

Visit to MOD Filton Abbey Wood and Airbus— Chris Roberts

ADLG recently offered members a chance to join a visit to view the Library facilities at MOD Abbey Wood in Bristol and tour the nearby Airbus plant. With more than a passing interest in the weird and wonderful topics the engineering students approach me with, I jumped at the chance to sign up for the visit on Wednesday 26th November.



Firstly, attendees were told to tentatively approach the security staff at the entrance to the MOD complex at Filton. Photographic ID and security tag in hand I was whisked to meet the rest of the group courtesy of a short ride on a golf buggy. From there we were shown around parts of the site by two members of library staff.

The entire site supports the armed forces as a purchasing and stores requisitioning hub. The site houses a large number of working groups with varied tasks: everything from making sure the army has enough boots for every soldier to negotiating contracts for new equipment and technology from international suppliers.

It was interesting to hear about the impact of recent cutbacks at the MOD upon the library service and the ways in which the staff had adapted. Staff had been relocated from a dedicated building and the print collection disbanded – one

small cabinet of some general reference materials remained. The library had needed to become a more streamlined online service providing "value added" services (such as current awareness and handling search queries) rather than managing a large variety of print and electronic resources.

The MOD maintains a Defence Intranet system for general information and online resources for all sites across the country. However, staff at Filton used *British Standards Online* to identify the specifications for processes and equipment used in the armed forces. The site also makes use of *Jane's Defence Online* – a specialist resource covering defence and industry news, technical data about military equipment as well as political review/country profile information. Library staff are sometimes asked to assist working groups carry out background research on potential suppliers before contract negotiations begin. It was good to hear that the local MOD staff had supported the library and requested that the service continue in some form in spite of the severe cutbacks to space and resource.

From my own point of view the visit to the Airbus site was a definite highlight of the day. The company has close links with the Mechanical Engineering Department here at the University of Bath, and according to one of the staff I spoke to on the day, will play host to around 50 placement students this year.

The first thing to strike you about the Airbus facility in Bristol is the sheer scale of the place. A 14 mile long fence encompasses production hangars, administrative offices, testing facilities and, let's not forget, a fully functioning runway large enough to handle heavy commercial airliners and transport planes.

Airbus staff had lined up a number of places to view, the first of which was the low speed wind tunnel testing centre. We were taken to a control room built inside a loop around which air could be forced at speeds over 150 miles per hour. This control room overlooked a space the size of a small office. Inside this area, intricately constructed, scale models of aircraft are mounted and tested at various wind speeds. Using a variety of sensors in the tunnel and on the aircraft models themselves, Airbus staff can gather data relating to the flight characteristics of the final production aircraft under various stresses and strains.

This kind of physical testing in combination with computational methods means that, for the most part, the flight characteristics of a new aircraft are usually known to the designers and engineers long before the full-size version ever gets near a runway.

Next, we looked at some of the software testing facilities and a set of landing gear from the latest Airbus A380. (You may recognise the A380 as the large 'double decker' airliner that took off for the first time around 3 years ago.) The software development area demonstrated the extent of failsafe systems management applied in modern airliners. While there is a commercial need to make the aircraft as light and as cost effective as possible, this has not lead to any compromises in the computerised control systems which appeared to be set up in such a way as to provide multiple backups in the event of any problems.

The building also housed a complete working landing gear arrangement from an A380 for continuous analysis and testing. This test rig will remain in place for the entire life of the aircraft. This permits the simulation of any faults that aircraft owners may report over time as well as allow the company's own

ongoing testing and evaluation of materials and systems. We were even able to don hard hats and take a wander around the landing gear, which is quite a departure from my usual experience of looking for journal articles about these kinds of things!

Our group then visited a large hangar where wings were being fabricated for a new military transport aircraft. We saw the large 'jigs' in which the main structures of the wings are assembled. Modern aircraft production requires extremely exact measurements and tolerances, the effects of vibration from the nearby railway line had to be reduced before fabrication could begin. To that end, thousands of tonnes of concrete had been poured into a massive hole around 10 metres deep in order to create a stable, 'shake-free floor' for the factory.

One of our group commented that in many ways assembling the full-size wings was reminiscent of *Airfix* kits from many boys' youth! Sure enough, assembly was arranged in such a way as the components required that day were lined up on carts in a neat row for a team of assembly technicians to collect from at each stage. The workspace itself had been set up with input from the technicians in order to accommodate the best ways of working and assembly.

Finally, we were taken on a brief tour around the composite materials testing and development area. Using massive 'pressure cookers' and rolls of carbon fibre materials kept stored at -14 degrees Celsius, staff here worked on new ways of casting, moulding and shaping components made from composite materials. The principles and processes developed here could be applied on larger scales in dedicated manufacturing sites. Once again, we were shown the way in which commercial concerns are balanced against safety issues with emphasis

being placed upon gaining the highest levels of material strength at the lowest weight with the highest measures of quality.



Overall, I found the day to be very beneficial and all the people we met were very successful in making all of the processes they worked with both very interesting and clear for non-engineers. The Airbus tour especially, provided a very good overview of the kind of practical work the students I try to support may be involved with one day. It is one thing to help students find data on composite materials properties or experimental papers relating to fluid dynamics but quite another to see how, eventually, some of those students may end up applying the skills they are developing at university in a real engineering environment.

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CILIP West Midlands is utilising Web 2.0 technology to record a picture of library provision in their region. Vice-Chair **David Viner** introduces a social networking project to actively engage with its members.

THEY SAY THAT a picture tells a thousand words - so with that in mind we are asking library and information professionals in the West Midlands to use the medium of photography to show off their library. We are calling on all budding photographers as we embark on an exciting digital photography project

using the photo management and sharing application Flickr (www.flickr.com). Simply photograph your library and upload your photo to the Group Pool on the 'CILIP West Midlands Library Photo Competition' group page. It's that easy! Maybe your library building itself is architecturally impressive, or perhaps you have taken some shots of an event, activity or initiative you have run, that you would like to share with others. We are accepting more than one photo per authority or organisation (in fact the more merrier). With 301 static public libraries in the West Midlands alone, not to mention all the school, FE/HE, health and legal libraries, we could easily reach half a ton of images.

As Flickr now allows the adding of "geo-tags" or location metadata to images directly on the website, it means that in a few months time we should have a map populated with all kinds of libraries; large and small, old or new, public or private.

Not only will you be helping to create a digital collage to showcase the diversity of our region's libraries, but the library or individual that submits the best image to our Group Pool will have it reproduced here in *Library + Information Gazette* later this year. The winning shot will need to be artistic, creative and imaginative, showing off your library in a whole new light. So get snapping and put your library on the map!

With other ideas beginning to stem from this already, such as a CILIP West Midlands Calendar for 2010, the project has the potential to become a cross sectoral promotional tool to help project a positive image of libraries, and particularly those in the West Midlands. Members have until Friday 5 June to upload their images.

You can visit our group pool on Flickr, at www.flickr.com/groups/cilipwmlibphotocomp