



Blue Abyss, designed by Robin Partington.

Jun 27, 2017 14:06 BST

## **Northumbria University supports world's first commercial space and deep sea research and training centre**

Northumbria University, Newcastle is supporting the launch of Blue Abyss, the world's first commercial space and deep sea research and training centre to be built at RAF Henlow, Bedfordshire.

The £125m centre is part of a multi-million-pound regeneration vision to develop a science, innovation and technology park on part of the soon-to-close RAF base site.

The Blue Abyss team is working with Central Bedfordshire Council to create the facility, designed by London's Gherkin architect Robin Partington.

The new centre will house the world's biggest 50m deep pool, a hotel, an astronaut training centre including parabolic flight capability, hypobaric and hyperbaric chambers and a human performance centre to enable divers, astronauts and top athletes to perform at the peak of their potential.

Blue Abyss will fulfill a crucial role in the growth of the UK's space industry, highlighted by the government in the Queen's Speech last week. It will provide an arena for pioneering research and development into extreme environments, which in turn will enable better human performance in deep sea and space environments by encouraging innovation. The research and development will help to reduce risk, test operational procedures, improve performance and aid exploration in these environments.

Northumbria University, which has a burgeoning aerospace medicine and rehabilitation laboratory, and aims to conduct world leading research in the fields of aviation medicine, space medicine, and terrestrial healthcare/rehabilitation sponsored today's launch event. It was attended by representatives of the European Space Agency (ESA), Romanian cosmonaut Dumitru-Dorin Prunariu, Blue Abyss non-executive director, and representatives from central and local government.

Scientists at Northumbria are also working with the University of Edinburgh to develop a prototype engine based on solid-to-vapour transformation, which could be used for harvesting energy on the surface of Mars and other extreme environments.

Professor Greta Defeyter, Associate Pro Vice-Chancellor for Strategic Planning & Engagement at Northumbria University said: "Northumbria is committed to working in partnership and sees this as essential to support its ambition as a research-rich, business-focused, professional university with a global reputation for academic excellence. As such, the University is delighted to be supporting Blue Abyss through their official launch."

Dr Nick Caplan, Associate Professor of Musculoskeletal Health at Northumbria University added: "We have been developing human spaceflight related activities for nearly 10 years at Northumbria within the Aerospace Medicine and Rehabilitation Laboratory.

“We understand the challenges in accessing space environments for research and development, and Blue Abyss will soon be able to provide these. We are excited about what the future holds for human spaceflight research in the UK, and here at Northumbria University, as we build a strong relationship with Blue Abyss.”

It is hoped that building will start at the end of the year ready to begin operating in 2019, bringing about 160 new jobs.

The centre will also offer a wide range of experiential ‘space preparation’ packages for groups and individuals.

These packages will run alongside a ground-breaking commercial astronaut training programme to allow ordinary people to undergo a full astronaut training programme ready for the wave of commercial spaceflight opportunities coming to market.

The Blue Abyss team plans to reuse some facilities at RAF Henlow, including a centrifuge base already installed at the site for its long-arm human centrifuge for high-G astronaut training.

Blue Abyss chief executive John Vickers said its aim was to transform human life science research and performance training in extreme environments, focusing on advanced commercial diving skills, underwater and space robotics, human spaceflight preparation, professional athlete fitness and healthcare from a better understanding of human physiology under extreme conditions.

Blue Abyss’ education outreach programme and collaboration with universities will help shape a new generation of scientists and engineers, working with primary schools through to post-graduate and post-doctorate researchers.

“RAF Henlow provides the ideal site for Blue Abyss. The market is waiting for this facility – space tourism, the UK space programme and the demand for experiential packages.

“Having a centrifuge base already there is an important feature because it’s the most expensive and difficult element of the equipment to install.

“Being part of something bigger, working closely with a proactive council in its enabling and planning capacity and bringing jobs to the area, means we can make the incredibly exciting facilities for the industries we will serve a reality, for UK plc and increase the profile of space travel, space adventure and tourism, deep-sea and offshore energy innovation.

“The government highlighted in the Queen’s Speech how important the space industry is for UK plc. It wants to make the UK the most attractive place in Europe for commercial spaceflight to help increase the UK share of the global space economy to 10% by 2030.”

Professor Simon Evetts, Blue Abyss Space Operations Director, said: “By being progressive and investing in a sector that has grown throughout the recent economic downturn, we not only ensure our space sector remains vibrant when the UK leaves the EU, but we also provide the UK itself with a high-growth, innovative field of endeavour to help underpin our future.”

Offshore technology for the oil & gas and renewables industries will be tested in the pool, and hyperbaric chambers, providing a vital role in bringing new robotic and human aid technologies to market.

Blue Abyss will be working with world-leading companies and academic institutions to develop the UK’s reputation and status as an industrial nation.

The centre’s Kuehnegger Human Performance Centre will house specialist diver, astronaut and athlete research and development facilities. The centre will include a microgravity simulation suite with a traversable, full-body suspension system plus additional hypobaric chambers to facilitate hypoxia and altitude training, rehabilitation and physiological studies.

“Our education provision will be vital to give students from across the UK and the world the opportunity to work on real-world projects with internationally renowned academics that they would not have had access to otherwise,” Mr Vickers said.

“Blue Abyss will provide a crucial offering to the STEM (Science, Technology, Engineering and Maths) agenda in the UK by providing a truly exciting arena for science to be taught and experienced.”

Cllr James Jamieson, Leader of Central Bedfordshire Council, said: “The council welcomes the proposals to bring Blue Abyss to the Henlow site as a central part of a comprehensive mixed use regeneration vision.

“The proposal of a science, innovation and technology park at Henlow with Blue Abyss as a key investor will secure many high-tech jobs for the local area and beyond and ensure sustainable regeneration of this former RAF site.

“The Defence Infrastructure Organisation (DIO) representing the Ministry of Defence (MoD), and central government, are exploring opportunities to work in partnership with Central Bedfordshire to secure the sustainable redevelopment of the Henlow RAF site.

Central Bedfordshire is pleased to be working in partnership with Blue Abyss to bring these exciting, innovative proposals to fruition within central Bedfordshire.”

Plans for the facility also include include a conference theatre and training rooms, and a 120-bed hotel.

[www.blueabyss.co.uk](http://www.blueabyss.co.uk)

---

Northumbria is a research-rich, business-focused, professional university with a global reputation for academic excellence. To find out more about our courses go to [www.northumbria.ac.uk](http://www.northumbria.ac.uk)

If you have a media enquiry please contact our Media and Communications team at [media.communications@northumbria.ac.uk](mailto:media.communications@northumbria.ac.uk) or call [0191 227 4571](tel:01912274571).

## Contacts



### **Rik Kendall**

Press Contact  
PR and Media Manager  
Business and Law / Arts, Design & Social Sciences  
rik.kendall@northumbria.ac.uk  
07923 382339



### **Andrea Slowey**

Press Contact  
PR and Media Manager  
Engineering and Environment / Health and Life Sciences  
andrea.slowey@northumbria.ac.uk  
07708 509436



### **Rachael Barwick**

Press Contact  
PR and Media Manager  
rachael.barwick@northumbria.ac.uk  
07377422415



### **James Fox**

Press Contact  
Student Communications Manager  
james2.fox@northumbria.ac.uk



### **Kelly Elliott**

Press Contact  
PR and Media Officer  
kelly2.elliott@northumbria.ac.uk



### **Gemma Brown**

Press Contact  
PR and Media Officer  
gemma6.brown@northumbria.ac.uk