

Science Community Focus

The Harwell Experience

Marion O'Sullivan, STFC. For further information about STFC research facilities and business innovation partnerships contact: marion.osullivan@stfc.ac.uk or visit www.stfc.ac.uk

What better way to get people enthused about science than to hold a festival of science and innovation? From 8-11 July 2015, during the International Year of Light, the Harwell Campus in Oxfordshire did just that, and welcomed close to 18,000 visitors during a four-day celebration of inspirational science, technology and engineering.

The Science and Technology Facilities Council (STFC), the Diamond Light Source and the Harwell Campus Partners decided to open the doors to some of the world's most spectacular and powerful science facilities for the first time in 15 years. This was a rare opportunity for the visitors to see the breadth of science and engineering that public investment pays for at Harwell, as well understanding a little of why this work is so important and to understand the impact this science has on their own lives.



HRH the Duke of York is Patron of both the International Year of Light and the Harwell Campus so it was very fitting that he chose to visit on the first day of the science festival. It started with a day of visits by school students and their teachers who were taking the opportunity to see what goes on in some of these national science facilities. The Duke met with some of the students as well as young graduates and apprentices who work on the site. As a pilot, he is very keen on nurturing skills in engineering and said, "There are scientists doing all sorts of wonderful things, but they couldn't do them without the engineers to make it happen. What I'm interested in is trying to encourage that coincidence of activity where young people are inspired to think not only of science but also of engineering, as tools with which they can actually do something constructive."



HRH the Duke of York views the Incredible Power of Light Exhibition



Check out the 3D printing

More than 5000 young people came to the public day on Saturday 11 July, the busiest day of all. It proved a perfect opportunity for the research staff at the Harwell Campus to inspire and encourage them to consider taking up subjects that will enable them to become our next generation of scientists, engineers and technicians. More importantly it allowed them to explain the many routes to a career in science, such as university studies or becoming an apprentice at one of the UK's science campuses.

"Our open days are a great opportunity to inspire young people who may not even have considered a career in science and engineering," said Dr Andrew Taylor, STFC's Executive Director of the National Laboratories.

"The cutting edge research we do here at Harwell depends on the skills of the outstanding engineers and technicians, who build, maintain and operate our unique facilities. There is a great opportunity for young people to join us and be trained through our apprenticeship scheme in electrical, electronic and mechanical engineering."



Dress like a scientist

The 'Harwell Experience' attracted thousands from all over the UK and from much further afield - among them, people from as far away as Canada and New Zealand, who were visiting the UK and took the opportunity to take a peek behind the scenes of this exciting science campus.

Particularly popular areas of the Harwell site included the ISIS Neutron and Muon Source, which is used for a huge variety of science, from designing new medicines to testing materials used in aircraft; and the Diamond Light Source with its iconic silver ring that houses the UK's Synchrotron. These facilities each received more than 4,000 visitors on the public day.



Boy with scanned picture of himself



Laser beams

There were opportunities to take a 'selfie' with a gigantic cast of a Gorgosaurus dinosaur skeleton or for people to star in their own Matrix-style 'frozen time' film sequence with the Technology team's time-slice camera. In the control room for Vulcan, one of the world's most powerful lasers, enthusiasts were able to experience the thrill of firing the laser in a simulation created for the day. They burst 2,500 balloons using lasers, produced 10 litres of slime and devoured 7kg of marshmallows which they were using to construct models of atoms.



Trying the Van de Graaff

The two middle days of the science festival were dedicated to industry. On Thursday 9 July the Harwell Campus welcomed many members of the international Space community for the opening of two major new space facilities – the new STFC RAL Space integration and test facility 'R100' and ECSAT, the European Space Agency's (ESA) home in the UK.

Speaking at the inauguration event, Minister for Universities and Science Jo Johnson said, "Putting cutting-edge knowledge and innovation and world-class space testing facilities right on the doorstep, the opening of the European Space Agency and R100 facilities at Harwell today are a major boost to the UK's space sector.

Director of STFC RAL Space, Dr Chris Mutlow agreed, saying "Our new integration and test facility provides capability for the needs of the next generation of spacecraft and instruments, and will contribute to the growing community of space focussed businesses, capabilities and skills located at the Harwell Campus Space Gateway."

ESA's UK facility has been developing steadily since 2008, following the UK government's decision to increase its contribution to ESA and the new ECSAT building will host 120+ jobs including teams in telecommunications and integrated applications. Special emphasis will be put on the development of new markets for satellite-based services and applications. The building will also house the Earth Observation Climate Office, Science and Exploration teams and Technology and Quality Management teams supporting ESA research and development programmes in the UK, focusing on 'game-changing' technologies and capabilities.



Jo Johnson addresses the visitors

During the inauguration event, Jo Johnson also took the opportunity to launch the UK's first National Space Policy. Developed in partnership with industry and academic stakeholders, the policy provides a long term plan to exploit the world's thriving space market to deliver economic growth and societal benefits for the UK.

Business people had the chance to take part in a series of talks and tours on Friday 10 July. Developed to showcase the opportunities to be had at the Harwell Campus, the Inspiration and Innovation day focused on two main areas – Big Data and Visualisation; and Materials and Life Sciences.

This mini-conference was able to broaden the horizons for the many who came to hear how science and industry can form very successful partnerships. They discussed how high performance computing can be used to support new product design, how cognitive computing systems like IBM Watson can help to make decisions by cutting through the complexities of Big Data, and how collaborations with large facilities such as the Diamond Light Source can have very positive benefits for the health and energy sectors.

Combined with tours of the large national facilities like the ISIS Neutron and Muon Source, Diamond and the Research Complex at Harwell, the industry participants were able to get an insight into how their own businesses could benefit and grow.



Science Minister Jo Johnson visits ISIS neutron and muon source



Liquid nitrogen Show

Chris Bee, STFC's Head of Business Development, said that the day had been a great success. "It was the perfect opportunity to promote discussion about what's possible using the facilities at Harwell", he said.

In fact the general consensus has been that the whole Harwell Open Days festival has been a huge success. The event has captured peoples' imaginations and they now know a lot more about lasers, protons and the engineering challenges of building and maintaining the facilities on the site.

Feedback has been incredibly positive. One man commented that it had been "worth coming 150 miles for", another was "absolutely stunned" by everything he had seen. But the biggest accolade was from a young man who told his mum "this place is better than Legoland!"



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