

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: 809 members, 90 corporate members at end 2019

ASSOCIATION ACTIVITIES DURING 2019 AND TO DATE

In 2019 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 Mike King for his tireless work in the tunnelling industry and for the BTS for its lifetime contribution to tunnelling.
- Lunch for James Clark Medal recipients
- Harding Prize competition for under 35's
- Annual dinner held each year in May.
- Holds the Biennial BTS Conference & Exhibition (next event to be held in March 2021, delayed from October 2020 due to the Covid-19 Pandemic)
- Co-badged events with numerous other organisations including ICE, IOM3, BGA, Concrete Society

The BTS jointly with the Institution of Civil Engineers supports an All Party Parliamentary Group to engage with parliamentarians and promote tunnelling and the use of underground space as a sustainable form of infrastructure development. The group was busy during 2019, despite other time pressures on parliamentarians, and held a number of briefing sessions at the ICE and hosted a summer reception in the Houses of Parliament. This group was also

recognised in the Government spending review for the role it plays in promoting infrastructure development.

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.

The BTS also continues to work with industry clients, contractors and consultants in an industry forum to review and improve health and safety cross the tunnelling industry. Transforming Tunnelling Safety aims to transform the health and safety performance of UK tunnelling works and has embarked on a major project to increase openness, and to share best practice. This information is available to all through the BTS website <https://www.britishtunnelling.org.uk>

An updated version of BS6164 – Health and safety in tunnelling in the construction industry – Code of practice was published late 2019 by BSi. The BTS and its members provided significant input to this document.

The BTS has begun a process for undertaking a further update of the Specification for tunnelling. Feedback on the current specification is being collated through our blog at <https://btsspec4.wordpress.com/>

2021 will see the 50th anniversary of the BTS. This is a hugely significant milestone for the society and there are many plans being developed to mark this occasion in 2021. The plans for this have commenced and are well advanced. The BTS intends to publish a book celebrating 50 years of the BTS which will be available for WTC 2021.

Think Deep UK has further developed its initiatives on the development of underground space in 2019, holding three further workshops on Design, Transport and 3D Planning, following on from the workshop on Social Value. The group has

published its first “blue paper” entitled Investing in urban underground space – Maximising the social benefits following the first workshop and is in the process of preparing the remaining three blue papers.

BTS Young Members

The young members continued to offer a wide range of activities including lectures, workshops and socials. The BTSYM has close links with other ITA young member organisations and continue to develop relationships and co-host lectures and events. A key part of their work in 2019 was actively working on encouraging the younger generations to consider tunnelling as a career. The BTSYM continue with monthly workshops on specific tunnel issues for the development of young engineers in the tunnelling industry. They once again held their annual conference in March 2019 which proved yet again to be hugely successful.

CURRENT TUNNELLING ACTIVITIES

Thames Tideway Tunnel

During 2019, tunnelling on the Thames Tideway contracts comprising 25km of 7.2m diameter tunnel at depths up to 66m under the River Thames connecting the previously constructed Lee Tunnel continued. There will be a total of six TBMs completing the tunnelling works. In November 2019 the first TBM completed its journey. Tunnelling will continue throughout 2020 and into 2021 when the final TBMs will be launched.

High Speed Two

2019 has seen the continuation of the ECI design phase for the main works civils contracts for the proposed high speed rail line between London and Birmingham. These contracts comprise 35km of twin bored tunnel. The ECI phase completed in later 2019/early 2020 and the construction contracts were awarded in early 2020. Works are currently in planning for the tunnelling works. 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.

North Yorkshire Polyhalite Project

New project owner Anglo American, has commenced work on the 37km long tunnel to transport the high-grade potash (polyhalite) to the coast at Redcar. Tunnelling at depths of up to 300m, with

associated access shafts and mine shafts up to 1500m deep, commenced in 2019.

Hinkley 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 2 No. intake tunnels and 1 No. outtake tunnel comprising around 9km in total. The first TBM commenced its journey in September 2019 with completion due towards the end of 2020.

Bank Station Capacity Upgrade
Construction work has continued on the upgrade to Bank Station, one of the largest underground railway complexes in the world. The works comprise a new entrance, three ticket halls, six lifts, 10 platforms, two 94m travellers, 570m tunnel and platforms for the Northern Line.

Silvertown Tunnel

Late 2019 saw the contract award for

the Silvertown project comprising twin bored tunnels under the River Thames approximately 1.4km long and 12m diameter. The project is a PPP delivery model. This project will create another road crossing in East London adjacent to the existing Blackwall tunnel.

FUTURE TUNNELLING ACTIVITIES

Lower Thames Crossing

A proposed new motorway on the M25 to include 14.5 miles of road. This will also comprise 4km of twin tunnel beneath the River Thames East of London each with a diameter of around 15m. The project is currently in the planning and development phase with the procurement process for construction due to commence in late 2020. The road is due to be operational in 2027.

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 in planning and development and due for construction procurement in 2020.

Bakerloo Line Extension

TfL is proposing to extend the Bakerloo line beyond Elephant & Castle to Lewisham, serving Old Kent Road and New Cross Gate. This will comprise new stations and twin 8.5km tunnels from Elephant and Castle to Lewisham. The project was released for consultation in late 2019.

Crossrail 2

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

Coire Glas hydroelectric scheme

Scottish and Southern Energy continue with plans to develop a new hydroelectric scheme in Scotland. This projects is expected to included tunnelling and large span caverns.

Haweswater Aqueduct Replacement Project

United Utilities is planning to replace an existing aqueduct in the North West of England that provides drinking water for the city of Manchester. This replacement will comprise approximately 50km of 3m diameter tunnelling at depths of up to 300m.

