



British Tunnelling Society
Annual Report and Accounts 2021

James Clark Medal Winners lunch



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Executive Summary



Ring Building on Thames Tideway West

2021 was the year of two halves, with the latter half bringing a momentary period of normality to the BTS and the industry, which was grabbed with great delight.

After embracing a new normal many projects made significant milestone progress in 2021, including the preparation and launch of a number of TBMs for major projects such as HS2, as well as key procurement announcements.

Our membership has seen a notable rise in Individual membership, however we have had a slight fall in young member and corporate membership expected to be due to reduced opportunities for in person events. There is also a continuing slight reduction in overseas memberships.

The first half of the year saw the continuation of BTS and BTSYM evening lectures being held online via our You-tube channel, however we were able to relaunch in person events at the BTS Conference and held three in person lectures at the ICE from October to December. We have had a good range of topics from 'Experiences from TBM Tunnelling in Difficult Ground', the 'North York Polyhalite Project Mineral Transport System', 'CERN's High Luminosity Large Hadron Collider' and 'Low, intermediate and high pressure compressed air working' along with the return of the 'Tideway Update'. Our live You-tube hosted events sustained a high level of online viewing only dropping slightly once in person events were able to resume.

Sadly, once again our Annual Dinner and Design and Construction Course were postponed as events of such size were still not able to be held. However we hosted four well attended on-line CPD courses with Warwick University, covering an Introduction to Tunnelling, Health and Safety in Tunnelling, Tunnel Design and Finite Element Analysis in Tunnelling short courses.

Autumn 2021 brought a return to in person events and we started with the BTS Conference at the QEII Centre in Westminster, followed by welcoming 54 delegates to the BTS Underground Health and Safety Course at the ICE.

The 2021 James Clark Medal was awarded to Robert Ibell and we presented his award at our November evening lecture. We were also able to award our 2020 Medal recipient, Helen Nattrass, with her medal at the October evening lecture. However, we held the Harding Prize virtually and this was awarded to Benjamin Lafarga for his excellent entry.

The revision of the BTS Guide to the WCA regs was completed and the document published in July 2021. Progress has also continued with the development of the SCL Best Practice Guide and BTS Specification 4th Edition which should both be ready for publication in mid-2022.

We launched our new look BTS Website in February 2021 and website content has also been expanded to include Transforming Tunnel Safety. Benefits of the new website include significantly reduced ongoing costs, greater freedom of page set up and an upgraded payment platform for our events.

Plans for the 50th Anniversary Book continue at pace and a sample book chapter and example size book were made available to be viewed at the BTS Conference. The publication of the book has been delayed until 2022 to incorporate all the stories we have to share.

I would like to thank all the committee for all their support and effort during my second year as Chair, they have thoroughly embraced a continuation of a mix of in person and online interactions, whilst finding time to help shape the approach and delivery of BTS activities throughout 2021. I am incredibly grateful for the passion and enthusiasm of our individual, corporate and committee members and what has been achieved by their voluntary efforts. I also thoroughly enjoyed the return to in person events where I was able to meet so many of you as Chair.

Whilst not a complete return to normality the future for UK tunnelling is looking bright and full of opportunities and I believe that our Society will continue to flourish and make a very significant contribution to that workload.

Kate Cooksey

BTS Chair

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1. BTS Committee

Chair: Kate Cooksey, Morgan Sindall

Vice Chair: Rod Young, Barhale Construction

Immediate Past Chair: Ivor Thomas, BAM Nuttall

Elected Members and Trustees

Name	Company	Term	Responsibility
John Corcoran	Thames Tideway	Retired 2021	Papers & Meetings
Brian Lyons	Dr Sauer and Partners	Retired 2021	Awards & Courses
Benoit Jones	Inbye Engineering	Retired 2021	Technical
Sarah Langley	Sika Ltd	Retires 2022	Papers & Meetings
Chris Pressdee	Construction Industry Research and Information Association	Retires 2022	Education
Ignacio Castillo	Skanska	Retires 2022	Awards & Courses
Alastair Smith	Jacobs	Retires 2023	Communications
Christoph Eberle	Mott MacDonald	Retires 2023	Technical
Jérôme Furge	Bouygues Travaux Publics	Retires 2023	Conference (Oct 2021 onwards)
Mehdi Hosseini	London Bridge Associates	Retires 2023	
Richard Sutherden	J Murphy & Sons Limited	Retires 2024	
Mike King	MKTunnelling Limited	Retires 2024	
Tim Smart	HS2 Ltd	Retires 2024	

Co-opted Members:

Name	Company	Responsibility
John Corcoran	Thames Tideway	Annual Dinner
Ken Spiby	London Bridge Associates	50 th anniversary celebrations
Eddie Woods	Consultant	T&TI Editorial Advisory Board
John Scholey	Retired	Annual Dinner
Paul Perry	Hewson Consulting Engineers Ltd	BGA, PHEW Liaison
Divik Bandopadhyaya	London Bridge Associates	Young Members Chair (From 5 November 2020), Digital Delivery & Logistics from 4 November 2021, Website from February 2022.
Alasdair Fraser	Atkins	Young Members Chair (From 4 November 2021)
Shani Wallis	Journalist	Media Relations and Publishing
Damian McGirr	COWI UK Ltd	ITA Affairs
George Demetri	Compelo	Tunnels and Tunnelling magazine
Roger Bridge	Balfour Beatty	Education, Think Deep

Anita Wu	London Bridge Associates	Website
Mark Leggett	Mott MacDonald	Conference, Education, APGGI (up to October 2021)
Neil Moss	Gall Zeidler Consultants	May 2021 onwards

Institutional Representatives:

Name	Company	Responsibility
Andy Flowerday	Barhale	Pipe Jacking Association
Bill Grose	Independent	Institution of Civil Engineers, APGGI, ITIG
Alan Bozeat	Hunter Personnel	Institute of Materials, Minerals, and Mining
Andrew Hindmarch	Mott MacDonald Ltd	Institute of Materials, Minerals, and Mining
Donald Lamont	Hyperbaric & Tunnel Safety Ltd	Health and Safety, Technical
Neil Moss	Gall Zeidler Consultants	Technical (up to May 2021)

2. Chair's Report

2021 brought another unusual year with a gradual return to a sense of normality during the latter half of the year. For the tunnelling industry it saw the ramping up of delivery of major projects such as HS2, Silvertown and Lower Thames Crossrail, with many project teams now adjusted to hybrid working.

The BTS continued to deliver online events, hosted by the BTSYM Chair Divik Bandopadhyaya on our BTS YouTube channel who I am once again incredibly thankful to for supporting keeping the virtual presence of the BTS going through such an unusual period of time.

2021 however also brought a taste of a return to normality in Autumn where it was a great privilege to have my first in person event as Chair giving the David Wallis lecture at the BTS Conference. It was great to see so many friends and colleagues coming together and catching up at such a fantastic event after such a long hiatus. It was also great to be joined by so many of our international colleagues such as Martin Herrenknecht. The BTS are very grateful to Tunnelling Journal for managing such a fantastic event with the BTS.

I am incredibly thankful to all our speakers who continued to embrace the online experience as well as those that have given evening lectures in person. They have all given their time to come and present to us and share their knowledge and experience, with many having made an exceptional additional level of preparation to help make each of our events a success. The wide and varied selection of evening presentations not only showcases what our industry can do but it also continues to be a leading light in the knowledge sharing activities of the ICE and its Associated Societies.

It is fantastic to see people back at our in person events but also that our online presence and lecture views is still remaining high. I thoroughly enjoyed the evening meetings I hosted at One Great George Street where audience interaction really added to the event, although I couldn't resist asking a question or two myself!

Learning from the interest in our 2019 and 2020 programme we also welcomed back the Tideway project for an update, once again giving an opportunity for younger members on the project to share their experiences so far.

The return to the ICE for evening meetings brought an almost return to 'Sausage and Chips' in the ICE bar, however with the ICE bar and catering remaining closed we looked to the Westminster Arms as an

alternative. We look forward to the ICE bar and catering reopening for evening meetings in 2022. It has been great to see the BTS spirit and community enjoying in person meetings again.

However, with sadness, we had to once again postpone and cancel many of our much loved events including the Annual Dinner in May and the Design and Construction Course in July. We are incredibly grateful to many members who supported the BTS once again by foregoing a refund for the Dinner for a second year and holding their bookings for the 2022 Dinner. It was fantastic however to see so many delegates at the BTS Underground Health and Safety Course and see the benefits of live interaction.

The disruption to our calendar has given us further time to work on improvements to our courses, fostering links to other tunnelling groups around the world and our communications materials. We launched our new BTS Website in February 2021 - www.britishtunnelling.com, which has already brought us many benefits including an improved payment system for our events.

Our membership has seen a notable rise in individual membership, however we have had a slight fall in young member and corporate membership expected to be due to reduced opportunities for in person events. There is also a continuing slight reduction in overseas memberships. The challenge ahead is to further grow our membership which we hope will be easier to achieve with a 2022 return to in person events.

We have also continued with our aim to provide information and guidance with our publications, evening meetings and training courses. The work on our SCL Best Practice Guide and BTS Specification 4th Edition continues which should both be ready for publication in mid 2022.

It gave me great delight this year to be able to hold the Harding Prize in April after receiving a substantial number of entries. The prize was awarded to Benjamin Lafarga. It was great to see the enthusiasm from young tunnellers to enter the Prize and share their tunnelling experiences.

Plans for the 50th Anniversary Book continue at pace and a sample book chapter and example size book were made available to be viewed at the BTS Conference; it is rather overwhelming to see the amount of stories there are to be shared. The publication of the book has been delayed until 2022 to incorporate all the stories we have to share.

The BTS Young Members' group continues to grow and continued to embrace delivery of online lectures. They celebrated National Tunnelling Day/ World Tunnel Day on 4th December with a 24 hour zoom marathon, further developing our international links. Whilst their annual conference had to be postponed, they have focused on social media campaigns and events to continue to support the younger members of the tunnelling industry. They also hosted the first in person social just before the BTS conference.

The James Clark Medal 2021 was awarded to Robert Ibell in recognition of his long and distinguished career in tunnelling, dedication to the BTS and commitment to developing young tunnel engineers. It was a delight to be able to award the medal to Robert Ibell in November and celebrate his achievements. We were also able to finally celebrate the achievements of the 2020 Medal recipient, Helen Nattrass, who was awarded her medal at our October meeting. I look forward to welcoming both to the James Clark Medal luncheon that will be held in October 2022.

For our members the normal working day has started to resemble pre-covid times but the new hybrid approach continues to provide opportunities for a more diverse workforce. The Thames Tideway Project has its last machine in the ground and is progressing with secondary lining and civils structures. York Potash has been busy tunnelling and shaft sinking and several of the machines have successfully launched on the HS2 London to Birmingham route. Bank Station Upgrade prepares for its blockade works whilst tunnelling at Hinkley Point continues, and works are progressing with the launch chamber

for the Silvertown Tunnel TBM. Looking further forward procurement is progressing for Lower Thames Crossing, A303 Stonehenge Tunnel and HS2 Phase 2a. Busy future workloads can be seen in further developments of HS2 Phase 2b and large hydro schemes such as Coire Glas.

Whilst I had hoped that 2021 would bring us closer to normality we instead embraced another year of largely remote working and celebrated the ability to host in person events during the Autumn. I thoroughly enjoyed the return to in person events that 2021 brought, especially the BTS Conference, where I was able to meet so many of you as Chair. I would like to thank all the committee for all their support and effort during my second year as Chair, the committee has remained active at all times in progressing the ambitions of the society and I am incredibly grateful for the positivity in approach, as well as all the spare time the committee members provide to make our society what it is. I am also incredibly grateful to our secretary, Katherine Coldwell, for all of her support and work to keep the BTS running smoothly, whilst having to work out how to deliver remotely.

3. BTS Objectives and Communications

Alastair Smith (Chair), Sarah Langley, Kate Cooksey, Ivor Thomas, Ignacio Castillez-Dominguez, Jerome Furge, Mehdi Hosseini, Tim Smart, Alasdair Fraser, Anita Wu, Ken Spiby, Shani Wallis, George Demetri.

Communication in 2021 has presented significant challenges due to the Pandemic restrictions. The Communication Strategy is under further review to incorporate the learning from the need to deliver meetings, communications and lectures using social media and digital platforms as a result of the COVID pandemic restrictions. While the restrictions resulted in unprecedented changes to the way the society had to deliver lectures, meetings and communications it also brought opportunities to reach wider audiences via the social media and digital platforms.

The primary aims of the Society communication strategy are to:

- i. Promote the art and science of tunnelling, including the creation and use of underground space
- ii. Inform and advance the education of its members
- iii. Influence UK government, clients, and industry
- iv. Inform the public.

This communication strategy aims to achieve the following:

- Make the BTS the first port of call and be seen as thought leaders in the industry
- Promote tunnelling as a credible career choice and contribute to the education of tunnellers
- Develop and promote readily available material and intellectual content, promoting best practice, and become the hub for tunnelling knowledge
- Make the BTS the forum for our members discussion, networking, and knowledge sharing
- Inform and influence national and local government, and influence and educate clients.

The pandemic required the continued use of emails as the primary method of communications to the members and the efforts by Katherine Coldwell are recognised and greatly appreciated by the society. For the social media the BTS operated on the Twitter, Facebook and Wikipedia platforms at the start of 2021 with the BTYSM running accounts on Facebook, Twitter, LinkedIn and Instagram. The BTS added a LinkedIn account in November 2021.

YouTube became the primary platform for delivery of the majority of the evening lectures and the committee meetings were facilitated using Microsoft Teams. Virtual social events such as bars after online meetings were also held to allow for member networking.

The number of followers/ subscribers on the different platforms are given below:

Platform	Year Created	Followers/ Subscribers *	Annual Increase in Followers ^δ
BTS Facebook	November 2020 [‡]	285	79
BTS Twitter	January 2014	1584	84
BTS LinkedIn	December 2021	76	N/A
BTS YouTube [†]	January 2018	1530	484
* Total till 31 December 2021			
^δ Total followers gained between 1 January and 31 December 2021			
[‡] Created in 2009 but remained unused till 2020			
[†] includes BTSYM lectures and associated subscribers			

The Communications Sub-committee has prepared some overarching guidance for social media posts to ensure the society's values are reflected in any postings on social media platforms.

The Communication Sub-committee has also been working to manage how the society responds to requests for comment with a list of primary contacts prepared and responses to typical topics in preparation.

Adverts published in Tunnels and Tunnelling International have continued to be part of the Communications strategy and have been focused each month on upcoming events. The subcommittee recognises with appreciation the work in preparing the adverts each month by Divik Bandopadhyaya.

The communications subcommittee is investigating a storage platform for the countless images and photographs that have been collected for the 50th Anniversary Book, which is expected to be published in 2022.

A highlight in the committee meeting programme was the June meeting when Rachel Skinner (OBE) the ICE President joined the meeting. Kate Cooksey gave a presentation about the BTS which was well received and there were useful discussions on topics close to Rachel's ICE agenda on Shaping Zero and skills development in construction and how the ICE and BTS can work collaboratively on furthering such important industry challenges.

We have looked deeply into the way our membership and our wider audience use social media and have worked with BTSYM to re-establish and expand our social media presence and develop a plan for the future. The number of subscribers on our YouTube channel has soared during 2020 and we have increased our spread across all our intended Social Media platforms.

Thank you again to the members of the team for your time and input.

4. Finance and Membership

This year we retained all of the existing rates and membership fees. The membership rates, per grade, can be seen in the table below.

The membership fee for 2021 again included the provision of a hard copy and digital version of Tunnels and Tunnelling magazine. An agreement has been signed between BTS and T&TI for 5 years in 2020 (with a 3-year break clause) and a reduced contribution from BTS to the magazine. This provides stability and value for money for a significant period of time.

Grade	UK	Overseas
Corporate Member Small (Up to 50 employees)	£430	£541
Corporate Member Medium (50 to 500 employees)	£685	£935
Corporate Member Large (More than 500 employees)	£1110	£1604
Individual	£85	£138
Retired	£32	£44
UK Student/Apprentice	£20	n/a
Young Member	£42	£53

Membership: The detail of the current membership (at the end of December 2021) is set out below:

	Member Classification	2021	2020	2019	2018	2017	2016	Change 2020/21
UK	Corporate members	84	88	82	75	71	50	-4
	Individual members	433	414	457	461	446	490	+19
	Students and Retired	68	69	67	76	72	83	-1
	Young Members	150	192	193	199	191	152	-42
	Total	735	763	799	811	780	775	-28
Overseas	Corporate members	7	8	8	8	6	6	-1
	Individual members	103	101	103	113	133	113	+2
	Students and Retired	7	5	6	7	8	7	+2
	Total	117	114	117	128	147	126	+3

The change in membership from 2020 has shown a very slight net decrease in total membership. There has been a slight reduction in the number of non-corporate members since 2020. However Corporate memberships also show a slight decrease after several years of increase.

Overall cash reserves increased to £465,584 by the end of 2021; the increase in overall cash reserves is due to further sponsorship payments for the BTS @ 50 book during 2021, with an improvement in Net Current Assets to £318,410 from £291,628 at the end of 2020. Within the reserve BTS hold funds on behalf of Think Deep UK which amount to £9,818.

The restricted fund has been created after a donation of £10,000 was made by the widow of Doug Allenby. The Doug Allenby Award was established in 2020 and the funds are to be used to award a medal to a Young Tunneller (BTSYM) annually in Doug's Memory. The fund is currently at £5,496.

5. Evening Meetings

Sarah Langley (Chair), John Corcoran (Chair up to May 2021), Christoph Eberle, Richard Sutherden, Divik Bandopadhyaya, Alasdair Fraser, Brian Lyons.

The year again has seen a full calendar of high-quality presentations covering a wide range of topics. The Committee's and members' thanks go to all the presenters.

As the Pandemic continued, we were forced to continue our YouTube presentations followed by virtual bars. It has been great to see so many attendees, even though in May a number of the viewers tuned in to see their favourite band, only to be met with Particle Physics!

This new platform has enabled us to engage with our members and friends all over the World and it has been wonderful to catch up afterwards in the "Virtual Bar" and then in real life in the final quarter of the year.

The programme of monthly BTS meetings through 2021 is as follows:

Date	Lecture Title & Presenter(s)	Venue/ Platform	Views†
21 st Jan ¹	Three Great Challenges - Experiences from TBM Tunnelling in Difficult Ground <i>Lok Homes (The Robbins Compnay)</i>	YouTube ^Δ	2400
11 th Feb ¹	Joint BTS/ MinSouth Lecture : North Yorks Polyhalite Project Mineral Transport System <i>Craig Sewell & Jason Fawcett (Strabag)</i>	YouTube ^Δ	2100
18 th Mar ¹	Werrington Grade Separation - Curved Box Jack <i>Matt Hadden (Morgan Sindall Infrastructure)</i>	YouTube ^Δ	1400
15 th Apr ¹	Harding Prize Final 2021 Presenations by Harding Prize 2021 Finalists: <i>Benjamin Lafarga, Christina Trigle & Cate Anthony</i>	YouTube ^Δ	1300
20 th May ¹	CERN's High-Luminosity Large Hadron Collider (HL- LHC) Project <i>Pieter Mattelaer & James Gillies PhD (CERN)</i>	YouTube ^Δ	2000
17 th Jun ¹	Hinkley Point C Nuclear Power Station Tunnelling and Marine Project <i>Matt Fowler (Balfour Beatty)</i>	YouTube ^Δ	1000
16 th Sep ¹	Dewatering strategies for underground infrastructure in the London Basin <i>Toby Roberts (WJ Group)</i>	YouTube ^Δ	622
30 th Sep [*]	Closing the Loop: Back analysis of sprayed concrete junctions <i>Dr Nicky de Battista (University of Cambridge) & Dr Alun Thomas (All2plan ApS)</i>	Queen Elizabeth II Center	N/A
20 th Oct ⁰	Low, intermediate and high pressure compressed air work <i>Dr Donald Lamont MBE & Roy Slocombe (CWAG)</i>	ICE ^Δ	309
18 th Nov ⁰	Digital Twins for condition assessment of Brunel's Rail Tunnels <i>Dr Anmol Bedi & Marco Invernici (Bedi Consulting)</i>	ICE ^Δ	356

9 th Dec ⁰	Tideway Update <i>Maurice Gallagher (Tideway), Jennifer Her (BMB JV), Ignacio Tognaccini-Sainz & Ricardo Manias (FLO), Matthew Campbell (CVB JV)</i>	ICE ^Δ	484
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Note:

¹ Webinar ⁰ Hybrid (In-Person + streamed live on YouTube)
^Δ Link to YouTube recording hyperlinked where applicable
[†] Approximate on YouTube; as on 31 December 2021
^{*} Recording Unavailable/ Not Livestreamed

6. BTS Young Members

Divik Bandopadhyaya (Chair), David Ashworth (Secretary), George Doulikas (Professional Development Sub-Chair), Ciara Maguire (Media & Social Sub-Chair), Cate Anthony (Schools & Universities Sub-Chair) and Alasdair Fraser (Outreach Coordinator [Sub-Chair Equivalent]).

The BTSYM Committee year 2020/21 (spanning November 2020 to November 2021) continued to suffer the impact of the pandemic; wherein, no in-person events were held until September 2021 and school and university visits remained suspended. The pandemic also led to the cancellation of the BTSYM Conference 2021 (similar to 2020).

During the course of the year, the BTSYM held a series of webinars and online workshops – as listed in Table 6-1. It should be noted that the BTSYM AGM 2021 constituted the first in-person BTSYM lecture since February 2020 (with post lecture drinks sponsored by LBA); whilst the BTSYM Social on 29th September 2021 constituted the first in-person BTSYM event.

Table 6-1 - List of BTSYM Lectures & Workshop held between November 2020 and 2021

Date	Lecture Title & Presenter(s)	Venue/ Platform	Viewst [†]
05 Nov 2020 ¹	BTSYM AGM & Webinar : Digital Inspections - A Better Way <i>Will Howlett & James Connell (Arup)</i>	YouTube ^Δ	653
15 Apr 2021 ¹	BTSYM Workshop : Point Clouds in Geoengineering <i>Ioannis Farmakis (Queen's University) & Stratis Karantanellis (Aristotle University of Thessaloniki)</i>	MS Teams [*]	~ 70 attendees
22 Apr 2021 ¹	Joint BTSYM/ TALym / ICE London G&S Webinar : Managing Safety in Tunnelling <i>Michael William Sanderson (Larsen & Toubro)</i>	YouTube ^Δ	1800
10 Jun 2021 ¹	BTSYM Webinar : Thames Tideway Tunnel Victoria Embankment Foreshore <i>Florin Edu (Barhale) & Ala Hammad (Tideway)</i>	YouTube ^Δ	789
09 Sept 2021 ¹	BTSYM Webinar : The Design of Gaskets for Segmentally Lined Tunnels <i>Mike King (MK Tunnelling Limited)</i>	YouTube ^Δ	858
28 Oct 2021	Joint BTSYM/ CPTym Webinar [Delivered in Portuguese] : Túnel Rodoviário de Silvertown, Londres - Poços e Cut & Covers <i>Cláudio Cabral Dias (Ayesa)</i>	Hosted on CPTym's YouTube ^Δ	440

29 Oct 2021 ¹	Joint BTSYM/ CPTym Webinar : Lisbon Metro - Green and Yellow line extension <i>Francisco Bernardo (COBA Consulting Engineers SA)</i>	YouTube ^Δ	273
04 Nov 2021 ⁰	BTSYM AGM & Lecture : Explaining Quality Engineering <i>Tiago Geraledes-Rodrigues (Balfour Beatty)</i>	YouTube ^Δ	296

¹ Webinar ⁰ Hybrid (In-Person + streamed live on YouTube)

Note:

^Δ Link to YouTube recording hyperlinked where applicable

[†] Approximate on YouTube; as on 31 December 2021

* Recording Unavailable/ Not Livestreamed

The said social (as presented in Figure 6-1), took place at Tattershall Castle (Westminster, London) on the day before the BTS Conference and hosted 35 attendees both young and experienced members of the UK as well as the global tunnelling industry. Drinks and refreshments at the event were sponsored by the BTSYM up to £300; however, on the day, various BTS Corporate Members sponsored refreshments once the BTSYM budget was reached. The BTSYM would therefore like to thank Sika Ltd, Normet UK and LBA for their financial contributions.



Figure 6-1 : BTSYM September 2021 Social

In addition to the above events, the BTSYM continued to provide general IT support to the BTS committee by aiding online streaming and managing the BTS' YouTube channel, as well as organising post-lecture virtual socials on Zoom. On the online front, the BTSYM's social media channels continued to witness reasonable growth over the year as depicted in Table 6-2.

Table 6-2 : BTSYM Social Media Followers Statistics

Platform	Year Created	Followers*	Annual Increase in Followers ^δ
BTSYM Facebook	September 2014	809	20
BTSYM Twitter	December 2011	1508	53

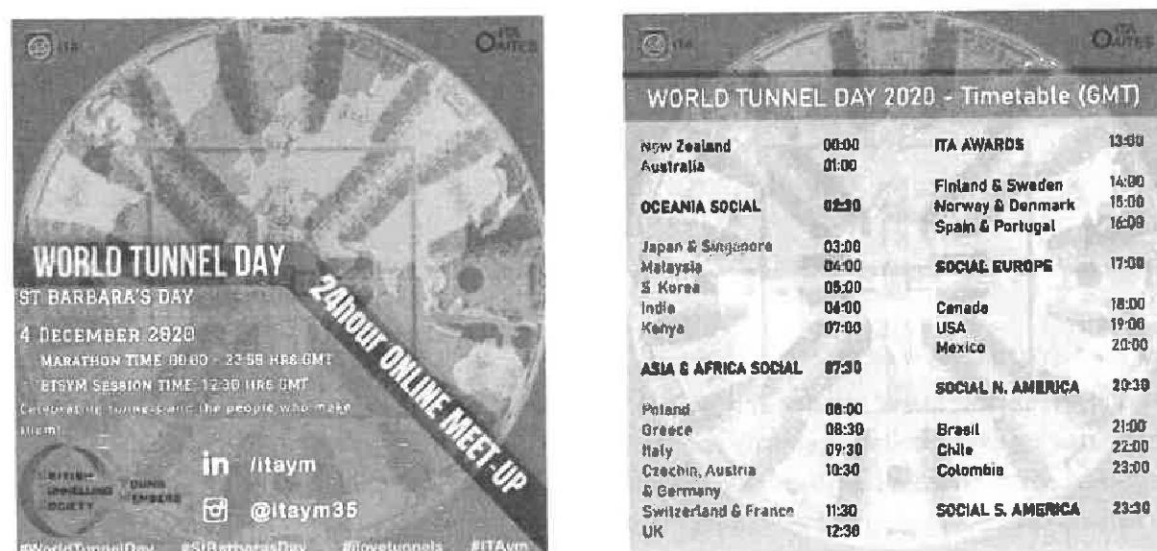
BTSYM LinkedIn	January 2019	4185	940
BTSYM Instagram	January 2016	421	Data Unavailable
* Total till 31 December 2021			
δ Total followers gained between 1 January and 31 December 2021			

Furthermore, in December 2020, the BTSYM through its involvement with the International Tunnelling Society Young Members (ITAYM), championed the delivery of a 24 hour global Zoom Marathon on National Tunnelling Day/ World Tunnel Day (4th December 2020) – see Figure 6-2. As described by ITAYM, the marathon “was an incredibly successful global event with 30 countries involved and more than 3000 participants from all over the globe”.

The BTSYM’s 30 minute long session at the marathon provided an update of its activities along with a general update of projects both in their delivery and planning stages within the UK. The recording of the UK slot (which also celebrated the 30th anniversary of the Channel Tunnel’s service tunnel breakthrough) is available to view on YouTube.

Finally, continuing its legacy of international collaboration and knowledge exchange, the BTSYM once again supported the 2nd iteration of the Symposium for Young Tunnellers of Asia (SYTA; hosted online by Tunnelling Association of India Young Members on 7th August 2021). The proceedings of the symposium included presentations by Dr Ioannis Vazaios and William Thrope (both representing BTSYM), as well as an address by Divik Bandopadhyaya (BTSYM Chair 2020-21) .

Figure 6-1 : World Tunnelling Day 2020, 24 hour Zoom Marathon



7. Awards

Ignacio Castillo (Chair), Brian Lyons (chair up to May 2021), Chris Pressdee, Alastair Smith, Mike King, Anita Wu.

Harding Prize 2021

The Harding Prize for 2021 was awarded to Benjamin Lafarga.

James Clark Medal 2021

The James Clark Medal winner for 2021 was Robert Ibell. The award was made in recognition of his long and distinguished career in tunnelling, dedication to the BTS and commitment to developing young tunnel engineers.

James Clark Medal Winners Luncheon 2021

The luncheon was not held in 2021 due to COVID 19. Previous James Clark Medal winners will be invited to the 2022 luncheons planned for February and October 2022.

Doug Allenby Award

The Doug Allenby Award was established in 2020, the funds are to be used to award a medal to a young tunneller (BTSYM) annually in Doug's Memory. The 1st award will be made at the BTSYM Conference in 2022.

8. Education

Chris Pressdee (Chair), Mehdi Hosseini, Mike King, Tim Smart, Divik Bandopadhyaya, Mark Leggett, Roger Bridge, Kate Cooksey, Ivor Thomas, Christoph Eberle, Benoit Jones.

MSc Course

The MSc Tunnelling and Underground space course was not run for the academic year 2021/2022 due to the impacts of COVID and the departure of Dr Alan Bloodworth from The University of Warwick.

As a result, and in an effort to ensure continued educational opportunities, a series of short CPD courses were run in collaboration between Warwick and the BTS as follows:

- Introduction to Tunnelling (Online) 27th – 29th April 2021
- Health and Safety in Tunnelling (Online) - 25th – 27th May 2021
- Tunnel Design (Online) 15th – 17th June 2021
- Finite Element Analysis in Tunnelling (Online) 13th – 15th July 2021

The courses were well attended and feedback from attendees was positive.

MSc Course – BTS Bursary

The BTS did not award a bursary in 2021 due to the pause in the MSc Tunnelling and Underground Space at Warwick University.

9. Training and Courses

Rod Young (Chair), Sarah Langley, Alastair Smith, Jerome Furge, Mehdi Hosseini, Richard Sutherden, Tim Smart, Divik Bandopadhyaya - BTSYM, Anita Wu.

BTS Tunnel Design and Construction Course

The twelfth Tunnel Design and Construction course was to be held at Warwick University in July 2021. But due to the Covid pandemic unfortunately the course was cancelled.

The 2022 course will be held from 4th July to 8th July, and will once again be held at Warwick University.

BTS Underground Health and Safety Course

The annual BTS Underground Health and Safety Course was held at the ICE on 22nd & 23rd Nov @ the ICE London, with 54 bookings.

The 2022 Course will be held at the ICE in London on 21st and 22nd November.

On Line CPD Courses

4 courses were arranged with Warwick University, to continue members' development through the covid period.

- Introduction to Tunnelling - 27th – 29th April 2021 – 9 attended.
- Health & Safety - 25th -27th May 2021 – 18 attended.
- Tunnel Design - 15th – 17th June 2021 – 18 attended.
- Finite Element Analysis in Tunnelling - 13th – 15th July 2021 – 13 attended.

Tunnel Survey Course

No Tunnel Survey Courses were arranged during 2021 due to the Covid pandemic.

10. TunnelSkills

(Rod Young reporting)

ACHIEVEMENTS for 2021:

Level 2 Tunnel Operative Apprenticeship

- The first cohort of apprentices from the Tideway project have all completed apart from two, who have had barriers to completion due to Covid. They are expected to complete shortly.
- A second cohort has been recruited on the HS2 C1 section. TunnelSkills supported this focused recruitment campaign and thirteen apprentices were appointed in September 2021. Completion of the apprenticeship, expected at the end of 2022.
- TunnelSkills is currently supporting employers who are looking to recruit further cohorts from April 2022. TunnelSkills will continue to support with attraction and recruitment activities, as well as routes to expanding the provision required to meet expected demand.

Immersive Learning Project

- In 2021, the development of the resources was completed with enhancements following feedback from Members' pilots, and to mitigate some of the barriers presented by Covid.
- The project continues into its final year with a focus on promotion of the resources to employers with a view to them utilising the resources in their own programmes. The initial vision of the project was that these would be used to support tunnelling specific training programmes and also engagement with education to promote tunnelling as a career.
- Engagement with the resources has been high with positive feedback.
- It is expected that TunnelSkills will achieve the targets originally agreed with CITB at the outset of the project.

TunnelSkills influencing industry specific standards and qualifications

- The Multi Service Vehicle (MSV) CPCS category (A51) was approved for delivery by NOCN in November 2021, following extensive support from TunnelSkills members. CITB have approved four grant claims from February 2022.

NVQs, Assessor Training and Qualification

- TunnelSkills continues to promote to Members and support with a financial incentive.
- In 2021, one candidate started the Assessor qualification. Another candidate achieved the Level 3 Award in Understanding the Principles and Practices of Assessment and is now working towards the Level 4 Award in the Internal Quality Assurance of Assessment Process and Practice.

Promotion of the work of TunnelSkills – increasing reach and influence

- TunnelSkills succeeded in having an article published in the specialist Tunnelling media (Tunnels and Tunnelling International), which kick started a successful social media campaign, with TunnelSkills LinkedIn and Twitter accounts launched in September 2021.
- LinkedIn has proved particularly successful, with almost 450 followers (individuals who actively choose to follow TunnelSkills' posts). Followers include not only those working in tunnelling (who span all job functions and levels within tunnelling, from loco drivers to project directors), but also individuals across the world (Australia, India, UAE, Spain) and those from other industries (education, building, recruitment, design).
- In October 2021, TunnelSkills commanded a stand at the British Tunnelling Society (BTS) conference - for the first time having a stand in its own right. The aim of this was to promote the Immersive Learning resources and the SKATE Matrix.
- TunnelSkills continues to be an active partner on the Transforming Tunnelling Safety Group (TTSG) and shares updates and information across the wider tunnelling industry.

11. Health and Safety and Standards

Donald Lamont

Other members of UK Delegation to CEN/TC151/WG4 - Steve Parker, Sean Martin.

CEN/TC151/WG4

WG4 met six times during 2021 all by Zoom. Progress continued on the revision of ENs 12110 and 16191. By the Autumn 2021, the technical revision of ENs 16191 and 12110 Parts 1 and 2 had been effectively completed and a request was made to CEN to hold a Committee Internal Ballot to get approval to move both standards from Preliminary Work Item status to New Work Item status. Positive votes were secured for both. Consequently, there is now a 36-month period within which CEN enquiry, resolution of comments, HAS consultant assessment, editing and translation, culminating in Formal Vote takes place, leading to harmonisation and listing in the Official Journal of the EU.

Multi Service Vehicles – a first draft of a standard for MSVs was received in early 2021, it having been prepared by France. After extensive discussions it was agreed to extend the scope to cover battery powered MSVs. Discussion on the detail of the draft continued throughout 2021.

Refuge chambers – work on a standard for refuge chambers has been put off indefinitely due to lack of resources in CEN/TC151/WG4.

CEN/TC196

At the end of 2021 CEN/TC196 agreed to revise EN 1889-2 – locomotives for underground use in mining and tunnelling. As yet no work has been undertaken but BTS will participate in the revision on behalf of BSI.

BS 6164:2019

No major issues arose with this standard during the year. In late 2021 it was formally adopted as the national standard for tunnelling safety by the Standards Institute of Israel.

BTS CAWG

CAWG met three times by Zoom. The revision of the BTS Guide to the WCA Regs was completed and the document published in July 2021. CAWG considered the prevalence in the workforce and the effect of patent foramen ovale (PFO) in triggering DCI at the November meeting.

12. Technical Sub-Committee

Christoph Eberle (chair), Jérôme Furge, Mehdi Hosseini, Benoit Jones (co-opted), Dr Donald Lamont (co-opted), Ivor Thomas, Chris Pressdee, Mike King, Richard Sutherden, Divik Bandopadhyaya, Shani Wallis, Paul Perry, Andy Flowerday, Alan Bozeat, Andrew Hindmarch, Tom Robinson (co-opted), Omar Mohammed (co-opted), Marco Invernici (co-opted), Charles Allen (co-opted), Jessica Serrano (co-opted).

The Technical Sub-committee is working on the following principal topics which are summarized below:

SCL Best Practice Guide

The SCL sub-committee continued to work on the SCL Best Practice Guideline throughout 2021. The design guide has been copy-edited and is almost ready for publication. The edits have been back checked by the authors and a final version has been prepared. After updating the references the guide will be ready for publication in 2022.

BTS Specification 4th Edition

After receiving comments on the previous edition via the blog, the committee has begun revising the text in earnest. Section editors were identified, and workshops on sustainability and sprayed concrete held. The updating process is advancing well with an anticipated draft for peer review being available July 2022.

13. APPGI

Bill Grose (Chair); Kate Cooksey; Mark Leggett; Ivor Thomas, Tim Smart, Jerome Furge.

The All-Party Parliamentary Group for Infrastructure (APPGI) is run jointly by the ICE and the BTS, having merged the BTS's APPG on Underground Space (APGUS) several years ago in order to focus Parliamentarians on fewer overlapping All-Party groups.

This enables BTS to concentrate on site visits and projects and initiatives of interest to its members and parliamentarians whilst leaving the administration of the Group and broader ICE policy aims to the institution's Public Affairs department to manage.

The stated aim of the group is to "highlight the importance of infrastructure, engineering and the use of underground space to the economy and society, and to hear from experts and discuss matters arising."

Moving the meetings from late afternoon to 8:30am in 2019 increased attendance from Parliamentarians and the meetings were held frequently enough to have gained some momentum.

There were no meetings during the 2020/21 session as a consequence of COVID-19 restrictions.

14. Website

Anita Wu (Chair), Ken Spiby, Alastair Smith, Shani Wallis.

BTS Website

Anita Wu (Chair)

The new-look BTS website was launched in February 2021. The new website is www.britishtunnelling.com. The BTS emails have also been upgraded to the new domain.

Please visit the website for further details.

Evening meetings, conferences, training courses and news are regularly updated with archive meetings available to watch online <https://britishtunnelling.com/events/evening-meetings-archive>.

Information on BTS publications and a suggested reading list are under the knowledge section of the website. The content for sustainability has also been expanded <https://britishtunnelling.com/knowledge/sustainability>.

The website content has continued to expand for Transforming Tunnel Safety (TTS) <https://britishtunnelling.com/tts/transforming-tunnel-safety> to encourage knowledge sharing of lessons learnt, best practice guidance and safety videos on tunnelling projects.

In developing the new website, we have changed to a free hosted site, which significantly reduces the ongoing costs (such that the new site will prove more economical than the old after just 3 years), whilst also permitting us a greater freedom of page set-up. The payment platform has been upgraded from the old site.

Tunnels Database

Ken Spiby (Chair), Mehdi Hosseini

The tunnels database is still not available to Members or to the public. It has not been possible to get the necessary controlled access to work reliably with the current database structure.

Further work on the database was stopped pending the completion of the new BTS website. Three meetings were held in 2021 and further testing carried out. Following further testing in 2022, it is intended that a recommendation be made either to modify or re-build.

15. 50th Anniversary

Working Group: Ken Spiby (Chair), Sarah Langley, John Corcoran, Anita Wu, Divik Bandopadhyaya General "BTS at 50 Sub-committee" as above plus Ivor Thomas, Mark Leggett, Shani Wallis, Kate Cooksey, Rod Young, Chris Pressdee, Ignacio Castillo, Sarah Langley, Mike King, Richard Sutherland.

The BTS celebrated its 50th Anniversary in March 2021, but the Covid pandemic meant that this was a much more muted celebration than had been hoped:

- It was not possible to hold the 2021 Annual Dinner.
- The two-day BTS Conference planned for March 2021 had to be delayed until late Sept, and in postponing, lost much of its Anniversary focus.



- We were unable to meet in person for much of the year.
- We were unable to launch the planned outreach programme. A BTSYM initiative, this programme aimed to make use of the new BTS book to visit schools and universities.

A book: "Tunnelling Tales: Fifty years of the British Tunnelling Society" is under production, but we were unable to complete this in time to publish in 2021.

Interest in the book has been much greater than was anticipated. By the end of 2021, we had received 421 contributions from around 200 authors. Of these:

- 381 have been through a first edit stories, bringing the word count down from 302,000 words down to 257,000 words.
- 13 stories have been rejected completely.
- 27 stories (33,000 words) remain to be edited and we anticipate a further 100 or so stories are yet to be written.

For the BTS Conference in late Sept 2021, we produced and displayed:

- A 32-page 'Blad' (sample), including copies of pages direct from the book, showing what we intend the final book to look like.
- A 750 page dummy version with all pages blank, showing the actual size the book, the binding, the cover and dust jacket, the paper quality etc....

The target is now to print and publish in the summer of 2022, with pre-ordering available from April. Strong pre-orders will mean a larger print run, resulting in savings per copy.

16. T&T Editorial Advisory Board (EAB)

Eddie Woods (Chair), Kate Cooksey, Roger Bridge, Andrew Smith, Ken Spiby, Ivor Thomas, Donald Lamont, Darren Page, Dave Terry, Benoit Jones, John Corcoran, Petr Salak, Rosa Diez, George Demetri, Wojciech Markowski (BTSYM), Christoph Eberle, Mehdi Hosseini and Divik Bandopadhyaya.

2021 continued where 2020 left off. All the editorial meetings have been virtual. There have been some changes to the EAB with Mark Leggett and Rashik Bhanderi stepping down, and we thank them both for their contributions.

George Demetri and Julian Champkin have done a fantastic job in very difficult circumstances. An example being that George does not have access to old copies of T&T not converted to pdf as the offices have been shut from Covid.

Originally, Keivan Rafie was responsible for drafting the Rules of Thumb, but it was felt by the EAB that the source of these could be expanded to reach out to industry experts. Some of the EAB stepped up including Ivor Thomas and Andrew Smith and the board feels this is a useful approach.

George has advised that for personal reasons he has decided to step down as editor and a recruitment process is in place. Until a replacement is found, he will be staying on to help produce the magazine, working on a two day/week basis, but this may change. This means that writing and uploading news and social media has now been outsourced. The EAB thanks George for his efforts.

The magazine is in a better place than at the end of last year and the quality has improved. There have been three meetings of the EAB in the year reviewing all of the issues. There has been consultation on several articles prior to publication.

17. International Tunnelling Association

Damian McGirr

The WTC and General Assembly was unfortunately postponed in 2021 in Mexico due to the global pandemic. This was another very tough and troublesome year for all involved with the ITA family. Copenhagen will now host the WTC in 2022 which has been postponed until September 2022.

Damian McGirr continued his role in the ITA Governance Council for 2021 examining the activity of the Executive Council and its conformance with the Statutes and By Laws, as well as reviewing governance, ethics and conduct of the Association. Damian has now been nominated by the BTS to become a member of the Executive Council. The election for this will take place at the General Assembly in 2022.

ITA publications can be viewed at <https://about.ita-aites.org/publications>

Working Groups

- [Working Group 2: Research](#)
- [Working Group 3: Contractual Practices](#)
- [Working Group 5: Health and Safety in Works](#)
- [Working Group 6: Maintenance and Repair](#)
- [Working Group 9: Seismic Effects](#)
- [Working Group 11: Immersed and Floating Tunnels](#)
- [Working Group 12: Sprayed Concrete Use](#)
- [Working Group 14: Mechanized Tunnelling](#)
- [Working Group 15: Underground and Environment](#)
- [Working Group 17: Long Tunnels at Great Depth](#)
- [Working Group 19: Conventional Tunnelling](#)
- [Working Group 20: Urban Problems, Underground Solutions](#)
- [Working Group 21: Life Cycle Asset Management](#)
- [Working Group 22 : Information Modelling in Tunnelling](#)

COMMITTEES

- ITACUS (Underground Space)
- ITA Tech (technical documentation)
- ITACET (Education and Training)
- ITACOSUF (Operational Safety of Underground Facilities)

18. Annual Dinner

John Scholey (Chair), Kate Cooksey, John Corcoran, Roger Bridge, Shani Wallis.

For the second year running the restrictions in place on gatherings prevented the society from holding its annual dinner. The majority of those who retained places originally booked for the aborted 2020 dinner opted to retain their bookings for a further year. Assuming the dinner can be held again in 2022, that event will become the 32nd Annual Dinner.

19. Institution of Civil Engineers

Bill Grose

The BTS continues to enjoy a close and positive relationship with ICE. As one of the largest and most active of the ICE's Associated Societies the BTS is a significant user and beneficiary of ICE facilities including meeting rooms, lecture theatres, bar and restaurant, and secretariat support. The arrangement is via a Service Level Agreement which continues to be reviewed annually.

A change in the financing arrangements in 2018 encouraged us to focus more on technical projects and to seek funding assistance from the ICE Enabling Fund. One project has been funded and successfully completed (Hyperloop Challenge, in 2020) and others are under consideration. This involves working closely with the Vice President for the Learned Societies.

The ICE regularly refers tunnel-related media queries to BTS committee members and relies on our advice and expertise in such matters. These referrals have resulted in senior BTS members appearing on TV (for example ITN News on the tunnels under Euston Square being dug by HS2 protestors), on radio and reported in the national and local press.

The BTS and the ICE continue to jointly run the All Party Parliamentary Group for Infrastructure.

20. BGA Liaison

Paul Perry

This year has remained a challenging one for all, although like the BTS, the BGA have continued to see a growing attendance from online participation at their evening meetings. Perhaps this is the new normal!

The two organisations continue to liaise regarding evening meetings and the like, to ensure that a varied range of projects and subjects are presented for the attendees.

Paul Perry, a member of the BTS committee, regularly attends BGA meetings and forms the communication link between the two groups. We look forward to a fruitful coming year.

21. Reserves Policy

The Trustees policy for reserve is for there to be at least the equivalent 12 months expenditure, this will ensure sufficient funds will be available to meet the needs of the Society. BTS reserves at the end of 2021 are £318,410. Due to the impact of Covid expenditure for 2021 is £119K. BTS expect this amount to increase in 2022 returning to above the £270K expenditure from 2019.

Independent Examiners

The audit requirement for a Charity such as the BTS is for an 'independent examination' of our accounts. This independent examination is undertaken by Lindeyer Francis Ferguson Ltd. We have been satisfied with the service provided to date and we propose that this relationship continues for the forthcoming year.

Trustees' responsibilities for the financial statements

The trustees are required to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charity and the incoming resources and application of resources, including the net income or expenditure, of the Charity for the year. In preparing those financial statements, the Trustees are required to:

- Select suitable accounting policies and then apply them consistently
- Make judgements and estimates that are reasonable and prudent
- State whether applicable accounting standards and statements of recommended practice have been followed, subject to any material departures disclosed and explained in the financial statements.
- Prepare the financial statements on an on-going concern basis unless it is inappropriate to presume that the Charity will continue in business.

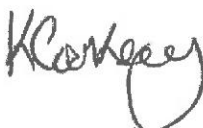
The Trustees are responsible for keeping proper accounting records which disclose, with reasonable accuracy, at any time, the financial position of the Charity and which enable them to ensure that the

financial statements comply with the Charities Act 2011. They are also responsible for safeguarding the assets of the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Trustees' Report overleaf was approved by the Committee and was signed on its behalf by:

Ms Kate Cooksey

Chair of the British Tunnelling Society



Date of Approval:

6/2/23

22. Legal and Administrative Information

The British Tunnelling Society was formed as an unincorporated association by the Constitution adopted on 23 September 1971 and as amended on 21 January 1993, 16 May 2002, and 17 May 2012. The Society became a registered charity in March 1993. The Charity number is 1017887.

The principal and registered office of the charity is:

One Great George Street
Westminster
London SW1P 3AA

Names and addresses of other relevant organisations or persons:

Bankers

National Westminster Bank	CCLA Investment Management Limited
Strand Branch	St. Alphage House
PO Box 414	2 Fore Street
38 Strand	London
London WC2H 5JB	EC2Y 5AQ

Solicitors

Solicitors are appointed from time to time as the need arises.

Examiner

Jonathan Healey FCA

Lindeyer Francis Ferguson Ltd
North House
198 High Street
Tonbridge
Kent
TN9 1BE

Investment Advisers

Investment advisers are appointed from time to time as the need arises.

23. Trustees Report

The Trustees present their report together with the financial statements of the British Tunnelling Society (the 'Society') for the year ending 31st December 2021. The financial statements have been prepared on the accounting policies set out in the financial statements and comply with the current statutory requirements, applicable law and the Statement of Recommended Practice 'Accounting and Reporting by Charities' issued in January 2019.

Organisational structure

The Trustees of the British Tunnelling Society are the ex officio and elected members of its Committee, with the Committee consisting of elected members, nominated members, co-opted members, and ex-officio members. Ten members of the Committee are elected by electronic/postal ballot, the result of which is announced at the Annual General Meeting. Members elected to the Committee serve for a term of three years and then retire from the Committee unless they are elected Chairman or Vice-Chairman. A retiring member is ineligible for re-election to membership of the Committee for a period of one year after they retire.

Two members, one nominated by each of the Institutions of Civil Engineers and Mining and Metallurgy, serve for a three-year term of office and then retire from the Committee unless they are elected Chairman or Vice-Chairman.

The Committee elects from amongst its members a Chair to hold office for two years immediately following the Annual General Meeting. Such election is held at the last Committee meeting of the previous Chairman's term of office. On expiration of a Chair's term of office, they may serve on the Committee in an ex officio capacity for a period of two years as immediate past Chairman. The Committee elects from amongst its members a Vice-Chairman to hold office for two years immediately following the Annual General Meeting. Such elections are held at the last meeting of the Committee of the previous Vice-Chairman's term of office.

The Committee may co-opt a member of the Society to the Committee at any time and for whatever purpose the Committee so decides. A co-opted member to the Committee will hold office until the following Annual General Meeting. Any casual vacancy, whether in the offices of Chairman or Vice-Chairman or amongst the elected or nominated members of the Committee, may be filled by the Committee, with the approval of the appropriate Institution in the case of a nominated member. A person appointed to fill a casual vacancy will hold office until the following Annual General Meeting, they will then retire. The casual vacancy will then be filled either by an election, by postal ballot, or by a nominated person from an Institution, as appropriate.

A term of office in a co-opted capacity or as the result of an appointment to fill a casual vacancy will not be counted for purposes of eligibility for subsequent re-election to the Committee.

Any individual member of the Society or nominated representative of a corporate subscriber of the Society or a nominated individual from an Institution will be eligible, except as otherwise provided, for election or appointment or co-option to the Committee.

Objects and policies and public benefit

The Society's objective is summarised as the advancement of the education of the public in and the promotion of the art and science of tunnelling, including the creation and use of underground space, by fostering learning, understanding, experience, interest, and research therein.

In furtherance of this the Society:

- Provides a forum for the discussion of the problems and techniques of tunnelling by holding monthly meetings which are free and open to all interested parties in addition to Society members
- Encourages tunnelling research and development to improve health and safety of the workforce, reducing both risk to the public and the cost of provision of infrastructure
- Provides training courses on a non-profit-making basis to train young tunnellers in tunnelling best practice
- Supports a Young Members division that embraces the objectives of the Society but focuses towards graduates, school leavers, and students still at school
- Supports the development of skills through support to courses such as the MSc in Tunnelling and Underground Space at Warwick University.
- Supports the development of apprenticeships and QCF NVQ qualifications via its work with the National Working Group, TunnelSkills and the Tunnelling and Underground Construction Academy (TUCA).
- Produces and arranges for the publication of papers and reports to disseminate information on tunnelling and to provide points of reference
- Co-operates with other associations in holding meetings and conferences locally, nationally, and internationally
- Is the national representative body to the General Assembly of the International Tunnelling and Underground Space Association (ITA) for the UK
- Pays its annual membership fees to the ITA for the maintenance and on-going management of the Association.
- Maintains liaison with similar associations and individuals in other countries and co-operates and participates in the formation, continuance and furtherance of an international society devoted to the interests of tunnelling and of other international, national, or local associations whose objects are allied to those of the Society
- Offers specialist assistance and advice to H.M. Government, statutory authorities, boards, institutions, and similar bodies and to make representations to such bodies
- Does all such other things as are incidental or conducive to the attainment of any or all the above aims.

Administration of the Society

The business affairs of the Society are administered by a committee consisting of ten elected members, several co-opted and ex officio members together with a representative from the Institution of Civil Engineers, the British Geotechnical Association, the International Tunnelling and Underground Space Association, the Institute of Materials, Minerals and Mining and the Pipe Jacking Association.

The 2021 AGM saw vacancies arise in the Committee, due to the retirement of elected members. This year 3 BTS members were duly elected to serve from the 2021 AGM for a period of three years. They were: Richard Sutherland, Tim Smart and Mike King.

In addition, the Committee requested that Eddie Woods, Anita Wu, Donald Lamont, Shani Wallis, Ken Spiby, Roger Bridge, Mark Leggett, George Demetri and John Scholey continue their roles as co-opted

members of the Committee, which they agreed to do and welcomed John Corcoran remaining on the Committee this time as a co-opted rather than elected member. Divik Bandopadhyaya took on the responsibility of the Young Members' Chair in 2020, followed by Alasdair Fraser in 2021. The British Tunnelling Society is one of the largest and most active of the Associated Societies of the Institution of Civil Engineers. The Committee deals with its substantial workload by allocating it to sub-committees as detailed in their individual reports.

24. Report of the independent examiner

I report to the trustees on my examination of the accounts of the British Tunnelling Society ('the association') for the year ended 31 December 2021.

Responsibilities and basis of report

As the Trustees of the Association (and also its directors for the purposes of company law) you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011.

I report in respect of my examination of the charity's accounts carried out under section 145 of the Charities Act 2011 and in carrying out my examination I have followed the Directions given by the Charity Commission under section 145(5)(b) of the Charities Act 2011.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination giving me cause to believe:

1. accounting records were not kept in respect of the Association as required by section 130 of the Act; or
2. the accounts do not accord with those records; or
3. the accounts do not comply with the applicable requirements concerning the form and content of accounts set out in the Charities (Accounts and Reports) Regulations 2008 other than any requirement that the accounts give a 'true and fair view which is not a matter considered as part of an independent examination.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.



Jonathan Healey FCA
 Lindeyer Francis Ferguson Limited
 Chartered Accountants
 North House
 198 High Street,
 Tonbridge, Kent
 TN9 1BE

Date 15 February 2023.

BRITISH TUNNELLING SOCIETY
STATEMENT OF FINANCIAL ACTIVITIES
(INCLUDING INCOME AND EXPENDITURE ACCOUNT)
FOR THE YEAR ENDED 31 DECEMBER 2021

	2021 Unrestricted funds £	2021 Restricted funds £	2021 Total funds £	2020 Total funds £
INCOME FROM				
Charitable activities:				
Subscriptions	110,122	-	110,122	117,852
Income from other trading activities:				
BTS CPD Courses	24,800	-	24,800	-
Royalties & Sales	275	-	275	1,087
Underground Health & Safety Course	10,810	-	10,810	-
Grant - Hyperloop Challenge (R & D)	-	-	-	7,500
Sundry Income	-	-	-	264
Sponsorship	-	-	-	889
Doug Allenby Award	-	-	-	10,000
Investments:				
Interest	7	-	7	165
Total Income	146,014	-	146,014	137,757
EXPENDITURE ON				
Charitable activities				
Postage	5	-	5	28
Printing, stationery and photocopying	-	-	-	27
Meeting Expenses and secretarial	15,170	-	15,170	15,970
Subscriptions to other bodies	1,155	-	1,155	1,120
Other costs	1,296	-	1,296	1,507
Publicity	-	-	-	883
Publications	6,000	-	6,000	-
Website	854	-	854	13,272
Award & Prizes	1,781	4,504	6,285	-
Grant	6,000	-	6,000	12,000
Hyperloop Challenge (R & D)	-	-	-	14,400
Sundry Expenses	500	-	500	-
Professional fees	4,202	-	4,202	4,162
	36,963	4,504	41,467	63,369
Expenditure on raising funds				
Expenses re course and dinner	29	-	29	12,450
Publications	41,904	-	41,904	41,544
Underground Health & Safety Course	9,219	-	9,219	1,730
General Function Expenses	-	-	-	434
Young Members Committee	309	-	309	226
BTS CPD Courses	1,744	-	1,744	-
BTS Conference	3,600	-	3,600	-
Bad Debt	20,960	-	20,960	-
	77,765	-	77,765	56,384
Total expenditure	114,728	4,504	119,232	119,753
Net income and net movement in funds	31,286	(4,504)	26,782	18,004
RECONCILIATION OF FUNDS				
Fund balances brought forward 1 January 2021	281,628	10,000	291,628	273,624
Fund balances carried forward at 31 December 2021	312,914	5,496	318,410	291,628

The statement of financial activity includes all gains and losses in the period.


All income and expenditure derives from continuing activities.

BRITISH TUNNELLING SOCIETY
BALANCE SHEET
AS AT 31 DECEMBER 2021

	Notes	2021 £	2020 £
CURRENT ASSETS			
Debtors	2	146,306	114,948
Short term deposits		62,583	62,583
Cash at bank		403,001	380,532
		<u>611,890</u>	<u>558,063</u>
CURRENT LIABILITIES			
Creditors: Amounts falling due within one year	3	293,480	266,435
		<u>293,480</u>	<u>266,435</u>
NET CURRENT ASSETS		<u>318,410</u>	<u>291,628</u>
INCOME FUNDS			
Unrestricted	6	312,914	281,628
Restricted	6	5,496	10,000
		<u>318,410</u>	<u>291,628</u>

The notes on page 30 to 32 form part of these financial statements.

Approved by the committee on 6/2/23 and signed on its behalf by:


Kate Cooksey - Chair

**BRITISH TUNNELLING SOCIETY
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021**

Accounting Policies**Accounting Convention**

The financial statements have been prepared in accordance with the Financial Reporting Standard 102 (effective January 2019) (FRS 102) and the requirements of the Statement of Recommended Practice (SORP) applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019) (Charities SORP FRS 102).

The British Tunnelling Society meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy note(s).

There are no material uncertainties about the charity's ability to continue, and so the going concern basis of accounting has been adopted.

Income

All subscriptions and investment income is accounted for when received, except in the case of subscriptions which are specifically stated to be in respect of an ensuing accounting period. No credit is taken for subscriptions unpaid at the balance sheet date.

Expenditure

Expenditure is recognised when there is a legal or constructive obligation to transfer resources to a third party, settlement is probable and the amount can be measured reliably. Expenditure is included within the Statement of Financial Activities on an accruals basis.

Fund Accounting

Unrestricted funds can be used in accordance with the charitable objectives of the Society, at the discretion of the Trustees. Restricted funds can only be used for the particular restricted purposes within the objectives of the Society.

Taxation

The charity is exempt from corporation tax on its charitable activity.

BRITISH TUNNELLING SOCIETY
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021

1 Member's subscriptions

The geographical analysis of subscriptions is as follows:

	2021	2020
	£	£
United Kingdom	91,604	96,877
Rest of the World	18,518	20,975
	<u>110,122</u>	<u>117,852</u>

2 Debtors

	2021	2020
	£	£
Debtors	5,240	20,960
Prepayments	121,178	77,924
ICE Intercompany	19,888	16,064
	<u>146,306</u>	<u>114,948</u>

3 Creditors

	2021	2020
	£	£
Purchase Ledger Control Account	6,614	8,187
Subscriptions in advance	32,166	34,092
Accruals	3,980	1,980
Other Creditors	9,818	10,274
Receipts in Advance	<u>240,902</u>	<u>211,902</u>
	<u>293,480</u>	<u>266,435</u>

Within the amount for other creditors BTS are holding £9,818 on behalf of Think Deep UK

4 Employees and Employment costs

The society does not employ staff directly.

5 Unrestricted Funds

	Unrestricted funds	Restricted funds	Total Funds
	£	£	£
Fund balances at 31 December 2021 are represented by:			
Current assets	606,394	5,496	611,890
Current liabilities falling due within one year	<u>(293,480)</u>	<u>-</u>	<u>(293,480)</u>
	<u>312,914</u>	<u>5,496</u>	<u>318,410</u>

6 Funds

	Unrestricted funds	Restricted funds	Total Funds
	£	£	£
Balance brought forward at 1 January 2021	281,628	10,000	291,628
Net movement in funds	31,286	(4,504)	26,782
Fund balances carried forward at 31 December 2021	312,914	5,496	318,410

7 Restricted Funds

The Doug Allenby Award was established in 2020, the funds are to be used to award a medal to a young tunneller (BTSYM) annually in Doug's Memory.

8 Committee Members

Committee Members do not and never have received any remuneration.

	2021	2020
	£	£
Travel and subsistence expenses reimbursed to committee members (n.b.1 trustees reimbursed in 2021, 2 in 2020)	766	225
	766	225