



*Working Group 1.2*

# Young Surveyors Newsletter

**Winter 2008  
Issue No. 2**

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## **EDITOR'S REPORT**

Dear Friends,

Welcome to the second issue of the Young Surveyors Newsletter!

Since the FIG Congress in Munich 2006 and the Hong Kong Working Week 2007, the Young Surveyors working group is well on its way to making the changes required to better our future – and hence the future of surveying. We hope for this newsletter to form a connection across nationalities, cultures and generations – an important form of communication for us to both demonstrate our skills and ask for help with our weaknesses.



In November 2007, FIG WG 1.2 Young Surveyors organized their own Workshop with the support of the FIG Council and Commission 1 with the motto “The role of Young Surveyors in Society”. The workshop, held in Cairo, allowed us to discuss fundamental strategies and develop a master plan for the future of the Working Group. Please read the article on page 3, and report back to us on any feedback you may have, or help you can offer!

Since the first issue of this newsletter, the content has improved significantly through the contribution of our members. In this issue we bring to you surveying experiences from Australia and projects undertaken by our working group members. We hope you yourselves can also share with us your thoughts by submitting an article – perhaps an exciting project, problems or highlights of being a young surveyor, or your experiences as a student.

Within this working group we are striving to achieve so much, but it is through your individual action and involvement that we will shape the future of our profession.

We hope you will enjoy our winter issue! I look forward to hearing from you...and perhaps we will meet at the Stockholm Working Week?

Cemal Özgür Kivilcim

Young Surveyors WG Secretary



### **JOIN THE FIG YS 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/](http://groups.yahoo.com/group/FIG_young_surveyors/)

## **REPORT FROM THE WORKING GROUP**

### **Young Surveyors Meet in Egypt!**

*by* Cemal Özgür Kivilcim  
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*FIG Young Surveyors Secretary*



As the last activity of the year 2007, the Young Surveyor Working Group committee, consisting of members across the globe, met in the glorious city of Pharaohs, Giza/Egypt.

The workshop was held for three days. During the different sessions, the work to date of the working group was evaluated and a working plan for 2008 produced.

The Working Group 1.2 committee discussed the needs, demands and standards of young professionals and students in the surveying profession. We formed a number of aims regarding the publication of our newsletter, a more interactive website, documentation and promotion of future activities, and importantly, how best to benefit YOU – the future of surveying. The best approach is certainly sustainability, and we hope to address this by encouraging as many young surveyors as possible to get involved (and their employers to promote this) and hosting networking and mentoring programmes (most notably at the upcoming Stockholm Working Week!).

#### **Goals of the Young Surveyors Working Group**

- **Promote** the benefits of participating in FIG events to young surveyors.
- **Attract** young surveyors with simple, fun activities that allow delegates to build useful networks.
- **Support** and pursue funding and sponsorship opportunities that allow young surveyors to attend FIG events.
- **Involve** young surveyors in FIG events, and encourage young surveyors to submit technical papers for presentation FIG events.

[You can read more about the Young Surveyors Working Group from our website:](http://www.fig.net/commission1/wgroups/wg2_06_10.htm)

[http://www.fig.net/commission1/wgroups/wg2\\_06\\_10.htm](http://www.fig.net/commission1/wgroups/wg2_06_10.htm)



**Board Members of the WG with FIG Vice President and Commission 1 Chair**

## UPCOMING MEETINGS

### Preparations for the Stockholm Working Week

by Cecilia Lindén

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FIG Young Surveyors Chair

#### 1. FIG WW 2008, Stockholm

The preparations for the 2008 FIG Working Week in Stockholm have been going on for quite some time - I joined the organizing committee at the end of 2004! Fortunately, a lot of hard work has seen our initial plans come a long way and we are now down to the finer details, such as putting the technical sessions together and booking buses for different tours.



The plans for student participation have also progressed a long way. A promotional tour is being planned where Christian Tufvesson (Events Coordinator) & I will be visiting all the different universities in Sweden to encourage Young Surveyors to come, work and participate at the event. As the overall theme of the Working Week is "Integrating Generations" we hope to see a record young surveyor attendance! In order to attract students there is a special fee of 700sek compared to a full delegate at 4900sek.

##### 1.1. Accommodation and YS activities

The conference webpage lists the contact information of Youth Hostels in Central Stockholm and surrounding areas. There is also a map depicting hostel locations. There are a few within walking distance from the

conference venue, and three of them are actually situated on board boats!

As for the Young Surveyors working group, you will be able to find us at a stand centrally located within the conference venue. There will be a speed-mentoring activity open for all, run during lunches the entire week. You don't know what Speed Mentoring is? See the explanatory article further on in this newsletter! We are also planning to have informal networking afternoons, with a local pub chosen for delegates to meet at following the final afternoon session.

There will also be a technical session held by the Young Surveyors working group. We will use this session to introduce ourselves and the aims of the working group. Representatives from the Swedish Mentor program will talk about their experiences and what is to be gained both personally and professionally. The third part of the session will deal with the importance of networking, with Peter Normann Hansen, CEO of Blom in Denmark and head of FIG Corporate Sponsors to talk about his own experiences throughout his career. Come along to learn, network and have your say!

*Stockholm Working Week  
14-19 June 2008  
Special attendance fee for students:  
500SEK*

For more information about the Stockholm Working Week please see:

<http://www.fig.net/fig2008>

## SPECIAL FEATURE

### Speed Mentoring at the Stockholm Working Week

By Kate Fairlie

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FIG Young Surveyors Marketing Committee Member

*The FIG Young Surveyors Working Group will be hosting a series of "Speed Mentoring" sessions during the course of the Stockholm Working Week 14-19th June 2008. Come and join us!*

#### 1. What is Speed Mentoring?

Ever found it hard to network? To approach more senior professionals? Feel like there is no one to talk to about your career? Speed Mentoring is the answer...!

“  
*The career  
equivalent to speed dating*  
!”

Speed Mentoring sessions will be hosted by the FIG Young Surveyors Working Group during the lunch sessions of the Stockholm Working Week. They will run for approximately 1 hour, including a brief introduction and five ten-minute slots.

Two groups of participants are invited to attend – the “mentees” and “mentors”. Mentees are generally younger surveyors, new to the profession and seeking guidance in their career. Mentors are more experienced professionals, willing to help the younger generation and perhaps eager to benefit from the fresh perspective and enthusiasm of newer recruits!

At the start of the session, mentors will be asked to take a seat, with mentees choosing a mentor to sit opposite, and then rotating to the next mentor at the end of each ten-minute slot.

Come with questions, ideas, and an interest in the wider surveying profession...and who knows what insights you could leave with!

#### 2. Why?

*So why such an organised, convoluted version of networking? Why the strict time limits?*

Well, rumour has it we hear seven times faster than we speak! Normally, this means that your mind wanders to important issues such as lunch...! But with an enforced time limit, you don't have time for the normal niceties and inanities of normal conversation – so you can come straight to the point!

Also, both parties have a reason to be there. Mentors are either invited guests – each session will have a theme with invited mentors to be listed in the Working Week programme – or interested employers. Mentees should come prepared with questions, or at least an idea of what they would like to get out of the session.

Further, all participants will be invited to mingle at the end of the 1-hour session as well as attend a less formal pub setting at the end of the day. What better way to hear the thoughts of an interested generation-X and generation-Y? How better to learn the ins and outs of the exciting industry you are entering?!

#### 3. How to take part?!

One. Attend the Stockholm Working Week.  
Two. Check your programme for details of time, location and eminent mentors!

Three. Attend, smile, have fun – and perhaps you'll learn something new!

## TECHNOLOGY AND TRENDS

### 3D Digitizing of Art Historical Objects

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**Keywords:** 3D digitizing, 3D reproduction, high resolution surface scanning, rapid prototyping

**Abstract:** Traditionally, copies of historical artefacts are made using gypsum casts. Difficulties are faced in this process due to size limitations or when non-physical characteristics – such as colour – need to be preserved. This article demonstrates the use of digital modelling in place of traditional physical reproduction methods. The creation of digital, or virtual, models uses modern geodetic methods and as such this non-invasive process is gaining importance in the art world.

#### 1. The Project

The Alexander sarcophagus (4<sup>th</sup> century B.C.) is one of the most outstanding monuments in the archaeological museum of Istanbul, Turkey (Fig. 1).

The aim of this project was to create a full reconstruction of the sarcophagus, under specified constraints, with the result to form part of an exhibition to tour the globe.

Traditionally, copies of such artefacts would be created through means of a gypsum cast – however, a key constraint of the project was that the sarcophagus could not be touched – thus eliminating traditional methods.



Figure 1: The Alexander Sarcophagus



Figure 2: Still coloured - the detail on the side of the sarcophagus.

Furthermore, the sarcophagus was covered by a glass cupola, which it was not possible to dismantle (Fig. 1). Finally, remnants of the original colouring on the sarcophagus were still present, and required in the reproduction (Fig. 2). The contact-copy method of gypsum casting requires that the object be covered with a material similar to latex to provide the negative – in this case such a method would destroy the remaining colour.

#### 2. 3D Digitizing

Thus, with the rich detail and remnant colour of the sarcophagus, the only method to prepare an exact copy without damaging the original was by means of near range photogrammetry, followed by “rapid

prototyping” of the virtual model. In this case, the 3D digitizer “ATOS III”, from the Germany Company GOM, was used (Fig. 3).

The remaining difficulty was to overcome the problem of measuring through the glass cupola. GOM helped overcome this with the testing and calibration of measurements through glass in their laboratory in Braunschweig, Germany.

It was found that with the ATOS III digitizing software errors were minimized by setting up the 3D digitizer perpendicular to the glass face. Measuring at acute angles to the surface of the glass was problematic –thus in this case, the sarcophagus could not be measured completely and the surface of the virtual model had many holes.



Figure 3: The ATOS III while projecting fringe patterns onto the object

### 3. The modelling and reproduction

The final modelling of the sculptures was quite difficult, due to the holes in the complex surface. The solution was to extrude the holey surface into a volume model – from which the “rapid prototyping” process, which specifically requires a volume model, could produce a 3D digitised model of the

sarcophagus. Rapid prototyping basically takes the 3D volume model to create thin horizontal cross-sections, which are then physically created.

From this a gypsum cast of the prototype was created, with a professional restorer brought in to hand-craft the non-measured parts of the surface – the holes.

In a final step, the copy was now ready for colouring in its original colours. Spectroscopic measurements were taken for this process, and the original colours replicated by a restorer.



Figure 4: Recreating the original colouring

### 4. Conclusion

The use of geodetic techniques in the art world is gaining prominence – and thus our profession is further expanding into these fields.

The processes required to reproduce and/or restore large historical artefacts, such as the sarcophagus in this example, include many constraints that need to be overcome – and collaboration between surveyors and traditional art restorers and historians is a vital tool.

## **YOUNG SURVEYORS EXPERIENCES**

### **Work Experience in Australia**

*by* Christian Tufvesson

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*FIG Young Surveyors Events Coordinator*

In the autumn of 2006 I was given the chance to participate at the FIG congress in Munich. Cool, I thought and went away for a week full of fun, excitement, new experiences and many new international friends. A couple of months after the congress I started to think about the fourth year of my Masters degree. I wanted to have a break and do something else for a while, study abroad or just travel; the cold weather in Sweden convinced me of the need to go away! Well, one thing led to another...

I had met some Australian surveyors at the FIG congress, and so I sent an email to these new friends. I also had a look at exchange opportunities in Canada, but these plans were shortly curtailed when an email arrived from my friend, Dean Wallington - promising survey work in Brisbane!

After two months of summer, and a lot of work in Sweden, it finally came to August and time for me to leave! I arrived in Brisbane to spend my first Australian Sunday with Dean's family. After two weeks of touring the sights of Brisbane and Surfers Paradise, I and Dean went down to office of Statewide Survey Group (SSG, [www.statewidesurvey.com.au](http://www.statewidesurvey.com.au)).

“  
*You don't work when it's raining in Queensland!*”

My boss Walter turned out to be the typical relaxed, funny Australian “bloke”! And Walter didn't just hire me for a couple of months, he also offered to pay me a decent salary for the job. After signing the contract papers, arranging a tax file number, etc. etc. it was finally time to get the real work started. And then it rained!



**High Rise Party!**

I still don't really now why, well no one wants to get wet, but still... You don't work when it is raining in Queensland. I believe it's a union thing and of course you don't want to get your instruments wet either. So the first day I spent driving around with my colleague Lindsay, who showed me around the big construction sites which SSG were working on. We also took a nice, long breakfast, whilst it rained!



During the next two and a half months I had a lot of early morning starts, but this simply meant I often finished work quite early. I spent a lot of time on some of the biggest construction sites in Brisbane, but also got some experience in a few of the smaller jobs like boundary location, subdivision, detail survey and traditional set out. On the construction sites I got the chance to see how a building changes and evolves, for example I was able to start a high-rise.



**Surveying work at the Buddhist temple.**

It's an interesting experience to be the one that the whole site is waiting for, and as soon as we had left the earth surface some meters below normal Brisbane city level, they poured the concrete. One afternoon I got the chance to participate in the roof party for an almost finished high-rise, something really Australian you may say.

SSG are one of Queensland's leading consulting surveyor groups, this helped out to make the work experience so amazing. Some days were relaxed with just some easy

boundary work on the beautiful islands outside Brisbane, other days were longer but the work was challenging, interesting –and so diverse!

All good things come to end, as they say, and so did my time in Brisbane. After I spent a further three months travelling with my girlfriend, where we took the opportunity to meet a lot of the Australians I had met the previous year and we also saw a lot of beautiful places across Australia, New Zealand, Singapore, Malaysia and Thailand.

If I later in my life get the opportunity to go back and be a surveyor again in Australia there is simply no way I could refuse! At any rate, there remains a high rise building in the heart of Brisbane that was essentially by me. And that's certainly something to be proud of!



**My first high rise is starting to grow!**

## **BOARD OF 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.

### **Members of The Board of The Young Surveyors**

The Young Surveyors Working Group is a newly formed, but as we make ourselves known we hope that the network will spread further around the globe, along with a significant increase in young surveyor involvement across the FIG. The WG board is composed of volunteer active students and young professional surveyors. We come from a variety of countries, cultures, experiences and backgrounds – so please feel free to email us if you have any comments, problems or would simply like to know how you can become more involved!

<b>Chair</b>	Cecilia Lindén, Sweden	<a href="mailto:clinden@kth.se">clinden@kth.se</a>
<b>Vice Chair</b>	Thorsten Schwing, Germany	<a href="mailto:t_schwing@web.de">t_schwing@web.de</a>
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