

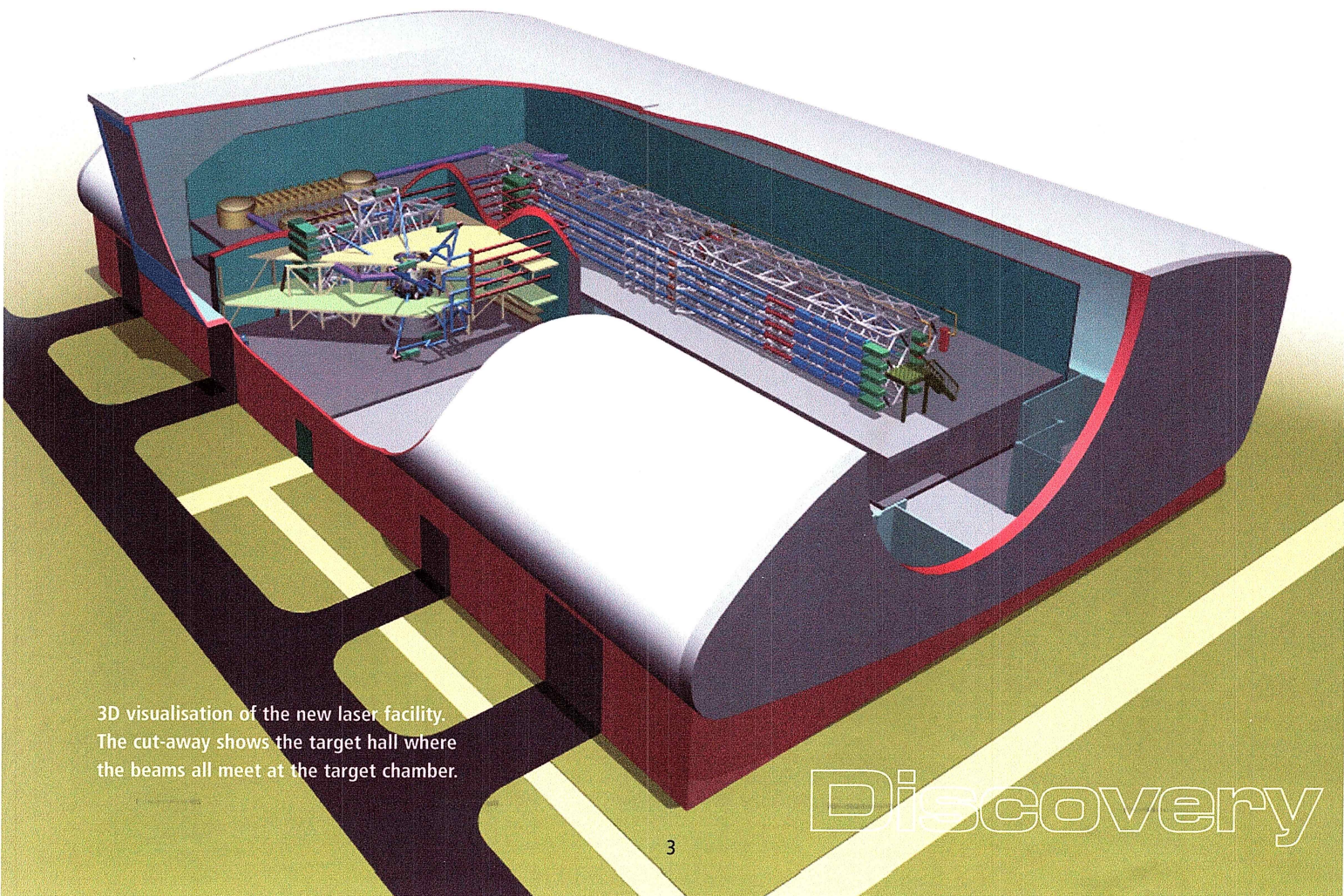
Orion

for AWE

It is therefore intended to operate the facility for the national benefit by allowing access by academic scientists as well as AWE and thereby build on the complementary expertise of the two communities in exploiting the exciting prospects of the new laser to the full.

The Rutherford Appleton Laboratory will use their expertise and act as the portal for managing academic access. Currently AWE is MoD's preferred site and the project that will deliver the construction of the new facility is

underway and has been named project Orion. Assuming MoD approval is ultimately given, we all look forward to the commissioning of this new laser which is currently planned for the end of 2007.



3D visualisation of the new laser facility. The cut-away shows the target hall where the beams all meet at the target chamber.

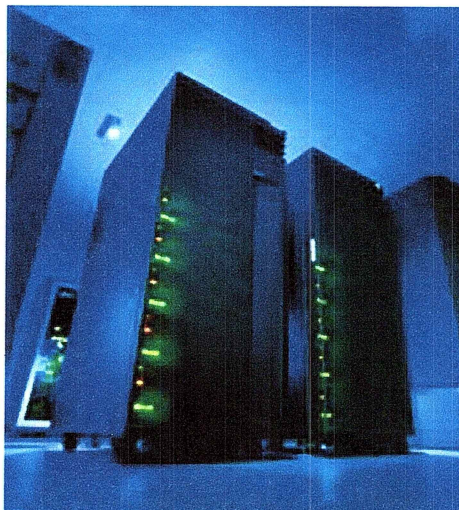
scientific means, the characteristics of both new and ageing materials. This task is particularly important in the case of the Trident warhead that has an expected total lifetime of around 30 years.

We plan to bring our materials science work together in a few state-of-the-art facilities at AWE Aldermaston and possibly at AWE Burghfield. They will incorporate the most modern safety, technical and energy-saving features. Again this plan will enable us to close and demolish a significant number of older buildings, particularly at the eastern end of the AWE Aldermaston site.

Supercomputing provides us with the ability to create the three-dimensional modelling and simulation requirements of our Physics, Engineering and Materials Departments.

All the information gathered from our hydrodynamics and laser research, together with data from previous actual nuclear tests, is used to refine computer codes used in the mathematical modelling of nuclear weapon performance. This is now the principal means of verifying the safety and reliability of the United Kingdom's nuclear warhead stockpile. AWE's current supercomputer – known as 'Blue Oak' – is capable of 3 million million calculations a second. This enormous calculating power enables us to take full advantage of new computer codes and conduct mathematical modelling in three dimensions.

Like other areas of science, supercomputing does not stand still. Demand for use of Blue Oak is huge and we are already planning to expand our computing power still further in the future.



AWE's Blue Oak supercomputer

Taking our vision forward

By setting out our long-term vision for AWE sites, we intend to engage with stakeholders in a constructive manner. This will enable issues to be understood and managed effectively as we continue to meet our primary responsibilities.

In our September 2003 leaflet we showed a 'Landscape Vision' for Aldermaston. We have now taken this significantly further forward and, in later sections, we will outline our proposed land use strategy, traffic and travel plans, as well as our landscape vision and principles. Similar plans are being developed for Burghfield.

Our vision is to change the appearance of our Aldermaston site from that of an 'industrial complex' to one more fitting for a centre with a reputation for world-class scientific and technical excellence. We need to ensure that we have the right facilities and infrastructure in place to meet our operational requirements. We also want to make the site more accessible for external partners, while maintaining necessary levels of security.

Our plans for the western end of the Aldermaston site are well advanced. To improve traffic flows and provide a new approach to the site fitting for a world class centre of science and technology, we are considering relocating our main entrance to the existing West Gate. In this area we will locate new accommodation buildings which will include modern conferencing facilities. This will provide easier access for visitors and help us improve links with academic, business and community partners.

We have already demolished many buildings close to the West Gate and cleared their sites. This includes the removal of two large redundant towers, which had been prominent features of the local landscape for many years.

Proposed new accommodation blocks will be designed to facilitate modern working practices and will provide attractive energy-efficient office facilities for our staff. As they are completed, we will be able to close a number of ageing office blocks. This will result in a further reduction in energy use and allow the safe removal of any asbestos and other hazardous materials prior to demolition.