New robotics hub opens in West Cumbria

Sitting on a headland above Whitehaven harbour, the first of a network of robotics and artificial intelligence hubs across the UK opened its doors to stakeholders this week.

The facility, known as RAICo1, will ultimately be used by Sellafield Ltd, supply chain partners and academia to develop the technology needed to decommission Sellafield and other sites like it.

Offering the ability to test technology in environments that mirror those on the Sellafield site, such as gloveboxes and water tanks, the facility removes some of the challenges associated with working on the nuclear site.

Head of robotics and artificial intelligence at Sellafield Ltd, Rav Chunilal said:

> A big factor is where RAICo1 is situated, in Whitehaven itself, at the heart of our community. We see it bringing in skilled people, but we also see it as being fundamental to developing skills in the area too.

Sellafield's Chief Operating Officer Rebecca Weston added:

> We know we can deliver the UK's nuclear decommissioning challenge safer, faster and at less cost by using robotics and artificial intelligence.
>
> RAICo1 is a real step towards achieving that. It brings together the owners of the challenges with the people who have the ideas and technology that can solve them.

RAICo1 is a joint initiative developed by Sellafield Ltd and the Nuclear Decommissioning Authority (NDA) in collaboration with the UK Atomic Energy Authority (UKAEA), Manchester University and the National Nuclear Laboratory.

Rob Buckingham, director of remote applications in challenging environments, UKAEA's robotics facility, said:

> UKAEA and NDA need remotely operated tools that are efficient, reliable, cost-effective and re-usable.
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> The next generation of robotics and smart machines will deliver our mission faster, cheaper and at lower risk. Learning together, in collaboration to avoid duplication, has to be the best way.

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A major milestone for the Oxford flood alleviation scheme

The Environment Agency has submitted the planning application to build the Oxford flood alleviation scheme.

This is a significant step towards reducing flood risk to homes, businesses and transport links in Oxford.

A major project led by the Environment Agency in partnership with 9 other organisations, the Oxford flood alleviation scheme is one of the biggest flood schemes currently planned in England.

Oxford has a long history of flooding, with significant floods in recent decades damaging homes and businesses and closing the railway and major roads into the city.

Working with the natural floodplain to the west of Oxford, the proposed scheme will create a new stream meandering through a gently sloping floodplain of grazing meadow with wildflowers and wetland. People will be able to enjoy walking and cycling alongside the new stream, and looking out for wildlife in the wetland and meadows.

Route of the Oxford Flood Scheme showing area of lowered flood plain

When water levels in the River Thames are high, the stream will start to fill its floodplain, reducing flood risk to built-up areas of the city.

Oxfordshire County Council will decide whether to approve the application following its online public consultation. People can submit comments on the planning application via the council's ePlanning system.

Joanne Emberson Wines, Flood Risk Manager at the Environment Agency, said:

> The Oxford flood alleviation scheme will reduce flood risk to all properties in Oxford currently at risk of flooding from the River Thames. It's a long-term solution that will help the city adapt to our changing climate and make it more resilient to future floods.
>
> The scheme has also been designed to bring environmental and

> community improvements to the area, creating a new wetland landscape that will benefit wildlife and local people for generations to come. Submitting this planning application is a huge step in making this a reality for communities in and around Oxford.

Councillor Emily Smith, Leader of Vale of White Horse District Council, said:

> With climate change, flood risk is increasing, and therefore the need to protect our communities has never been more pressing. The Oxford flood alleviation scheme will provide much needed reassurance to the Vale communities of South Hinksey, Kennington and North Hinksey, which are at regular risk of flooding.

The Oxford Flood Alliance, made up of local residents affected by flooding, has worked closely with the Environment Agency over many years on the development of the Oxford flood alleviation scheme. A representative said:

> We’re proud to have helped get the scheme to this point; it has been a huge effort across multiple partners bringing their expertise to the table.
>
> We believe the Oxford flood alleviation scheme is the best option for Oxford, its communities, its economy and biodiversity. Risk of severe flooding is increasing all the time and we need to ensure we are in a position to manage this.

- The project team considered more than 100 combinations of options to reduce flood risk from the River Thames in Oxford, working with the community every step of the way.
- The Oxford flood alleviation scheme will be effective against the scale of the largest Oxford flood in living memory – 1947.
- The new stream will be approximately 5 kilometres long, running from just north of Botley Road down to south of the A423 near Kennington, where it rejoins the River Thames. Most of this area is farmland and flood meadow.
- The scheme will see improved footpaths, and a new permissive walking and cycling path alongside the stream between Osney Mead and the Devil’s Backbone in South Hinksey.
- The scheme will create over 20 hectares of new wetland habitat and around 16 hectares of floodplain meadow. It will be maintained largely through traditional land management techniques such as grazing.
- We are working with environmental charity Earth Trust on our plan for the long-term environmental benefits of the scheme. This will help make the most of the unique opportunity to improve the local environment and further enhance the new landscape and habitats of the scheme over time.
- Hard engineering will be kept to a minimum, but there will be new structures where needed, such as bridges for footpaths to cross the new stream, culverts (tunnels) for floodwater to pass under main roads, and

earth embankments and flood walls.
- The scheme partners are: Environment Agency, Oxfordshire County Council, Oxford City Council, Vale of White Horse District Council, Thames Water, Thames Regional Flood and Coastal Committee, Oxford Flood Alliance, Oxfordshire Local Enterprise Partnership, University of Oxford and Highways England.
- The scheme is projected to cost £150 million to build, and will save £1.4 billion in avoided damages, by reducing flood damage and impacts on the city over the next 100 years. It is part of the record £5.2 billion investment in new flood and coastal defences to better protect hundreds of thousands of properties across the country.
- For more information see the Oxford Flood Scheme web page.

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Government to provide shot in the arm for West Midlands vaccine manufacturing facility

- Government grant of £15.9 million awarded to chemical producer Croda to increase the UK's capacity to manufacture key vaccine ingredients
- expanded Staffordshire facility will produce lipids for around 3 billion vaccine doses from 2023
- lipids are an essential component in COVID vaccines as well as other gene therapies

A grant of £15.9 million has been awarded to chemical producer Croda International Plc ('Croda')" to increase the UK's manufacturing capacity of specialty lipids, an essential ingredient in mRNA vaccines, the government has announced today.

This investment will enable Croda, a global market leader in the field, to significantly increase production capacity at its facility in Leek, Staffordshire.

This will also allow them to increase both the range and volume of lipids it is able to produce in the UK, – particularly the mRNA lipid used in a number

of Covid vaccines – as well as creating a number of jobs at the site.

mRNA has played a crucial role in our current COVID-19 vaccine programme – notably the Pfizer/BioNTech and Moderna vaccines – and has the potential to play a transformational role beyond this in future, for products such as flu vaccines as well as other emerging technologies including gene therapies for cancer and heart disease.

Business Secretary Kwasi Kwarteng said:

> The development of mRNA technology has been one of the greatest scientific leaps forward since the start of the pandemic and the potential for its use in future therapies – potentially treating cancer and heart disease – is remarkable.
>
> I am therefore extremely pleased to announce this support for Croda, a market leader in the manufacture of essential mRNA components, and the only manufacturer of lipids currently operating in the UK.
>
> Not only will this funding provide a significant boost to Britain's life sciences industry, enabling the production of an extra 3 billion vaccine doses domestically, but it also represents an important investment into the West Midlands' economy as we work to onshore manufacturing to the UK.

From 2023, the expanded facility will be able to produce a sufficient volume of lipids for around 3 billion vaccine doses – an estimate based on the volume of lipids required to produce existing COVID-19 vaccines – a significant contribution to global lipid supply and future vaccine production. This will increase both UK and global resilience not only to COVID-19, but also for future health emergencies.

Health and Social Care Secretary Sajid Javid said:

> The mRNA technology produced at this site has the potential to unlock the next generation of cutting-edge treatments for existing and new health threats.
>
> This significant investment further cements the UK as a world leader of exciting scientific innovations which are improving health outcomes at home and across the world.

During the pandemic, the government's Vaccine Taskforce invested over £380 million to secure and scale up the UK's vaccine manufacturing capabilities to ensure a robust response to COVID-19 and potential future health emergencies, and this investment builds on this already significant commitment.

Today's funding award also marks the launch of the £1.4 billion Global

Britain Investment Fund. Announced in last Autumn's Budget, the fund provides grant support to encourage internationally mobile companies to invest in the UK's critical and most innovative industries, covering life sciences, automotive and offshore wind.

This includes an additional £354 million for UK life sciences, including funding for the Vaccine Taskforce to further increase the UK's responsiveness and capability in vaccine production. The government continues to explore further options to strengthen the UK's resilience, including building on the recent success of mRNA vaccine development and manufacturing.

The Global Britain Investment Fund will drive investment in industries where the UK has both natural strengths and geographic spread and represents the government's commitment to deliver on its big priorities. This includes delivering on the levelling up agenda by ensuring high paying jobs are created across all regions of the UK, investing in clean, home-grown renewable energy, and ensuring the UK becomes a science superpower.

Investment Minister Gerry Grimstone said:

> The Global Britain Investment Fund will ensure the UK remains at the forefront of cutting-edge innovation, helping secure investments in key sectors that present the greatest economic opportunities.
>
> Today's investment is a perfect example of how the Global Britain Investment Fund will harness the best of the UK life sciences manufacturing sector to tackle the major challenges we face and level up every corner of the UK.

The funding supports the Vaccine Taskforce's work to secure innovations and opportunities that have emerged during the pandemic as outlined in the 'Living with COVID-19' plan, as well as delivering on the government's Levelling Up agenda, bringing a number of new jobs to the West Midlands, one of the key areas identified as an Innovation Accelerator in this year's Levelling Up White Paper.