

HS2 starts up first Midlands tunnelling machine

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The first tunnel boring machine (TBM) on the Midlands section of HS2 has now begun its one-mile journey.

The 2,000 tonne, 125 metre long machine, which is working its way under Long Itchington Wood in Warwickshire, was built and assembled by about 170 engineers.

A tunnelling team will now work around the clock in shifts to operate the machine for about five months as it excavates the first bore of the one-mile tunnel.

HS2 Minister Andrew Stephenson said: "This is yet another vital landmark in our journey towards a better connected Britain and with the launching of Dorothy today in Warwickshire, shows real progress in helping transform journeys across our country.

"It also underlines how our £96bn Integrated Rail Plan – the largest ever investment in our rail network – is instrumental in creating jobs and economic opportunities, and ensuring more people reap the benefits of better rail journeys."

This will be the first HS2 tunnel to be completed on the project, with the machine set to break through its first bore at the south portal in Spring 2022. It will then be disassembled and taken back to the north portal to dig the second bore, which is due to be completed in early 2023.

The tunnel, built to preserve the ancient woodland above, forms an important element in how HS2 is managing environmental impacts through the design of the railway, preserving Britain's precious wildlife habitats. These woods are classified as a Site of Special Scientific Interest (SSSI) and have complex ecosystems that have taken hundreds of years to establish.

HS2 CEO Mark Thurston pushed the button to start the machine. He said: "Today is another major milestone for HS2. You can see the real progress the project is making as we launch this TBM on one of HS2's largest sites in the Midlands, contributing to massive job creation in the region.

"More than 20,000 jobs and over 650 apprenticeships are already being supported by HS2, which is set to transform transport links between Britain's major cities, free up space on the rail network for more freight and local services, and support the UK's transition to net zero carbon emissions."

The machine will remove a total of 250,000 cubic metres of mudstone and soil which will be transported to the on-site slurry treatment plant where the material is separated out before being reused on embankments and landscaping along the route.

After a national vote, the TBM was named 'Dorothy' – after Dorothy Hodgkin, who in 1964 became the first British woman to win the Nobel Prize in Chemistry. Her discoveries included confirming the structure of penicillin, and her work with insulin paved the way for it to be used on a large scale for treatment of diabetes. She died in 1994 in Shipston-on-Stour in Warwickshire. The name was suggested by a student from Warwickshire College Group.

Michael Dyke, Managing Director of Balfour Beatty VINCI said: "Today represents a significant milestone, culminating months of hard work and representing a vitally important moment in the delivery of Britain's new high-speed railway line.

"As Dorothy, our cutting-edge Tunnel Boring Machine, sets off on her one-mile journey, our work across the northern section of HS2 continues to progress at pace. Over the next few months, we'll be building on our efforts to recruit the 7,000 people required across the Midlands to help us shape the UK's future infrastructure landscape; those who will see their work enjoyed for many years.

Working in partnership with youth charity the Prince's Trust, Balfour Beatty VINCI has pledged to provide 30 government-funded Kickstart placements for 16- to 24-year-olds this year as part of its ongoing commitment to support young people from the local area into work. The placements help those on Universal Credit and at risk of long-term unemployment.

Three Kickstart placements have now secured permanent roles with BBV, including Samuel from Tamworth, who had originally wanted to become a mechanical engineer but had been unemployed during lockdown.

Samuel, who is now doing a Site Engineering Apprenticeship with BBV, said: “It’s exciting knowing that I am working on a project as big as this – it’s a major project for my country that also aims to benefit local businesses. I hope to progress my career inside of Balfour Beatty VINCI and continue working on HS2 as a whole. If civil engineering is a career goal for anyone, then HS2 is one of the best jobs you can have on your CV. It’s a major project and from my experience the day-to-day scale of the job is very exciting. Every week looks different to the last.”

The final section at the south end of the tunnel will become a ‘green tunnel’ – also known as a cut and cover tunnel – where a soil ‘roof’ is built around the tunnel entrance to integrate the portal into the natural landscape.

In total there will be ten HS2 tunnel boring machines (TBMs) on Phase One of the HS2 project, working to create 64 miles of tunnel between London and the West Midlands.