

## CHAPTER 4

### TRAINING

Members were asked if a period of professional training (i.e. involving practical work experience) was compulsory as part of undergraduate study. If so, for how long is training required. They were also asked if a training period was required after graduation. In some countries, engineers may practice as professionals immediately after graduation, for others a period of vocational training is required during and after which further reviews are carried out before the individual may be entitled to consider himself as a professional civil engineer, entitled to carry out various construction related activities on an independent basis.

The question put to members was:

*4.1 Is a period of professional training compulsory as part of the undergraduate study? If so, for how long is training required?*

*and/or*

*4.2 Is a training period required after graduation?*

#### **COUNTRY**

- Croatia**      **Undergraduate training:** All undergraduate students are required to complete four weeks of practical training at a construction site. This training is organized in summer months.  
**Postgraduate training:** After graduation, well defined training period (practical work) of 3 to 5 years is a prerequisite for gaining license for independent performance of various construction related activities. The Building Law also defines training periods needed to obtain the status of a project engineer. Training periods depend on the complexity of work to be performed by an engineer.
- Cyprus**      **Undergraduate training:** (This depends on which country the student obtained his/her degree in civil engineering).  
**Postgraduate training:** A period of 1 year of professional training is required after graduation. There is a proposal to increase this training period to two years.
- Czech Rep**      **Training:** This is not compulsory at undergraduate or postgraduate level.
- Estonia**      **Undergraduate training:** During the period of study up to graduation, programmes include practical training in geodesy, engineering geology, and practical experience in construction or design companies.  
**Postgraduate training:** A training period is not officially required after graduation but some companies and enterprises have their own system of training.

- Finland** **Undergraduate training:** Training is compulsory only as a part of the undergraduate studies; the minimum requirement is 6 weeks (at worker level).  
Professional training can be accepted as part of the education up to 12 weeks, but is not compulsory.  
**Postgraduate training:** Training after graduation is not compulsory in order to be qualified.
- France** **Undergraduate training:** During studies, training periods in the professional sector are mandatory. Depending on the Establishments, depending on the study year involved, the duration of the training period varies from one to several weeks or months. In special cases, it could be as long as one year.  
More and more training periods are to be carried out abroad, sometimes this is mandatory.  
**Postgraduate training:** There is no training period requested after graduation.
- Germany** **Undergraduate training:** At technical universities or scientific universities, students do not need to undergo a practical placement.  
At universities of applied sciences students have to show a period of practical placement of up to 6 months before studying. During the study, there is a full-time practical placement of one semester (often the 5<sup>th</sup>) and a second one at the end of study (8<sup>th</sup> semester) to work in and on a problem of the company for the diploma thesis.  
**Postgraduate training:** In Germany there are no regulations for training after passing the examination at University or Fachhochschule, but there are numerous different independent institutions offering training courses. Such courses are sometimes necessary to award the title of a specialised civil engineer e.g. Prüflingenieur or to gain a better position.
- Hungary** **Undergraduate training:** Not applicable.  
**Postgraduate training:** A training period is required after graduation. This period varies according to discipline:  
2 years for Dipl. Ing (5 years study) consultants  
5 years for Ing. (3 year study-course) consultants  
10 years for 'experts'
- Ireland** **Undergraduate training:** Professional training is not compulsory as part of undergraduate study.  
**Postgraduate training:** A four year training period is required after graduation.
- Italy** **Undergraduate training:** No training period is required by law during the period of academic training or before sitting the State examination.  
**Postgraduate training:** After the reform, it is generally previewed, both in the Laurea and in the Laurea Specialistica courses a period of training (compulsory in some cases) by companies or professional societies. This training generally lasts six months and awards 8/12 formation credits.

- Lithuania** **Undergraduate training:** During the study time education programmes include 3 types of practical training:
- 2 weeks of practice in geodesy
  - 1 week of practice in engineering geology
  - 5 weeks of practice in construction or design companies.
- Postgraduate training:** There is no organized system of training of graduates except that some independent companies have their own system of training.
- Poland** **Undergraduate training:** A period of professional training is compulsory as part of the undergraduate study.
- Postgraduate training:** Training is required for a minimum period of 2-1 months up to a maximum period of 4-1 months after each academic year
- Portugal** **Undergraduate training:** A training period is required after graduation to be full engineer, but even without training (as "training" engineer), the members can do by themselves small works of engineering.
- Postgraduate training:** Six months training is required under the supervision of an older member (Supervisor) of OE. This is organized by OE and includes a short course on Professional Ethics and Responsibility. After the approval of the training the student can be registered in the Ordem dos Engenheiros as full member.
- Romania** **Undergraduate training:** Training is provided as part of undergraduate course.
- Two periods of training of one month duration each are provided in the curriculum of 5 – year degree courses, in the summers following a second and a fourth study year.
- Post-graduate training:** There is no organised system for the training of civil engineering graduates because there is no system of professional registration to require it. A university diploma is also a licence for professional work.
- Although there is no organised system, some public administrations or autonomous organisations have their own system for the training of young engineers in the first 2 – 3 years of their career.
- Also various types of continuing education and professional development are organised.
- Russia**
- Slovak Rep.** **Undergraduate training:** Professional training is a compulsory part of the undergraduate study. The period is decided in the study programme (e.g. 2 month).
- Postgraduate training:** In the Slovak Republic there are strict regulations for training. Certain professions require not only degrees, but also a Certificate of respective training. After this qualification confirmed by University – Civil Engineering Faculty (Degree) and the Slovak Chamber of Civil Engineers civil engineers may act as e. g. Authorized Engineer, Site manager Design Consultant, etc. For applying into practice, there are determined various regulations for individual organizations.

- Turkey**      **Undergraduate training:** Training is only mandatory during undergraduate education. Field and office trainings are requested for an average of 45 days each in all Civil Engineering departments.
- Postgraduate training:** Training after graduation is not applied in Turkey, and to cover the effects of this lack the undergraduate trainings are kept essential and quite featured.
- United Kingdom**      **Undergraduate training:** A period of professional training is not compulsory as part of the undergraduate study. However, some training may take place for example during sandwich courses or as part-time study.
- Postgraduate training:** The route to membership of the Engineering Council UK requires a continuum of education, training and personal development, which builds upon the educational base. This period of development ideally includes a formal structured training scheme but it can be achieved without. The training period must be formally assessed before the candidate may proceed to the next stage. A training period typically lasts between 3-6 years.