

Surveying your future?



Your guide to **Civil Engineering Surveying**

From the initial photography, mapping and ground preparation of a site, to every contractual and financial aspect of engineering projects, commercial management and geospatial engineering careers offer the best training and the latest technology to support the modern world above and below the ground. You could be tunnelling your way under the world's cities or surveying projects from sports stadiums to major pipeline installations.

The Institution of Civil Engineering Surveyors is a professional institution offering free membership and benefits for students studying at ICES accredited universities. Established over 35 years ago, the Institution aims to encourage studying and supports professional members to increase the value of their services to the public.



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Commercial Management

...what does that mean?

Commercial management is the process that deals with contractual and financial aspects of civil engineering projects. Working alongside other professionals and businesses, commercial managers ensure delivery is on time and within budget.

Responsibilities

Commercial managers can be responsible for:

- Document preparation, including legal documents
- Evaluating prices from contractors and subcontractors
- Preparing estimates for the cost of construction projects
- Advising engineers on financial issues
- Measuring and costing planned work
- Continually valuing costs of the ongoing project

Specialisms

You may specialise in any of the following areas:

- Quantity surveying (measurement and evaluation of projects)
- Estimating (calculating the cost of projects)
- Procurement management (purchasing goods and services)
- Planning (ensuring construction is planned and completed as agreed)
- Project management (general management of the whole project)
- Cost engineering (cost management and value engineering of projects)

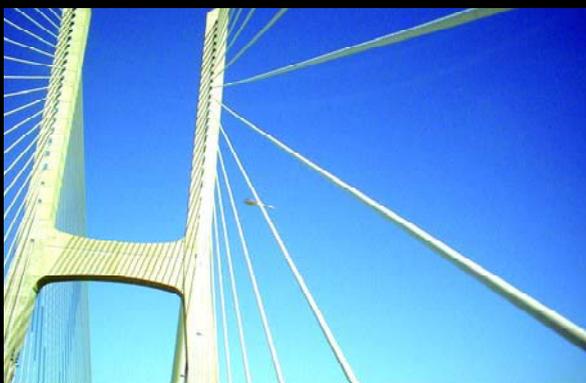
and the professionals say...

"Working in the civil engineering industry is very rewarding. In almost 15 years, I have seen roads, motorways and bridges constructed where once it was simply waste land. I have worked on civil projects managing the build of new pathways and bridges for communities to gain access to local amenities and schools. There's a visible sense of achievement at the end of every project."

Member of ICES

"With an increase in the UK population and global climate changes inevitable, sustainability has to be embedded into future projects. It's up to the younger students and professionals to continue where others have started. The civil engineering industry is a great way to work with different materials on complex projects servicing the public, transport and leisure requirements of everyone."

Fellow Member of ICES



Geospatial Engineering

...does that involve mapping?

Geospatial engineering is an important part of civil engineering construction projects. Before construction work starts, precise mapping and planning is a critical part of the project process.

Responsibilities

Geospatial engineers can be responsible for:

- Computer-based measuring to map the best position to construct
- Producing up-to-date plans to form the basis of a project
- Setting out a site so that structures are built to scale in the right place
- Monitoring the construction process
- Providing control points by which the future movement of structures, such as dams or bridges, can be monitored

Specialisms

You may specialise in any of the following areas:

- Land and engineering surveying (preparation of maps and plans to ensure that construction takes place to the dimensions and tolerances required)
- Hydrographic surveying (measuring and mapping the earth's surface covered by water)
- Photogrammetry and remote sensing (producing an area plan from photographic images and using electromagnetic energy to obtain information about an object or condition without physical contact)
- GIS – Geographic information systems (collecting and presenting information)
- Cartography/visualisation (two or three dimensional maps and plans)

and the students say...

"Once I'd passed my A levels, I started a surveying and mapping degree at the University of Newcastle. My modules emphasised spatial data measurement manipulation and analysis. Once I got used to using new terminology, I was able to study hard and now work as part of a team developing the London 2012 Olympic Games. The job satisfaction working on such a prestigious project is out of this world."

Graduate Member of ICES

"I have just started my second year studying to become a quantity surveyor. Originally, I intended to become an architect but wanted to use my maths skills so civil engineering surveying felt more relevant. I admire great structures and look forward to being a part of projects like the Arsenal Emirates Stadium, Eurotunnel, Heathrow Terminal 5 or constructing roads and bridges from nothing!"

Student Member of ICES



Engineer a better future

...what qualifications do I need?

Unlike other industries, there are many ways of qualifying as a civil engineering surveyor. Get a head start by studying subjects such as English, Maths, Economics, Science and Geography. It's true; you need qualifications to make a cup of tea these days, so make the most of your studies and good luck!

The Institution of Civil Engineering Surveyors accredits a range of commercial management and geospatial engineering surveying undergraduate and postgraduate courses at universities and colleges across the UK, Ireland and Hong Kong. Contact the Education, Training and Membership Officer for more information now!

Accredited universities

- Dublin Institute of Technology
- Glasgow Caledonian University
- Hong Kong Polytechnic University
- Leeds Metropolitan University
- Limerick Institute of Technology
- Liverpool John Moores University
- Loughborough University
- Nottingham Trent University
- University of East London
- University of Exeter in Cornwall
- University of Newcastle
- University of Nottingham
- University of Plymouth



Your academic qualifications will act as a passport to new jobs in the UK and abroad. Lots of companies have graduate training schemes, allowing you to gain a professional qualification whilst in employment. Be sure to ask when applying for jobs.

If you choose a career in civil engineering surveying, find out how the ICES can guide you during your higher education studies. Why not join the ICES Network and organise events and activities for training and opportunities to meet like-minded people.

Contact the Education, Training & Membership Officer

Institution of CIVIL ENGINEERING SURVEYORS

Tel: 0161 972 3114 • Fax: 0161 972 3118

education@ices.org.uk • www.ices.org.uk



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