineers with less public speaking experience to practice giving a seminar in front of their peers. There are currently innumerable opportunities for engineers to give talks, and involvement in an event like this competition will help prepare the next generation of engineers for those opportunities. Congratulations to all of the presenters, and well done Nick de Ridder, who was the winner of this event and the recipient of a \$1,000 prize!

The three judges, Carlos Ventura, John Sherstobitoff, and Cameron Kemp, did not have an easy job in choosing the winner. We greatly appreciated their participation in the event and they provided us with some very valuable feedback at the end of the evening.

While the judges were deliberating, our special guest speaker Bob Schubak gave a wonderful talk on the transition between engineering and management.

I would like to thank the YMG volunteers who helped organize the event, and especially thank Kate Thibert who was the MC.



If you have any feedback or suggestions for this event or any future events, if you would like to comment on our progress, or if you want to get involved, please email us at [yng@seabc.ca](mailto:yng@seabc.ca).

## YMG Committee:

Ilana Danzig, EIT; Genivar  
Tyler Best, EIT; Bush, Bohlman & Partners  
Grant Fraser, EIT; Associated Engineering  
Kevin Riederer, P.Eng; Read Jones Christoffersen  
Shahrazad Talachian, EIT; Hatch Ltd.  
Kate Thibert, EIT, Ausenco-Sandwell

## UBC Student Reps:

Yuki Kishimoto  
Stanley Chan

## BCIT Student Reps:

Chris Hatton  
Leah Jankola



*The 5 presenters: (from left) Alistair Russell, Michael Roberts, Nazli Azimikar, Adam Patterson, Nick de Ridder*



*The 3 judges: Cameron Kemp, John Sherstobitoff, Carlos Ventura*



*From left to right: Katherine Thibert, Nick de Ridder, Ilana Danzig*



*Ending the night at the Lennox Pub*

## Haiti Reconstruction

By Joel Alexander Hampson, MSc, PEng, LEED AP

### Haiti Reconstruction: Two Years Later



I was in Haiti shortly after the two year anniversary event of the 12 January 2010: a magnitude 7.0 earthquake that struck near the Haitian capital—Port-au-Prince. It was the strongest event in over 200 years. An estimated 300 000 people died, over 100 000 buildings were destroyed and almost 200 000 houses were severely damaged.



In general, much of the earthquake damage remains. I saw many buildings with obvious signs of earthquake damage. In the more affluent areas, by Haitian standards, the buildings I visited seemed to show little to no damage, but in the impoverished areas I cannot understate the ubiquity of damage. Unfortunately, most

Haitians live in these severely damaged areas.



The current state of the reconstruction efforts focus on the “yellow house” repairs. The process of tagging buildings by the ATC 20 rapid evaluation is done, and international aid seems to be focused on repairing damage to homes that can be fixed. These repairs are done without upgrade because the aid agencies “triaged” retrofit as a subsequent priority. In general, the buildings are 6” masonry in-fill block walls on a slab floor with a wood frame roof and corrugated metal sheathing. The existing corner columns are reinforced with four 10M and ¼” smooth bar ties at 6”. The existing ties lack the 135° bend. Horizontal joint reinforcing is sometimes provided with ¼” smooth bar, but it is poorly detailed and seems to have resisted little during the event.

I was very impressed by the Haitian people: they are genuinely warm and welcoming; furthermore, they continue with life around the rubble and devastation. I was also impressed by the lack of scale in the effort to rebuild. I met the handful of engineers who are working hard to repair the buildings. They are clearly dedicated, but their good efforts seem so small in comparison to the magnitude of destruction that remains to date.



## 2012 Election Statements

**David Davey, P.Eng., Struct.Eng., Sacré-Davey Engineering (Past President)**



David was the founding President of the SEABC, and served in that position for two years. He is the current Past President and will continue to serve in that capacity.

**Cameron Kemp, P.Eng., Omicron Architect Engineering Construction Ltd. (Serving President)**



Having been part of the formation of SEABC I feel that this new organization is starting to "catch its stride". We have a strong technical Continuing Education program and great Communications program through the newsletter and website.

We are, however, still in the formative stages of organizing some of the other programs and committees within SEABC and I would like to continue with the Board to ensure that, as the organization matures, we preserve the principles and priorities that guided SEABC's formation.

For 2012 I would like to see a focus on forming and/or strengthening these various technical and business committees. Active committees tackling relevant, topical issues will see the SEABC become a fully mature organization representing all aspects of structural engineering to its members.

With your support I would like to be part of the SEABC's ongoing development.

**Bill Alcock, P.Eng. Struct.Eng., Sacré-Davey Engineering**



I am a graduate of the University of Toronto, have a Master's degree from UBC, and have nearly four decades of experience, primarily in industrial structures.

As a past director and chair of the DSE, I am gratified to see how well the SEABC has unified the various structural engineering associations in British Columbia into one truly dynamic organization. The newsletter, courses and other initiatives sponsored by SEABC since its inception have been excellent.

I would be honoured to continue as a Director of SEABC and will do my best to uphold the high standards that have been set by the previous Directors.

**Renato Camporese, P.Eng., Struct.Eng., Read Jones Christoffersen Ltd.**



The structural engineering profession is a highly technically complex discipline. Our members struggle with constantly changing codes and standards which at times are not clear and require

careful interpretation.

Through standing committees and task specific groups, the technical committee assists members in performing their technical duties through research and the development of best practices memorandums.

For the past two years I have had the pleasure of directing our dedicated members who have volunteered their time to address various complex and often controversial technical issues. As a graduate of the University of British Columbia with over 30 years of experience in consulting structural engineering, I have experienced many of these technical challenges. I would be honored to continue to serve as a Director of SEABC and as chair of the technical committee.

**Ilana Danzig, EIT, LEED AP, Genivar Consultants Ltd. Partnership**



I have been involved in the SEABC Young Members Group since 2009, and am currently chair of the group. We organized tours, seminars, hands-on events, and most recently, a Young Engineer Presentation Competition. I have served on the board of directors since the summer of 2011 as the Young Members representative, and I would be honoured to continue to do so.



**Paul Fast, P.Eng., Struct.Eng., Fast + Epp Structural Engineers**



SEABC has made an excellent start in connecting, equipping and representing the structural engineering community.

With close to 30 years structural design experience and serving on various non-profit boards, I am standing as candidate for the executive committee with the intention of building on this good foundation, particularly with the aim of encouraging our young engineers to strive for excellence and creativity amidst the rigor of calculations and learning building codes.

**Adrian Gygax, P.Eng, Struct.Eng., Gygax Engineering Associates Ltd.**



SEABC continues to build on the foundations established by its predecessor organisations to become a strong advocacy and support forum for the structural engineering profession. It would be my privilege to continue to serve our organisation as a board

member and contribute to these efforts.

I am a graduate in civil engineering from the University of British Columbia, and have three decades of experience in structural and foundation engineering.

Since 1997, I have been the Principal of Gygax Engineering Associates Ltd. where we specialise in structural design for infrastructure. I am a firm believer in professional development and mentoring. In its 15 years of existence, my firm has trained four engineers-in-training and I serve on the APEGBC "Looking to Exempt" panels. Continued support for the SEABC's Certificate Programme, technical seminars and working groups are vital to our profession.

Providing input to for curriculum development at our local universities is also very important to me.

**David Harvey, P.Eng., Struct.Eng., Associated Engineering (B.C.) Ltd.**



I am privileged to have served as a Director of SEABC and observe its exciting growth over the past two years.

Our membership numbers have exceeded expectations, and SEABC has become a strong voice for structural engineers. We have tackled important technical and practice issues, enhanced professional development opportunities, conducted a membership survey, and established high communication standards for structural engineers.

We must build upon this promising start, and if re-elected, I will work hard to improve services for the SEABC membership.

**Surinder Parmar, P.Eng., PMP, BC Hydro Vancouver**



I have been involved with the SEABC Board since its inception and prior to that I was involved with the VSEGSBC for a number of years. I feel privileged to be serving on the Board of SEABC along with many esteemed members of our Structural community. I will

encourage other SEABC members to come forward and serve on various SEABC committees working diligently on enhancement of the Structural Engineering profession.

**Leonard Pianalto, P.Eng, Read Jones Christophersen Ltd.**



Leonard is a key member of the Structural Restoration Group on the Vancouver Building Science and Restoration team. RJC's fall protection and glazing practices have grown significantly under his leadership.

Leonard is also involved in post-earthquake planning and seismic restraint of building components.

Leonard is the principal editor of the 2010 revisions to the Glazing Systems Specifications Manual, and is Chair of the Canadian Glass Association's Technical Committee. He is very active within APEGBC holding positions on the Building Code Committee and the Continuing Professional Development Committee.

Mentoring defines part of Leonard's daily routine, proven by his winning RJC's Rick Banman Mentorship Award in 2011. Leonard is also a part-time instructor at the British Columbia Institute of Technology (BCIT) in the School of Construction and the Environment.



**Stephen Pienaar, P.Eng., Prokon Software Consultants (Canada) Ltd.**



Information technology is becoming increasingly important to organisations. The SEABC is no different. IT leadership and vision are best displayed at the top: in the boardroom.

As the Association's webmaster, I have been directly involved with setting up the SEABC website and online services. The goal posts are continually shifting and much more need to be done in coming years. I would consider it a privilege to continue serving as Director of the SEABC and help our Association achieve its online objectives and expand its online presence even further.

**Andrew Seeton, P.Eng., Bush, Bohlman & Partners**



My participation in the local structural engineering societies began in 2005 when I joined the Board of Directors of the Vancouver Structural Engineers Group Society (VSEGS). I acted as VSEGS President beginning summer of

2007, a position that transitioned to Chair of the SEABC Education Committee when VSEGS joined DSE and SECBC to form SEABC in early 2008. Since 2008 I have served on the Board of Directors for SEABC while remaining active with the Education Committee. I have undertaken collaborative efforts with other committee members to coordinate successful educational seminars for SEABC members, including video archiving of selected seminars so that these events can be accessed by members throughout the province.

I look forward to continuing these efforts in the coming year and would be honoured to continue serving on the Board of Directors. Continued professional development is vital for all structural engineers; this belief is what motivates my participation in SEABC.

**Rob Simpson, P.Eng., Struct.Eng, LEEP AP, Glotman Simpson Group**



Structural engineering is a unique profession. We have the greatest of responsibility for the lives of the public who occupy our buildings, yet the public barely understands our work. For the

most part our clients barely understand our work. Still, we strive for excellence and soak up technical knowledge at every opportunity. This is where SEABC comes in. Helping each of us become better at the technical aspects of our profession improves our lot as a whole. Engineers in Vancouver are equal with the best in the world, thanks to organizations such as SEABC.

It has been a pleasure to serve since the inception of SEABC, and that of its predecessor SECBC in the early 90's. We have come a long way and have much left to do. I would strongly encourage younger engineers to take opportunities for work on technical committees to help continue our growth as a profession.

**Cameron Smith, EIT, Allnorth Consultants Ltd.**



My involvement with the SEABC began as a student representative to the SEABC while attending the British Columbia Institute of Technology and has continued in my current capacity as Chair of the SEABC Education Committee.

The majority of my experience has been in construction engineering and industrial and transportation structures, servicing the mining, power transmission, chemical, oil and gas and forestry industries.

I am pleased to be given the opportunity to stand for a position as a Director of the SEABC, and to further my involvement with the Association.

**Carlos Ventura, Ph.D., P.Eng., University of British Columbia**



SEABC is an organization comprised of talented, diverse, and devoted professionals with the goal of promoting the Structural Engineering profession in BC and elsewhere.

SEABC should continue to develop opportunities for its members so that they can contribute to achieve this goal. I have truly enjoyed being a member of SEABC since its formation in 2008 and was privileged to be among the group of engineers that made possible the amalgamation of the VSEGS,

DSE and SECBC that resulted in the establishment of SEABC.

As an educator and researcher at one of the leading universities in Canada, and as a consultant, I see my role in the Board of Directors of SEABC as one of the links between academics and practitioners. I am strongly interested in promoting the continued education of Structural Engineers, and I am committed to continue my support for the Certificate of Structural Engineering Program and for many of the other educational activities promoted by SEABC.

Many of us cherish the learning and sharing environment that SEABC has given to us, as well as the opportunity to meet outstanding professionals and develop enduring friendships. This motivates me to find ways to ensure that younger members, especially those starting their professional careers, have the same rewarding experience as many of us have had over the years. I am committed to finding ways to ensure that younger members make SEABC's vision their own vision.

## SEABC Scholarship

By Martin Bollo, , P.Eng., S.E.



Fourth year BCIT Civil Engineering student Kevin Grant was the recipient of the Structural Engineers Association of British Columbia Award in Structural Engineering at a ceremony held on Wednesday, November 16, 2011 at the Willingdon Conference Centre.

Along with two other awards for UBC students, these awards are offered to students entering their fourth year of studies in Civil Engineering who have demonstrated academic proficiency and an interest in structural engineering.

The awards are funded through proceeds from the SEABC Certificate in Structural Engineering Program. BCIT Faculty member Martin Bollo (pictured left and sporting a 'Movember' moustache) presented the award to Kevin (pictured right).



## Communications Committee

By David Harvey, P.Eng, Struct.Eng.  
Director SEABC



Do you enjoy reading the SEABC Newsletter? Have you ever wanted to see details of your favourite project in print?

If you answered 'Yes' to both questions, then you are very much of interest to the SEABC Communications Committee and to the Newsletter readership.

To keep the newsletter lively, current and informative, we very much need your input. Do tell us about your design, construction, or research project from any engineering perspective. Just send outline details to [newsletter@seabc.ca](mailto:newsletter@seabc.ca) and we'll take it from there – we'll be waiting to hear from you.

Thank you to all our readers for your ongoing support and encouragement. We really appreciate all your input. Please keep up your SEABC membership so that we can continue to serve you in 2012 and beyond. As always, we appreciate feedback from members including comments on past events, suggestions for future topics, and proposals for presentations, so please do not hesitate to contact us at:-

[education@seabc.ca](mailto:education@seabc.ca).

## Green Concrete

By Dr. M. Shahria Alam, P.Eng.

### Green Concrete for Sustainable Construction



UBC's School of Engineering professor, Dr. Shahria Alam is pursuing a novel green concrete research project, which possesses a great value in substantial reduction of industrial wastes from landfills. Dr. Alam at UBC's Okanagan campus worked with undergraduate

research assistant Emma Slater and graduate students Muntasir Billah and Rafiqul Haque to find ways to utilize various types of waste like fiber glass scrap, demolished concrete, paint, in producing this new-generation concrete.

In the B.C. region, there are more than 40 composite manufacturing companies and they produce a lot of waste. The local manufacturers in the B.C. Interior alone produce around 1,000 metric tonnes of composite scrap every year that has the potential to be reused in construction projects.

As environmental preservation is becoming a primary concern in the present day, the use of sustainable materials in construction is gaining popularity. In this study we investigated the use of a new sustainable concrete that has the potential to produce significant environmental benefits such as the preservation of natural aggregate as well as a reduction in landfill sizes. We seek to provide a concrete that is acceptable for both its fresh and hardened properties produced in a cost effective and sustainable manner.

At the initial stage, when we used fiberglass, it was kind of shaky but the end results were encouraging. Due to the very different surface characteristics and shape of the waste aggregates investigated, mixing and testing of concrete containing the waste aggregates separately and in combination were performed to draw conclusions on the behavior of each aggregate type individually as well as how they interact with each other in the concrete mixture.

A number of varying mix proportions, similar to those used in the ready mix industry, were designed and produced. These mix proportions vary in percentage replacement. The concrete produced was designed to

meet the general fresh concrete industry standard. Moreover, we are planning to test its various cement mixes by paving sections of a Kelowna street to determine its long term performance under various environmental exposures.

The research is supported by OK Builders Supplies Ltd. and the Natural Sciences and Engineering Research Council (NSERC) of Canada which provided a \$25,000 grant through NSERC Engage program and later \$60,000 through NSERC Collaborative Research and Development Grant for the next three years. The City of Kelowna facilitated the access to the Glenmore landfill and collect recycled concrete aggregates.

FRP scraps were donated by FormaShape-Whitewater Composites, Kelowna. Okanagan Testing Laboratories Ltd, Kelowna provided experimental facilities to conduct some testing of materials.



*Hardened green concrete*



## ***YMG Tour of Fraser Heights Bridge***

**By David Harvey, P.Eng, Struct.Eng.  
Director SEABC**

On December 14, 2011, the Young Members Group arranged a site tour of the Fraser Heights Bridge.

Currently under construction, the bridge is the second largest bridge on the Port Mann Highway One project, after the new Port Mann Bridge. The four lane Fraser Heights Bridge forms part of the project's connection with the new South Fraser Perimeter Road and is required to cross an environmentally-restricted wetland area in North Surrey.

The bridge has twin superstructures; the eastbound superstructure is 436 m long while the longer westbound superstructure is 472 m long. A typical internal span length is 18 m, and the bridge is supported by a total of 112 steel pipe piles of 762 mm diameter. There are 302 precast deck panels 11 m wide by 3 m long.



*Construction underway at Fraser Heights Bridge*

The novel bridge design was the result of the footprint restriction in the wetland which was limited to a total of 50 square metres, and the prohibition on machinery entering the wetland. This dictated the use of "top down" construction, whereby the pile-supported bridge is used to carry the erection equipment – the pile driving crane and the trucks delivering materials.

The environmental restrictions also forced the use of extended steel pipe piles; precast full-depth deck panels; and structural steel girders and pile caps. The deck panels are installed and then the joints are grouted to provide composite behaviour with the steel girders. The 200 ton crane used for pile-driving and erection is supported by a specially designed work deck supported by the permanent pile caps. Trucks delivering piling, prefabricated components or ready mix concrete travel across the steel girders and precast deck panels, including recently installed sections not yet acting compositely.



*Site Tour underway at Fraser Heights Bridge*

Approximately 20 individuals signed up for the tour and listened to a presentation by Associated Engineering's bridge designer, Uri Wexler, P.Eng., who explained the intricacies of the design; and Kiewit Flatiron Segment 4 engineer, Ron Osmus, who outlined the unique construction method adopted for this bridge.

Uri described the design challenges which included four-level performance-based seismic design on a site which varied from deep soft deposits to outcropping till-like foundation material. Base isolation was the adopted seismic system using elastomeric isolators at each girder support point; a total of 232 isolators of 520 x 520 mm plan size was required.

Uri's slides included several photos of the fabrication of the isolators which were all subjected to high shear-strain testing prior to shipment. In service the isolators help to distribute the seismic support among all of the piled support bents; they also limit thermal strains on the substructure – thereby permitting the use only one intermediate expansion joint, and two at the



abutments. The bridge is to be fitted with seismic health-monitoring equipment as part of the program currently being implemented by the BC Ministry of Transportation and Infrastructure.

Ron then described the piling and top-down erection methodology, and reported that construction had gone smoothly to date, with about 60% of the erection completed. At the time of the site visit only two piles had encountered obstructions – boulders at depth – which had required the installation of an H-pile within the pipe pile shaft to by-pass the boulder and supplement bearing capacity.



*Shear test on Seismic Isolators*

Following the presentation, Uri and Ron accompanied the attendees to the nearby bridge site and pointed out the construction process as it was occurring. Those attending were suitably impressed with the straightforward construction method and its low environmental impact, and thanked Uri and Ron for facilitating the visit.



*Bearings ready for shipment*

## BCIT and CSCE Update

By Leah Jankola  
SEABC Student Representative  
3rd Year BCIT-CSCE Director



The BCIT Student Chapter of the Canadian Society for Civil Engineers (BCIT-CSCE) helps students forge ties within the Structural and Civil Engineering community.

So far this year, the Chapter has hosted several seminars, raised \$3085 in donations for Prostate Cancer, and organized social events for students to relax from their heavy course load. In addition, the Chapter sponsored two students to participate in the Western Engineering Conference (WEC) in Calgary, Alberta – a first for BCIT.

Another first for the Chapter is sending a team to the upcoming annual Troitsky Bridge Building Competition in Montreal, Quebec. The team must construct a bridge with a clear span of 1 meter, using only Popsicle

sticks, glue, floss, and toothpicks. They will have two hours to assemble the bridge, after which its ultimate load carrying capacity will be tested.

In February, the BCIT-CSCE Chapter will be hosting its 6<sup>th</sup> Annual Professional Night. The purpose of this event is to give professionals the opportunity to network and discuss career paths with students. It also allows students to develop a better understanding of the Civil and Structural Engineering Industries.

The evening will include complimentary hors d'oeuvres, refreshments, and a cash bar. We invite Structural Engineers to attend. The Professional Night

will be held on Thursday, February 23, 2012, from 6:30 to 9:30pm, at the BCIT Burnaby Campus.

If you would like to attend, or have questions about the event, please email David Marchand and Dave Walker at:

[professionallnight@bcitcsce.ca](mailto:professionallnight@bcitcsce.ca)

with the subject heading "Professional Night RSVP".

Printed nametags and a brief introduction will be made for all professional attendees who RSVP.



*Preparing popsicles for the Troitsky Bridge Building Contest*

## 2012 Membership Survey

By David Harvey, P.Eng, Struct.Eng.  
Director SEABC

Stop press – the results of the 2012 Membership survey are in. Perhaps unsurprisingly, not a great deal has changed. Our membership continues to show a high degree of satisfaction with the services SEABC provides, and is mostly knowledgeable about SEABC resources. We really appreciate the 110 comments we received and the Board will examine each one to see where improvements can be made. If members are unaware of current SEABC resources, we recommend that they carefully read broadcast emails and check out the SEABC website.

We received 144 completed surveys as well as some that were partly completed; 72% of respondents were based in the Lower Mainland of BC. The response rate of 21% is an improvement on 2009. The overall scores were as follows:

- Technical: 71%
- Structural Practice: 73%
- Education: 79%
- Communications: 74%
- Young Members Group: 72%
- Corporate Members: 59%
- Branches: 54%
- Board of Directors: 78%
- Value of SEABC Membership: 85%

The scores for the various groups are encouraging, are mostly well above average, and are broadly similar to the previous survey; however, the more "average" scores demonstrate where work is still needed. Note that the YMG score gauged "future direction" rather than "satisfaction". While we are not reporting the individual question responses here, there proved to be quite a bit of variation in the individual question scores.

The results will be useful to each particular group in planning its future activities. The positive response on sustainability means that SEABC will continue to develop a position on sustainability from which it can advise members.

A key facility we added to the website last year is the Directory of Structural Engineering Firms. We received a comment indicating that the Directory was of "...no value", however, the on-line facility has substantially reduced the number of enquiries SEABC receives from the public asking for the names of suitable structural engineering companies that service particular areas of BC. The Directory provides a potential client with a list of the best-matched listed firms in response to an enquiry. We have heard from both listed firms and members of the public that the Directory is proving to be useful. If your company is not listed, please provide us with the information needed to add your firm to the Directory.

Many thanks to the 25 respondents that expressed interest in serving on an SEABC committee – you will be hearing from us shortly. And finally, please look out for future SEABC membership surveys; we promise not to pester you, and will run surveys only when we believe that it is important to seek your feedback.

## On the Web

By Stephen Pienaar, P.Eng; SEABC Webmaster



### On the Web

Gauging by the positive response to the recent Members Survey, I conclude that the SEABC is a healthy organisation. Our Association's heart is beating with enthusiastic volunteers and a wealth of professional

development opportunities. I am proud to be associated with the SEABC.

### Members Survey

With the 2009 Members Survey, the Board learned some interesting things, and they have since implemented many of the suggestions made by members.

The 2012 Member Survey completed earlier this month and elicited an equally positive response: over 20% of members participated. A summary of results are reported in this Newsletter and further information will be made available for the AGM on March 8.

Be in the know and register for the AGM at:

[www.seabc.ca/agm](http://www.seabc.ca/agm).

### Directory of Structural Engineering Firms

The SEABC Directory of Structural Engineering Firms currently includes more than 50 member firms. If you have not yet listed your company, we invite you to do so at:

[www.seabc.ca/corporate](http://www.seabc.ca/corporate).

### Seminar Recordings

The following seminar recordings were recently added to our online repository:

- **EERI Distinguished Lecture: "Dynamics of Urban Earthquake Risk - A Vancouver Case Study"**  
Presenter: Stephanie E. Chang, Professor, University of British Columbia  
Seminar date: December 5, 2011
- **Next Generation Performance-Based Earthquake Engineering: ATC-58 Approach**  
Presenter: Tony Yang, PhD, UBC Department of Civil Engineering  
Seminar Date: January 18, 2012

Log in at:

[www.seabc.ca/seminar\\_downloads.php](http://www.seabc.ca/seminar_downloads.php)

### Suggestions

We welcome your comments for improving our website and online member services. Please send your suggestions to:-

[webmaster@seabc.ca](mailto:webmaster@seabc.ca)

or post it on the SEABC Forum.

## Ask Dr. Sylvie

CISC published Ask Dr. Sylvie articles in Advantage Steel up until Edition 34 available at: [www.cisc-icca.ca/content/publications/publications.aspx](http://www.cisc-icca.ca/content/publications/publications.aspx)

See also the list of CISC technical resources at: [www.cisc-icca.ca/content/technical/default.aspx](http://www.cisc-icca.ca/content/technical/default.aspx)

## Advertising

If you would like to advertise in our newsletter and our website, our pre-paid rates per edition are \$270, \$360 or \$450 plus HST for a quarter, half, or full page advertisement, respectively.

50-word "Available for Employment" ads are free.

Please address advertising enquiries to: [newsletter@seabc.ca](mailto:newsletter@seabc.ca)

Please support our advertisers

## Mark Your Calendars

**Site Registration Option:** Use the [SEABC Forum](#) to arrange a get-together with other SEABC members and share the costs of a single site registration



### Seminars, Conferences and Meetings

#### Victoria Civic Heritage Trust Seminar

##### **Christchurch Earthquake: One Year Later**

Seismic Damage to Concrete Buildings

**Presenters:** Dr. Ken Elwood, Ass. Professor, Dept. of Civil Engineering, UBC, and Dr. Garry Rogers, Senior Research Scientist, Geological Survey of Canada

**Venue:** Antechamber, 2nd Floor, Victoria City Hall

**Date:** 7pm on February 22

More information: see flyer at the end of the newsletter

#### February Evening Seminar

**Topic:** Construction Engineering for San Francisco Oakland Bay Bridge

**Presenter:** Bruce Hamersley, Kohn Crippen Berger Ltd

**Venue:** Room C300, UBC Robson Square, 800 Robson Street, Vancouver

**Date:** February 22, 2012

**Time:** Refreshments 6:00 pm, Presentation 6:30 pm

**More information:** [Seminar brochure](#)

**Registration:** [Online registration](#)



## **April Evening Seminar**

**Topic:** BCBC 2012 (NBCC 2010) -Changes to the Code Presenters

**Presenter:** Steven Kuan, Building and Safety Standards Branch, Province of BC, and Grant Newfield, Read Jones Christoffersen

**Venue:** Room C300, UBC Robson Square, 800 Robson Street, Vancouver

**Date:** April 25, 2012

**Time:** Refreshments 6:00 pm, Presentation 6:30 pm

**Registration:** Coming soon

## **SEABC Annual General Meeting, Dinner and Presentation**

**Date:** Thursday March 8, 2012

**Venue:** Sutton Place Hotel, 845 Burrard Street, Vancouver

**Time:** 5:30 pm (register online or mail in the attached form)

**Cost:** \$40+HST (SEABC Members), \$100+HST (Non-Members)

**AGM:** Address from SEABC President

**Keynote:** Bill Baker, SE, FASCE, FStructE — Skidmore, Owings & Merrill

For more information see flyer at end of newsletter

## **SEAO Northwest Conference – Shake It Up Again, Gambling With Seismic Vulnerability**

**Date:** July 26-28 2012

**Venue:** Kah-Nee-Ta High Desert Resort, Warm Springs, Oregon.

See flyer at end of newsletter

# SEABC Annual General Meeting, Dinner & Presentation



<b>Date:</b>	Thursday March 8, 2012
<b>Venue:</b>	Sutton Place Hotel, 845 Burrard Street, Vancouver
<b>Time:</b>	5:30 pm (register online or mail in the attached form)
<b>Cost:</b>	\$40+HST (SEABC Members), \$100+HST (Non-Members)
<b>AGM:</b>	Address from SEABC President
<b>Keynote:</b>	Bill Baker, SE, FASCE, FIStructE – Skidmore, Owings & Merrill

At 828 m high, the Burj Khalifa is the world's tallest building, a testament to the world's highest aspirations. Its design and construction pushed conventional technologies to record breaking heights.



IStructE Gold Medallist Bill Baker is recognized as one of the world's leading structural designers. He is Partner in Charge of Structural and Civil Engineering for SOM's Chicago and London offices and has a background in the design of landmark structures. Bill will present the story of the Burj Khalifa.





# Structural Engineers Association of British Columbia

**Mail-in Registration Form:  
AGM, Dinner, & Presentation  
March 8, 2012**

*You can also register online!*  
[www.seabc.ca/agm](http://www.seabc.ca/agm)  
(secure credit card payment via PayPal)

## Contact Information:

Name of Company or Individual \_\_\_\_\_  
(Receipt will be issued in this name to email provided below)

Street Address \_\_\_\_\_ City, Province \_\_\_\_\_ Postal Code \_\_\_\_\_

Telephone \_\_\_\_\_ Email (receipt will be issued to this email address) \_\_\_\_\_

## Registration Fees:

		REGISTRATION DEADLINE MARCH 2, 2012		
Name(s) of Attendee(s)	SEABC Membership Number (Required for Member discount)	SEABC Member \$40	Non-Member \$100	Fees
1. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
2. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
3. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
4. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
5. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____
6. _____	_____	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____

Check one box per attendee

**SUBTOTAL:** \$ \_\_\_\_\_

Please indicate any special dietary requirements

**ADD 12% HST** \$ \_\_\_\_\_

**TOTAL (PAYMENT ENCLOSED)** \$ \_\_\_\_\_  
Cheque payable to SEABC

Please make cheque payable to SEABC

**Mail this form and cheque to:**

**SEABC**

**#201-288 West 8th Avenue**

**Vancouver, BC V5Y 1N5**

**Contact: [agm@seabc.ca](mailto:agm@seabc.ca)**

Registration will be confirmed via e-mail. Registration cannot be guaranteed if received after March 2, 2012.  
An administration fee of \$25 will apply to any cancellations received by March 2, 2012. No refunds given after March 2, 2012.

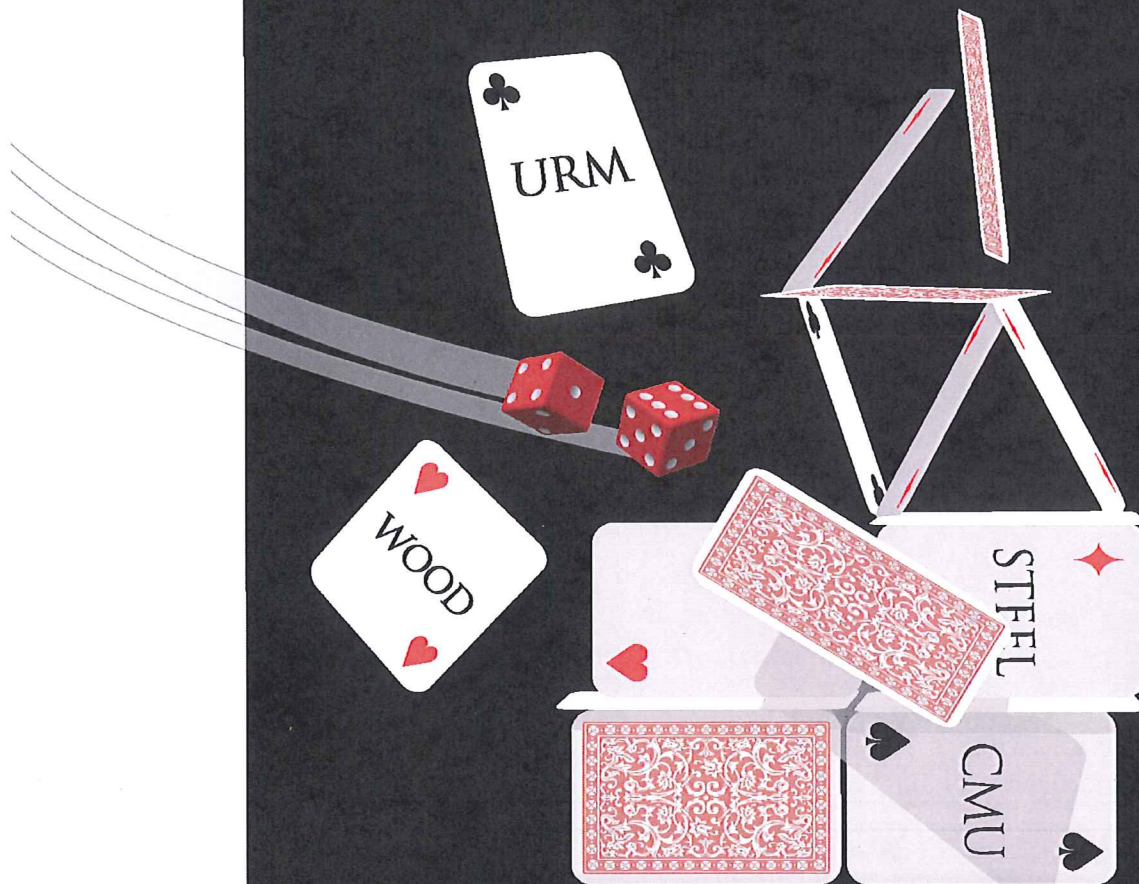
## SPONSORSHIP OPPORTUNITY:

If your company would like to be recognized as a sponsor at this event,  
please contact [agm@seabc.ca](mailto:agm@seabc.ca)

It is time to get this on your calendars  
SEAO Proudly Presents!!!

# SHAKE IT UP AGAIN

GAMBLING WITH SEISMIC VULNERABILITY



## SEA NORTHWEST CONFERENCE

JULY 26-28, 2012  
KAH-NEE-TA HIGH DESERT RESORT  
WARM SPRINGS, OREGON

Check out the attached Video from Youtube on the Resort. <http://youtu.be/1XvERNUwafg>