

# Queen's University Belfast

## School of Mechanical & Aerospace Engineering

### Centenary 1912 - 2012

This site celebrates 100 years of electrical and mechanical engineering degrees at Queen's University Belfast. This 100 year period, 1912-2012 comprises a period of phenomenal change in engineering and in engineering education.

#### Prior to 1912

When the Queen's College Belfast was established in 1849, engineering was still struggling for professional recognition. These were times when civil engineering, as opposed to military engineering, encompassed the already well-established field of mechanical engineering as well as the more embryonic electrical engineering. Indeed, the original purpose of the Institution of Civil Engineers was to facilitate engineers in the *'acquirement of knowledge requisite in their profession and for promoting mechanical philosophy'*.

The Institution of Mechanical Engineers was launched in Birmingham in 1847, but a fully fledged Institution of Electrical Engineers did not materialize until 1889. This was the background to the opening of the Queen's College, Belfast in 1849. As previously indicated, the term Civil Engineering embraced mechanical engineering and the more embryonic electrical engineering in those days and so, whilst degrees specifically entitled mechanical or electrical were not on offer until 1912, there is evidence that the relevant engineering sciences were the subject of examination at Queen's right from its inception in 1849.

#### 1912 – College Square

The Irish Universities Act of 1908 established two new universities - the National University of Ireland, and the Queen's University of Belfast. Queen's now had the power to shape its own future. But the available resources did not always match the university's aspirations – especially in engineering which was, and still is, renowned for its calls upon expensive capital equipment. The new university turned to a fellow neophyte, the Belfast Municipal Technical Institute whose grand new building was opened in College Square the previous year. Bulging with expensive equipment and with a goodly supply of engineering staff, the Institute was an attractive collaborating partner. After a good deal of negotiation, an agreement was reached recognising the Belfast Municipal Institute as a college in which university students could study for the engineering degrees or the University's Faculty of Science. The first students were enrolled in 1912 – the motivation for this Centenary publication!

A new Faculty of Applied Science and Technology was established by statute in April 1921. Full-time and part-time students could study in the Belfast College of Technology for degrees of the new Faculty, and Queen's would recognise suitably qualified College staff as capable of providing the relevant teaching. Thus commenced a long period of close collaboration between College and University.

#### 1920 – 1950

The period 1920-1950 saw steady but unspectacular progress in the Faculty. Full-time enrollments increased from 50 to over 400 over the 30 year period, but part-time students remained a significant component of total numbers throughout – nearly matching the full-time numbers in 1938. Degrees were of three-years duration, with the first year largely common across the engineering disciplines.

The availability of laboratory facilities encouraged research which grew to significant proportions in the 1920s-50s. Strength of Materials and Internal Combustion Engines were popular early topics in Mechanical Engineering, and much of the early research in Electrical Engineering sprang from interests in Wireless Telegraphy and Power Engineering.

#### 1956 – Stranmillis Road

With the passage of time the facilities at College Square began to show their age, and the accommodation became increasingly cramped. In addition, the University authorities were increasingly concerned that many engineering students had little opportunity to interact with students from other academic disciplines. So, in 1956 the David Keir Building opened and provided accommodation for the Civil Engineers, amongst others.

#### 1964 – Move to the Ashby

After several years in temporary accommodation in the University area, Electrical Engineering and Mechanical Engineering moved into the palatial Ashby Building in 1964. There, operating under a Joint Authority for Higher Technological Studies, they worked with the Technical College to deliver programmes leading to degrees and higher national certificates/diplomas.

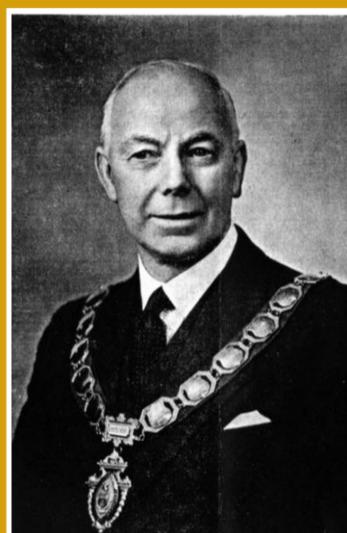
With acknowledgement to Professor Don McCloy



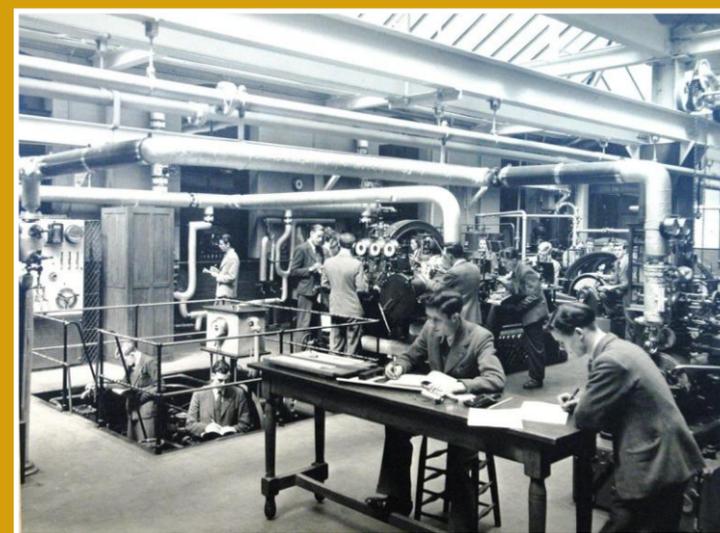
Professor Smith  
first professor of mechanical  
engineering 1912 – 1939



Mechanical engineering teaching laboratories in  
Belfast Technical College



Professor Warnock  
successor to Professor Smith



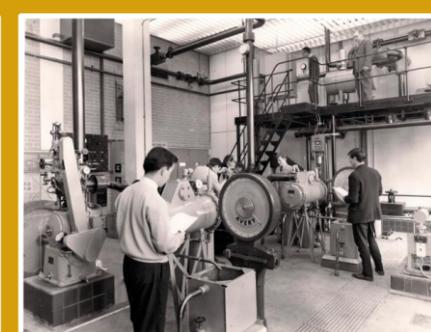
Mechanical engineering teaching laboratories in  
Belfast Technical College



The Ashby Building  
under construction



Lord Ashby opened the  
Ashby Institute in 1964.  
He was previously a  
Vice-Chancellor of QUB



Steam laboratory in the Ashby



Roy Crawford, research student,  
with Peter Benham, his supervisor



John Williams, material science lecturer,  
Ashby main lecture theatre



Gordon Blair and Robert Fleck



Robert Fleck and Ray McCullough at Dundrod