

Diamond honoured by Royal visit

Friday 19 October 2007 was a truly extraordinary day for staff at Diamond Light Source and all those involved in the design, construction, funding, operation and use of the UK's new national synchrotron facility. Her Majesty The Queen, accompanied by His Royal Highness The Duke of Edinburgh, officially opened Diamond, which is set to play a major role in facilitating ground-breaking science in the coming decades.



▶ *Hannah Terrill, the first baby born to a member of Diamond staff, Dr Nick Terrill, presents The Queen with a posy of flowers.*

▶ *Diamond chief executive Gerd Materlik talks to The Queen.*

The Queen and The Duke of Edinburgh heard about plans for 2008 including a fascinating application with a royal connection. In the 21st century cutting edge synchrotron technology is helping to conserve the fabric of the legendary Tudor warship, the Mary Rose, which was built over 450 years ago in the reign of The Queen's ancestor Henry VIII. The timbers from the Mary Rose collected a lot of sulphur accumulated from micro-organisms while in the ocean sediment before she was raised 25 years ago. Scientists will use Diamond's X-rays to investigate the presence of the sulphurous compounds in the salvaged wood which are thought to be slowly turning into highly corrosive sulphuric acid and eroding the ship's timbers.

Over 200 guests joined Diamond staff for the event including local dignitaries, foreign embassy officials, MPs and UK academics, along with representatives from Diamond's funding bodies, the Research Councils, industry and the international synchrotron light community.

The royal party toured the synchrotron – an incredible feat of science and engineering measuring over half a kilometre in circumference and covering an area over three times the footprint of Buckingham Palace. They were shown how the powerful light is produced and exploited, and how Diamond has already started to contribute to many fields of science.

Since the first research scientists were welcomed to Diamond in January 2007, a wide variety of experiments have taken place. These include research work that could potentially lead to drugs being available to prevent cancer cells from spreading, studying meteorites to understand the early solar system, examining ways to improve digital data storage through improved magnetic materials, and using the powerful X-rays to investigate fragile ancient parchments.

DVD inspires

As the largest science facility to be built in the UK for 40 years, Diamond fascinates everyone who is interested in the world of scientific research and technological advancement. Increasing the public's understanding of Diamond is very important as the facility has the ability to inspire people of all ages. With this in mind Diamond has produced a DVD with support from Orca Media, based at Pinewood Studios. To order a Diamond DVD please call 01235 778238 or 01235 778639.

campus
eye

www.harwell.org.uk

Celebrating fifty years of

From its origins 50 years ago, the Rutherford Laboratory has been renowned for its excellence in supporting UK science.



1969 How the Main Gate looked.

1957 – The National Institute for Research in Nuclear Science was formed in 1957 to operate the Rutherford High Energy Laboratory. A 50 MeV proton linear accelerator was transferred from the UKAEA to the new laboratory which set about designing a national machine for UK particle physics, complementing the accelerators under development in the USA and at CERN, Geneva.

1963 – Nimrod was commissioned in 1963. During its 15-year life-span, Nimrod successfully developed the capabilities of the UK particle physics community.



1967 Geoff Lambert at the console of the IBM 360/75 computer.

1971 – A Neutron Beam Research Unit was created to support the laboratory's burgeoning user community. The unit catalysed the development of a new approach to neutron beam provision, resulting in the Spallation Neutron Source project (named ISIS by Prime Minister Margaret Thatcher in 1985). The laboratory's expertise in accelerators, targets, detectors, electronics and computing was re-directed to construct a world leading neutron science facility, redefining the future of neutron scattering.

1970s – The laboratory grew through the amalgamation of the Atlas Laboratory (computing) and the



1979 The newly formed RAL director general Dr Godfrey Staffor, together with Dr Geoff Manning, director, Rutherford (left) and Dr John Houghton, director, Appleton (right) stand in front of the new IRAS dish, a 12m diameter, fully steerable S-Band antenna from NASA, constructed at RAL.

merger with Appleton Laboratory (radio propagation and space research) to create the Rutherford Appleton Laboratory (RAL). Soon after, neutron beams for research in the physical and life sciences were under development.

1977 – The Central Laser Facility, a high-power laser facility for UK academic plasma physics research, was established in 1977. Through excellent partnerships between RAL and the academic community, the Vulcan facility became an international competitor. The subsequent development of chirped pulse amplification and upgrades to petawatt capabilities established RAL as a world leading centre for laser research.

Mid-1990s – The transformation, from its single mission origins to the multi-disciplinary international centre of excellence of today, was completed in the mid-1990s, as RAL amalgamated with Cheshire's Daresbury Laboratory and the Council for the Central Laboratory of the Research Councils (CCLRC) was born. In recent years, RAL has been established in the context of the Harwell Science and Innovation Campus.



1987 The world's largest superconducting solenoid, built at RAL, on its way to CERN, Geneva.

1996 Due for launch in 2013, the James Webb Space Telescope (JWST) will carry a set of four sophisticated instruments to enable superb imaging at visible and infrared wavelengths, together with spectroscopic modes to investigate the chemistry and evolution of the objects populating our universe. Sam Heys and Paul Eccleston checking the MIRI satellite STM instrument (a component of JWST) in the Space Test Chamber.

Eco-friendly business expands

Elementa Consulting has 'graduated' from the Harwell Innovation Centre to larger premises at The Terrace. As a leading M&E Building Services Consultancy, the business also advises organisations on how to become greener and, in keeping with its environmental ethos, Elementa has chosen sustainable new offices.

"The Terrace provides energy-efficient building services that are practical and cost-effective," says Doug Kerr, director of Elementa's Oxford branch. With more spacious offices the business can continue its expansion. It already has offices serving Surrey and the East Midlands.

The company describes itself as 'working with the elements' and provides

building services for the education, residential, hotels, health, retail, commercial, urban regeneration and industrial sectors. Its emphasis on customer focus has also reaped rewards and, in 2006, clients rated Elementa in the top 15% of consultants based on the Constructing Excellence KPI (Key Performance Indicator) guidelines for overall performance. More recently Elementa won the Consultancy of the Year title at the tenth annual Building Services Journal (BSJ). www.elementaconsulting.co.uk

excellence



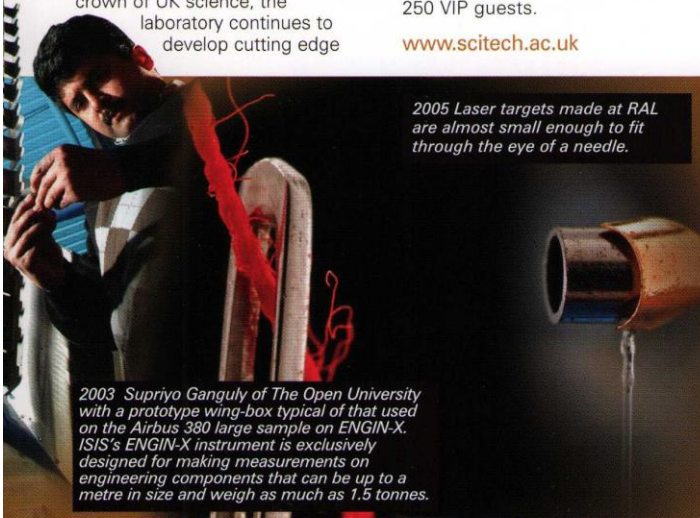
2007 Celebrating 50 years of excellence.

April 2007 – This marked the start of a new era in RAL's history when it became part of the new Science and Technology Facilities Council (STFC) merged with the Particle Physics and Astronomy Research Council (PPARC). Today, RAL is a vibrant source of support to UK academia and industry, and home to a diverse range of technologies with exciting futures in condensed matter science, lasers and space science. Celebrating its half century as a jewel in the crown of UK science, the laboratory continues to develop cutting edge

technologies which underpin inspiring research programmes worldwide.

2 Nov. 2007 – friends, colleagues and distinguished guests met to celebrate RAL's 50th anniversary. The head of the laboratory, Dr Andrew Taylor, chaired an afternoon programme of short talks which addressed RAL's past achievements and future prospects. The talks were followed by an evening reception and dinner for over 250 VIP guests.

www.scitech.ac.uk



2005 Laser targets made at RAL are almost small enough to fit through the eye of a needle.

2003 Supriyo Ganguly of The Open University with a prototype wing-box typical of that used on the Airbus 380 large sample on ENGIN-X. ISIS's ENGIN-X instrument is exclusively designed for making measurements on engineering components that can be up to a metre in size and weigh as much as 1.5 tonnes.

Liftshare upgrade

There are now even more reasons to use the Harwell Liftshare scheme. As well as reducing traffic and journeys in and around the campus, there are cost savings for users.

The website has been improved to make it more user-friendly. The registration pages have been simplified and the maps and search results make it easier to compare matches. There are higher levels of security and the number of active members has been increased. The system has also been modified to help those without email addresses.

In December each member will receive more details of the upgraded system. If you have any queries call Liftshare on 08700 780225 or email support@liftshare.com

Bus service changes

Earlier in the summer Oxfordshire County Council undertook a review of bus services in the Didcot and Wantage area. Employees on the Campus responded to OCC's consultation exercise which was undertaken in the run up to bus service changes that will take effect on Monday 10th December. The new arrangements bring a number of improvements to some of the services (including a discounted "Campus Pass" for people who use service 32 on a regular basis) but further work will be going on during the next six months to see whether additional improvements can be made.



Cut out and keep timetables are provided below for bus services to and from Didcot, Abingdon and Wantage / Grove. For details of all services look at the Campus Public Transport Guide. This is available at www.harwell.org.uk under "How To Get Here - Bus" and then "local bus routes".

DIDCOT

Buses from Didcot (Parkway) to Harwell Campus

0709MF	0915MF	1346	1759MF
0740MF	0941	1446	1848
0810MF	1046	1546	1946
0816S	1130	1646S	
0835MF	1146	1652MF	
0856	1246	1746S	

Notes:

- Times shown are departure times from Didcot Parkway
- All buses from Didcot Parkway serve Didcot Broadway / Grove. For details of all services look at the Campus Public Transport Guide.
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 or 96 except 0740 departure (Abingdon Buses service 94)

ABINGDON

Buses from Abingdon to Harwell Campus

0640MF	0820S	1211	1611
0717MF Z	0911Z	1311	1711
0735MF	1015	1411	1816
0800MF	1111	1511	1916

Notes:

- Times shown are departure times from Abingdon Stratton Way stop A1 except Z: 0717 stop A4; 0911 stop A8 (Bridge St.)
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 except 0717 departure (34 operated by Stagecoach)

WANTAGE & GROVE

Buses from Wantage and Grove to Harwell Campus

0625MF	1002G	1502G	1702G
0722MF G	1102G	1530MF	1805S G
0745S	1202G	1557MF G	1810MF G
0802MF	1302G	1602S G	
0902	1402G	1630	

Notes:

- Times shown are departure times from Wantage Market Place
- G: service comes from Grove - check www.harwell.org.uk for times
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 except 1530 and 1630 departures (34 operated by Stagecoach)

MRC Harwell Lecture 2007

Professor Dame Nancy Rothwell FRS, Medical Research Council (MRC) Research Professor at the University of Manchester and a world specialist in the understanding and treatment of brain damage in stroke and head injury, presented the annual MRC Harwell Lecture.

The annual lecture is hosted by the MRC's research units on campus and brings together some 200 scientists, school children and members of the public with an interest in medical research. This year Professor Rothwell spoke on 'Inflammation as a new target in brain disease.'

Her lecture explored research into brain disease and, in particular, how some components of our normal inflammatory responses are associated with diseases like stroke and dementia. It is now recognised that common infections, such as those caused by a broken tooth for example, can predispose patients to stroke.

Prof. Rothwell presented a strong case for investigating the systemic causes of brain disease and not simply considering those events localised within the cranium.

DIDCOT

Buses to Didcot (Parkway) from Harwell Campus

0645MF	0944	1524	1710MF
0736S	1024	1600MF	1724
0748MF	1124	1619MF	1750MF
0807S	1224	1624S	1827S
0827MF	1324	1635MF	1832MF
0924	1424	1655MF	

Notes:

- All buses to Didcot Parkway serve Didcot Broadway
- Times for Harwell Campus departures are at the Fermi Avenue bus station
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 or 96 except 1600 departure (Abingdon Buses service 95)

ABINGDON

Buses to Abingdon from Harwell Campus

0645MF	1024	1524	1724
0736S	1124	1550MF	1827S
0748MF	1224	1619MF	1832MF
0807S	1324	1624S	
0924	1424	1650	

Notes:

- Times for Harwell Campus departures are at the Fermi Avenue bus station
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 (terminates at Abingdon High Street) except 1550 and 1650 departures (34 operated by Stagecoach, serves Stratton Way stop A1)

WANTAGE & GROVE

Buses to Wantage and Grove from Harwell Campus

0724MF	0957G	1502G	1820MF G
0737MF	1102G	1604G	1903
0830MF	1202G	1702S G	2001
0832S	1302G	1713MF G	
0912G	1402G	1802S	

Notes:

- Times shown are departure times from Fermi Avenue Bus Station
- G: service goes forward to Grove - check www.harwell.org.uk
- Monday to Saturday unless stated: S: Saturday only; MF: Monday to Friday only
- No services on Sundays or public holidays
- All journeys operated by Thames Travel as service 32 except 0737 departure (34 operated by Stagecoach)

Green wins

AEA Technology will advise about renewable energy to support a £250m wind farm project by BT. AEA is one of three specialist advisors supporting the initiative that aims to provide up to 25% of BT's existing UK electricity needs by 2016. BT is currently one of Britain's largest energy consumers with an annual requirement of around 0.7% of the UK's entire consumption. The project will be the UK's biggest corporate wind power project outside the energy sector. AEA staff, including some at Harwell, will advise BT about renewable energy practices and effective carbon management.

An AEA-led consortium has also won the tender to create and run the London Green Badging Scheme. Awarded by the London Development Agency, the £1.5m contract will offer organisations in the capital advice about reducing their carbon footprint, with mentoring and rewards for the best performers. The scheme begins in December 2007 with 500 large London-based businesses and organisations joining within the first three years. It forms a major element of London's Climate Change Action Plan to help reduce the city's carbon emissions by 60 per cent by 2025.

Work, rest and play

- HDRS, the document recovery business, has now moved parts of its operation into the new building, Dalton House in Maxwell Avenue.
- The new RAL main entrance opened for visitors in October.
- Construction of the new £15m Four Pillars hotel and sports complex is due to start in February 2008.
- The new sports pavilion on the campus cricket pitch is complete and will be opened on 10th December.

First forum - The first Campus Forum was held at the end of October at RAL's guest house, Ridgeway House. It was a well-attended networking event bringing together representatives from many of the organisations and businesses on site. START Electron, ISS Facility Services Ltd and Red Interiors were given the opportunity to canvass their services and products. Many of the other guests gave an informal presentation about their business. Terry Stock, chief executive, Vale of White Horse District Council, was guest speaker and gave an interesting talk on issues affecting the campus and planned developments in the Vale. The next forum will be on Tuesday 12 February 2008 and any organisation based at the Harwell campus can attend. Please call Anne Tingley on 01235 431660 if your organisation would like to attend.

Visit www.harwell.org.uk for all news, events and useful information about the Harwell Science and Innovation Campus.

ABC Christmas cards

A superb selection of Christmas cards is available from Against Breast Cancer, with all the proceeds going to the Harwell-based charity. Designs range from contemporary to more traditional subjects with prices starting at £2.99 for a pack of eight cards.

See the complete range and an order form at www.aabc.org.uk



Campus Eye is produced for staff at Harwell Science and Innovation Campus.

If you have any news contact:
Valerie Judd, editor, email: vjpr@globalnet.co.uk or call 01865 331153.
Stories for the next issue should arrive before 17 February 2009.

Published by UKAEA.

See website: www.harwell.org.uk for more detailed site information, forthcoming events and classified ads.

Design and print: cdesign, email: darren.moore@ntlworld.com
Tel: 01235 210269