



*Council of Associations of
long cycle Engineers from
a University or a Higher
School of Engineering of
the European Union*



SEII
*European Society
for Engineers
and Industrialists*

CLAIU-EU Conference in partnership with SEII

Employability of Engineering Graduates

A Vision for the Future

To be held at

**University Foundation - Rue d'Égmontstraat, 11
1000 Brussels - Belgium**

Thursday 13th and Friday 14th March 2014

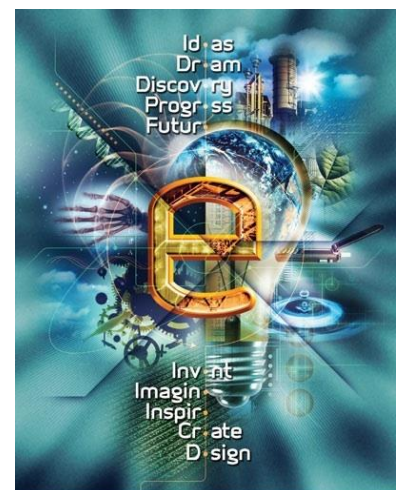
Our objectives are your reasons for participating

Climate, energy, insecurity about our future ..., we are faced with **huge challenges**. In order to meet them and to respond to the many problems they entail, **engineers will have an essential role to play**, particularly in Europe, which lacks natural resources and competitiveness. Do European engineers receive the **appropriate education** to come up to the expectations of their various employers ? This conference intends to draw the current status of the question, with a special view on future needs **for all types of engineers** (Bachelor, Master or doctoral degrees).

CLAIU-EU provides a forum for consultation and collaboration within Europe among associations of engineers who have received a more “theoretically oriented” education. Their last four annual conferences (from 2010 to 2013), held in different European cities – with an active collaboration of **SEII** – were dedicated to different aspects of engineering education. This conference will be the crowning achievement of the series.

SEII aims at promoting, through its activities, the essential role of the European engineer in society, and particularly in industry. Two of their annual conferences, organized with the support of **CLAIU-EU**, were dedicated to engineering education.

This is the reason why both organisations decided to organize this 2014 conference in partnership. The programme is aiming to be of interest to anyone in Europe **supporting engineering activities**, particularly HR managers in industry and representatives of engineering schools or faculties, of professional bodies and of accreditation agencies.



Engineers Make It Work

PROGRAMME DAY ONE – Thursday 13th March 2014

13 h 00 Registration and coffee

13 h 45 **Welcome address** by **Alejandro MARIN ARCAS**, President of CLAIU-EU, and **Philippe WAUTERS**, President of SEII

Session 1 – Views from industry

14 h 00 “**Engineers : leaders for Innovation, Integration and Direction**”, by **Christian JOURQUIN**, keynote speaker, former CEO of the Solvay Group, member of the Board of Directors of SEII, Belgium

Over the past few centuries, engineers have consistently contributed to innovative solutions to meet the challenges of daily life. At the dawn of this 21st century, the fast evolution and the growing complexity of the challenges that have to be met call for new paradigms in engineering, integrating new disciplines and new ways to share knowledge. Addressing them will require from engineers both teamwork and strong leadership capabilities. This typically defines the profile that industry, services and society at large will look for in the new generation of engineers : innovative personalities, able to integrate expectations from the future and solutions coming from other horizons of science and knowledge, and also able, through their strong leadership, to show the way and give the impulse to multidisciplinary teams for successful projects. But, the question is : how to breed them ?

14 h 50 “**Engineering education – academic interest versus industry needs**”, by **Frank-Stefan BECKER**, former Executive of Siemens AG, in charge of Communications, Government Affairs & Higher issues Education (Siemens Generation 21), Germany

This presentation will focus on the discrepancies between the requirements of an academic training and selection process and the needs of industry. As the gaps are widespread, age-old and have frequently been analyzed – as well as lamented – the reason for their persistence cannot be attributed to a lack of information, but rather to different interest of academia – “producers” – and industry – “customers”. This talk will discuss the underlying mechanisms, try to define “quality” from an industry perspective, highlight the future challenges for industry and derive some conclusions as regards the requirements that professional engineers must meet. Some prerequisites for making universities more autonomous in determining the quality assurance process as responsive as well to their customers’ needs – including students’ interests – will be outlined.

15 h 30 Coffee-break

Session 2 – Views from young engineers

16 h 00 “**Volunteering & Global Skills : a young engineers perspective**”, by **Siobhán McGRATH**, General Secretary of EYE (European Young Engineers)

The work of an engineer is increasingly global – projects based in other countries, international teams, ... – and therefore engineers must be able to work globally. Global skills are the non-technical skills needed by engineers to solve today’s engineering challenges. Universities are under pressure to add global skills development to an already overloaded curriculum. Should universities be solely responsible for preparing their students for employability ? Could not young engineers take responsibility for their own professional development ? Many of them volunteer, not only to contribute to the engineering community, but also to enhance their own employability, since volunteering is known for developing global skills.

16 h 30 “**Engineering education and its impact on young graduates’ employability from a students’ point of view**”, by **Mihai TOCIU**, President of BEST (Board of European Students of Technology)

BEST is a constantly growing non-profit organization that strives to develop students of technology through complementary education, educational involvement and career support. Since 1995, BEST also strives to bring the development of European Engineering Education closer to their students, who are the engineers of the future. We have learned that there is currently a gap between employers’ needs and the skills and knowledge provided by the universities. If those needs won’t be assessed and responded to, the gap will become larger as the industry develops while engineering curricula remain unchanged. There are already various opportunities to bridge this gap, but they are not included nor recognized in a classic curriculum. Something has to be done and BEST is ready to participate.

Session 3 – Views from education

- 17 h 00 “ **Employability of engineering graduates** ”, by **William GRIMSON**, former Head of department of Electrical Engineering and Academic Registrar from Dublin Institute of Technology, Vice President of Engineers Ireland
- ‘Graduateness’, the expected attainment of programme learning outcomes and employability are three close, but not identical, perspectives on what constitutes a graduate. There are also three major stakeholders, with sometimes conflicting views on the subject : the academic institution, the employer in a broad sense, and the student, who is the future graduate and employee. Adding different societal norms and cultural values, it is clear that there is a wide scope for respective expectations to be misaligned and no possibility for a “one size fits all”. A whole system has been progressively build, struggling along to meet the expectations, but causing some tensions around a number of difficult to cross gaps. This paper will review the process of ‘negotiation’ amongst stakeholders, explore the perceived educational gaps or inadequacies and make some tentative proposals as to how such matters can best be addressed.*
- 17 h 30 “ **Engineering Graduates for Employment** ”, by **Ian FREESTON**, Professor Emeritus - University of Sheffield, Higher Education Adviser - Engineering Council, Member of EUR-ACE Label Committee - ENAEE, United Kingdom
- The role of education as a preparation for employment has been debated for many years, particularly within Higher Education. It is directly relevant to engineering education, because activities intrinsic to engineering, such as designing and creating artefacts and processes, imply markets and end users, and consequently employment in production. The issue is sometimes represented as a distinction between engineering science, which stresses the education of the individual student, and engineering technology, which emphasises training for employment in a specific industry. Is it possible to design programmes that will satisfy the requirements of all stakeholders : students (with a variety of interests, aspirations and abilities), employers (with widely differing products and markets), teachers (with career aspirations often based more on research rather than on teaching), universities (interested in academic reputations in many disciplines), and society at large (usually represented by government policy and financing) ? How can these potentially conflicting requirements be resolved without over-prescribing engineering programmes, while encouraging diversity and innovation of content and teaching methods ?*
- 18 h 00 Conclusion of Day One
- 20 h 30 Conference Dinner (optional)

PROGRAMME DAY TWO – Friday 14th March 2014

- 08 h 45 Welcome and coffee

Session 4 – Linking education to market needs

- 09 h 00 “ **Employability of engineers : new challenges within a difficult economic landscape** ”, by **José Ignacio GARBIZU**, Dean of the “Colegio de Ingenieros Industriales de Gipuzcoa”, Spain
- Spain’s high unemployment rate prompted the General Council of Official Industrial Engineering Associations to take a deep look at the situation of industrial engineers in the country, including their prospects for employment. Different aspects of their employment, underemployment or unemployment, were to be analyzed through the answers to a questionnaire that was sent to the 19 Industrial Engineering Associations of Spain. This paper will present the main results of the survey : what these associations do for their members, the unemployment rate depending on the location, the sector of activity, the gender, the years of experience, how the risk is perceived, the willingness to set up their own company, etc. The speaker will end up with a short description of the action plan that has been drawn to improve the situation.*
- 09 h 30 “ **Title not yet specified** ”, by **Massimo GUARASCIO**, Professor of Materials and Environmental Engineering, University La Sapienza of Rome, Italy (**to be confirmed**)
- 10 h 00 “ **Employability of civil engineering graduates & the Bologna process – findings of surveys conducted by the European Council of Civil Engineers** ”, by **Iacint MANOLIU**, Professor, Technical University of Civil Engineering of Bucharest, and **Barbara KARLEUŠA**, Professor, University of Rijeka, respectively Chair and Vice-chair of the Standing Committee of the European Council of Civil Engineers (ECCE)

The word 'employability' does not appear in the Bologna Declaration of June 1999, but only the statement that "the degree awarded after the first cycle shall be relevant to the European labour market as an appropriate level of qualification". Is it the case now, nearly 15 years later? This paper tries to answer such a question on the basis of surveys conducted in 2013 by ECCE on the impact of the Bologna process on civil engineering education and profession in Europe, with emphasis put on employability. Academics and professionals from 17 countries were actively involved in the surveys, the findings of which are summarized and commented in the paper.

10 h 30

Coffee-break

Session 5 – Influence of accreditation

11 h 00

“ *Lessons learnt from the accreditation of civil engineering programmes in Belgium* ”, by **Bernard REMAUD**, former President of CTI (Commission des Titres d'Ingénieur, France), member of ENAAE

Two agencies – AEQES in Belgium and CTI in France – have organized in 2012-2013 a joint mission in the French speaking Community of Belgium, with a twofold objective : the evaluation of their engineering programmes according to Belgian legal requirements, and their accreditation according to CTI's and EUR-ACE's criteria. Discussions are in progress with the Engineering Faculty deans of the Dutch speaking Community in view of organizing their legally required accreditation by CTI. This paper presents the lessons learnt from these experiences : benefits and pitfalls of a joint process between two different agencies, the adaptation of EUR-ACE criteria to different national contexts, and the different views on the issues of engineering graduates' employability.

Session 6 – Debate

11 h 45

Plenary Discussion between the speakers and the participants

13 h 00

Closing drink and conclusion of the conference

PRACTICAL INFORMATION

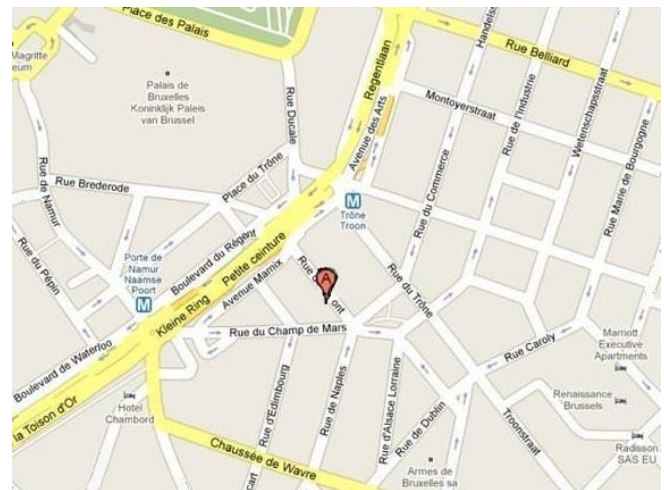
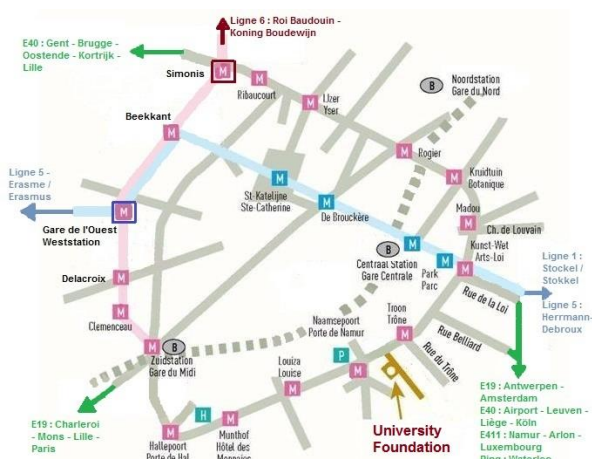
Where and how

Venue : University Foundation, rue d'Egmontstraat 11, 1000 Brussels, Belgium (Salle A, first floor)

Train : Central Station, Luxembourg Station or South Station

Metro : lines 2 and 6, station Trône/Troon

Car park : Porte de Namur / Naamse Poort



Registration fees

Conference (including coffee-breaks with biscuits and closing drink) :

- ✓ For CLAIU-EU members and/or SEII members : 170,- € / participant
- ✓ For neither CLAIU-EU nor SEII members : 200,- € / participant
- ✓ For students : 25,- € / participant

Dinner : 75,- € / participant

Registration online procedure

- For CLAIU-EU members, [click on](#) : an invoice will be sent with the necessary payment information.
- For SEII members, click on www.seii.org →

ENG → registering to an event
or
FRA → inscription à un événement

 } and follow the instructions.

An invoice can be sent upon request (the VAT number of the participant's organization is required if in Belgium).

- For non-members : any of the two above procedures.

For any other information about the registration procedure, please contact one of the conference coordinators.

Accommodation

Apart from the speakers and representatives of CLAIU-EU, for whom the few available rooms at the University Foundation have been booked, it is up to any participant who needs accommodation to deal with the choice and reservation. If you need any help, please contact one of the conference coordinators.

Conference coordinators

For any further information, please contact one of the two conference coordinators:

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