

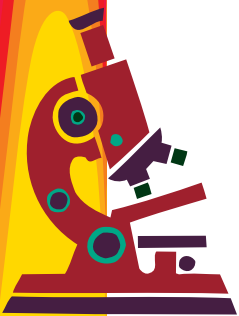
SCIENTIST PROFILES

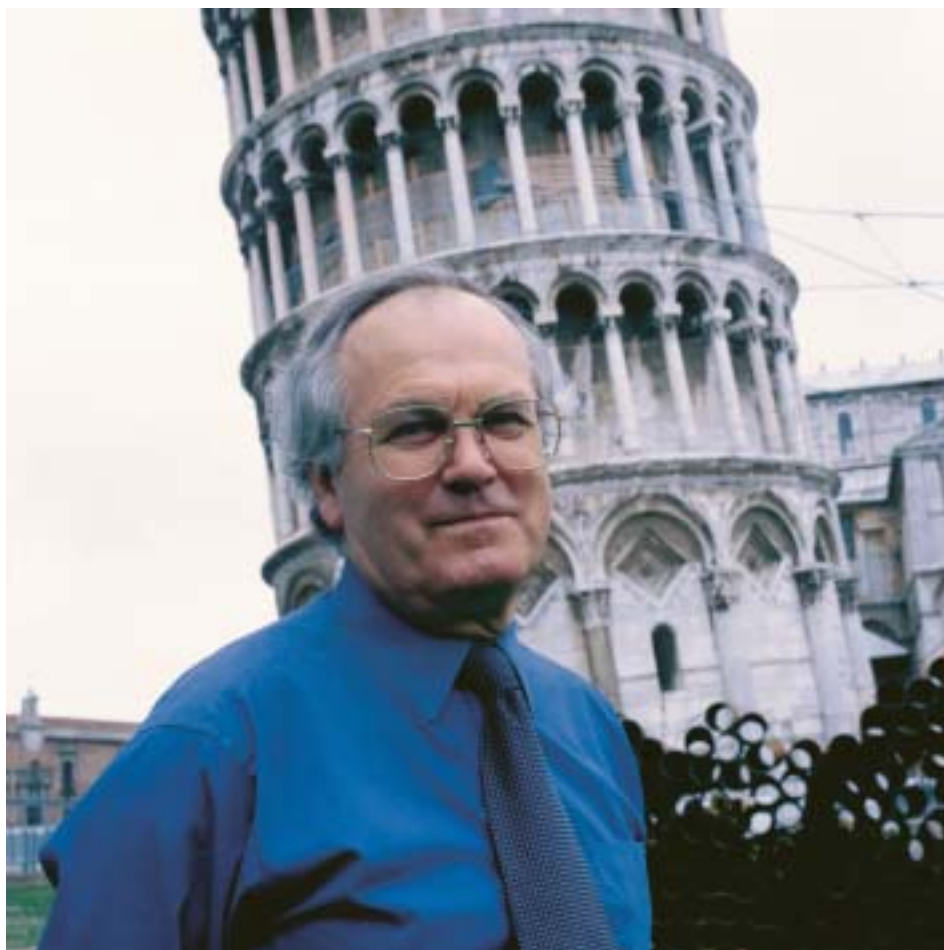
what it means to be an engineer

Prominent engineers say what first interested them in engineering and describe what continues to excite and inspire them. This is followed by a short description of their area of current research and how they see it as relevant to modern needs.

The photographs are intended to challenge pupils' notions that scientists are all middle-aged men wearing coats, peering at smoking test tubes in a laboratory. They may inspire your children or pupils to consider a career in science.

What fascinates and challenges them?

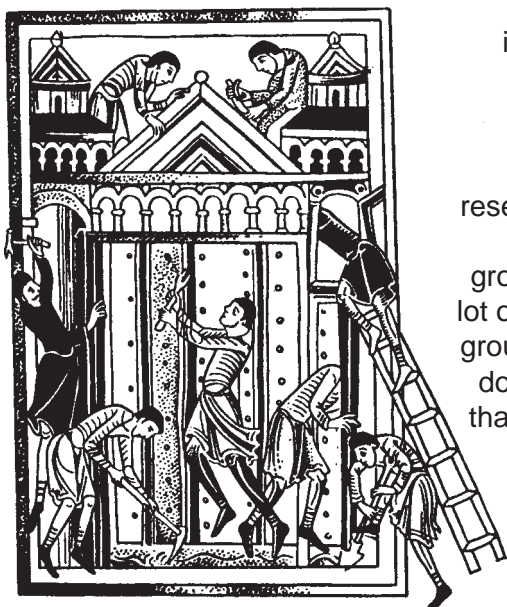




‘... being involved in building ... is immensely satisfying’

Professor John Burland
DSc (Eng), FEng, FRS

Professor Burland took up civil engineering because he was fascinated with the unpredictable nature of the natural environment and wanted to work on projects that would benefit people for, perhaps, hundreds of years. He says, ‘To have had an involvement in the construction of a bridge, a tunnel or a building is immensely satisfying.’



At present Professor Burland is researching geotechnics – the study of the engineering behaviour of the ground. The researchers need to do a lot of detective work to find out why the ground at particular sites behaves as it does. They can then design buildings that will remain safe, and upright! This is a challenge that requires a lot of skills and experience.

Building, 900 years ago

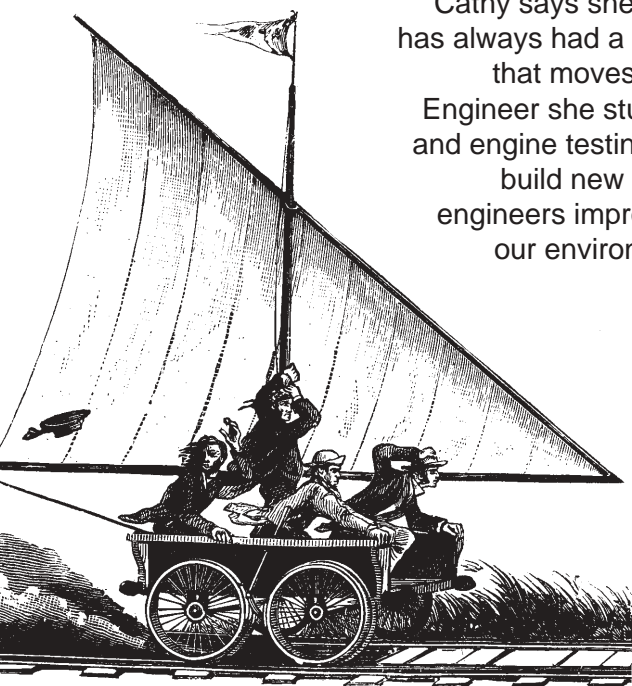


‘...I love taking apart anything that moves’

Cathy Day

IEng, MIIE (Mech)

Cathy says she was ‘born to be an engineer’, as she has always had a burning desire to take apart ‘anything that moves’. In her job as a Powertrain Facilities Engineer she studies the fumes that vehicles give out and engine testing. Her greatest challenge is to find or build new equipment that will help development engineers improve the vehicles they produce so that our environment is healthier and more pleasant.



Rail sailing, 150 years ago



‘...having fun and improving lives’

Professor Ann Dowling
FREng

Professor Dowling says her job in research in engineering is ‘not only great fun’ but aims to improve the quality of all our lives as well. She enjoys the challenge of new projects. Her current research is in reducing the impact that aircraft and cars have on our environment. She is looking at ways of controlling the amount of noise that jets and helicopters make.



Otto Lilienthal, 1894



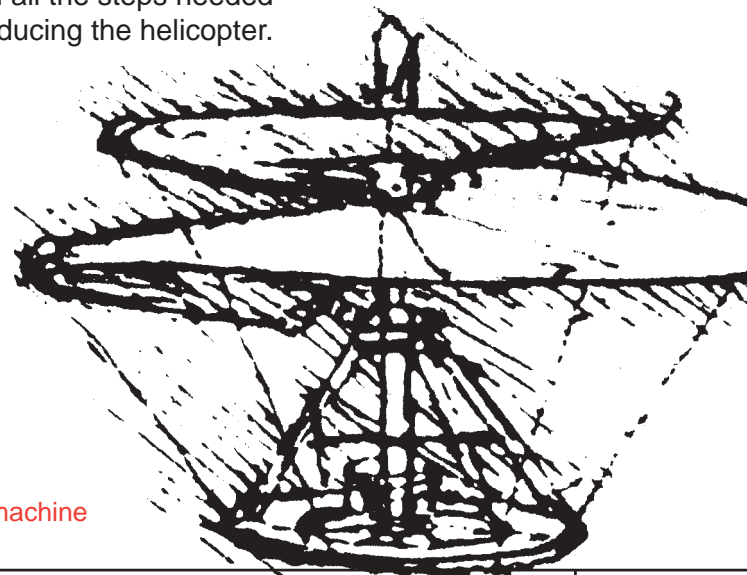
‘...building
a better
helicopter’

Annette Hobhouse

MSc, BSc (Eng)

Annette became an engineer through her fascination with the beauty and practical applications of mathematics.

She manages the production of helicopters, deciding on the best way of making a helicopter from its design, and her team tries to improve on all the steps needed in producing the helicopter.



Leonardo da Vinci, sketch of a flying machine



‘...building rides that work first time’

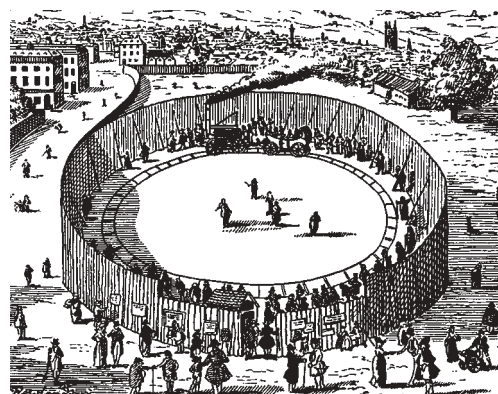
Dr John Roberts

FREng, BEng, CEng, FICE, FIStructE,

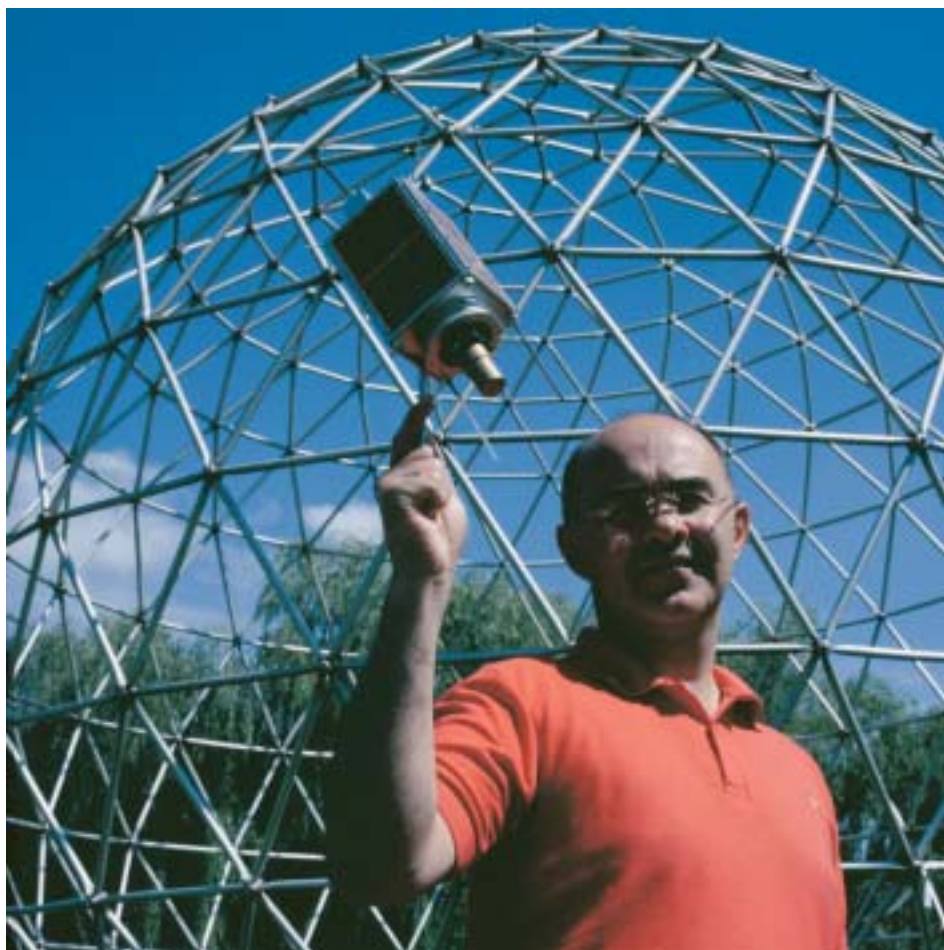
Director – Engineering, Babtie Group

‘I originally decided to become an engineer following a summer holiday job on a construction site, when I worked as a labourer. This was hard (and unrewarding) work, but I became aware of the engineer who visited the site occasionally and was obviously held in awe by all concerned. I still think that being an engineer gives me a really good chance to mix creatively with all kinds of scientists.’

Part of my work involves the design of large passenger-carrying rides, and in particular rollercoasters. Every ride is unique but all have to be designed to be at the same time safe and yet extremely thrilling. They also have to ‘work first time’.



Catch-me-who-can, the World's first passenger railway, 1808



‘...universal access – making space for people’

Professor Martin Sweeting
OBE, FREng, FRS, FIEE, FRAeS, FBIS

Professor Sweeting was interested in communications from a very early age and that interest led him into experimenting with amateur radio. As a young research student at the University of Surrey he began experimenting with the reception of signals from American and Russian weather satellites and amateur radio satellites using inexpensive, often house-built, equipment.

He says, ‘My mission was to make space accessible to everyone – like the personal computer.’

He is currently working on constructing constellations of microsatellites to monitor natural and man-made disasters on Earth.

He is also working on ways of making Moon missions less costly by designing science payloads.



Russia's SPUTNIK 1, Earth's first satellite, launched 4 October 1957



‘...the
future for
electricity’

Tanya Wishart

BEng, MSc, CEng, MIEE

Asset Manager for lines and cables at NI Electricity

Tanya says, ‘New science and technology developments, such as genetically modified crops and the Internet, are rapidly changing our view of the world, and our place in it.

I look forward to seeing where science takes us next.’

Tanya is creating a model to show how money can best be spent on overhead power lines and cables in Northern Ireland, taking into account factors such as safety, equipment design and customers’ concerns.

A very early battery by Alessandro Volta, 1800

