

# United Kingdom

**Name:** British Tunnelling Society

**Type of structure:** Non-profit, professional membership body, learned society and Associated Society of Institution of Civil Engineers (ICE)

**Number of members:** 857 members, 78 corporate members



## ASSOCIATION ACTIVITIES DURING 2017 AND TO DATE

In 2017 the British Tunnelling Society continued to offer its membership technical lectures; training and development and engage and inform on the development and use of underground space.

The BTS continues to work closely with University of Warwick in the delivery of an MSc in Tunnelling & Underground Space

We are a focal part of the Industry working group – Transforming Tunnel Safety comprising BTS, Clients, Consultants and Contractors with the initiative to drive improvement in the health and safety performance of the tunnelling industry.

- 10 informal evening discussions – monthly apart from July and August.
- Various technical and social meetings and events arranged by the BTS Young Members
- Award of James Clark Medal to Joseph Gallagher for his lifetime contribution to tunnelling.
- Lunch for James Clark Medal recipients
- Harding Prize competition for under 35's
- Annual dinner held each year in May.
- Co-badged events with numerous other organisations including ICE, IOM3, BGA, Concrete Society
- Will hold the BTS Conference & Exhibition in London in October 2018

The BTS jointly with the Institution of Civil Engineers supports a Parliamentary Group to engage with politicians and promote tunnelling and use of underground space as a sustainable form of infrastructure development. This has been reenergised in 2017 and it is planned for future activities through 2018.

The BTS continues to work with and support Tunnel Skills. TunnelSkills (the industry training development forum) has developed a number of tunnelling specific courses in conjunction with City & Guilds and CITB. Tunnel Entry, Loco Operators, Concrete Pump Operation and Tunnel Safety Training Scheme are some of the courses developed.

## Think Deep UK

This group has further developed its initiatives on the development of underground space in 2017.

The group has launched a series of workshops with the first 2 held in 2017

- Social Value of Underground Space – September 2017
- Future Transport – November 2017

Both workshops were attended by over 20 peoples and there was great debate and discussion at each. The group is currently in the process of preparing papers from the workshops or publishing in 2018.

The 3rd in a series of three workshops will be held in February 2018 on 3D Urban Planning.

In June 2018 we will again host our annual event to recap on the work of the group for the past 12 months.

## BTS Young Members

The young members continued to offer a wide range of activities including lectures, workshops and socials.

A key part of their work in 2017 was actively working on encouraging the younger generations to consider tunnelling as a career.

The teachers pack which has been being developed by the BTSYM for a number of years completed its hugely successful trial at the Oasis Academy Southbank.

The teachers pack was released for public use on the BTS website in December 2017. The pack will continue to be developed and refined going forward and the BTSYM welcomes any feedback on the pack from its members.

Friday 10th March 2017 was the day of the fourth annual BTSYM conference. It was an event with an attendance of 100 young tunnelling professionals. The conference started with the presentation from the key note speaker Jothijs van Gaalen of BAM Infraconsult and continued with a very good selection of technical, practical and academic presentations. There also included a presentation from a Norwegian international speaker.

Friday 7th December marked this year's National Tunnelling Day, the third annual event to be held. The Target 1000 initiative to reach out and inspire young people was easily met. 2017 also saw the ITAYM grow this globally by launching the International Tunnelling day.

## CURRENT TUNNELLING ACTIVITIES

### Northern Line Extension

November 2017 saw the completion of twin 3km of 5.2m diameter tunnel for the extension to the Northern Line to the future development at the Iconic Battersea Power Station

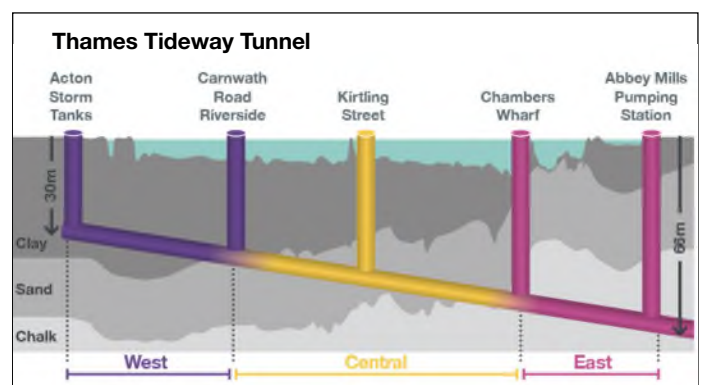


### Thames Tideway Tunnel

Works continue on the stations at Battersea and Nine Elms and the connection to the existing network with Step Plate Junctions.

### Thames Tideway Tunnel

2017 saw the continuation of the Thames Tideway contracts comprising 25km of 7.2m diameter tunnel at depths up to 66mm under the River Thames connecting the previously



constructed Lee Tunnel Works have begun on the shafts and one of the TBMs has been delivered to site with tunnelling due to commence in 2018.

**High Speed Two**

2017 saw the award of the seven main works civils contracts for the proposed high speed rail line between London and Birmingham. These contracts comprise 35km of twin bored tunnel.

Construction is due to commence in 2019 following the completion of the ECI stage 1.

Phase 2 for HS2 is currently under development and this currently comprises a further 21km of twin running tunnels giving a total of 56km which is approximately 10% of the total 561km length.



**High Speed Two**



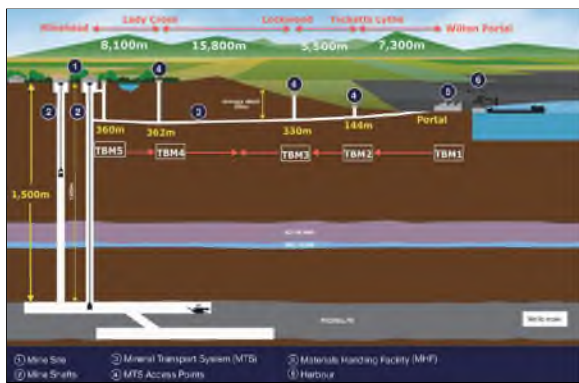
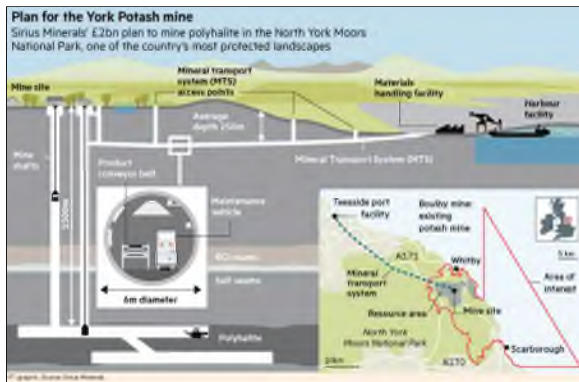
**Above: Silvertown Tunnel**

**Bank Station Capacity Upgrade**

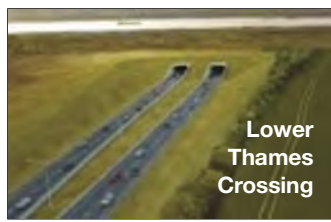
Construction work has commenced on the upgrade to Bank Station, one of the largest underground railway complexes in the world



**Crossrail 2**



**Above: Stonehenge Tunnel**



**Lower Thames Crossing**

**York Potash (above)**

Project owner Sirius Minerals, which has commenced work on the 37km long tunnel to transport the high-grade potash (polyhalite) to the coast at Redcar. The tunnel will be at depths of up to 300m with associated access shafts and mine shafts up to 1500m deep.

**Hinckley Point Nuclear Power Station**

Work continues on the first new nuclear power station in the UK for many years. Part of the work on this will comprise intake and out fall tunnels; 9km in total

The works comprise new entrance, three ticket halls, six lifts, 10 platforms, two 94m travellers, 570m tunnel and platform for Northern Line

**FUTURE TUNNELLING ACTIVITIES**

**1. Silvertown Tunnel**

Twin bored Tunnel under River Thames approximately 1.4km long and 12m diameter. The project is currently out to tender and is to be procured as a PPP delivery model. Contract award and construction are due in 2019.

**2. Crossrail 2**

This project will comprise 72km of twin-bored tunnel; 11 underground stations. It is currently undergoing a review by Government prior to being taken forward to Hybrid Bill

**3. Lower Thames Crossing**

A proposed new motorway on the M25 to include 13 miles of road. This will also comprise 3km of tunnel beneath the River Thames East of London with a tunnel diameter of 12m or greater. The project is currently in planning and due to be operational in 2027

**4. A303 Stonehenge Tunnel**

This is a proposed 11km dualling of the A303 in the vicinity of the ancient monument at Stonehenge. The works will comprise 2.9km of twin tunnels. The project is currently in planning and due to start on site in 20121

**5. Bakerloo Line Extension**

TfL is proposing to extend the Bakerloo line beyond Elephant & Castle to Lewisham, serving Old Kent Road and New Cross Gate, and would like to hear your views.