



Quality, Security and Sustainability

- the pillars of a successful Green Deal

Each year, all over the world, there are a lot of structural failures and collapses happening. This testifies clearly that sustainability and reliability of buildings and infrastructures are not an “*optional*”, but a compulsory “*need*”, the society cannot miss neither in terms of security, nor in relation to costs.

The “*Morandi*” highway bridge collapse in August 2018 (Genova-Italy, with 43 casualties), the *Hard Rock Hotel* crash in 2019 (New Orleans - USA) and the *Juxian Restaurant* collapse in 2020 (Linfen City - China, with 29 people killed and over 30 severely injured) are only “*the tip of the iceberg*” of a very long and increasing list of structural failures. We have chosen these examples to show that the problem still exists and it is not to underestimate even in modern times, where the use of new computer technologies, artificial intelligence and modern construction techniques seems to be able – alone – to solve every problem, trying to substitute human knowledge and skills.

From the beginning of its existence *ECEC* – the *European Council of Engineers Chambers* – is therefore engaged to stress the importance of high quality, in the planning as well as in the construction site, as the best approach towards the security we all need. Since high quality requests expertness and competences as well as specific skills, there is no other way as to massively invest in knowledge, which can be acquired only via appropriate training and academic instruction. Only a profound comprehension of the rules of physics together with a widespread familiarity with mathematics can ensure the necessary understanding required for blameless planning and good constructing with the result: sustainability. No other path can substitute an academic training!

In 2010, *ECEC* adopted the “*Code of Quality for European Chartered Engineers*”, with the goal to harmonize the requirements concerning the quality of engineering services in the Member States, taking into account the European Commission’s Working Paper “*Enhancing the Quality of Services in the Internal Market: The Role of European Codes of Conduct*”. Doing so, *ECEC* was well aware that at that time also the EU Commission was stressing the importance of quality in engineering services!

In 2012, *ECEC*, together with the *WFEO* (World Federation of Engineering Organisations) adopted the “*declaration on sustainable Buildings and Infrastructure*”, with the aim to underline the importance of sustainability and reliability in the construction sector and circular economy. All this should be reached via integrated design by high-qualified multidisciplinary teams as well as via substantial technological improvement, warranted by exchanging and applying scientific and technical knowledge, innovation and practice.

In 2013, *ECEC* issued the document “*9 arguments why professional regulation for engineers is essential for Europe*”, demonstrating that “*regulation*” means a “*guarantee*” for best engineering education, for best practical experience, for continuing professional development, for the best state of the art as well as for equality of engineering services all over Europe. Regulation is important for quality, so the main documents content, and “*quality*” means “*safety*”; “*quality*” means “*sustainability*”; “*quality*” means also “*costs guarantee*” in the interest of the public spent.

In 2015, *ECEC* published the declaration “*independence of engineering services saves people’s money*”, analysing the well-known and widespread problems of the construction-cost increasing, of the general delay in scheduled time tables and the common lack in the execution quality of newly realised buildings



and infrastructures. Common problems, all this, avoidable by strictly dividing design from constructing, by providing impartial control of designs and independent supervising on construction site, by defining standard performance profiles for the engineering services all over Europe. Only independent engineers, not focused on product selling, can find a definition of lifecycle costs. The green deal urgently needs this definition.

In 2018, ECEC issued two documents, "*Public Procurement of Engineering Services – fair procedure ensure successful projects*" and "*Definition of status and importance of BIM – The role of the engineering professions*", both with the goal of giving a constructive contribution in important matters concerning the public life and the public interest, shown by the point of view of the European Academic Engineers.

One of the most important ambitions ECEC pursues is reaching an appropriate safety level as well as cost-certainty in constructions, by guaranteeing high quality and serious engineering services; the ideas and the paths towards these aims can be summarised as follows:

- Only professional regulations regarding the necessary level of instruction and qualification, professional conduct and continuing professional development can ensure that only engineering services are provided that can guarantee the safety of our infrastructure and built environment!
- The quality of engineering services goes beyond the requirement of safety. A knowledge-based society must be based on the intelligent use of resources to allow the prospect of producing more while consuming less and must ensure that technological advances are achieved and applied in a creative, conscious and ethical manner without any corruption!
- Professionally performed, flawless constructions and cost certainty must be of primary importance and vital for both public and private clients!
- The way towards this may only proceed by means of centralized project design, understood as project designing that is independent of economic interests and focused only on quality, which puts the interests of the client foremost; this, together with high quality and competent construction supervision, which, likewise entirely free of vested interests, may operate for the purpose of achieving good results!
- Professional, highly qualified, independent and quality-focused executive designing is an indispensable condition for a complete cost calculation in line with realistic market conditions, and consequently acts as a guarantee of construction time reliability and cost certainty!
- A clearly defined description of the professional services promised is just as important in this context as uniform and therefore predictable and fair remuneration criteria, which mainly benefit the client in the commissioning phase!
- The independent engineer exclusively represents the interests of the client and therefore also gets his remuneration exclusively from the client. The independent engineering service starts with the development of the project and continues until finishing and handing it over. It guarantees that what has been realized is exactly what was designed by the engineer, permitted by the authorities and contracted by the construction company. Individual responsibilities of all parties taking part in the execution of the project are easy to define.

Talking about these goals as basics for successful European Green Deal points out: the ECEC is ready for participation. Independent engineers can guarantee which green technology is not a green fig-leave only.