

THE BRITISH TUNNELLING SOCIETY

Annual Report and Accounts for The Year Ended 31st December 2007

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BRITISH TUNNELLING SOCIETY ANNUAL REPORT 2007

COMMITTEE:

Chairman:

Bill Grose
Arup

Vice Chairman

Paul Hoyland
Balfour Beatty

Immediate Past Chairman

David Court
Edmund Nuttall

Elected Members:

Geoff Bateman	Scott Wilson	Stood Down 2007
Chris Bambridge	MottMcDonald	Retires 2008
Mike Francis	Kellogg Brown & Root	Retires 2008
Ian Williams	BAA	Retires 2008
Colin Eddie	Morgan Est.	Retires 2009
Damian McGirr	Donaldson Associates	Retires 2009
Chris Dulake	Faber Maunsell	Retires 2010
Nathan Wilmot	Arup	Retires 2010
Lawrence Halls	Tam International Consultants Ltd	Retires 2010

Co-opted Members:

Myles O'Reilly	Consultant	T&TI
Helen Nattrass	Sir Robert McAlpine	Lobby Group
Donald Lamont	Health and Safety Executive	Safety
John Scholey	Kellogg Brown & Root	Annual Dinner
Bob Ibell	London Bridge Associates	Crossrail Working Grp

Members invited to report to the Committee:

Martin Knights	Jacob Babbie	ITA
Rodney Craig	Rodney Craig Associates	Newsletter
Shani Wallis	Freelance Tunnelling Journalist	International

Institutional Representatives:

David Donaldson	Institution of Civil Engineers
Alan Bozeat	Institute of Materials, Minerals and Mining

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

LEGAL AND ADMINISTRATIVE INFORMATION

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 Charing Cross Branch PO Box 113, Cavell House 2a Charing Cross Road London WC2H 0NN	CCLA Investment Management Limited St. Alphage House 2 Fore Street London EC2Y 5AQ
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Solicitors: Solicitors are appointed from time to time as the need arises.

Examiners: Grant Thornton
Grant Thornton House
Melton Street
Euston Square
London NW1 2EP

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

The Trustees present their report together with the financial statements of the British Tunnelling Society (the 'Society') for the year ended 31 December 2007. The financial statements have been prepared on the accounting policies set out on page 19 of 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 April 2005.

Organisational structure

The Trustees of the British Tunnelling Society are the members of its Committee.

The Committee shall consist of elected members, nominated members, co-opted members and ex-officio members.

Nine members of the Committee shall be elected by postal ballot of the members of the Society. The result of a postal ballot shall be announced at the Annual General Meeting. Members so elected to the Committee shall serve for a term of three years and shall then retire from the Committee unless elected Chairman or Vice-Chairman. A retiring member shall be ineligible for re-election to membership of the Committee for a period of one year after retirement.

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

The Committee shall elect from amongst its members a Chairman who shall hold office for two years immediately following the Annual General Meeting of the previous Chairman's term of office. Such election shall be held at the last Committee meeting of the previous Chairman's term of office. On expiration of a Chairman's term of office, he may serve on the Committee in an ex officio capacity for a period of two years as immediate past Chairman.

The Committee shall elect from amongst its members a Vice-Chairman who shall hold office for two years immediately following the Annual General Meeting of the previous Vice-Chairman's term of office. Such election shall be 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 shall 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 so appointed to fill a casual vacancy shall hold office until the following Annual General Meeting and shall then retire. The casual vacancy shall 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 shall 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 shall be eligible, except as otherwise provided, for election or appointment or co-option to the Committee.

Objects and policies

The objects of the Society are to advance knowledge in and encourage the art and science of tunnelling by fostering understanding, experience, interest and research therein. Summary of policies adopted to further the objects of the Society are:

- To provide a forum for the discussion of the problems and techniques of tunnelling
- To encourage tunnelling research and development
- To arrange for the publication of papers and collect and disseminate information on tunnelling

- To hold meetings of members, including where appropriate non-members, of the Society and to co-operate with other associations in holding meetings locally, nationally and internationally
- To maintain liaison with similar associations and individuals in other countries and to co-operate and participate 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
- To offer specialist assistance and advice to HM Government, statutory authorities, boards, institutions and similar bodies and to make representations to such bodies
- To all such other things as are incidental or conducive to the attainment of any or all of the above aims.

CHAIRMANS REPORT 2007

The last year has again been very busy for the Society and its Committee.

The 2007 AGM saw the presentation of the James Clark Medal to Tommy Talbott, a former Vice Chairman of the BTS and lifelong contributor to the tunnelling industry. We also extend our congratulations to Ian Whitehead of Mott MacDonald who won the Harding Prize in 2007.

We are delighted to report that BTS member Martin Knights was elected President of ITA in May 2007; Martin joins our committee meetings regularly to report his achievements and ITA activities. Martin is supported by BTS in his ITA activities, and we trust that his presidency will be a success.

Our industry remains buoyant, having seen the completion of the Lea Valley Cable Tunnels and commencement of the A3 Hindhead Tunnel, and work continuing at King's Cross, Croydon Cable Tunnel, Glendoe Hydro Scheme, and the Docklands Light Railway. Progress has also been made with Crossrail and Tideway, two massive pieces of London's forthcoming infrastructure,

Unfortunately there has been a slight drop in UK membership to 544 although there has been a slight increase in overseas membership to 164. It is hoped that this trend of falling individual UK membership can be reversed. Our finances remain in good order, with a healthy operating balance which has increased over the last few years reflecting the success of income from publications and the BTS Course.

The mainstay of the Society's activities is the varied programme of discussions and presentations held at the Institution each month. These cover projects of interest, latest developments in tunnelling, and other issues for our industry. We strive to build upon that programme each year, to fulfill our learned society function of knowledge-sharing, and to provide thought leadership in tunnelling. Attendance at the meetings is extremely high, with typical numbers ranging from 100 to 250 members and guests. I am also pleased to report that David Donaldson has re-started the option of corporate or individual sponsorship of the bar following the evening meetings, and about half of our meetings are now followed by free drinks.

The Tunnel Design and Construction Course was re-designed this year, and was more successful than ever, attracting nearly 90 delegates to Brunel University. Further enhancements are planned for 2008.

Our engagement with ICE continues fruitfully, and we have asked Myles O'Reilly to act on our behalf in liaising between the BTS and One Great George Street in respect of their catering and refreshments after our evening meetings.

Our Health & Safety and Standards sub-committee continues to be busy, with work on a review of BS6164, an NO guidance note and a watching brief on compressed air working.

Helen Natrass's Tunnelling Lobby took a group of Parliamentarians to the Combe Down Stone mine in Bath, and made presentations during the year on sustainability, the Thames Tideway project and "tunnelling into the future". Our lobby group also supports the Associate Parliamentary Engineering Group, and is making great strides in engaging parliamentarians with tunnelling engineers.

The BTS website has undergone significant improvements and a change of provider, and we now hope that the lack of maintenance that beset us during 2007 is now over. Our thanks go to Chris Bambridge for his persistence and time taken in sorting this out.

Tunnels and Tunnelling continues to be delivered to all members monthly, and its high standard of reporting and editorial is watched over by our Advisory Board which meets with

T&T four times a year. The Society continues to publish a Newsletter, for which we are indebted to the hard work of Rodney Craig. Next year Rodney is stepping down from his role as editor and publisher of the Newsletter, and I would like to record our heartfelt thanks for his steadfast work over many years.

Our Annual Dinner 2007 was held once again at the popular Whitbread Brewery, our Guest of Honour was Tim Brick from Dublin Corporation. The after-dinner speaker was David Kendall, the Yorkshire Bank Manager.

Our emergent Sustainability sub committee has started work, looking at how the industry itself can be more sustainable and how we can put the arguments for tunnels themselves as a sustainable solution for infrastructure.

In closing, I would once again like to thank all the members of the committee for their continued support, commitment and hard work. The fact that this Society is so successful, well-respected, well-attended, and sociable is due in no small measure to the tremendous enthusiasm of the committee, who give their time so generously, and the support of their employers.

Finally, I would like to say that I have enjoyed and been honoured to have served as the Chairman of BTS and I wish Paul Hoyland, who takes over from me as of this AGM, all success for his two years ahead

A handwritten signature in black ink, appearing to read 'Bill Grose', written over a light blue rectangular background.

Bill Grose
BTS Chairman

February 2008

ADMINISTRATION OF THE SOCIETY

The business affairs of the society are administered by a committee consisting of nine elected members, several co-opted and ex officio members together with a representative from the Institution of Civil Engineers and the Institute of Materials, Minerals and Mining.

Three vacancies arose in the Committee, due to retirement of elected members, as previously advised to the BTS membership. There were three nominations, all of whom are duly elected to serve from the 2007 AGM for 3 years. They are:

- Lawrence Halls
- Chris Dulake
- Nathan Wilmot

In addition the Committee has requested Bob Ibell to continue as a co-opted member of the Committee, which he has agreed to do.

In 2007, Mr G Bateman stood down from the committee.

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 subcommittees as follows:

1. PAPERS AND MEETINGS

Michael Francis (Chair), Damian McGirr, Nathan Wilmot, Shani Wallis, Alan Bozeat.

This year a series of interesting papers on a variety of UK and international tunnelling topics have been presented, highlighting the latest developments in tunnelling and the issues that are affecting our industry.

Offers of suitable presentations are always welcome and the society is grateful for the support of the speakers, especially the international speakers who travel to the UK to give their presentations.

Papers presented during 2007 were:

Date	Title	Speakers
18-Jan-07	Limerick Main Drainage Project A project with EPBM and slurry TBM's with challenging mixed ground conditions	Russell Naylor, Resident Engineer Seamus Ryan – Limerick City Council Peter Jaques – Murphy
15-Feb-07	Joint Meeting with MinSouth/IMMM Stabilisation of Caverns at Coombe Down Bath Design and environmental assesment of measures to stabilise old mine workings in limestone	Ashley Poulter – Scott Wilson
15-Mar-07	Glendoe Hydropower Bored/Drill and Blast Rock Tunnels, Underground Powerhouse Cavern	Neil Sandilands,(Scottish and Southern Energy) David Hobson (Jacobs Engineering) Christian Zimmerman, (Hochtief Glendoe JV) Johann Schoendube (Hochtief Glendoe JV)
19-Apr-07	Harding Prize Shortlisted Papers Shallow Cavern Stations, A major undertaking for New York City's first subway in 60 years Datchet Tunnel Repair Recent modelling of challenging tunnelling soil-structure interaction problems in Asia	Hannes Lagerger - Arup Ian Whitehead - Mott Macdonald Nathan Wilmot - Arup

17-May-07	BTS AGM LUL Cooling the Tube Creating space for ventilation plant in and around the congested underground stations	David Waboso – LUL Mark Gilbey – PB
21-Jun-07	Durban Harbour Tunnel South Africa 4.4 m dia 500 m long bored tunnel under the harbour	Andrew Officer (Goba (Pty) Ltd) Andrew Hindmarch – Mott Macdonald
20-Sep-07	DLR Woolwich Extension Twin bore tunnels under the Thames in chalk extending the DLR to Woolwich Arsenal	Harvey Pownall (WARE), Andy Alder (Halcrow), Daljit Dhanda (Morgan Est)
18-Oct-07	Crossrail Underground Conference 2007 An update on the plans for London's major cross city rail infrastructure	Doug Oakervee – CLRL
15-Nov-07	Joint meeting with BGA Dounreay Shaft Isolation of shaft used as depository for radioactive waste by innovative grouting	Alex Tiernan - Project Manager Iain Robertson - Site Manager Dounreay Shaft Isolation Project
6-Dec-07	From our Correspondents A view of tunnelling worldwide from the Tunnelling Press Correspondents.	Tris Thomas Shani Wallis

The February meeting was held jointly with MinSouth. The November meeting was jointly held with the BGA.

All meetings were held at One Great George Street.

2. TRAINING AND EDUCATION

Colin Eddie (Chair), Chris Bambridge, Lawrence Halls, Bob Ibell (co-opted)

The training and education subcommittee has over the last year concentrated on three streams of activity; the BTS course, the achievement of a competent and qualified workforce and encouraging young people into the tunnelling industry.

The five day BTS Tunnel Design and Construction course was this year held at Brunel University and was attended by 87 delegates. Following feedback from the 2006 course, the format was changed significantly to improve delegate participation. Five themes were chosen; introduction to tunnelling, project development, scl, soft ground and finishing on the final day with rock tunnelling. Breakout sessions and workshops were introduced this year and feedback proved very positive.

The subcommittee propose to further enhance the course for 2008 in the following ways:

- Each speaker will be invited to provide electronic copies of supporting literature (papers) pertinent to their topic
- Copies of powerpoint presentations in addition to the speakers written papers will be made available to the delegates.
- Greater input from leading academics on key topics

The Tunnel Skills initiative was launched in the period. This will provide a formal framework for both training and competency assessment and aims to aid the development and promotion of the qualifications and skills required in the modern tunnelling industry. Articles of Association to the CITB Construction Skills scheme have been drafted and briefing sessions with all major contractors and key UK clients have been held.

In recognition of the predicted skills shortage in the industry in the coming years, the subcommittee has examined ways in which to encourage young people into the industry. The Royal Academy of

Engineering have and will continue to support this programme and to date 20 separate initiatives have been identified.

3. AWARDS

Michael Francis (Chair), Ian Williams, Chris Dulake

Three papers were received for the Harding Prize Competition. These were presented at the April meeting. The winner was Ian Whitehead of Mott MacDonald who described the repair to the Thames Water raw water pipeline near Datchet.

The James Clark Memorial Medal was presented at the AGM to Tommy Talbott, Miller Construction (Morgan Est). Chris Hughes in his introduction said that Tommy is a Fellow of the Institution and a former Vice Chairman of the Society.

Tommy left the Royal Engineers in the late 1950's to join Sir James Miller and Partners as a site engineer. Over the next four decades, he rose through the ranks in this contracting organisation as it changed ownership to Miller Buckley, Miller Construction and latterly Morgan Est. Tommy retired as an executive director in the mid 1990's but has continued in a part-time capacity, offering advice and support to the Morgan tunnelling team.

In his lighthearted address Chris Hughes praised Tommy for his unstinting generosity in coaching and mentoring younger tunnel engineers, and his ability to inspire teamwork during what can sometimes be very difficult and trying periods when undertaking tunnelling works.

4. FINANCE AND MEMBERSHIP

Paul Hoyland (Chair), Bill Grose

Finance

To meet the financial demands on the society's funds, including inflation, the Committee decided to increase the subscriptions. The rises are in the region of 5%.

The rates for 2008 are as follows:

	<i>UK</i> £	Overseas £
Corporate Member Small (Up to 50 Employees)	360.00	430.00
Corporate Member Medium (50 to 500 Employees)	570.00	760.00
Corporate Member Large (Over 500 Employees)	925.00	1290.00
Individual	71.00	110.00
Retired	28.00	35.00
Student	24.00	35.00

The new committee will seek to set a budget for the forthcoming year that returns a modest surplus.

Membership: The details of the current membership as at end 2007 is set out below:

		2007	
UK	Corporate Members	30	Increase of 5
	Individual Members	464	Decrease of 79
	Student and Retired	50	Increase of 1
	UK Total	544	Decrease of 73
Overseas	Corporate Members	2	No change
	Individual Members	152	Increase of 2
	Student and Retired	10	No change
	Overseas Total	164	Increase of 2

The histogram attached shows the membership figures for the last seven years. Following the slight upturn in membership figures for 2005 and 2006 there has been a significant fall in individual UK

membership although the number of UK corporate members has increased. It is hoped that this trend of falling individual membership can be reversed.

Please refer to Appendix 1 on page 16 for further details of membership figures.

5. HEALTH & SAFETY and STANDARDS

Donald Lamont (Chair), Dave Court, Lawrence Halls, Helen Natrass.

CEN Standards – draft amendments to EN 12110 (Airlocks), EN 12111 (Roadheaders), EN 12336 (Shield machines) and EN 815 (Hard rock TBMs) to meet the requirements of Directive 2006-42-EC were finalised in November. The work item to revise EN 12111 was agreed in principle. Work began on the combination of ENs 12336 and 815 into a single standard. CEN/TC151/WG4 continued to have participants from UK, Switzerland and Germany only. Efforts continued to be made to secure French participation but without success.

BS 6164 – a review of this standard was carried out by BSI and a number of potential amendments identified. The draft text for discussion by the BSI committee which was expected in early 2007 did not appear due to resource shortages in BSI. The BTS committee has been kept aware of developments.

Nitrogen Monoxide Guidance – the final text of this guidance note has been drafted and is undergoing editing and formatting. It is hoped to present a paper on recent research and guidance relating to NO at ITA in 2008.

Compressed Air Working Group – CAWG met once during the year and as last year, no compressed air work was undertaken during the period. The group continued to work on the digitisation of the Radiographic Atlas first used to classify dysbaric osteonecrosis in the 1960s. This valuable reference document will be copied to medical schools as a teaching aid when available. The group commented on the results of HSE's research on the use of Doppler as a real time monitoring tool in compressed air work. A second meeting of CAWG to discuss HSE's proposals for the revision of L96 – Guide to the Work in Compressed Air Regulations 1996 had to be postponed until early 2008.

6. TECHNICAL

Michael Francis (Chair), Colin Eddie, Ian Williams

The Society is currently working on 3 main documents and guides – Best Practice Guide for Monitoring (see separate statement), Best Practice Guide for Timbering, and the Tunnelling Specification.

The Best Practice Guide for Timbering is in its early stages of development and will continue to be developed under the chairmanship of Helen Natrass.

The Tunnelling Specification has had several sections updated, and contributions from the industry have been reviewed and included where they are considered to improve or clarify the original. There is a need for thorough review and rewrite of the Sprayed Concrete Lining. This will be done in collaboration with Crossrail.

7. TUNNELLING LOBBY

Helen Natrass (Chair), Bill Grose, Paul Hoyland, Alan Bozeat, Colin Eddie

The Lobby Group has continued its efforts in a similar vein to the previous season. The Rt. Hon. Nick Raynsford MP continues as Chairman of the All Party Parliamentary Group for Underground Space (APGUS), with Helen Natrass facilitating the assistance of the BTS in arranging events.

APGUS has held the following events since the last report was prepared:

- AGM and talk on sustainability of underground structures
- Presentation 'The Thames Tideway Project'
- Site visit to Combe Down stone mine
- Presentation 'Tunnelling into the future' – joint meeting with the Associate Parliamentary Engineering Group and the All Party Parliamentary Group for Earth Science, followed by BTS drinks reception.

The presentations have been attended by increasing numbers of Parliamentarians. Site visits continue to attract fewer because of committee and voting pressures in the House. Our presentations have also

attracted large audiences from amongst the BTS membership and guests. The magnitude of the support for these events impresses Parliamentarians who then note that the issues in question are of concern to industry and should be taken seriously.

The Lobby Group has supported the meetings of the Associate Parliamentary Engineering Group (APEG), ensuring our presence in the wider engineering lobby. The joint meeting we organised with APEG and the All Party Parliamentary Group for Earth Science was a very successful event for addressing a wider audience, broadening our contacts and networking. We intend to build on the modest success of this season for next year.

8. WEBSITE

Chris Bambridge (Chair)

2007 started with the Web site requiring significant work doing to it to bring it back into full functionality. A change of web service provider has greatly improved the performance of the site and we are now able to upload changes within 48hrs of them being required. The site has received an improved functionality through drop down menus and the home page shows the latest additions. It is hoped that members find these of use.

Behind the scenes the site has been upgraded to comply with latest web guidelines in order to improve access and our exposure through search engines. As the public face of the BTS we are keen to ensure that member's interests are looked after. Any errors omissions or suggestions to improve the site are always welcome and will receive swift attention.

In 2008 we hope to continue improvements to the site and to include links to our corporate sponsors sites to give something additional back for supporting the BTS.

9. TUNNELS AND TUNNELLING INTERNATIONAL EDITORIAL ADVISORY BOARD

Myles O'Reilly (Chair), Geoff Bateman, Keith Bowers, David Court, Paul Hoyland, Tom King, Richard Lewis, Barry New, Andrew Smith, Ivor Thomas and Eddie Woods.

All members of the British Tunnelling Society receive the journal Tunnels and Tunnelling International (T&TI) every month. This magazine contains up to the minute news on the tunnelling industry internationally, a wide range of technical articles and reports of the BTS meetings held at the Institution of Civil Engineers, Great George Street, London. It is also used to transmit the Society's circulars and newsletter to members.

Four meetings of the Advisory Board were held during 2007. At these meetings the contents of the journal were reviewed with the Editorial Staff and Publisher of T&TI and ideas on topics for inclusion in future issues were discussed. It is very important that the standard of the technical articles in T&TI is high, and that the range of topics covered in each issue is sufficiently wide and comprehensive so that there is always something to interest every BTS member. It is important, too, given T&TI's close relationship with the Society that the journal is well regarded world wide.

The view of BTS members on any issue relating to T&TI are always welcome and some members of the Advisory Board are invariably available to be nobbled in the bar following Society meetings at the Institution. Letters to T&TI are to be encouraged because lively correspondence columns can greatly increase interest in a technical journal.

10. INTERNATIONAL TUNNELLING ASSOCIATION (ITA)

Donald Lamont, Member Nation Representative, Martin Knights, President of ITA

Martin Knights was elected President of the International Tunnelling Association and Underground Space Association in Prague in May 2007 by a two-thirds majority and a clear mandate for pushing ahead the new ITA Strategy.

Under Martin's Presidency the ITA has proposals for developing the 2007 strategy including:

- New proposals for the Annual Communications meeting
- Website upgrading
- Proposed position papers for public attention
- Launching the new sub-committees for Training (ITA CET) and the use of underground space (ITACUS)
- Membership drive

- Ideas for more effective operation of the Working Groups
- Preparations for the replacement of the Secretary General post 2009

The new Executive Committee has mobilised quickly to deal with the 2007 Strategy requirements and Martin is sure that they will have good progress to report by the time of the next meeting in Agra, India in September 2008.

The next ad hoc meeting of the Executive Committee took place in Amsterdam in January 2008 on the occasion of the Dutch Tunnelling Congress organised by Han Admiraal of COB (Who spoke at the October BTS meeting) entitled "Think Deep". This promises to be an exciting agenda which addresses the concepts that influence the need to build infrastructure underground. The slogan for the Amsterdam Congress is "Can you afford not to go underground?" Crossrail and Thames Water Tideway senior representatives have been invited to be keynote speakers at this Congress.

Martin presented a paper at the STUVA Congress in Koln at the end of November. This will be on the ITA website. The Congress was Alfred Haack's final official farewell to his colleagues in the tunnelling world on the occasion of his retirement.

Martin's paper is about resources, sustainability and how underground solutions are appropriate. The paper will be the basis for a number of presentations that Martin will make in the next year or so including at Amsterdam.

11. ANNUAL DINNER

John Scholey (Chair)

On 18th May 2007 (a week later than our usual 'slot'), the nineteenth BTS annual dinner was held at The Brewery banqueting centre, attended by 473 members, partners and guests. The event supplemented BTS funds by some £3,000.

We reinstated the champagne reception, with the assistance of sponsorship from Continental Conveyor, to whom very many thanks.

The chairman's guests included Dublin Port Tunnel client Mr Tim Brick and Harding prize winners Ian Whitehead and Adrian Tan. The dinner was followed by an address by Chairman Bill Grose and a speech from David Kendall, both of which were well received. Music from Rockin' Flames then accompanied the inevitable reconstruction of a wide range of tunnel projects from years past.

Please note that the 2008 dinner is on 9th May 2008. This is our usual 'slot', i.e. the one following the early May Bank Holiday. See you there!

12. MONITORING GUIDE

Damian McGirr (Chair), Keith Bowers, David Cook, Frank Mimmagh, Rand Seldman

Progress on the development of the monitoring guide has been steady in the past twelve months. Below is a reminder of the scope/objectives of the guide:

1. The document is intended to provide best practice guidance to assist those who have responsibilities which require the use of monitoring systems to manage risks in underground construction. This includes Clients, Project Managers, Designers and Contractors who all have duties at different stages in the life of a project. The guidance may also be relevant to other parties, such as insurers and adjacent infrastructure owners, who have interests in underground works.
2. The scope of the report is principally geotechnical and structural monitoring relevant to underground construction.
3. In general the report will address monitoring of parameters relevant to structural behaviour (such as displacement, stress, strain, temperature and groundwater pressure). The report does not set out to address specifically environmental monitoring (such as contamination, noise and

vibration). Nonetheless, it is recognised that many principles of good practice may be common to both types of monitoring.

4. The report aims to include monitoring undertaken for a range of different objectives and on behalf of various stakeholders. Thus it is intended to include monitoring of new underground works (for construction verification and control) and the monitoring of existing infrastructure affected by underground construction (for infrastructure protection). It will also consider the need to integrate monitoring information with works progress data to facilitate interpretation and construction management.
5. The guidance will focus on the principles which must be adopted to ensure that such systems are safe, effective and efficient. The guidance is not intended to be prescriptive in terms of detail design, which it is recognised changes relatively rapidly with advances in technology. Nor is it intended that this guide will specifically address the technology (both hardware and software) of monitoring equipment.

The structure of the report is now decided and a draft of the document is nearing completion. It is planned to have a draft for review by the full committee in May/June 2008. The aim is still to publish the document at the end of 2008 / early 2009.

13. NEWSLETTER

Rodney Craig (Chair)

'The Society publishes every two months a BTS Newsletter. However, during 2007 there were only 5 Newsletters published. The Newsletters are sent to members whose names are on the Secretary's e-mail database and are published on the Societies' website.

The change of website organiser during 2007 has meant that the Newsletters were not immediately placed on the website. However since the beginning of 2008 all Newsletters are now on the website. If you would like a copy of the Newsletter regularly, please contact the Secretary Jade Donovan at the BTS, who will forward a copy on issue.'

14. SUSTAINABILITY

David Donaldson (Chair)

The Society has commenced a review of the impacts which sustainability can have upon tunnelling projects. The ICE paper "Society, Sustainability and Civil Engineering" (ICE et al 2002) has adopted the United Nations definition of Sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs". A sub-committee has been formed to address the challenges which sustainability presents in tunnel design and construction with emphasis on UK projects.

Sustainability in tunnelling

There are several general areas in which tunnellers can contribute to sustainability – in examining the case for tunnels compared to other infrastructure; in the construction of tunnels; and in the operation of tunnels.

The case for tunnels

In evaluating tunnels against other options (eg at-grade roads, or bridges over rivers, or by-passes round obstacles) one can look at the economic, environmental & societal aspects on the usual bases, but including embodied energy, the environmental value eg aesthetics; control of pollution (noise, exhausts); environmental control (eg A/C in railway stations; sewage outflows in storms).

There is a strong argument for the societal value of underground space – in terms of safety (eg, safe haven, protection of assets); or, for example, the disposal of hazardous waste.

There is also an argument for tunnels in looking at whole-life economy – embodied energy over whole life cycle; travel time etc

Sustainability in tunnel construction

There are several areas where a sustainable approach can be applied to tunnel construction, eg

- Re-use of spoil
- Non-polluting consumables
- Zero ground movement
- More energy-efficient TBMs
- Energy-efficient linings
- More efficient ventilation

Sustainability in tunnel operations

Also there are areas for consideration in the operation of tunnels:

- In the refurbishment of existing infrastructure
- In retro-fitting or upgrading existing tunnels
- Cooling London's tube

There are several research initiatives currently being pursued in the UK, these include;

Embodied energy in tunnels – being studied by Cambridge University on the CTRL London tunnels.

Geothermal tunnels – using tunnels for ground heat storage, this links to EU 7th Framework research, and the “Cooling the Tube” initiative.

The sub-committee will address the challenges of this area of increasing importance to construction in general and tunnelling in particular and our findings and responses will be pursued together with the ICE.

15. RELATIONSHIP WITH ICE AND OTHER BODIES

As an Associated Society of the Institution of Civil Engineers, the Society continues actively to pursue this relationship with its joint meetings with other associated societies and its representation on other committees.

The use of the ICE facilities is invaluable to the Society, and is regularly used by the various subcommittee meetings and for general meetings with industry representatives.

The Society's role is to advance knowledge in and encourage the art and science of tunneling by fostering understanding, experience, interest and research therein, which is not something that can exist in isolation and there are many important links with other engineering disciplines and sciences. Although totally separate from other organizations', the Society seeks to co-operate in areas of common ground with other bodies.

16. RESERVES POLICY

The reserves as of the 31st December 2007 are £97,098; the trustees consider it important to keep unrestricted reserve levels equivalent to a year's subscription income. It is necessary to ensure that there are sufficient funds to meet the needs of current and future activities and as a result, the reserves policy is renewed annually. The activities of the Society are of a long-term nature and require continuity of funding. Reserves can therefore be relied on to act as contingency in the event of income flows being disrupted.

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 the 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 1993. 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

17. INDEPENDANT EXAMINERS

Grant Thornton, having offered themselves for reappointment as examiners shall, subject to the approval of the membership, be reappointed for the next financial year

The Annual Report on pages 2 – 16 was approved by the Committee and was signed on its behalf by:

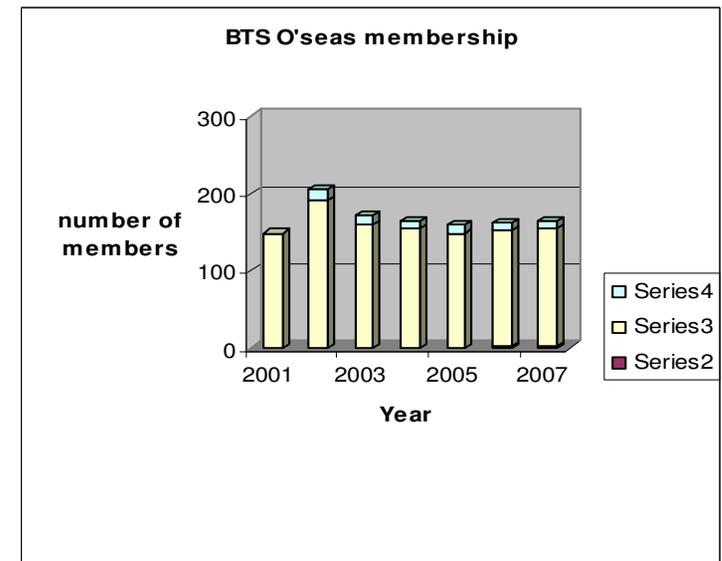
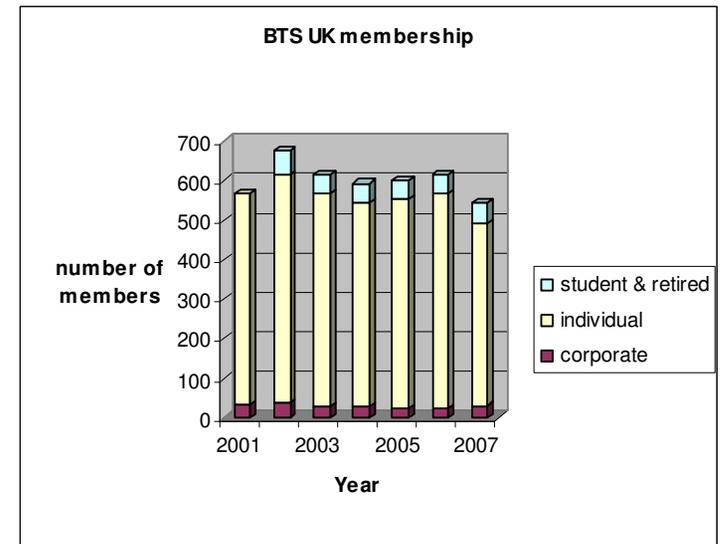
A handwritten signature in blue ink, appearing to read 'Bill Grose', is centered on the page. The signature is written in a cursive style with a long horizontal stroke at the end.

Bill Grose – Chairman of the Society

Appendix 1 - Finance & Membership: Membership Figures

BTS MEMBERSHIP - LAST 7 YEARS

		2001	2002	2003	2004	2005	2006	2007
UK	corporate	32	39	28	28	23	25	30
	individual	537	575	539	518	531	543	464
	student & retired		61	48	48	47	49	50
	total		675	615	594	601	617	544
Overseas		Oct-01	Oct-02	Oct-03	Oct-04	Oct-05	Oct-06	Oct-07
	corporate		1	1	1	1	2	2
	individual	149	190	159	154	148	150	152
	student & retired		15	12	10	11	10	10
total		206	172	165	160	162	164	
Total	corporate		40	29	29	24	27	32
	individual		765	698	672	679	693	616
	student & retired		76	60	58	58	59	60
	total		881	787	759	761	779	708



**REPORT OF THE INDEPENDENT EXAMINERS TO THE TRUSTEES OF
THE BRITISH TUNNELLING SOCIETY**

I report on the accounts for the year ended 31 December 2007, which are set out on pages 20 to 24.

This report is made solely to the trustees, as a body, in accordance with the regulations made under Section 44 of the Charities Act 1993, (the Act). My work has been undertaken so that I might state to the charity's trustees those matters I am required to state to them in an independent examiner's report and for no other purpose. To the fullest extent permitted by law, I do not accept or assume responsibility to anyone other than the charity and the charity's trustees, as a body, for my work, for this report, or for the opinions I have formed.

RESPECTIVE RESPONSIBILITIES OF TRUSTEES AND EXAMINERS

As described on page 15-16, the charity's trustees are responsible for the preparation of the accounts. The charity's trustees consider that an audit is not required for this year (under section 43(2) of the Act) and that an independent examination is needed.

It is my responsibility to:

- Examine the accounts (under section 43(3)(a) of the Act);
- To follow the procedures laid down the General Directions given by the Charity Commission under section 43(7)(b) of the Act; and
- To state whether particular matters have come to my attention.

BASIS OF INDEPENDENT EXAMINER'S STATEMENT

My examination was carried out in accordance with the General Directions given by the Charity Commissions. An examination includes a review of the accounting records kept by the charity and a comparison of the accounts presented with those records. It also includes consideration of any unusual items or disclosures in the accounts, and seeks explanations from you as trustees concerning any such matters. The procedures undertaken do not provide all the evidence that would be required in an audit, and consequently I do not express an audit opinion on the view given by the accounts.

INDEPENDENT EXAMINER'S STATEMENT

In connection with my examination, no matter has come to my attention:

- i. which gives me reasonable cause to believe that in any material respect, the requirements:
 - to keep accounting records in accordance with section 41 of the Act; and
 - to prepare accounts which accord with the accounting records and to comply with the accounting requirements of the Act;

Have not been met; or

- ii. to which, in my opinion, attention should be drawn in order to enable a proper understanding of the accounts to be reached.

Carol Rudge FCA

**GRANT THORNTON UK LLP
Chartered Accountants
Town of Office**

Date

ACCOUNTING POLICIES

BASIS OF PREPERATION

The financial statements have been prepared under the historical cost convention as in accordance with United Kingdom applicable accounting standards and the Statement of Recommended Practice "Accounting and Reporting by Charities" (SORP) issued in April 2005.

The principal accounting policies remain unchanged and are set out below.

TAXATION

The charity is exempt from taxation under current legislation.

INCOMING RESOURCES

Income is included when the conditions for receipt have been met and there is a reasonable assurance of receipt.

Income and Donations and Member subscriptions

Income from member subscriptions is included in incoming resources when these are receivable.

Interest receivable

Interest is included when receivable by the charity.

RESOURCES EXPENDED

Resources expended are included in the SOFA on an accruals basis.

Costs in support of charitable activities

Costs in support of charitable activities are comprised mainly of the costs of organising meetings.

Governance Costs

Comprises the costs of trustees' expenses and audit fees.

Fund accounting

Restricted funds are to be used for specified purposes laid down by the donor. Expenditure for those purposes is charged to the fund.

CASH FLOW

The Society has used the exemption under Financial Reporting Standard No 1 (Revised) not to prepare a cash flow statement as it qualifies as a small entity.

THE BRITISH TUNNELLING SOCIETY

Statement of Financial Activities for the year ended 31 December 2007

	Note	Unrestricted Funds £	Restricted Funds £	Total Funds 2007 £	Total 2006 £
Incoming Resources					
Incoming Resources from Charitable Activities					
Members subscriptions	1	66,246	-	66,246	61,878
Activities for Generating Funds:					
Courses and Annual Dinner	2	87,924	-	87,924	69,375
ITA Fire Protection Conference	2		-	-	26,050
Nitrogen Oxide Working Group	2	2,000	-	2,000	8,000
Publications	2	1,404	-	1,404	6,329
Investment Income		3,552	-	3,552	2,874
Total Incoming Resources		161,126	-	161,126	174,506
Resources Expended					
Costs of Generating Funds:					
Activities in furtherance of the charity	2/3	133,440	-	133,440	171,044
Governance Costs	4	3,525	-	3,525	3,525
Total charitable expenditure		136,965	-	136,965	174,569
Net Movement in Funds		24,161	-	24,161	(63)
Total Funds at 1 January		72,065	872	72,937	73,000
Total Funds at 31 December		96,226	# 872	97,098	72,937

All the Charity's activities derived from continuing operations during the above two financial periods.

The notes on pages 22 to 24 form part of these financial statements.

The Charity has no gains or losses other than those shown in the statement of financial activities above. There is no material difference between the above results and the historical cost equivalent.

Balance Sheet

THE BRITISH TUNNELLING SOCIETY BALANCE SHEET AT 31 DECEMBER 2007

	Note	2007 £	2006 £
CURRENT ASSETS			
Debtors	7	8,441	22,008
Short term deposits		70,544	70,372
Cash at bank		45,763	10,982
		<hr/>	<hr/>
		124,748	103,362
CURRENT LIABILITIES			
Creditors:			
Amounts falling due within one year	8	27,650	30,425
		<hr/>	<hr/>
NET CURRENT ASSETS		97,098	72,937
		<hr/> <hr/>	<hr/> <hr/>
INCOME FUNDS			
Unrestricted		96,226	72,065
Restricted		872	872
		<hr/>	<hr/>
		97,098	72,937
		<hr/> <hr/>	<hr/> <hr/>

Approved by the board and signed on its
behalf by:

Mr Bill Grose - Chairman

Date

The notes on pages 22 to 24 form part of these financial statements.

Notes to the Accounts

1. Members' subscriptions

The geographical analysis of subscriptions is as follows:

	2007 £	2006 £
United Kingdom	49,501	45,834
Rest of the world	16,745	16,044
	66,246	61,878

2. Activities for generating funds

	2007 £	2006 £
Tunnelling courses & annual dinner	87,924	69,375
ITA Fire Protection Conference	-	26,050
Publications	1,404	6,329
N O Working Group	2,000	8,000
	91,328	109,754

Activities in furtherance of the charity

	Unrestricted	Restricted	Total	Total
	2007 £	2007 £	2007 £	2006 £
Expenses re course & dinner	56,225	-	56,225	62,490
Harding Memorial Lecture	-	-	-	800
Tunnels & Tunnelling	42,471	-	42,471	45,825
NO Working Group	870	-	870	11,832
ITA Fire Protection Conference	2,020	-	2,020	24,567
AGPUS Reception	-	-	-	1,656
	101,586	-	101,586	147,170

3. Costs in support of charitable activities

	2007	2006
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	£	£
Printing, stationery & photocopying	1,825	1,847
Postage	2,462	1,996
Meeting expenses & secretarial	14,840	14,974
Subscription to other bodies	1,213	919
Joint Code of Practice For Risk Management of Tunnel Works in the UK	-	-
Website Costs	8,971	-
Other costs	43	388
BTS Lobby Group	1,136	-
Publicity	564	3,647
Awards & Prizes	800	103
	<u>31,854</u>	<u>23,874</u>

4. Governance Costs

	2007 £	2006 £
Examiner fees	3,525	3,525
Trustee meeting expenses	-	-
	<u>3,525</u>	<u>3,525</u>

5. Employees and Employment costs

The Society does not employ staff directly.

6. Trustees' remuneration

Trustees do not receive remuneration and there were no other transactions involving Trustees.

7. Debtors

	2007 £	2006 £
Other debtors	6,241	18,812
Prepayments and accrued income	2,200	3,196

8,441	22,008
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8. Creditors: amounts falling due within one year

	2007 £	2006 £
Creditors	11,951	10,397
Receipts in advance	15,699	20,028
	27,650	30,425

9. Restricted Funds

The committee administers the BTS CEN fund which was established in January 1991 to provide financial support to UK members of the CEN TC/151 Working group 4 which is producing European Standards for the safety aspects of tunnelling machines.

The Historical Database fund was established in July 2000. The fund is to provide financial support for a tunnelling database.

10. Analysis of net assets between funds

	Unrestricted funds £	Restricted funds £	Total funds £
Fund balances at 31 December 2007 are represented by:			
Current assets	123,876	872	124,748
Current liabilities falling due within one year	(27,650)	-	(27,650)
	96,226	872	97,098