

Young Surveyors

Newsletter

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EDITOR'S REPORT

Dear Colleagues,

Welcome to the FIG Young Surveyors Newsletter!



During the recent months, the FIG Working Week 2008 in Stockholm-Sweden became a success story for FIG Young Surveyors. With a record number of young and experienced surveyors' participation, the WW has found a special section in the history of FIG. The motto of the event "integrating the generations" raised the flame and the expectations of FIG YS as well.

The paper presented by the WG Board members in Stockholm was picked as the FIG article of the month in July, just after the congress. We believe that we are on the right track!

Please read on to find out what our Young Surveyors have been doing around the globe. We are looking forward to meeting you in a FIG event.

With My Best Regards,

Cemal Özgür Kıvılcım Young Surveyors WG Secretary



JOIN THE FIG WORKING GROUP ONLINE!

Join the Young Surveyors Working Group to receive our quarterly newsletter, announcements and become involved in our profession!

Young Surveyors Yahoo Group:

http://groups.yahoo.com/group/FIG young surveyors/

The YS are also on Facebook – just search for FIG Young Surveyors and join!

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FROM THE WORKING GROUP CHAIR...

Diary of FIG Working Week

Cecilia Lindén

The FIG Working Week in Stockholm (14-19 of June 2008) was a week full of new friends, old friends and a lot of fun.

Saturday 14th of June

The Young Surveyors met at the SLF (Swedish Association of Chartered Surveyors) office to finalise our plans for the working week. In the evening we attended a dinner at one of Alfred Nobel's old factories to celebrate the 100-year anniversary of the Swedish Surveying organization.

Sunday 15th of June

After the General Assembly there were annual commission meetings, and we spread out over as many commission as possible to make as many contacts possible. Then we prepared for the exhibition by buying decorations for our booth (it was to become very beautiful despite our small budget! In the evening we went to the Stockholm City Hall where there was a lot of mingling and nice food.

Monday 16th of June

The big opening ceremony! Due to our theme, I was on stage together with Carl-Olof Ternryd (FIG Honorary President) to visually demonstrate the theme of the working week. Together we helped open the Working Week – we were on our way! I was very nervous to walk in with the honorary guests, just thinking don't fall or do anything also stupid... But fortunately I didn't and it all went in accordance with the plan. And as Chris McAlister said - Abba's Dancing Queen played by a brass band was something special.

After this we went over to the exhibition to finish decorating our booth – all the exhibitors helped us

blow up balloons, which was a great icebreaker:-). When the exhibition opened, we had without a doubt the happiest and most colourful booth around. Chris McAlister had made home printed postcards with info about the group and badges that said speed mentor and young surveyor. These were to be so popular! After this we had the first speed mentoring session — it was a huge and noisy success.

Then we had our technical session in the afternoon, which was chaired by the Young Surveyor's good friend, Gert Steinkeller from Austria (he did a great job). As the room reserved for this session wasn't that big we soon faced the problem that the room was completely full, people where standing alongside the walls and there was a queue outside to get in. When Stig Enemark showed up to get it he was rejected at the door by the volunteer who had been instructed not to let any more people in for fire security reasons. And this became a saying how our session was so full that the FIG president couldn't get in! The session was excellent, with many accounts and interesting experiences about how to get young surveyors more involved. The dinner this evening was at the Wasamuseum, the Swedish show off ship that sank on its maiden journey, which 100 years later is a museum!

Tuesday 17th of June

Another day with a successful speed mentoring session – this time in the foyer where we could catch people coming from lunch. This location also had a higher roof so the sound level was more acceptable.

Throughout the whole working work there was a massive interest and people came up to ask us how they could join, and how they could participate in this new working group. During the evening there where organized home visit dinners in Swedish Surveyors homes. In my home there was one as well, me and Farid (my boyfriend) had people from a large number of countries and we made home fabricated moose meatballs with mashed potatoes as main course.

Wednesday 18th of June

More speed mentoring! It was more successful than we had hoped, and also very appreciated with a large number of people attending. For future FIG Working Weeks and Congresses we hope that speed mentoring will be a permanent event. In the afternoon we had another session, this time an informal one with several guest speakers. First we had Christina Gustafsson CEO of IPD Norden talking about the Swedish Mentorprogramme as one of the founders, together with Frida Karlsson a student that participated last year. This was followed by many questions and I hope that some country might have been inspired to start a programme of their own. Then Peter Normann Hansen from Blom Denmark was talking about the subject "The Importance of Networking" where he gave his view of good and bad networking and how he does it. He was a very captivating speaker.

Last but not least, Christian Tufvesson talked about how he took the chance of international experience in Australia after contacts that he had made during the FIG Congress in Munich 2 years earlier. He was also very interesting. This time we had a bigger room so that everybody could get in and this time even Stig Enemark did. The evening contained a gala dinner in the Winter Garden at the Grand Hôtel. This last night perhaps people

where now a bit tired of this nonstop mingling but still gave their utmost, at least I did by counting and welcoming all the guests to the dinner. The dinner itself was very nice and I sat at a table with only young surveyors. This was very nice but as one in the organizing team for this working week I think we should have mixed people up a bit more. And after the dinner, as always, party until late with the Australians \oplus

Thursday 19th of June

Last day, by now we were all a bit tire, but enthusiastic about our successful week! There was a lot of thanking and saying see you next year, us in the YS group we where just walking around with smiles on our faces so happy with the outcome. Then I was surprised by the Australian's making me an ambassador for the 2010 congress. After the farewell reception I went home and became ill as I now relaxed for the first time in weeks. But it was a week I will never forget and that I would redo without thinking twice about it.

My hope as a chair of the FIG Young Surveyors Working Group is that my group will have created a fully functional structure by 2010 so that we can hand over to a new gang, as we will be in the upper field of what we call a young surveyor. But of course we will always be young at heart...



Invitation

FIG COMMISSION 2 – Professional Education
Working Group 2.3 – Educational Management and Marketing

"Navigating the Future of Surveying Education" 26 – 28 February 2009 at BEV, Vienna, Austria

The FIG Commission 2 and the Austrian Society for Geoinformation and Surveying (OVG) are honoured to invite you to the Workshop "Navigating the Future of Surveying Education" at the BEV in Vienna

FROM THE WORKING GROUP...

Young Surveyors get together in Stockholm Christian Tufvesson Events Coordinator

Likely earlier mentioned in this newsletter the participation of students during the FIG Working Week in Stockholm in June exceeded our expectations.

Many where gathered during the days at the conference centre Norra Latin. After the first weekend days past the week began with many happenings for everyone involved.

Planned since before was The Young Surveyors Get Together! In order to keep it simple, cheap and possible for everyone to participate the options of possible things to do wasn't that many even though we were in Stockholm. Bravely we trusted the weather gods and placed the event in the park Humlegården. This central and famous park in the city centre of Stockholm is also the place where you'll find the Royal Library but we had no intention to read book on this evening...

After a rainy afternoon we meet up at 7pm and to avoid the wet grass we were equipped with plastic bag to sit on. With happy faces, relaxed clothing, something to drink and a food from the

nearby restaurants we all sat down in the park to enjoy the evening. The topics for conversation were of course free but actually quite far from the surveying area. Old and new friends laughed

together and talked about everything from earth to ground (Swedish expression). The evening went on, people seemed to like the company of other people in the same work field but from so many countries. Almost 10 nationalities were represented in the park, young and some not that young spent the evening together while the sun didn't go down... Cause the sun actually almost doesn't go down during June nights in Stockholm, it definitely don't in the northern parts of Sweden!



After a couple of hours the crew made the decision to move on in to the city centre for some more beers. Like earlier days that week we ended up at "Friday's" and continued to enjoy the rest of the evening together with good friends!

So many cool and funny memories last from this week, this evening were one of them but far from the only one! Thinking about it now after some months still makes the smile come back;)

Thanks to you who were there, and to you who weren't, make sure you're there next time!

FIG YS CALENDAR

Eilat, Israel, Working Week (2009)

Vienna, Austria, Working Group 2.3 Workshop (2009)

Sydney, Australia, Congress (2010)

Marrakesh, Morocco, Working Week (2011)

Rome, Italy, Working Week (2012)

WORLD OF SURVEYORS

Young surveyors at INTERGEO 2008

Thorsten Schwing
Vice Chair

"INTERGEO is the world's largest event and communication platform for geodesy, geoinformation and land management. The trade fair and conference cover all the key trends that crop up along the entire value-added chain – from geo-based information surveys and data processing to integrated applications."

The INTERGEO is organised by the German Society for Geodesy, Geoinformation and Land Management (DVW). This year it took place in the Free Hanseatic City of Bremen! From September 30th to October 2nd, *15,000* visitors travelled from far and wide to visit the event - with close to 500 exhibitors across 24, 000 square meters of the Bremen Exhibition Centre.

Running in parallel with the events on the exhibition floor are the conference and INTERGEO forum. This year some 60 leading professionals in their field gave presentations on European market developments. The main topics addressed included "the environment" as well as "geocaching", "geomarketing" and the construction of "geodata infrastructures" like INSPIRE und GDI.DE. .

Within the session four young surveyors had the opportunity to present their work, whether it be their thesis, practical training or projects carried out as part of their work or studies.

This year the papers presented were: "Geodata infrastructure in Sachsen" from André Müller (KonVerS), "The sails engineer in the Geo-Brach" from Jochen Engmann (KonVerS), Jan Lott's (ARGEOS) "Expedition with the research ship Polarstern" and "Thesis in France – One year at the aerospace institute in Toulouse" from Jan-Dirk Wegner (ARGEOS). This year's forum was a great success and thanks must go to all who participated and particular congratulations to the organisers on a fantastic event.

INTERGEO 2009 will be held in Karlsruhe and will run from September the 22nd to the 24th. The DVW and the Council of European Geodetic Surveyors (CLGE) have tasked the FIG "young surveyors", ARGEOS and KonVerS with the creation of a concept to increase student and young surveyor participation in the 2009 event. INTERGEO is a wonderful opportunity for students and young professionals to be exposed to the latest developments in the industry and the FIG young surveyors are excited about getting more up and coming surveyors involved in 2009.

YOUNG SURVEYORS' EXPERIENCES

Great Experience at 78°13' N and 15°33'E

Asude Arslan Sørensen University of Bergen, Norway After finishing my first master on Geodesy at Bogazici University, Istanbul, Turkey, I decided to have a second one on marine geophysics at Bergen University, Norway. I thought, since I got the knowledge about crustal movements, plate tectonics during my geodesy studies, why not going deep and search the seismic events those cause tectonic movements. At the spring2008, I signed up for the course called Svalex.

Svalex is a multidisciplinary integration of students at the Norwegian Universities. Approximately 90 students and 30 professors Together with invited guests follow the field course.



Figure 1: I am getting ready to climb, behind me the melting glacier.

The students are grouped in multidisciplinary teams consisting of students with geology, geophysics and petroleum technology as background. The course itself provides three main arenas for learning: The UNIS campus in Longyearbyen, Svalbard; the cruise liner M/S Nordstjernen, and the seismic vessel M/S Håkon Mosby, which will carry out seismic acquisition.

The first 2 nights of the course was hold in Longyearbyen, far up in the north which has a northern latitude of 78° and eastern longitude of 14°. Longyearbyen is only 1300 km from the North Pole (Figure 2).



Figure 2: Location of Longyearbyen.

Longyearbyen has one of the toughest climates in the world, it has a population of 1,700. The sun never rises between October 26 and February 15. The average annual temperature is -4°C. In winter time the temperature often lingers between -20°C and -30°C, moreover the winds are gale force or stronger. If you take into account the chill factor, the effect of the wind on temperature, the temperature can drop to -80°C.

After 2 days of lectures at the UNIS (University Centre of Svalbard), the world's most northern university, we were ready to start our cruise and explore the northern pole fyords. Figure 3 shows the cruise used for this course, everyday we sailed different locations and we were transported to land by zodiac boats. Since at these locations polar bears exist, we were surrounded by guards against polar bears. Unfortunately, we havent seen any



Figure 3: The cruise used for this field course, Nordstjernen.

The idea of SVALEX course is to understand the geology. According to studies, the Svalbard area was lying some millions year ago where Morocco is today. So the island itself includes lots of coal mines, since it had tropical climate, and by tectonic movements, sea level changes all the forests was covered by sands, muds and formed todays coal (Figure 4).



Figure 4: Geology sketch of the mountain, including coal mines.

Another interesting thing at Longyearbyen was there is a seed storage built 2 years ago. In this storage, which was built in a mountain, all the seed of all plants, fruits, vegetables all around the world are collecting and storing in

this very big natural fridge. The idea is when we loose the extiction of some plants, fruits..etc by using the seeds from this storage we can start planting them from the begining.

Conclusion

At northern pole I had a great experience, and learned to work with multidisiplinary fields. Experienced climbing the mountains and investigating the rock samples, sometimes we needed even taste the rocks to be able to decide where they can be belong to. I wish this opprtunity can be given to all students who are studying at geosciences and of course who want to exprericense the living and working conditions at the northern pole.

SURVEYOR GENERAL'S FELLOWSHIP, NSW AUSTRALIA

Stephen Barr

Editors note: Due to space restrictions Stephen's article has been edited significantly. To see the complete version, check out the Young Surveyors yahoo group.

The Fellowship was awarded to learn about three areas, these were

- 1. To gain an appreciation of the importance and benefits of a land title system
- 2. To understand the way that buildings are subdivided to manage mixed use development, and
- 3. To look at the ownership of public open space.

Indonesia

Objective: gain an appreciation of the importance and the benefits of a Land titling system.

Indonesia is a country of contrast, having wealth and poverty, beauty and squalor and cutting edge technology and subsistence living. It's titling system is also a contrast, where by a mix of western and traditional land laws exist. The Western land laws where supported by cadastral maps and surveys while the traditional or customary land laws where unique to each region.

In 2004 it was estimated that there was approximately 80 million land parcels in Indonesia of which less than 30 million are formally registered (World Bank, 2004 LMPDP). The World Bank has been involved in funding and supervising the expansion of the land titling system in Indonesia. The work itself is being undertaken by the Indonesian Federal Government via their National Land Agency known as Badan Pertanahan Nasional (BPN) through the Land Management and Policy Development Project (LMPDP). In addition to this programme a further project is being funded which concentrates on the Island of Aceh which was devastated by a Tsunami on Boxing Day 2004. It is this second project that really drives home the value of a land titling system that is sound, accurate and carefully protected with regard to security of tenure.



Photo 1: a woman with her title in hand, while the title is for 12 square metres, this may be sufficient to run a small shop or similar, particularly as the site has frontage to a busy road.



Photo 2: A sign for a new residential subdivision in Aceh displaying the flags of several countries.

Hong Kong - FIG Working Week

Objective: how surveyors can support developing nations

The working week provided an opportunity to see the influence that surveyors can have internationally through FIG and the relationships formed by FIG with organisations such as the World Bank and educational institutions around the world. The opportunity to hear speakers on many different subjects from different countries provided an insight into the global nature of the surveying profession and the opportunities available to surveyors on the international stage.

One of the most interesting sessions was a group of talks which were given by candidates from China, North America, Australia, Nigeria, United Kingdom and Israel. The speaker from the United States outlined a system established in the US that monitored sea level rise through a sophisticated GPS network which monitored the land and sea levels relative to each other and provided very accurate high precision data. This network was in the process of being expanded to provide measurements along the coast of the US. In contrast the delegate from Nigeria presented on the Niger delta and the environmental issues facing the delta area and the search for oil that was being undertaken in the area. He highlighted the lack of mapping and geographical information that was know about the area and the inability to monitor environmental impacts due to the lack of information. The contrast between the resources available to each country was striking.

New York

Objective: review how New York City deals with mixed uses within buildings and acquisition of public open space.

Subdivision of Buildings

The different uses within buildings is an issue that effects most commercial buildings in New York City as it is a requirement set by the New York City Council that all buildings have retail space at the shop front to create an active street interface. These uses are governed by zoning laws.

Stratum subdivisions are used in New York, examples were provided by surveyors in New York. These examples included lots created in the roadway for monorails and their related infrastructure as the road and the monorail were funded and owned by different Government departments and subdivisions of old basements that extended under the road reserve. It was interesting to see that on the survey plans there were both imperial and metric dimensions on every line, something the surveyors found very tedious to prepare, especially on 3 kilometres of stratum plan for the monorail.

This style of subdivision is very similar to strata subdivision however, rather than people's rights to operate a business in a building that is predominantly residential being protected by separating them into a stratum lot, these uses are protected by zoning law.

The Council has a desire to place a walking/cycle path along the edge of the natural area, this pathway will need to traverse through both the public reserves and the land owned by the community association. This creates a dilemma of how to deal with legal access, maintenance and public liability within the community association land. Their solution was for the Local Government to move to acquire a strip of land to allow the footpath to be constructed and to solve the issues of access, ownership and liability.



Photo 3: The New York Skyline. The foreshore is a good example of well used public open space

Ownership of Open space

The Open Space Institute (OSI) is an organisation that acquires large and small tracts of open space with a view of preserving this land in the long term to ensure its protection against development and to preserve its natural attributes. OSI has two main arms, land acquisition and conservation finance. The acquisition arm uses capital to acquire land and conservation easements. The loans arm uses capital to provide bridge loans to other conservation organisations for land protection.

Project for Public Spaces (PPS) is an organisation that provides expertise and advice in creating and managing open space that is desirable, interesting and community focused. One of the initiatives undertaken by PPS is the investigation of a non profit organisations and the role they can play in the management, upgrading and maintenance of parks in urban areas.

These two organisations show a different interest in open space from that that is currently displayed in New South Wales. In America there is community concern and awareness of the value of public open space and the desire to retain these areas, either as large conservation parks or to be involved in the maintenance and embellishment of urban parks to create safe focal points for the community.

Community title is being used to manage and maintain open space land, which main contain active open spaces such as parks but also environmentally sensitive lands such as riparian zones, flood liable areas and threatened or endangered species. While this solves the issues associated with ownership it may not provide the best social outcome with regard to public access to open space, especially in regard park areas and may not provide best practice and dynamic management of environmentally sensitive sites.

Undoubtedly we are seeing changes occur with regard to the protection of environmentally sensitive land and the management of open space in New South Wales. It will be interesting to see whether the organisations and community interest in public open space in New South Wales changes to become more inline with American models in time.



Photo 4: The Statue of Liberty, A New York City Icon, surrounded by open space

Thanks

My thanks goes to all those people that graciously gave of their time and effort in Australia, Indonesia, Hong Kong and New York to afford me the experience I was fortunate to enjoy. Finally, I would also like to thank my employer, Monteath and Powys.

TECHNOLOGY AND TRENDS

3D Point Clouds Paint a Bright Future

Leigh Finlay
Senior Associate - NSW Spatial Manager
Sinclair Knight Merz

Email LFinlay@skm.com.au

3D laser scanners are state of the art tools with diverse applications that are increasingly being used to capture data on large or complicated sites and structures. Scanning projects are becoming more mainstream and have enabled surveyors and engineers to overcome obstacles never before thought possible.

This technology allows Sinclair Knight Merz (SKM) to capture data in a multitude of different environments. Whether it's a major road with high traffic volumes, a historic building undergoing renovation, or a complex area in a plant slated for new design, scanning provides a safe and cost effective solution to today's engineering and design problems.

Over the past five years, SKM has been using 3D laser scanning technology to provide innovative solutions to clients on a wide range of projects across Australia. Below are just a few examples from the list of over 75 projects.

Hinze Dam - Gold Coast Queensland

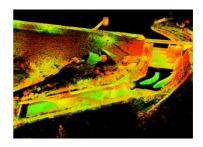
SKM is an alliance partner in the current project to raise the dam wall of the Hinze Dam in the Gold Coast hinterland by 14m. An accurate model of the existing dam wall, spillway and associated infrastructure was crucial to the design process and presented an interesting challenge due to the complicated nature of the dam wall and spillway. Of most concern was the safety issue of working on steep slopes of the dam wall and also above the spillway.



Photo 1: Scanner capturing spillway infrastructure

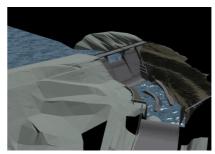
The 3D scanner solved most of these issues by enabling fast, accurate and very detailed 3D data capture without the need to place survey staff on or near these dangerous slopes.

The 800m dam wall, spillway and intake canal infrastructure was scanned in just over two weeks and full 3D drawings delivered to the client well within the required timeframes that led to an accelerated design program.



Resulting point cloud data

Sections of the dam wall and spillway structure could be easily extracted from the resulting 3D model at any interval and angle, allowing designers full flexibility in their approach to the demanding program. The very complicated spillway structure and channel baffles were fully modelled in ACAD and then easily transferred into 12D for further analysis.

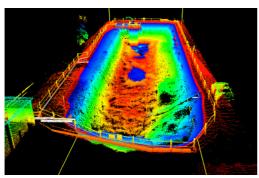


3D model

Hornsby Heights Sewage Treatment Plant (STP), Sludge Lagoon, Sydney, NSW

Surveying on or near steep slopes has always been a problem for surveyors. Having to be harnessed, using boom lifts, and in extreme instances abseiling, all create logistical nightmares for surveyors and project managers alike. Rock walls can also be very difficult to accurately represent, as they can be filled with many nooks and crannies. Using a laser scanner to survey a steep slope (as pictured below) can make these jobs a lot easier. Working inside areas that may be contaminated can also cause a risk to surveyors on the project.

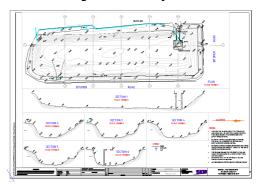
Point cloud data



SKM surveyors were approached to scan a Sludge Lagoon at Hornsby Heights STP. The rock surface inside the lagoon was surveyed using a HDS3000 Laser Scanner from locations outside the railing of the lagoon. By taking sections through scan data at

1 metre intervals a Digital terrain model was created. With some modelling of the structures in the lagoon a final output drawing was delivered in Autocad.

Plan drawing and sections form 3 d model



Conclusion

At SKM we are seeing and emerging trend where the innovative application of new technology from the Spatial Industry is making a significant contribution to major engineering and other projects across many disciplines and geographies. 3D laser scanning is being routinely used on major industrial projects and increasingly also on more traditional survey projects and is often seen as the critical differentiator in major projects in facilitating the successful outcomes for ongoing works, as much of what comes afterwards is directly predicated on the spatial data supplied by Surveyors and Spatial professionals.

YOUNG SURVEYORS WORKING GROUP

Today, many of the FIG member organizations are facing difficulties in attracting young people to the surveying profession. The goal of this working group is to create connections between "old" and "young" surveyors.

As a policy, this group aims:

- To improve the number of young professionals participating within the FIG;
- To help young professionals in the beginning of their careers, by facilitating networking and mentoring opportunities;
- To increase co-operation between the commissions and students and young professionals.

JOIN THE FIG WORKING GROUP ONLINE!

Join the Young Surveyors Working Group to receive our quarterly newsletter, announcements and become involved in our profession!

Young Surveyors Yahoo Group:

http://groups.yahoo.com/group/FIG_young_surveyors/

The YS are also on Facebook – just search for FIG Young Surveyors and join!