

16

Annual report and financial statements

Charity registration no: 269275

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The Institute is a professional body seeking to promote all aspects of the science, engineering and technology of materials, minerals and mining through its members for the benefit of all. The trustees, who are duly elected members of Council, are pleased to present their annual report together with the financial statements of the Institute for the year ended 31 December 2016.

The annual report and financial statements have been prepared in accordance with the accounting policies set out on pages 42 to 45 and comply with the Charity's Royal Charter, the Charities Act 2011 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their financial statements in accordance with the financial reporting standard applicable in the UK and Republic of Ireland published on 16 July 2014.

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The Institute of Materials Minerals and Mining (IOM3) is an unincorporated registered charity with registration number 269275.

Public benefit

Materials form an integral and important part of all our lives. The materials cycle covers the exploration and extraction of raw materials from the earth, processing them into industrial/engineered materials, application of these materials, recycling of waste and the ultimate disposal of waste in an environmentally friendly way. It is more important than ever that the scientists, engineers and technologists involved in the materials cycle are qualified and experienced to make the best use of materials in terms of economics, efficiency and sustainability for the benefit of all. The objectives and activities of the Institute (see page 32) have been designed to support the wider materials, minerals and mining community together with government and other interested parties to achieve these ideals.

The Institute has referred to the Charity Commission's guidance on public benefit when reviewing its aims and objectives and in planning future activities. In particular, the Council considers how planned activities will contribute to the aims and objectives it has set.

Vision

Our vision is to be recognised as the global leader for professionals involved with the materials cycle.

Mission

- To promote the science, design, engineering and technology of materials, minerals and mining and their practical applications.
- To facilitate qualifications, professional recognition and development, and to deliver knowledge, information and networking services to a global membership and wider community.

An overview

I really enjoyed my two years as President of IOM3 after leaving Rolls-Royce at the end of 2014. It was a great honour to be given this opportunity and I feel a little sadness that the time has passed so quickly.

Mike Hicks
President
2015 – 2016

I set my priorities for the Presidency under the heading of 3M's; namely Management, Moving and Membership. In terms of Management, I am the third President to have been frustrated by the inability to get our new Governance structure into place. The Privy Council have still not given us final approval to our plans but we are hopeful for resolution in the very near future. Another disappointment is that we failed to meet our budget in 2016. However, I am pleased that robust plans have been put in place to break even by 2018. The HQ move to 297 Euston Road has gone very well and we are building on our presence within the Knowledge Quarter of the capital. Since the successful formal opening by HRH The Duke of Edinburgh in November 2015, the building has seen increasing use by both IOM3 members and external customers and the feedback has been generally very positive. Finally, Membership: our target is to achieve 20,000 members by 2020 and I am pleased to report excellent progress towards this target due to the hard work of the membership team and volunteers. The key to success will not be just down to hitting the numbers but also on attracting and retaining more younger members and achieving greater gender and ethnic diversity. Everyone can play a role in helping to meet these objectives, so please encourage your friends and

colleagues to join IOM3 or seek a membership upgrade.

Personal highlights of 2016 have included attending various membership events around the country where I have had the opportunity to meet a range of really enthusiastic people across the whole spectrum of our activities. I would like to take this opportunity to thank everyone who has invited me to their local events. I also get great pleasure from awarding medals and prizes to the many deserving individuals and companies. The Premier Awards dinner was a particularly memorable event, held for the first time in the new Bessemer Suite at Euston Road. The Young Persons' World Lecture Competition has gone from strength to strength. In 2016 the final was held at Araxá in Brazil and there were representatives from nine different countries. The standard of lectures was particularly high and I would like to record my sincere thanks to CBMM for hosting this event and for being the primary sponsor over many years. We look forward to the next event in Australia in October 2017. Finally I would like to thank all of the IOM3 staff and the many volunteers for all the support I have received and for their continued hard work and dedication. I look forward to working together in my new capacity as Chair of the Managing Board and in supporting Martin, our new President.

Looking to the future

Martin Cox
President
2017 – 2018

It's a great privilege to undertake the President's role as Mike Hicks, who held the role for the past two years, moves on to chair the Managing Board and Jon Binner relinquishes this position.

My thanks go to both Mike and Jon for the examples they have set. As a Vice-President you watch closely the progress of the President and Past President, and your attention to detail increases, the closer it comes to picking up the Presidency.

Looking to the two years that lie ahead, previous priorities remain in place. These are the recruitment and retention of members with a 20,000 membership target for 2020, increasing the number of Engineering Council registrations, a requirement to operate the organisation in line with the budget agreed, and to implement the governance changes that will increase our operational effectiveness.

Within these objectives is the ongoing development of a membership that reflects modern society with a greater ethnic and gender diversity, and an awareness of the demographics that present themselves. Strategies will need to be sought that take advantage of the increased life expectancy and evolving work patterns that are challenging the previously accepted working life and retirement model.

IOM3 has been through an extended period of change. Implementation of the long-awaited governance changes will mark a point where we will look increasingly outwards and organise ourselves to engage and address the issues that concern our technical divisions, and add to that the drive to multidisciplinary engagement and the issues that affect today's society.

Now well established in the Knowledge Quarter at 297 Euston Road, increasing engagement includes a growing international dimension to our interests, opening up ever expanding opportunities for those that wish to take them on. My own origins in the oil and gas industry featured engaging and taking on challenges, developing the habits and routines that lead to achievement and delivery, and we'll be looking to offer the same across the length and breadth of IOM3.



CEO's Review

Bernie Rickinson
Chief Executive



The year 2016 saw IOM3 consolidating its operations within the new Euston Road headquarters building and, at the same time, reaching out to enlarge its global position with new links to Brazil, Russia and Australia.

It was an eventful year packed with change and new achievements. Our schools educational outreach programme which provides a unique capability for primary and secondary school teachers surged forward to achieve a record of over 1000 schools engaged within the Schools Affiliate Scheme (SAS). From our evaluation of SAS deliverables, there is growing evidence of the positive effect this initiative is having on the engagement of young people in our community. We see the number of schools enrolling in this membership group continuing to increase at a rate of at least 10% per year. Other areas of education outreach have involved an extension of the Young Persons' Lecture Competition, both in the UK and at

the World Final. Competitors provided a modified, very short presentation to capture the imagination of school audiences. Feedback from schools in Ireland and Brazil confirmed that the concept was valued and highlighted the different style of presentation required for 11 to 16 year olds.

The importance of our international relationships was re-emphasised with the referendum vote to leave the European Union. Members and non members value the close working relationship that the Institute provides, both through its involvement with international federations and through its global member network. Council reaffirmed its intent that these relationships should be maintained to ensure no loss of linkage or activity arising from the Brexit decision.

Accreditation of university and industry courses expanded rapidly and simultaneously the Membership team enjoyed a record year for the registration of new Fellows and Chartered qualifications. Total membership grew and it was pleasing that the interest from young professionals, both as graduates and technicians, advanced in the year. With the rapidly increasing range of new members from different communities, it was important to increase our levels of training for professional review activity. A special thank you goes to all our member volunteers who assist in professional member reviews. With the growing interest from industry and academia in professional recognition of their staff, this area of IOM3 activity is set to grow still further. This broader interest was particularly relevant to our engagement with the Mining University in St Petersburg. We are well on the way to achieve a unique and recognised status in Russia and this programme is set for further expansion in 2017.

Reorganisation within the UK Steel Industry provided the Institute with the challenge to retain the extensive technical library of Tata in the UK. This large collection has been transferred to our Grantham site where jointly with other mining and materials collections, IOM3 is supporting the development of a National Materials and Minerals Archive. Integration and cataloguing of all of the collections is due to be completed in mid 2017. Together with our national Materials Information Service, this provides further extension of member benefits. During 2016, digitisation trials commenced which will lead to the integration of other online information retrieval services in 2017. Members were also advised that through the developing relationship with Taylor & Francis (our new journal publisher) their online journal access was set to broaden from 20 to almost 100 titles. This significant enrichment of access to technical knowledge is provided within our membership subscription fee and further demonstrates the breadth and depth of services that IOM3 provides to its global membership.

Against the requirement for institutions to adapt and remain relevant, IOM3 took a leading management role in the launch of a new collaborative activity spanning all UK based professional engineering institutes. The 21st Century PEI initiative is attempting to shape the organisation of professional societies so that they are ready to face the needs of members in 2025. The strength of collaboration and open

debate demonstrated by this group has been endorsed and without doubt can lead to the development of institutional change well beyond the somewhat inward and opinion-based thinking of the recent Uff Report. Interdisciplinary and collaborative engagement is required for the future. IOM3, with its many communities spanning engineering, science, design and technology, is well used to thinking and behaving in this way.

We took steps during the year to further enhance our IT and communication capability and to ensure that on an ongoing basis, the demands of data protection and cyber security are being progressed. Audit activity, both external and internal, continued through the year and this has provided real benefit in the refinement of practice. It has also confirmed the significant contribution that IOM3 is providing as a charity to public benefit. Looking to our progress on financial control we made substantial progress to improve cost reduction with relatively flat income levels. Our five year plan establishes a continuing need to increase income streams with further reorganisation to effect reduced overheads. We remain on target to achieve a break even position by 2018. The Institute is in a strong financial position enjoying total assets which have more than doubled during the last three years.

Corporate aims

Our strategic plan contains the following corporate aims:

- Increase the membership and the retention of members.
- Promote the importance and relevance of our subject areas and increase our influence.
- Improve membership services in extent, quality and perception.
- Operate at a surplus with sufficient reserves to meet at least one year's activities.

Our plans for 2017

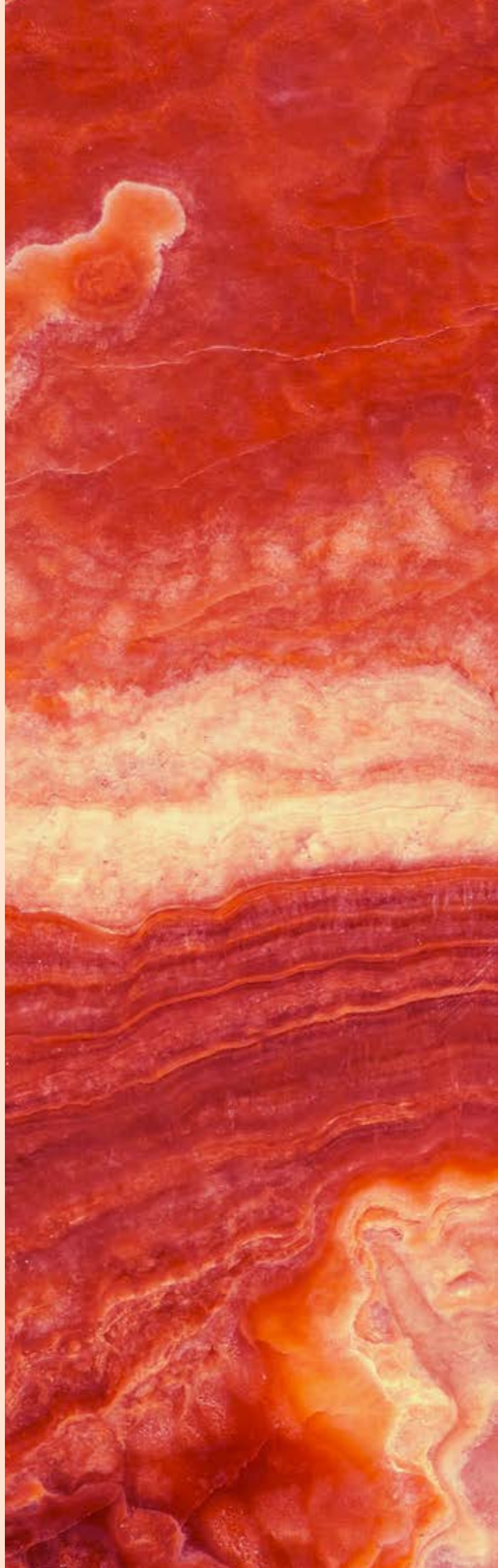
- Implement the change in governance structure previously endorsed by our membership and which reflects best practice in the charity sector;
- Continue to develop our membership, particularly with respect to younger members and registered grades;
- Make further progress in the improvement of income levels with additional control and reduction in overhead charges;
- Take full advantage of the capabilities provided by our new London premises;
- Make provision for and commence the planning of the Institute's 150th Anniversary in 2019.

2016 was the first full year of operation from the Institute's new headquarters in Euston Road, following the year of major changes related to the move from Carlton House Terrace in 2015. During the year, two further organisations were brought within the umbrella of IOM3 – the Titanium Information Group and the European Association for Brazing and Soldering. IOM3 also entered into an agreement to provide qualifications for mining engineers working in the Russian Federation.

Work continued during the year on streamlining internal procedures and systems, aided by a programme of internal audits. In common with other organisations, the issue of cyber security was high on the agenda during the year, resulting in a review of IOM3 data protection policies and overall system security, culminating in an external penetration test to assess our system vulnerability. No major security issues were identified, but this aspect of our activity will remain under constant review.

Disappointingly the plans for governance change proposed and accepted at an EGM in November 2012 were still unable to be implemented, pending the approval of the Privy Council. Details of Phase 1 of the governance proposals are described in more detail on page 30. Council began to consider Phase 2 of governance changes during 2016 and it is expected that this will be finalised during 2017.

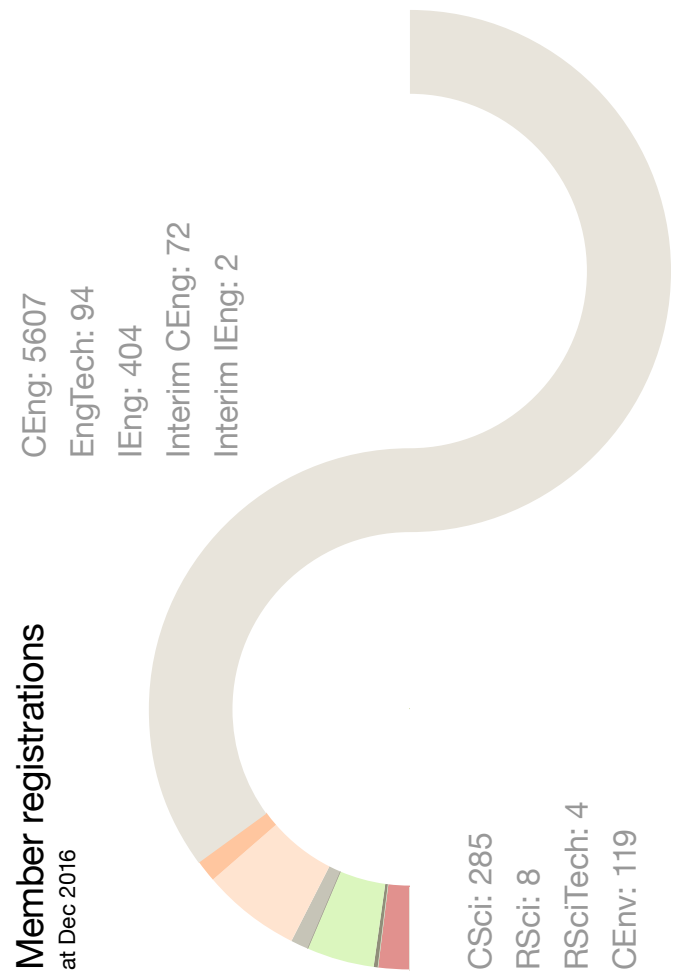
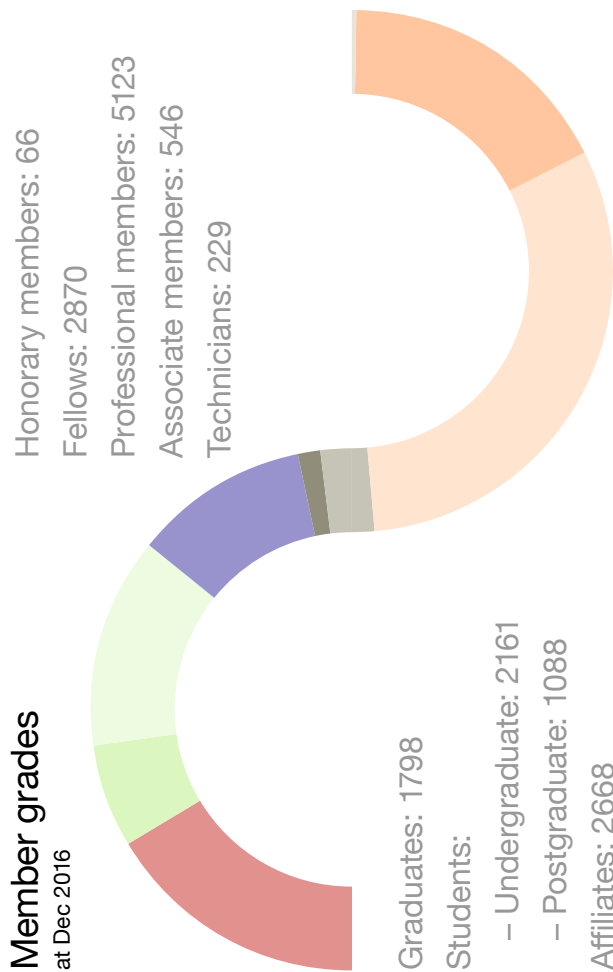
Highlights of the year across all sectors of IOM3 are described in the following pages. IOM3 is grateful to the huge cohort of volunteers contributing to our activities in the UK and overseas, and would also like acknowledge the hard work and dedication of its staff.





Highlights of 2016

Member recruitment and development saw yet more records being set. Our Membership Growth Initiative continued to make significant progress towards meeting a target of 20,000 members by 2020.



A total of 2,046 new members were recruited during the year; significantly 24% of these were women. Women now make up 18% of IOM3 members, which while modest, is the highest of all the professional engineering bodies. There is no doubt that this trend is set to continue and will be encouraged in the future.

The year also saw the launch of the 'Get Registered' campaign, with the objective of encouraging members to apply for both professional registration and the higher levels of membership. The first phase targeted those who have been members for some time and received a particularly favourable response. Numerous interviews with registered members and clinics were held to advise members, including the first CEnv forum. Overall 194 members achieved professional registration during the year, a record for the Institute.

IOM3 entered into an agreement with the Engineering Council to provide members with access to the MyCareerPath online system for planning and recording professional development (PD). This tool is particularly useful for members working towards professional registration of any kind.

Growth in the number of new Fellows also set a record with 124 being confirmed - twice the number achieved in the year before the growth initiative was launched. More than half came through the Nomination Route, demonstrating the involvement of the existing Fellow community. Growth in other membership grades was also significant during the year, particularly at Technician level. This is set to continue as initiatives in this area come to fruition, including Trailblazer Apprenticeships.

The **Younger Members' Committee (YMC)** represents the interests of IOM3 members under 35 and is involved in organising various events throughout the year to engage with young people.

Young Persons' Lecture Competition

The 2016 National Final of the Young Persons' Lecture Competition was held on 20 April at the Armourers' Hall in London, home to the Worshipful Company of Armourers & Brasiers, which supports the event. Colleen Mann, representing the North East, won with her lecture 'In the Bin for 100,000 Years: An Intergenerational Burden'.

Young Persons' World Lecture Competition

The eight finalists of the Young Persons' World Lecture Competition 2016 spent a week in Brazil, hosted by main sponsors CBMM (Companhia Brasileira de Metalurgia e Mineração). The Brazilian experience included visits to Sugar Loaf Mountain and Christ the Redeemer in Rio, the Federal University of Rio de Janeiro and a state-of-the-art-steel mill operated by Companhia Siderúrgica do Atlântico. The competition final took place in Araxá, the home of CBMM, and was followed by a special tour of the CBMM facilities. First place in the competition went to Zhong (Alan) Li from Singapore. IOM3 is grateful to sponsors CBMM and Rolls-Royce for their generous support of this major international event for young people which is now in its 12th year.

Technical outreach Drogheda

A pilot project to involve secondary schools with the World Lecture Competition was run in Ballymakenny College in Drogheda, Ireland, whereby pupils at the school took part in their own version of the UK YPLC final. The UK finalists of the YPLC had prepared five minute videos of their lecture presentations which were shown to the school pupils, followed by a discussion of the presentations and voting for the best one. The event was run by Dr Phil Bischler, chair of the 2016 judging panel for the YPWLC. It is planned to extend the activity to other secondary schools in the future.



Young Persons' Lecture Competition finalists 2016

YMC Meets

Representatives of the Younger Members' Committee conducted interviews entitled 'YMC meets...' to give an insight into the careers of prominent figures within IOM3. These included Bill Milne FIMMM, director of the Centre for Advanced Photonics and Electrics (CAPE) from 2005-2015 and co-founder Cambridge CMOS Sensors and Cambridge Xray Systems. In another interview, Kate Thornton was filmed talking to Dr Matthew Cole MEng CEng CPhys CSci MIMMM, Oppenheimer Research Fellow in the Electronic Devices and Materials group and the Cambridge Graphene Centre at the Department of Engineering, University of Cambridge. This is available on IOM3TV, the Institute's online video channel.

Matopoly

On 1 October the ever-popular Matopoly, hosted by the Younger Members' Committee, rolled back into Manchester. As with the previous versions of Matopoly, each team was required to visit a number of locations dotted around the city relating to the materials, minerals and mining theme. The chosen locations also took into account the industrial history of Manchester, for example the Macintosh Mill and Bridgewater Canal, and famous scientists from the city. As always, the aim of the event was for the teams to visit as many of the locations provided on the Matopoly game board as possible within four hours. The winning team in 2016 were the Croda Vikings.

Local Societies

East Midlands Materials Society

A very successful conference on Future Directions for Lightweight Materials and Structures was organised by the East Midlands Materials Society (EMMS), in conjunction with the British Composites Society and the Light Metals Division of IOM3 on 30 June 2016 at the National Space Centre in Leicester. The event, the fourth and most successful conference so far organised by EMMS, was sponsored by Innoval and the Titanium Information Group.

MinSouth continues student support

MinSouth sponsored two new students in 2016: Penny Weiser (University of Oxford) and Alan Morris (Camborne School of Mines). A total of five students are now receiving financial support from the society, a programme only made possible thanks to the contributions of nine company sponsors who provide financial support to various educational initiatives which include support to ESTA, STEMnet and the Ecton Hill Mining Trust. The Society has also provided support to student groups at the Royal School of Mines and Camborne School of Mines who have applied for financial assistance to enable them to participate in geology field trips and the Student Mining Games.

Cleveland Institution of Engineers

Each year, the Cleveland Institution of Engineers holds a collection for the President's nominated charity at the annual dinner. This season's President, Mark Lewis, is a keen sailor, selected the Royal National Lifeboat Institution as his charity. The local Rotary Club organises and administers the collection, and a cheque was presented to the RNLI at the Redcar lifeboat station on 3 February. £650 was raised at the CIE dinner, and the Rotary Club made this up to £750.

Ebbw Vale Metallurgical and Historical Society

Ebbw Vale Metallurgical and Historical Society held its 79th Annual Dinner at the Angel Hotel, Abergavenny. The event was attended by over 100 members and guests from all over the country.

Manchester Polymer Group

Manchester Polymer Group (MPG) once again contributed to the Manchester Science Festival with their workshop, Pliability of Plastics, with a nod to the cars of James Bond. This ran for two days in October with more than 750 parents, grandparents, children and tourists visiting the event at the Museum of Science and Industry.

6

UK regions

7

countries

50

local societies

4490

member participation in the local society programme

6140

non-member participation in the local society programme

The IOM3 **Women In Materials** group aims to continue its series of networking events for women in different parts of the UK during 2017, and to develop mechanisms for supporting women in their careers in the materials industries.

Jessica Middlemiss took over as Chair of the IOM3 Women in Materials group (WIM) during 2016. WIM hosted an evening event at Warwick Manufacturing Group, University of Warwick to celebrate National Women in Engineering Day on 23 June, attracting a good audience regardless of the fact that it was the day of the UK referendum on Brexit.

WIM was also involved in a joint event with the Younger Members' Committee in November, advising younger members on the benefits of Chartership and how to go about obtaining it. This was part of the IOM3 Get Registered campaign.

A meeting on mentoring and career development was organised in Birmingham in the first quarter of 2017, and WIM is planning their fourth celebration of National Women in Engineering Day in London on 23 June.

WIM was pleased to see that three IOM3 local societies had women presidents last year – Cornish Institute of Engineers, East Midlands Materials Society and the North of England Institute of Mining and Mechanical Engineers. WIM has compiled a detailed list of options for volunteer participation within IOM3, which will be promoted to all members during 2017, and will be encouraging women in particular to become more involved in IOM3 activities across the board.



Catherine Miller, President - North of England Institute of Mining and Mechanical Engineers (NEIMME). Catherine first became involved with NEIMME while undertaking her Masters degree and became the first woman President in 2015, its 163rd year.



Kim-Marie Crowther, President - Cornish Institute of Engineers (CIE). Kim-Marie is the first female President in an organisation active for more than 150 years.



Dr Katy Voisey, President - East Midlands Materials Society (EMMS). Katy became involved in EMMS in 2005 and has been president since 2013.

24%

of 2016 new members are female

17%

of 2016 new Fellows are women

The Materials Information Service (MIS) continues to provide technical help and information to personal members, corporate members and the general public.

2016 continued to see a large number of enquiries from a global audience via the IOM3 website, with technical enquiries being especially brisk in the early part of the year. Project work was undertaken during the year for companies in the USA, Egypt, Spain and the UK.

The MIS Team continued to support the technical communities within IOM3, particularly identifying areas of synergy between them. Significant changes in the delivery of such support will be implemented during 2017 to reduce costs and increase efficiency.

The Library Services team saw an increase in the level of document requests and library related enquiries. Another main project was the transfer of parts of the Tata Steel UK Ltd, Swinden Technology Centre Library, Rotherham to the IOM3 Grantham Centre. A Memorandum of Agreement was signed at the beginning of 2016, and the move was completed at the end of November 2016. A published list of books and journals in the Collection will be available in mid 2017.

The IMIMAGE (Information on Mining, Metallurgy and Geological Exploration) bibliographic database continues to be produced and managed by MIS staff and is highly appreciated by members, subscribers and researchers worldwide. A slight decline in subscriptions was more than matched by the high level of interest and support from members.

A European Project to participate in a Horizon 2020 work package – MATCH (Materials Common House) continued during 2016. A number of workshops were attended to contribute to foresight and road mapping for the final project outcome, deliverable in June 2017. MIS is also heavily involved in the Signature Materials project to establish technological solutions to metal theft in the UK and beyond. Further work to combat the theft of copper earth straps particularly in distribution sub stations was commissioned by Electricity North West during the latter part of the year and into 2017.

Major objectives for 2017 are to grow membership of the Titanium Information Group and IOM3 Industry Affiliate Scheme, increase training activity for brazing and soldering at Grantham and project work within the European Association for Brazing and Soldering (EABS), and continue the digitisation project of library resources. MIS will also be investigating a new system to manage and take advantage of opportunities arising from technical enquiries.

Journals

Taylor & Francis Group has made good progress since taking over the Institute's journal publishing activity in 2015. In 2017, (from the end of January) the range of publishing services IOM3 and its members enjoy will be enhanced with selected offerings from their suite of materials science and engineering journals. IOM3 members are also entitled to a book discount with CRC Press which is part of the same parent company.

Work on the pilot library digitisation project begun in late 2015 continued throughout 2016 and sample items were sent to OneMine (an online digital library of mining and minerals publications). A trial of selected users showed that the information contained in the pilot project was useful and of interest to members, and we are currently working to find the best means of delivering content to members in future.

Magazines

The Institute's member magazines comprise the monthly Materials World and quarterly Clay Technology. During 2016, the magazines team introduced a country report series to Materials World and also saw increased member participation in the magazine, particularly towards the end of 2016, with extended letters and opinion sections. Clay Technology was expanded in size and content by eight pages. The Materials World companion blog exceeded 21,000 followers, which gives it a significant reach outside of our core audience of IOM3 members. Materials World also reached its 25th volume of publication with the January 2017 issue.

A switch to a new mailing provider reduced costs while also ensuring that each issue arrives with members more quickly and reliably.

The magazines team aims to continue to increase member and divisional participation in the magazines, especially encouraging more younger members to contribute articles and opinion pieces, to help promote the Institute to the next generation of members in the early stages of their careers.

A highlight of our international activities was a milestone collaboration agreement with the National Association of Mining Engineers in St Petersburg, Russia.

The cornerstone of the agreement is to provide competence-based qualifications for mining engineers working in the Russian Federation. Both parties are committed to improving engineering standards and ensuring that the agreement serves as a positive change for the industry.

Training

The IOM3 Training Academy based at our Grantham Centre has continued to deliver courses and training interventions to meet the human resource development needs of the packaging, clay and wood industry sectors. The number of delegates registering in 2016 increased on the previous year despite uncertain fiscal conditions brought about by Brexit and other industry-specific issues.

The packaging course portfolio remains popular, with the industry-respected Diploma course attracting more than 40 delegates during the year. The Certificate course saw a resurgence of interest and was oversubscribed, and our other one-day bespoke courses were well attended. It is planned to add to the short course offering in 2017.

A new QCF Level 3 Certificate in Wood Technology was launched in 2016, structured to follow on from the existing QCF Level 2 course in Timber and Panel Products. Successful completion of the new course will enable students to apply for professional accreditation as a Registered Science Technician (Science Council) and Engineering Technician (Engineering Council). Participant numbers for training in wood science and technology have grown with this new course, and we intend to consolidate this position through more targeted marketing and a portfolio of one-day courses and training interventions in the next year.

Four refresher and training events associated with the Clay Quarry Manager's CPD scheme, run by the IOM3 Training Academy, were delivered during 2016. This scheme has seen an increase in participation as more companies become aware of the need to update and maintain the skill sets of key members of staff in their organisations.

The Technical Certificate in Clay Building Products was again fully subscribed, while work continues on the course revalidation, due for completion in 2017. IOM3 is currently consulting with industry to identify what level and format future courses should take.

PIABC

PIABC Ltd is a specialist awarding body administered by IOM3, with a suite of regulated and nationally recognised qualifications in the materials sector. During 2016 PIABC continued to develop and evolve qualifications to meet the needs of the materials sector including two regulated Clay Technology qualifications and a Wood Technology qualification. PIABC undertook a rebranding exercise and launched a new website, built in-house, during the summer of 2016. In September it became PIABC Limited to meet the requirement in the Apprenticeships, Skills, Children and Learning Act (2009), which follows through into Criteria for Recognition of three of PIABC's Regulators (CCEA Regulation, Ofqual and Qualification Wales) and the General Conditions of Recognition requiring an awarding organisation to be legally established and constituted.

PIABC successfully completed its annual regulatory activities for each of its four Regulators (CCEA Regulation, Ofqual, Qualification Wales and SQA Accreditation). We fully expect that 2017 will be another challenging year in the light of the changes to vocational and technical education through the Government's Post 16 Skills Plan and its planned 15 technical routes (T-Levels) on the horizon.

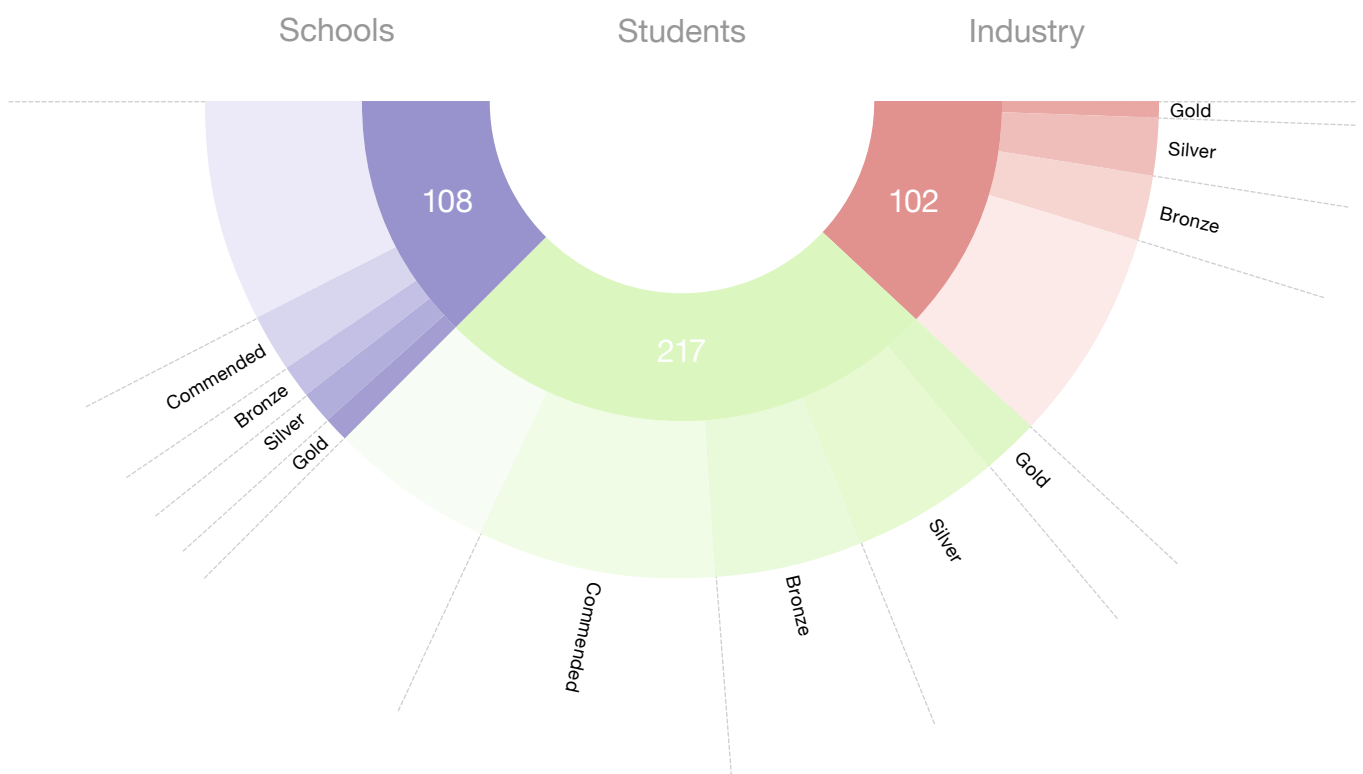
Venue Hire

The London office at 297 Euston Road saw an increase in the number of new external clients hiring meeting room space for conferences, workshops, meetings and events. The Members' business area, based on the 4th floor, has been in regular use. Feedback shows that members value this benefit as the London office is well situated with excellent public transport links.

The IOM3 regional office in Stoke-on-Trent was refurbished during 2016 and is now available to hire for meetings and events. Members are also entitled to free use of the Members' Business Area on the ground floor and receive discounted rates on room hire charges. Members who are in the vicinity are welcome to come and view the new facilities.

Following the merger of the European Association of Brazing and Soldering into IOM3, SkillFridge used the Grantham Boilerhouse to hold a regional heat of a national brazing competition, which may become a regular event at the Boilerhouse.

The **Starpack Industry Awards** scheme recognises innovation in packaging design and technology, with its Schools and Student awards intended to encourage young people to take up careers in consumer packaging design.



Starpack Awards 2016 totalled 427 entries.

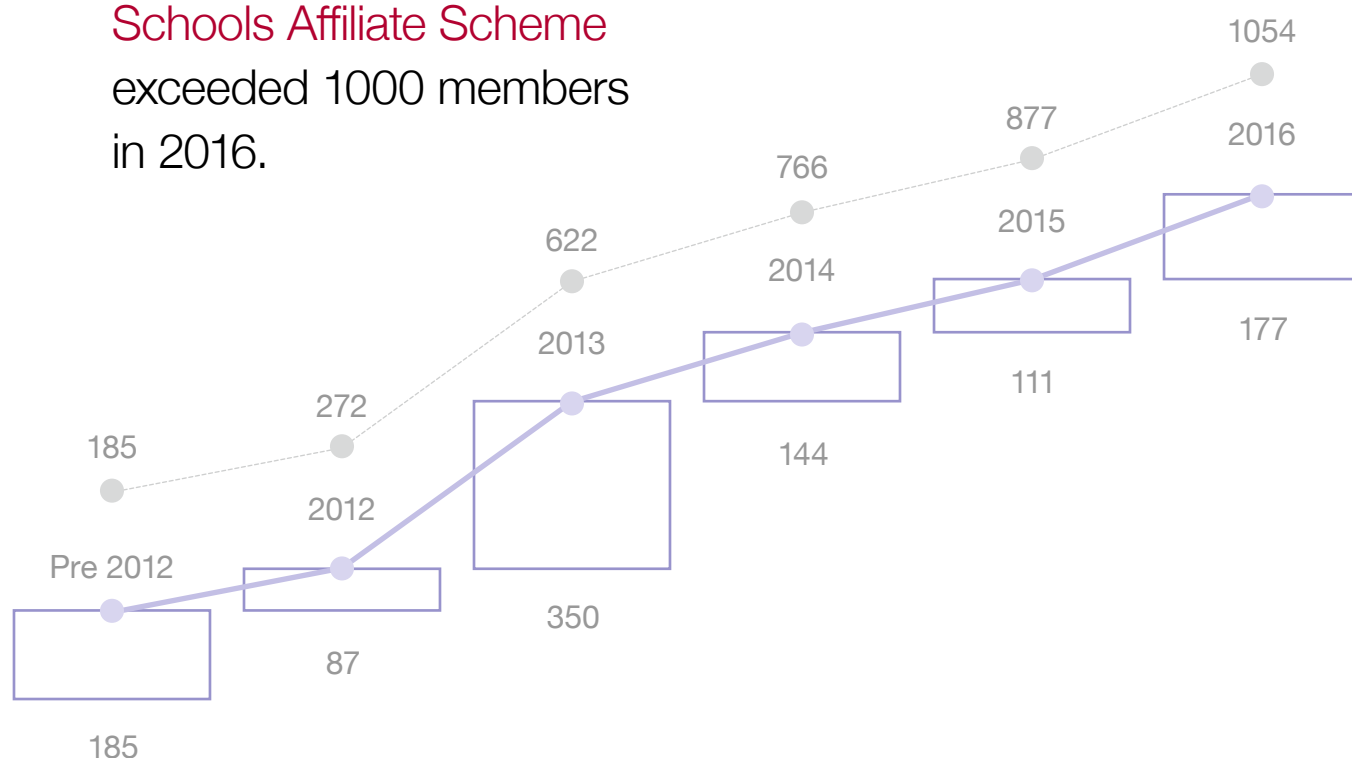
The 2016 Starpack awards scheme received over 100 entries from school pupils, over 200 from students and more than 100 for the Industry Awards. The ceremony for the Schools and Student awards was held in June at IOM3 headquarters in London, incorporating a marquee on the Euston Road, with schools entrants being treated to a trip on the London Eye. The Industry Awards were presented at the Easyfairs Packaging Innovations event in London in September.

In 2017, relaunched as the Starpack Packaging Industry Innovation Awards, the competition will recognise excellence in packaging innovation, design and development – with a new

focus on a personal level of recognition for those working in industry, as well as corporate awards.

The WorldStar Awards, the largest global packaging competition, owned by the World Packaging Organisation (WPO), continue to grow and succeed under the administration of IOM3. A record number of 195 winners were awarded a WorldStar during the 2016 awards judging session held in Vienna, Austria, including 12 entries from the UK. 2016 also saw the addition of a special category – Packaging that Saves Food – whose successful entries will be on view at Interpack, Dusseldorf in May 2017.

Schools Affiliate Scheme exceeded 1000 members in 2016.



2016 was another successful year for Education. Our activities provide educators with resources to enrich and enhance their teaching, and learners with opportunities to gain hands on experience of our disciplines at all ages.

In December 2016 we reached a tremendous milestone as membership of the Schools Affiliate Scheme (SAS) exceeded 1,000 for the first time. SAS members continue to benefit from web-based resources, presentations in schools and the loan of our Discovery Boxes containing a range of samples designed to enhance the teaching of the materials curriculum, including materials used in aerospace, medicine and sport.

In the Spring and Autumn of 2016 we worked with IET, IMechE and ICE on Engineering Extravaganza events in Sheffield and York to coincide with British Science Week and Tomorrow's Engineers week. These one-day conferences each provided around 100 young people aged 13-14 with the opportunity to find out about the wide variety of options available within engineering. Together with the other engineering institutions, we will be looking at how these opportunities can be expanded in 2017.

The Magic of Materials Summer School, our three-day residential course for 14/15 year olds run in conjunction with St Paul's School, Barnes, was oversubscribed. We have continued to work closely with the IOM3 Younger Members' Committee and our next Materials Matter conference for sixth form students is being hosted by the National Composites Centre in Bristol to coincide with British Science Week in 2017.

At the other end of the age spectrum, we have created a new workshop to support the teaching of materials in the KS1 Science curriculum for children aged five to seven and are in the process of trialling an updated version of our KS2 activities that will feature training for primary school teachers.

Throughout 2016 we continued to support the subject knowledge enhancement of trainee and practicing teachers. Looking forward to 2017, we hope to develop our relationships with IOM3 members, divisions and local societies, companies and universities in order to extend our reach and engage an even greater number of teachers and young people.

Technical Communities

Bessemer Day

Bessemer Day, the annual IOM3 Iron and Steel Society event, took place in October at the new Bay Campus at Swansea University, UK, in collaboration with the South Wales Materials Association (SWMA). The day consisted of a masterclass during the day, the Bessemer Lecture and the Iron and Steel Society awards, including the presentation of the Bessemer Gold Medal by IOM3 President Mike Hicks.

The Bessemer Lecture was delivered by the 2016 Bessemer Laureate, Professor Alan Cramb, President of the Illinois Institute of Technology, USA. In keeping with Sir Henry Bessemer's dedication to technological development, Cramb's lecture was titled *Steel Processing Technology: Potential Futures*. Starting with a brief history of his career, Cramb then delved into steel's past. Starting with examples of early iron and steel making, including the move to liquid metal production, the beginning of cast iron and, finally, the Bessemer converter. Looking forward, Cramb posed the question, "What is the future for steel processing?". He proposed options for change and also covered disruptive issues to the global steel industry. The evening culminated in the Bessemer/SWMA dinner.

TIG and EABS mergers

IOM3 announced the transfer of the activities of the Titanium Information Group (TIG) to the IOM3 Light Metals Division. TIG is a respected membership body available to companies working with titanium, previously operated by NAMTEC, and then the University of Sheffield.

IOM3 also subsequently welcomed members of the European Association of Brazing and Soldering (EABS) to the Institute's Surface Engineering Division, thus confirming a second merger within twelve months.

Construction Materials Group

Members of the Construction Materials Group (CMG), held one of their annual meetings at the Knauf Insulation manufacturing plant in St Helens, Merseyside. Formed in 1946 as a fibreglass insulation manufacturer, Pilkington Insulation, it later became Owens Corning before finally becoming Knauf Insulation. The company is active in more than 35 countries with 30 manufacturing plants and over 5,000 employees across the globe.

Oil and Gas meets with Corrosion

The Oil and Gas Division held a very successful joint technical meeting with the Aberdeen branch of the Institute of Corrosion. Ian Taylor CEng FIMMM described his experiences in managing marine corrosion in offshore wells and a second presentation addressed corrosion under insulation in an offshore installation. Another joint event is already in the pipeline for 2017.



Celebrating 50 years of tribology at Buckingham Palace: L-R: Prof Wilfried Bartz, Tribology Gold Medallist (Germany); Prof Friedrich Franek, President, Austrian Tribology Society (Austria); Prof Jean Frêne, Tribology Gold Medallist and Past President, French Tribology Society (France); Prof Kenneth Holmberg, Chairman, Finnish Tribology Society (Finland); HRH The Duke of Edinburgh; Professor Peter Jost; Dr Bernie Rickinson, Chief Executive, IOM3; Prof Nikolai Myshkin, Chairman, Society of Tribologists of Belarus (Belarus), Prof Ian Sherrington, Administrator of the International Tribology Council; Prof Ward Winer, Tribology Gold Medallist (USA); Eugene C Gwaltney Jr, School Chair Emeritus, Georgia Institute of Technology (USA).

50 years of tribology

On 2 March, leading figures from the world of tribology were invited to a special anniversary reception at Buckingham Palace, hosted by HRH The Duke of Edinburgh, to celebrate 50 years of the ground-breaking report which introduced the term 'tribology'. The report is popularly known as the Jost Report, named after Professor Peter Jost CBE HonFIMMM, chair of the committee that produced it. Professor Jost attended the event but sadly passed away shortly afterwards.

The Buckingham Palace event was co-ordinated by IOM3, which is providing support to the development of tribology in the UK. In 2015, IOM3 launched UK Tribology, with four other key learned societies (Institution of Engineering and Technology, Institution of Mechanical Engineers, Institute of Physics and Royal Society of Chemistry). The aim is to provide a single voice with a largely outward facing remit, to reach as much of UK industry as possible.

The Packaging Society

The Packaging Society (TPS) held a very successful event in March, entitled 'The Packaging Innovation Challenges of an Ageing Population' and continued their involvement with the EasyFairs Packaging Innovations event. A bigger stand than at previous events welcomed more guests than ever before to the Packaging Consultancy Clinic. TPS held their annual Fellows' Lunch at the RAF Club in London where Chris Turner was presented with an Outstanding Service Award.

Marketing

The Materials World monthly e-newsletter was launched in April 2016. It enjoyed positive feedback from members and provided a targeted digital promotional opportunity. The ClayTech UK conference in November 2016 generated record levels of sponsorship and exhibitor commitment and, while the advertising market remained challenging, 2016 saw an increase in the number of online recruitment postings.

2017 will see continued sales focus on the IOM3 conference programme that includes PVC 2017 and the generation of sponsorship and exhibition revenue from all events. The sales team will also be actively promoting the multiple communication channels available to companies wishing to market their products and services to IOM3 members.

Conferences and events

The conference department ran 23 events during 2016, ranging from half-day meetings in our own offices in London to multiple-day events in prestigious venues, attracting nearly 1,400 delegates, both members and non-members. Notable successes included Euradh/Adhesion organised in Glasgow in September on behalf of the Society for Adhesion and Adhesives and heralded as one of the best in the series to date. ClayTech, the UK clay industry's annual landmark event, continues to grow with increasing participation from young/early career personnel and an expanding exhibition – it has now outgrown its previous venue (Staffordshire Showground) and will move to Newark Showground in 2017.

The Steel Strategy Seminar – Technology Strategy for the Future UK Steel Industry, held at IOM3 London headquarters in November was so successful, it necessitated running an overflow room to meet demand. This was facilitated by our state-of-the-art video conferencing facilities. The one-day seminar was supported by over 120 delegates and enjoyed presentations from all the major companies in the reshaped UK industry, as well as several sector experts. Full use was made of social media and live blogging to share the event online, and short presentations from the speakers were also made available after the event on IOM3 TV, taking advantage of technology to give the event a high profile online.

Major events in 2017 include the international PVC conference which requires a huge resource to stage, though early results indicate it will be a great success.

23

events ran in 2016,
attracting 1377 delegates

21%

increase in membership and
registration web traffic

85%

increase in Young Persons' Lecture
Competition web traffic

Website and social media

Work continued on the IOM3 website to improve interaction with our member database and iron out some glitches relating to member log on, profiles and payments. Overall, website visits in 2016 were down 14%, but visits to the Membership & Registration, Membership grades, Journals, Packaging training and Young Persons' Lecture Competition pages increased significantly on 2015, by as much as 85%.

Increasing use is being made of video footage to bring lectures and events to members via the website. Our online video channel, IOM3 TV, now hosts a range of presentations from the Young Persons' World Lecture Competition, technical meetings, award ceremonies, lectures, interviews and other events. It is certain that the use of video material will expand in future as an effective means of sharing experiences and bringing information to members who cannot attend events in person.

The IOM3 social media presence has grown further to include 4,396 Twitter followers (23% increase) and 2,909 Facebook fans (20% increase). Materials World magazine has its own accounts, which now number 5,721 Twitter followers and 984 Facebook fans. A number of IOM3 staff now have their own Twitter accounts and are able to tweet live from events such as exhibitions, the annual IOM3 Awards and the Young Persons' World Lecture Competition across the globe. The official IOM3 LinkedIn Group membership stands at 7,409.



Medals and Prizes



The Institute of Materials, Minerals and Mining (IOM3) awards numerous medals and prizes in recognition of outstanding contributions to science, technology and management across all disciplines in materials, minerals and mining.

Awards are presented for personal achievement and published work as well as for outstanding contributions to the Institute and its activities. Some awards are aimed specifically at younger people, others recognise technological developments or contributions to education. Awards are presented at special occasions throughout the year, and some award winners deliver lectures to which all members are invited. Prizes are also presented to the best students in specific disciplines and IOM3 runs competitions such as the Young Persons' Lecture Competition to recognise communication and presentation skills. Full details of IOM3 awards and prizes are published on the IOM3 website at www.iom3.org/iom3-awards.

Medals and Prizes 2016

The Institute's medals and prizes are awarded for outstanding contributions to science, technology and management in the field of materials, minerals and mining. The premier and other awards made throughout the year were:

Premier awards

Bessemer Gold Medal	A W Cramb
Platinum Medal	S Ion
Silver Medal	E Hosking
Sir Andrew Bryan Medal	G Bridges
Chapman Medal	D Farrar
Futers Gold Medal	J J R Cilliers
Griffith Medal & Prize	Y W Mai
Thornton Medal	G C J Lynch
T B Marsden Professional Award	P Latham
Thornton Medal	G C J Lynch
Rosenhain Medal & Prize	M Titirici
Rowbotham Medal & Prize	T Taylor
Stokowiec Medal	A Backhouse
Swinburne Medal	S Patrick
Medal for Excellence	S Bedford
International Medal	A Dias

Personal achievement awards

Tom Colclough Medal	A Bannister
Dowding Medal and Prize	P Montmitonnet
Frank Fitzgerald Award	D Penney
Gold Medal	M White
Hadfield Medal and Prize	J Beeley
Hancock Award	M Bennett
Roy T Holland Medal	M Lombardo
Leslie Holliday Prize	I Partridge
Hume Rothery Award	N Dupin
Sir Colin Humphreys Award	J Perkins
John Hunt Medal	A Karma
Ivor Jenkins Medal	J Dunkley
Institute's Technician Medal	R Long
Thomas Medal	D Anderson
Verulam Medal and Prize	C Marsden
James S Walker Award	A Constantinou
Outstanding Contribution Award	M Hull M Ansell

Publication awards

Guy Bengough Award	R J Bennett, S W Booth & C M Younes
Billiton Gold Medal	M Y Solar & S Mostaghe
Composite Award	P Parlevliet & M Geistbeck
Cook/Ablett Award	R R Dehoff, M M Kirka, W J Sames, H Bilheux, A S Tremsin, L E Lowe & S S Babu
Alan Glanvill Award	D Li, T Zhai, Q Gong, G Fei, H Xia
Douglas Hay Medal	A Brzovic, S Rogers, G Webb, J P Hurtado, N Marin, P Schachter, J Alvarez & K Baraona
Mann Redmayne Medal	1. F Dorey & P F Knights 2. T T Werner, G M Mudd & S M Jowitt 3. S T Abrahami, Y Xiao & Y Yang
Materials World Medal	Fred Starr
Adrian Normanton Award	J Steer, C Grainger, A Griffiths, M Griffiths, T Heinrich & A Hopkins
Pfeil Award	L Cordero-Arias, S Cabanas-Polo, J Gilabert, O. M Goudouri, E Sanchez, S Virtanen & A R Boccaccini
STWJ Best Paper Prize	R Rahbarpour, T Azdast, H Rahbarpour & S M Shishavan X C Liu, C S Wu & G K Padhy
Wardell Armstrong Prize	M Pawley, A Reid, R Dutch & W Preiss
Williams Award	H Wu, R Speets, F Heeremans, O Ben Driss & R van Buren

Joint awards

Beilby Medal and Prize	S Banerjee
Harvey Flower Award	R O Thomas
Charles Hatchett Award	H-B Nadendla, L Bolzoni & M Nowak
Robert Perrin Award	C Hindle
Vanadium Award	N Kamaikawa, K Sato, G Miyamoto, M Murayama, N Sekido, K Tsuzaki & T Furuhashi



Dame Sue Ion OBE FRS FREng CEng FIMMM receives the Platinum Award from President Mike Hicks



Dr John Dunkley FREng CEng FIMMM receives the Ivor Jenkins Medal



Professor Sarbajit Banerjee FRSC, recipient of the Beilby Medal and Prize



Rachel Long CEng MIMMM receiving the Institute's Technician Medal from President Mike Hicks

Large Local Society of the Year

ICTa Yorkshire built on the success of its 2013–2014 season and was a little more ambitious in 2014–15, including two visits in the programme, as well as four meetings. The first hugely successful visit was to the hangar of the last remaining flying Vulcan bomber near Doncaster, which famously saw action in the Falklands in 1982. ICTa Yorkshire member companies hosted students from the IOM3 Academy managed Clay Technology Certificate Level 2 & 3 tutorial days, where students were able to visit brick, pipe and tile factories in the region.

The Yorkshire branch also provided seed funding for the 2015 ICTa Study Tour, which visited brick, pipe and tile works along with tableware, wall tile, engineering suppliers and the Rolls-Royce Heritage Centre in Derby.



Patrick Furr and Chris Hallas of ICTa Yorkshire, with Mike Hicks

Small Local Society of the Year

Mining Institute of Scotland (MIS) saw a 30% rise in membership in 2015 and maintained attendance levels at meetings, partly due to the numerous student seminars held at universities. A full programme of technical meetings covered a diverse range of subjects, including oil and gas, mining, geology and environment. At Fife College, MIS helped establish a Student Forum, and students were hosted at the International Coiled Tubing and Well conference in Aberdeen. An article was published to coincide with the 70th anniversary of the Monopol Grimberg disaster to raise awareness of the role that past MIS members played in both helping address the incident and the reconstruction of the German coal mining industry after World War II. A history of the local society, Hidden Riches, was published.



David Seath of MIS with Mike Hicks



Young Persons' World Lecture Competition

The top three contestants in the Young Persons' World Lecture Competition 2016: In first place was Zhong (Alan) Li from Singapore for his lecture on Artificial Corneal Implants: A Brighter Future with Advanced Bioceramics. In second place was Jean Potgieter, representing South Africa with his lecture Effects of Compaction on Lateral Earth Pressure. Third place went to Brazilian finalist, Isabella Vasconcelos Joviano dos Santos, for her lecture Block Copolymers Self-assembly: Structurally Controlled Materials Directing Future Energy Applications.

Design Innovation in Plastics competition

Annabel Burton, second year Product Design student at Nottingham Trent University, won the competition for her redesign of the buckle on the surcingle, or strap, that fastens around a horse and holds a protective rug in place.

Other Awards

Royal Charter Prize	Matthew Way
R H Craven Award	Arturo Mendoza Meinhardt, Katherine Danks
A T Green Award	Kay Jervis
Technician of the Year Category A	Emma Prusek
Technician of the Year Category B	Richard James
Young Persons' National Lecture Competition	Colleen Mann
Young Persons' World Lecture Competition	Li (Alan) Zhong

Honours and awards

CBE

- Professor Paul O'Brien FRS FREng FIMMM Professor of Inorganic Materials Chemistry, University of Manchester. For services to science and engineering.

OBE

- Brian McCarthy Strategic Relationship Manager, Innovate UK. For services to business and innovation.
- Dr Alan Turnbull CEng FIMMM Senior Fellow, Electrochemistry and Corrosion, National Physical Laboratory. For services to science and industry.
- Eur Ing Martin John Rigley CEng FIMMM Managing Director, Lindhurst Engineering. For services to business and innovation.
- Professor Kathleen Elizabeth Tanner FIMMM Professor of Biomedical Materials, University of Glasgow. For services to biomedical engineering.

MBE

- Dr Stephen Eric Bold FREng CEng FIMMM, for services to Engineering, Education and to Charity.
- EUR ING Dawn Bonfield CEng FIMMM, for services to the Promotion of Diversity in Engineering. Dawn is Chief Executive of the Women's Engineering Society and among many other achievements, she founded the national awareness day, National Women in Engineering Day (NWED), which takes place annually on 23 June to celebrate and focus attention on the work of and opportunities for women in engineering.
- Eur Ing Martin John Rigley CEng MIMMM Managing Director, Lindhurst Engineering, for services to business and innovation.

Fellows of the Royal Society 2016

- Professor Pratibha Gai FRS CEng FIMMM
- Dr Sue Ion FRS CEng FIMMM
- Professor Philip Withers FRS FIMMM

Fellows of the Royal Academy of Engineering

- Professor Andrew Bell FREng CEng FIMMM – Chair in Electronic Materials, University of Leeds, UK
- Professor Sarah Hainsworth FREng CEng CSci FIMMM – Professor of Materials and Forensic Engineering, University of Leicester, UK
- Professor Paul O'Brien FRS FREng CEng FIMMM – Professor of Inorganic Materials, University of Manchester, UK
- Prof William Mark Rainforth FREng CEng FIMMM – Professor of Materials Science, University of Sheffield, UK
- Dr David Rugg FREng CEng FIMMM – Engineering Senior Fellow, Rolls-Royce plc
- Mrs Catriona Schmolke FREng CEng FIMMM – Senior Vice President, Jacobs
- Prof Robert Wood FREng CEng FIMMM – Associate Dean of Research, and Director of nCATs, University of Southampton, UK

- Dr Peter Jost CBE HonFREng – President, International Tribology Council and World Tribology Congress. Dr Jost was elected as an Honorary Fellow but sadly passed away before he could formally take up his Fellowship.

Krumbein Medal

- Awarded by the International Association for Mathematical Geosciences to Professor Peter Dowd FREng CEng FIMMM

RAEng Engineers Trust Young Engineer of the Year

- Ben Britton CEng CSci MIMMM, Lecturer at the Department of Materials, Imperial College, London.

Honorary Fellows of the Institute

Professor Peter Jost CBE HonFIMMM

Peter was the founder of tribology, and his 1966 report on the subject was highly influential. The report established the significant financial loss to the UK each year through wear and led to research centres and committees studying and championing tribology all over the world.

Professor Julia Elizabeth King, Baroness Brown of Cambridge DBE FREng HonFIMMM

Julia specialises in fatigue and fracture in materials and is currently Vice-Chancellor of Aston University. She has enjoyed highly successful careers in industry and academia and has held numerous senior public appointments, including the UK Low Carbon Business Ambassador.

Andrew Stewart MacKenzie FRS HonFIMMM

Andrew is an leading applied earth scientist. Following a career undertaking research with the British Geological Survey, he moved to business management and has become a leader in the energy and mining industries working with BP, Rio Tinto and latterly as CEO of BHP Billiton, the world's largest mining company.

Top 50 Women in Engineering

The Top 50 Women in Engineering was launched in 2016 to coincide with National Women in Engineering Day. The inaugural list was published in the Daily Telegraph on 23 June 2016. It included the following IOM3 members:

- Professor Helen Atkinson CBE FREng CEng FIMMM – Head of the Department of Engineering, University of Leicester
- Baroness Brown of Cambridge, Dame Julia King DBE FREng HonFIMMM – Vice Chancellor and Chief Executive, Aston University
- Liv Carroll DIC CGeol FGS FIMMM – Chartered Geologist, Geological Society
- Dame Sue Ion FREng FRS FIMMM – Chair NIRAB, Nuclear Innovation and Research Advisory Board

Financial review

Overview

After the exciting and challenging changes of 2015, 2016 was somewhat a calmer year for the Institute, with both staff and trustees concentrating on improving the financial performance of various IOM3 activities and developing new sources of income.

The Institute finished the year with an overall deficit of £534k, a significant improvement on the 2015 deficit of £1,554k. While there was no improvement in the amount of income generated during the year, a programme of cost reduction and organisational changes implemented in 2015 started to bear fruit and overall expenditure decreased by £780k compared to the previous year. The staff and trustees continue to look for further cost savings and new income streams to ensure the Institute starts operating at break-even level as soon as possible.

On the other hand, the costs of running our defined benefit pension scheme and funding its deficit continue to have significant effect on the financial results of the Institute. In order to agree the recovery plan and free up cash available to invest in future activities, the Institute and pension scheme trustees agreed to place a first charge of £610k against the London property. The charge came into effect at the end of 2016 and enabled IOM3 to reduce the amount of deficit funding payable to the pension scheme, while at the same time providing security to the pension scheme trustees. In addition, it was agreed that the pension scheme will pay its own running costs for two and a half years, starting in 2017, which will enable the Institute to invest freed-up funds in developing new income generating activities.

Investments and reserves review

Council's policy on reserves is to:

- Set aside sufficient reserves to fund the net book value of all tangible fixed assets and the cost of future capital expenditure requirements. These amounts are held in the asset development fund and total £13,261k at 31 December 2016.
- Set aside reserves to develop and improve the quality of services provided by the Institute. These reserves are held in the services development fund and total £88k as at 31 December 2016.
- Set aside reserves for assorted other specific purposes as detailed in note 19. The combined reserves held in these four funds as at 31 December 2016 were £225k.

- Retain sufficient liquid reserves to cover the future expenditure of charitable, management and administrative costs of up to one year. This level of reserves is considered appropriate to allow the Institute to be managed effectively, to provide a buffer for uninterrupted services and to achieve the long-term objectives of the Institute. The unrestricted reserves total £4,321k at year end and represent 101% of the total budgeted expenditure for 2017.

In light of the challenges faced by various IOM3 activities, Council has set a budget for net expenditure of £42k for 2017 to support initiatives for the development of membership and conference programmes as well as establishing new sources of income. It is expected that the Institute will operate at break-even level by mid-2018.


The Institute has adopted a policy of maximising total returns from investments commensurate with acceptable risk for a charitable organisation. Amounts required to fund operations of the Institute are set aside in a short-term fund consisting of cash or easily realisable investments. All other investments are placed in a long-term fund. An appropriate benchmark (depending on the Institute's requirements) is agreed with the investment managers to measure performance.

Principal risks and uncertainties

Council has identified the following major risks facing the Institute:

- Failure of IT systems and compromise to the use of membership database as a result of a cyber security breach;
- Loss of members through the ageing population and economic impact within the industry;
- Difficulty in maintaining current and replacing lost income streams;
- Financial impact of the deficit of the defined benefit pension scheme on the Institute's future strategy;
- Major adverse change in investment values.

The risk register is being reviewed and updated on a regular basis and the trustees, staff and professional advisors are taking steps to mitigate these risks and minimise their impact on the Institute's future performance.

A close-up photograph of a honeycomb structure, likely a beehive, with a blue sky visible in the background. The honeycomb cells are a warm, golden-brown color and are arranged in a regular, repeating pattern. The background is a clear, bright blue sky, which is slightly out of focus, creating a sense of depth. The overall composition is clean and visually appealing, with the honeycomb pattern dominating the foreground and the sky providing a contrasting background.

Structure and Governance

The founding body of this Institute was created in 1869. The Institute of Materials, Minerals and Mining is a body incorporated by Royal Charter dated 25 July 1965 and modified on 26 June 2002. As such it does not have company directors or share capital.

The Institute is governed by a broadly based Council whose members represent the full scope of interests of its membership. Councillors are the Trustees of the Institute and are elected to represent members by discipline, region and grade. The responsibility for the ongoing management of strategy and performance of the Institute lies with the Managing Board, whose membership is drawn from senior members of the Institute. An Audit Committee keeps under review the effectiveness of the Institute's financial reporting, internal control policies and operating procedures, and has a broad remit to review all elements and levels of Institute governance and function.

Proposals for changes to the Institute's governance structure have been approved by the Members but have yet to be implemented. The following pages describe in more detail the composition and remit of the Institute's current boards and committees, as well as the proposed governance changes.

Structure, governance and management

Council

The governance of the Institute is vested in the Council. Members of Council, other than co-opted members, are trustees of the Institute for the purpose of charity law. Under the Bye-laws of the Institute, members of Council are elected by members of the Institute at the annual general meeting to serve for varying terms. Under the Institute's regulations, Council is entitled to co-opt honorary vice presidents and five members of Council.

Regular induction meetings are held for new Council members to ensure that they understand their responsibilities as trustees of the charity. The induction process provides trustees with information about the role of Council, its supporting boards and the organisational structure of the Institute. The objects of the Institute together with the mission statement and corporate strategies are explained. Each trustee is provided with an information pack and points of access to further details. Ongoing training is provided to trustees in relation to the individual responsibilities undertaken by them wherever appropriate.

Council meets at least three times during the year to review strategy and approve operating plans and budgets.

Council has overall responsibility for ensuring that the Institute has appropriate systems of control, financial and otherwise. It is responsible for safeguarding the assets of the charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities. Council has introduced a formal risk management process to enable it to assess business risks and implement risk management strategies on a regular basis. It involves identifying the types of risks the Institute faces, prioritising them in terms of potential impact and likelihood of occurrence, and identifying means of mitigating the risks. As part of this process Council reviews the adequacy of the charity's current internal controls. The systems of internal control are designed to provide reasonable, but not absolute, assurance against material misstatement or loss. They include:

- a strategic plan and an annual budget approved by Council
- regular consideration by Council of financial results, variance from budgets, non-financial performance indicators and benchmarking reviews
- delegation of authority and segregation of duties

The law applicable to charities in England and Wales requires Council to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charitable group and the charity and of the incoming resources and application of resources of the charitable group for that period. In preparing those financial statements, Council is required to:

- select suitable accounting policies and apply them consistently

- observe the methods and principles in the Charities SORP (Statement of Recommended Practice)
- make judgements and estimates that are reasonable and prudent
- state whether applicable UK accounting standards 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

Council is responsible for:

- preparing the trustees' report and the financial statements in accordance with applicable law and United Kingdom accounting standards (Generally Accepted Accounting Practice)
- keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the Institute and enable Council to ensure that the financial statements comply with the Charities Act 2011, the applicable Charity (Accounts and Reports) Regulations and the provisions of the Royal Charter and Bye-laws
- safeguarding the assets of the charity and taking reasonable steps for the prevention and detection of fraud and other irregularities
- the maintenance and integrity of the charity and financial information included on the charity's website in accordance with legislation in the United Kingdom governing the preparation and dissemination of financial statements.

The Council are aware of the early adoption by the charity of the Charities SORP (FRS 102) issued in July 2014, rather than applying the Charities 2005 SORP which has been withdrawn but is still referred to in the extant Charities (Accounts and Reports) Regulations 2008. This departure has been necessary for the financial statements to show a true and fair view in accordance with United Kingdom Generally Accepted Accounting Practice effective for accounting periods beginning on or after 1 January 2015.

Audit Committee

The Audit Committee, which reports to the Managing Board and Council, comprises a chairman and three other members of Council or membership who are not associated with the Managing Board or management of the Institute. Appointments are endorsed by Council. Members who served during the year are set out on page 35. The committee normally meets twice a year or as the chairman of the committee sees fit. The Chief Executive and Finance Director generally attend, with others

invited as and when appropriate. The committee is authorised to keep under review the effectiveness of the Institute's financial reporting, internal control policies and operating procedures, together with a broad remit to review all elements and levels of Institute governance and function. Advice is given on the appointment of external auditors. A regular dialogue is maintained with the Institute's external auditors to review matters identified from audits as being in need of management attention and the actions to be taken to resolve the same. The chairman has direct access to the President and Council.

Managing Board

Council delegates its responsibility for the ongoing management of strategy and performance of the Institute to the Managing Board. Membership of this board is drawn from senior members of the Institute and staff. The day to day management of the Institute's activities is delegated to the Chief Executive and staff. The Managing Board reviews the progress of the Institute's subsidiaries, boards and committees.

IOM Communications Ltd

The charitable trading activities are carried out by this wholly owned subsidiary. The Board of this company, meets regularly to assess the commercial opportunities and effectiveness of the company's trading activities.

Nominations Committee

The committee reviews the role, membership and performance of the major committees including Council and provides nominations for succession planning of Institute officers. The committee also oversees adherence to the Charter and Bye-laws.

Remuneration Committee

The committee agrees the remuneration package for all executive directors and key management personnel (as detailed on page 35) and the overall levels of remuneration for other staff. Remuneration is set on the basis of level of responsibility and experience.

Industry and Technology Policy Board

The board is responsible for the co-ordination of seventeen technical divisions. In turn, the role of the divisions is to further the networking and professional development of their members. The board consists of the divisional chairmen who are elected by the technical community they represent.

Professional Policy Board

The board is responsible for membership, education, accreditation and professional development and technician activities. Four committees support the board.

Local Affairs Board

The board is responsible for the promotion of the interests of regional members, communication between Council and regional members and the establishment of links with affiliated local societies.

International Affairs Board

The IAB is responsible for communications between the Institute and its international communities. It also encourages the development of new activities and communities outside the UK.

Younger Members' Committee

The younger members play a vital and active role in the development of the Institute and their activities are co-ordinated by the Younger Members' Committee.

External Affairs Group

The group makes submissions to UK government, parliamentary committees and the European Commission on behalf of the Institute.

Women in Materials Group

The IOM3 Women in Materials Group was formed in 2012 to raise the profile of women members within IOM3, to support networking, mentoring, and work in schools to educate girls about the benefits of a career in science and engineering.

Materials Institute Services Ltd

This is a wholly owned subsidiary responsible for non-charitable activities. The company had not traded for a number of years prior to recommencement of activities from 1 January 2016.

Changes to IOM3 governance

The Institute's Council voted unanimously at its meeting on 3 July 2012 to support a proposal to amend the governance of the Institute. The proposed changes are important to implement current best practice and to comply with guidance from external organisations such as the Charity Commission. The proposals saw extensive debate by Council, with much thought going into the inter-relationship of Charter, Bye-Laws and Regulations. Safeguards are provided for the democratic operation of the Institute.

A document detailing the proposed changes was sent to all IOM3 members in the autumn of 2012 and IOM3 members voted to accept the proposals at an EGM held on Tuesday 20 November 2012. The proposals for Governance Change were subsequently sent to the Privy Council for approval and are with that body at the time of publication of this annual report. It is anticipated that approval will be obtained from Privy Council during 2017 and the proposals will be implemented with immediate effect.

The primary change to Governance embodied in the proposals is to bring the size of the governing body into line with best practice and Charity Commission guidance. This change should also make decision-making more efficient. The Institute Council numbers around 50 and these Councillors are also the trustees of the charity. The changes to Governance will retain a Council of similar size, but make it advisory to a smaller decision-making trustee body to be called the Executive Board.

The changes will free the Advisory Council from management issues and enable it to consider strategy. Once free of statutory obligations, Advisory Council can give its time to investigating future needs and opportunities for the Institute and recommending the strategic direction on all aspects of the Institute. The smaller Executive Board will be able to meet more frequently and act more quickly in addressing management and business opportunities. The Institute will have a structure that follows current best practice and that enables it to function more effectively in the fast moving technological and business world.

Governance changes phase 2

The IOM Governance Working Group is currently looking at the organisation of IOM3 boards reporting to the new Executive Board, with a view to streamlining and consolidating activities and reporting structures. Draft proposals have been published and final approval will be required by Council, anticipated later in 2017, once Phase 1 of the Governance Change is in place.

Composition of proposed Advisory Council

The Advisory Council will draw representatives from across the interests within the Institute. Elections from the membership will continue to be overseen by an ongoing Nominations Committee.

- The President, Senior Vice-President and two Vice Presidents will be ex-officio members.
- 20 members will be elected from Society, Division and cross-cutting group chairmen.
- Eight members will be elected from the different grades of membership.
- Six members will be drawn from UK and overseas regions.
- Co-options will enable areas of expertise on the Advisory Council to be reinforced.

Composition of proposed Executive Board

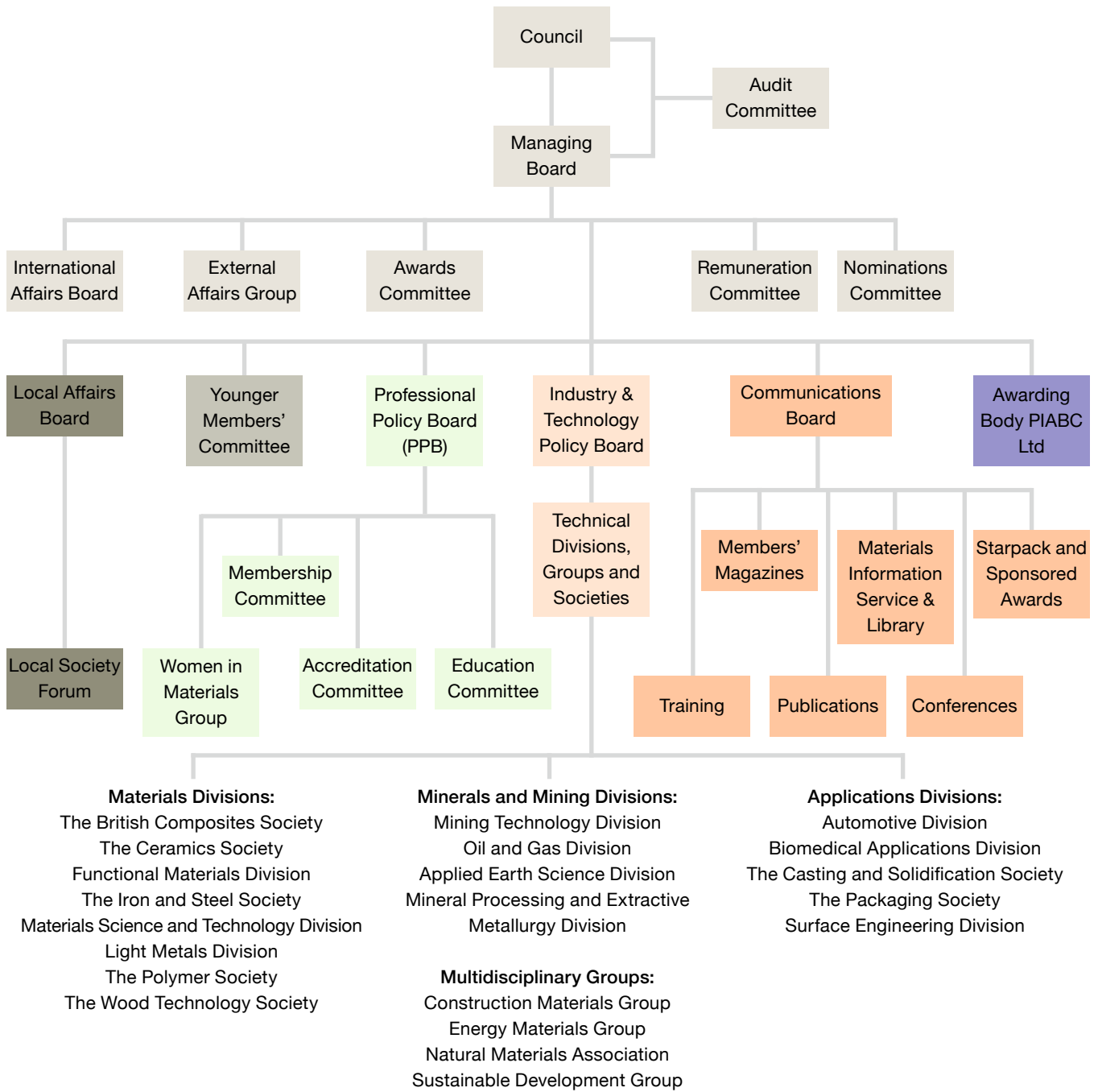
The Executive Board, the trustee body, will comprise the immediate Past President as chairman, the President, Senior Vice President, two Vice Presidents and Honorary Treasurer. It will also include the Chairmen of the primary boards of the Institute:

- Industry and Technology Policy Board
- Professional Policy Board
- Local Affairs Board
- International Affairs Board
- Younger Members
- Communications Board

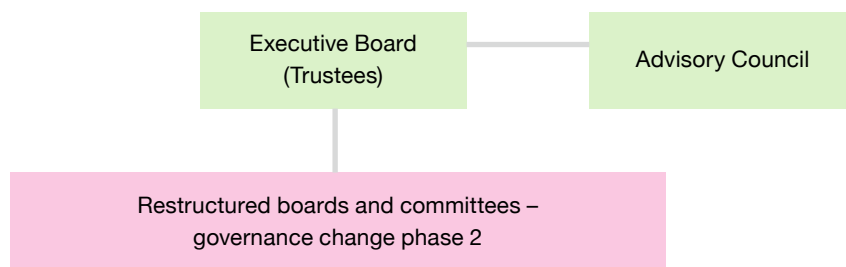
An additional two members will be elected from the Advisory Council and two members co-opted to reinforce areas of expertise.

The method of appointment for the officers of the Institute (President, Vice-Presidents and Honorary Treasurer) will not change from current practice, which is led by the Nominations Committee.

IOM3 current structure



Proposed new structure



Objectives and activities

The objects of the Institute, as set out in the Royal Charter, shall be: To advance and develop all aspects of the science, engineering and technology of the discovery, exploration, development, characterisation, exploitation, processing, application and recycling of materials, minerals and fuels; To further and co-ordinate education, training and practice in these disciplines and to facilitate the acquisition, preservation and dissemination of knowledge pertaining to these disciplines. In pursuing these objects in so far as they may be similar to those of existing organisations, the Institute shall use its best endeavours to co-operate with them and to ensure that its activities are complementary to those of such organisations.

Through our activities we aim to:

- Raise the profile of our sector as a technology vital to the wealth of the nation
- Provide a central resource of expertise and information
- Support and encourage education in materials, minerals and mining to attract young people to the profession
- Disseminate information through conferences, events, publications, online resources, social media
- Provide networking opportunities through technical, local and other activities to increase interaction between industry, academia and government
- Increase the visibility of new technology to industry
- Provide our members with benefits, services and opportunities to support their careers

Twenty-two special interest groups act (see page 31) as a focus of expertise within the broad range of technical sectors embraced by the Institute. Each group holds regular meetings and, through its supporting network of committees and members, organises a programme of events to promote and develop its discipline. Each also maintains its own online microsite and communicates its activities to members and non-members alike through web content, newsletters and social media. Events organised by the technical groups are open to all and serve to inform about the latest developments within the discipline as well as providing networking opportunities for people from academia, industry and government, often in an international context. Networking events attract non-members from the UK and overseas, who often make up at least 75% of the event audience.

A network of affiliated societies in the UK and overseas provides activities at a local level, delivering a regular programme of evening lectures, site visits and seminars that are open to all. Some affiliated societies also engage with local schools, universities and businesses to provide valuable support for teaching and learning.

The Institute has an active education programme to attract young people into a career in the materials, minerals and mining science, engineering and technology sector. Our Schools Affiliate Scheme (with over 1,000 registered schools) provides help, advice and teaching materials free of charge to schools and the education team regularly attends schools and careers fairs. Our schools presentations have so far been delivered to over 74,000 pupils throughout the UK. The Education team also organises study days for teachers and events to allow older pupils to interact with young people already working in the sector. The Institute accredits a number of university, college and industry courses in the UK and overseas, and provides a special low cost membership package for undergraduates, which is often sponsored by local societies or by their university. A thriving Younger Members' Committee organises regular events for students and younger members. A relatively recent addition to our activities, the Women in Materials group promotes networking for women in the materials profession and strives to provide support for women in STEM careers.

The Institute's divisions, boards and committees are all composed of volunteers mostly drawn from the Institute's membership, who freely give their time and expertise to further the Institute's professional activities, develop its communities and provide peer review processes where needed. The Institute depends on the engagement of its members in the broad range of its activities and could not deliver its objectives effectively without their significant contribution.



2016 Young Persons' World Lecture Competition finalists

Members of the Institute play a prime role in promoting our objects and providing public benefit. Accordingly, a wide range of member services and benefits have been developed in pursuance of our objectives and to attract newcomers to the Institute. Benefits of membership include professional recognition, networking opportunities to share knowledge and experience, free materials information services, a members' magazine, a members' business centre and use of facilities, discounted conference fees, training courses and publications, and additional online services. The Institute provides support to its worldwide membership through its UK offices, its technical divisions and societies, and its network of affiliated local societies. Career progression is recognised through various of grades of membership and the Institute is licensed to deal with applications for Chartered Engineer, Chartered Scientist, Chartered Environmentalist, Incorporated Engineer, Engineering Technician, Registered Scientist and Registered Science Technician status. The Institute collaborates with many like-minded societies in the UK and overseas.

The Institute works closely with government and EC departments particularly in relation to the delivery of new technology to industry. This work has enhanced the reputation of the Institute and we are now seen as a first port of call in our area of expertise. We are also increasingly called upon by the national media to provide comment or signposting for high profile news stories as well as technical articles for the specialist press. The Institute maintains an extensive resource of technical and historical publications that form the core of its information and library services, a source of expertise accessible to all. The Materials Information Service provides consultancy and advice services to anyone who needs access to expertise in materials, both individuals and organisations. Of the 1,500 enquiries routinely handled

each year, 50% originate from the UK public. Our Industry Affiliate Scheme allows small and medium sized enterprises to become company members of IOM3 with direct access to its information and consultancy services.

Through its subsidiary, IOM Communications Ltd, the Institute publishes technical books, learned journals and member magazines and organises conferences on materials, minerals and mining related subjects. The publishing of technical books and learned journals is outsourced to Taylor & Francis (formerly Maney Publishing). Access to this material is available to both members and non-members. In-house teams publish the member magazines and organise the majority of conferences. IOM Communications Ltd also operates information services and provides consultancy advice on materials. All these services are fundamental in achieving the Institute's objectives.

Stimulating innovation in the use and application of materials, the Institute organises both UK and worldwide competitions to develop a broad understanding of the importance of materials and minerals. Non-members are encouraged to take part in competitions related to soft skills, the use of plastics and innovations in packaging, and such events engage with schools, students and businesses from the UK and Europe. Separately the Institute provides an extensive range of awards both to members and non-members who have provided outstanding contributions to the community that the Institute supports.

There is a regular programme to ensure that employees are involved in the direction and progress of the Institute. Employees are consulted and kept fully informed on issues of concern to them. Staff training and development appropriate to the Institute's goals is assessed on a regular basis and provided both internally and externally.

Officers and council members (from 1 January 2016 to May 2017)

President	Dr M A Hicks (to December 2016) Mr M C Cox (from January 2017)
Senior Vice-President	Mr M C Cox (to December 2016) Dr S M Best (from January 2017)
Honorary Treasurer	Dr M J May
Vice Presidents	Dr S M Best (to December 2016) Dr K Thornton (from September 2016) Dr P J E Bischler
Chairman of Managing Board and Past President	Prof J G P Binner (to December 2016) Dr M A Hicks (from January 2017)
Chairman of Professional Policy Board	Dr C W Corti
Chairman of Industry and Technology Policy Board	Dr D J Gooch (to July 2016) Mr K A Harrison (from July 2016)
Chairman of the Local Affairs Board	Dr P J E Bischler
Chairman of Younger Members' Committee	Dr K Thornton
Chairman of International Affairs Board	Mr B D Lye

Council members representing corporate members from the regions

Scotland	Dr C S Hindle
North East	Vacancy
North West	Vacancy
Midlands	Mr D R Evetts
South East	Vacancy
South West & Wales	Vacancy

Council members representing all corporate members

Professional Members & Members	Dr J R Wilcox Mr M C Cox
Associate Members	Mr S J Wood Dr S O Matthews
Technician Members	Mr S L J Bellaby

Council members representing disciplines

Metals	Dr K A Ridal
Ceramics	Professor J G P Binner
Plastics & Rubber	Mr K L Forsdyke
Minerals & Mining	Mr R G Siddall

Divisional board chairmen

Applied Earth Science	Mr J J Aldridge
Automotive Applications	Mr A Haggie
Biomedical Applications	Prof A L Lewis
The British Composites Society	Mr E G Shahidi (to March 2017) Dr D Kells (from March 2017)
The Casting & Solidification Society	Dr P Withey (to December 2016) Professor Z Fan
The Ceramics Society	Professor J G P Binner (to July 2016) Dr A M McDermott (from July 2016)
Functional Materials	Prof R A Dorey
Light Metals	Dr M R Clinch
Materials Science & Technology	Dr M R Winstone (to March 2016) Prof M R Jolly (from March 2016)
Mineral Processing & Extractive Metallurgy	Mr A D Francis
Mining Technology	Dr P J Foster (to March 2016) Mrs C A Blackmore (from March 2016)
The Packaging Society	Mr K V H Barnes (to March 2017) Mr C B Waterhouse (from March 2017)
Oil & Gas	Eur Ing S A Bedford (to July 2016) Dr A J Sturgeon (from July 2016)
The Polymer Society	Dr A K Wood
The Iron & Steel Society	Mr M J Steeper
Surface Engineering	Dr D S Rickerby
The Wood Technology Society	Mr J H Park

Advisory Council members

Elected to serve when the first phase of governance change has been implemented (see page 30)

Mr B Edy, Mr J Sellors,
Mr W J Tinsley, Dr C Fenn,
Mr A Partridge

Senior boards and professional advisors

Managing Board

The Managing Board is chaired by the immediate past president and includes the following:

The President
 Senior Vice-President
 Honorary Treasurer
 Vice Presidents
 Chairman of IOM Communications Ltd
 Chairman of Professional Policy Board
 Chairman of Industry & Technology Policy Board
 Chairman of Local Affairs Board
 Chairman of International Affairs Board
 Chairman of Younger Members' Committee
 Chairman of PIABC
 Chief Executive
 Deputy Chief Executive
 Finance Director

Board of Directors – IOM Communications Ltd

The following served as directors during the year:

Chairman	Mr J C H Lewis
Directors/trustees	Dr A T Cole Dr M J May Mr K Shankland Prof A L Greer Dr S Garwood Dr A T Tinker (from September 2016)
Chief Executive and trustee	Dr B A Rickinson
Company Secretary	Ms J Bugajeva

Audit Committee

Chairman	Mr P J K Haslehurst Dr D Elliott Mr C Hallas Mr S Patrick Mr M Chapman Mr B A Bhat (from May 2016)
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Remuneration Committee

	Mr M C Cox Dr M A Hicks Mr J C H Lewis Dr M J May
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Key management personnel

Chief Executive	Dr B A Rickinson
Deputy Chief Executive	Dr G Woodrow
Finance Director	Ms J Bugajeva
Director of Communications	Dr I A N Stanciaszek
Director of Sales and Marketing	Ms K Harrison
Director of Membership and Professional Development	Mr I J Bowbrick
Director of Administration	Ms C M Tuke

Professional advisors

Bankers	Lloyds Bank plc Chelmsford Legg St OSC 1 Legg Street Chelmsford CM1 1JS
Solicitors	Allen & Overy LLP One Bishops Square London E1 6AD Howes Percival LLP 3 The Osiers Business Centre Leicester LE19 1DX
Auditors	RSM UK AUDIT LLP 25 Farringdon Street London EC4A 4AB
Investment Managers	Blackrock Investment Management (UK) Ltd 12 Throgmorton Avenue London EC2N 2DL
Actuaries	First Actuarial LLP Second Floor, The Square Basing View, Basingstoke Hampshire RG21 4EB

RSM UK Audit LLP has indicated its willingness to continue in office.

This report was approved by the trustees on 23 May 2017.
Dr M A Hicks





Financial Statements



36 - 65

The following pages detail financial activities for the year ended 31 December 2016, reflecting operating performance, assets and obligations.

Independent auditor's report to the trustees of the Institute of Materials, Minerals and Mining

Opinion on financial statements

We have audited the financial statements of The Institute of Materials Minerals and Mining (the 'charity') and its subsidiaries (the 'group') for the year ended 31 December 2016 which comprise Group Statement of Financial Activities, the Group and parent charity Balance Sheets, the Group and parent charity Statement of Cash Flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice), including FRS 102 "The Financial Reporting Standard applicable in the UK and Republic of Ireland".

In our opinion the financial statements:

- give a true and fair view of the state of the group's and charity's affairs as at 31 December 2016 and of their incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Charities Act 2011.

Emphasis of matter – early adoption of the Charities SORP (FRS 102)

In forming our opinion, which is not modified, we have considered the disclosure on page 42 concerning the charity's early adoption of the Charities SORP (FRS 102) issued in July 2014, rather than applying the Charities 2005 SORP which has been withdrawn but is still referred to in the extant Charities (Accounts and Reports) Regulations 2008. This departure has been necessary for the financial statements to show a true and fair view in accordance with United Kingdom Generally Accepted Accounting Practice effective for accounting periods beginning on or after 1 January 2015.

Scope of the audit of the financial statements

A description of the scope of an audit of financial statements is provided on the Financial Reporting Council's website at <http://www.frc.org.uk/auditscopeukprivate>

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters where the Charities Act 2011 requires us to report to you if, in our opinion:

- the information given in the Trustees' Report is inconsistent in any material respect with the financial statements; or
- sufficient accounting records have not been kept by the parent charity; or
- the parent charity financial statements are not in agreement with the accounting records and returns; or
- we have not received all the information and explanations we require for our audit.

Respective responsibilities of trustees and auditor

As explained more fully in the Statement of Trustees' responsibilities set out on page 28 the trustees are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view.

We have been appointed as auditors under Section 151 of the Charities Act 2011 and report in accordance with regulations made under section 154 of that Act. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's (APB's) Ethical Standards for Auditors.

This report is made solely to the charity's trustees as a body, in accordance with the Charities Act 2011. Our audit work has been undertaken so that we might state to the charity's trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charity and the charity's trustees as a body, for our audit work, for this report, or for the opinion we have formed.

RSM UK AUDIT LLP
25 Farringdon Street
London
EC4A 4AB

Date: 2 June 2017

RSM UK AUDIT LLP is eligible to act as an auditor in terms of Section 1212 of the Companies Act 2006.

Consolidated statement of financial activities for the year ended 31 December 2016

	Notes	Unrestricted funds General £'000	Unrestricted funds Designated £'000	Restricted funds £'000	Permanent endowment £'000	Total funds 2016 £'000	Total funds 2015 £'000
INCOME AND ENDOWMENTS FROM:							
Donations and legacies	4	-	-	-	-	-	2
Charitable activities							
Membership and related activities		1,459	-	-	-	1,459	1,450
Charitable trading activities	3	1,618	-	-	-	1,618	1,707
Other trading activities	5	180	-	-	-	180	207
Investments	6	230	2	53	-	285	300
Total income		3,487	2	53	-	3,542	3,666
EXPENDITURE ON:							
Raising funds	5	161	-	-	-	161	208
Charitable activities		-					
Membership and related activities		3,030	-	46	-	3,076	3,473
Charitable trading activities	3	1,290	-	-	-	1,290	1,627
Other		6	-	-	-	6	5
Total expenditure	7	4,487	-	46	-	4,533	5,313
Net gains on investments		745	8	133	-	886	200
Net income/(expenditure)		(255)	10	140	-	(105)	(1,447)
Transfers between funds	8	-	-	-	-	-	-
Other recognised (losses)/gains:							
Gains on revaluation of fixed assets		-	84	-	-	84	-
Actuarial losses on defined benefit pension scheme		(513)	-	-	-	(513)	(107)
NET MOVEMENT IN FUNDS		(768)	94	140	-	(534)	(1,554)
Reconciliation of funds							
Total funds brought forward		5,089	13,480	2,010	33	20,612	22,166
TOTAL FUNDS CARRIED FORWARD		4,321	13,574	2,150	33	20,078	20,612

Consolidated and charity balance sheets as at 31 December 2016

	Notes	Group		Institute	
		2016 £'000	2015 £'000	2016 £'000	2015 £'000
FIXED ASSETS					
Intangible assets	9	278	344	262	324
Tangible assets	10	14,016	13,994	14,016	13,994
Investments	11	8,958	8,922	8,958	8,922
Total fixed assets		23,252	23,260	23,236	23,240
CURRENT ASSETS					
Stock and work in progress	13	51	16	3	2
Debtors	14	577	502	188	257
Cash at bank and in hand		497	266	123	24
		1,125	784	314	283
CREDITORS: Amounts falling due within one year	15	(1,683)	(1,397)	(1,218)	(1,218)
NET CURRENT (LIABILITIES) ASSETS		(558)	(613)	(904)	(935)
NET ASSETS EXCLUDING PENSION ASSET OR LIABILITY		22,694	22,647	22,332	22,305
Defined benefit pension scheme liability	22.3	(2,616)	(2,035)	(2,616)	(2,035)
TOTAL NET ASSETS	16	20,078	20,612	19,716	20,270
THE FUNDS OF THE CHARITY					
ENDOWMENT FUNDS	17	33	33	33	33
RESTRICTED INCOME FUNDS					
Restricted funds	18	2,150	2,010	2,150	2,010
UNRESTRICTED FUNDS					
General funds		4,321	5,089	3,959	4,747
Designated funds	19	13,301	13,291	13,301	13,291
Revaluation reserve		273	189	273	189
TOTAL CHARITY FUNDS		20,078	20,612	19,716	20,270

The financial statements on pages 39 to 65 were approved and authorised for issue by the trustees on 23 May 2017 and signed on their behalf by:

Dr M A Hicks, Trustee and President 2015 – 16



Dr M J May, Honorary Treasurer



Consolidated and charity statement of cash flows for the year ended 31 December 2016

	Notes	Group		Institute	
		2016 £'000	2015 £'000	2016 £'000	2015 £'000
Cash flows from operating activities:					
Net cash provided by/(used in) operating activities	T1	(778)	626	(910)	554
Cash flows from investing activities:					
Dividends, interest and rents from investments		285	300	285	300
Purchase of intangibles		(19)	(213)	(19)	(206)
Purchase of property, plant and equipment		(106)	(818)	(106)	(818)
Proceeds from sale of investments		1,274	1,231	1,274	1,231
Purchase of investments		(425)	(481)	(425)	(481)
Net cash provided by investing activities		231	645	99	580
Change in cash and cash equivalents in the reporting period		231	645	93	580
Cash and cash equivalents at the beginning of the reporting period	T2	266	(379)	24	(556)
Cash and cash equivalents at the end of the reporting period.	T2	497	266	123	24

T1 Reconciliation of net income/(expenditure) to net cash flow from operating activities

Net expenditure for the reporting period (as per the statement of financial activities)		(105)	(1,447)	(125)	(1,446)
Adjustments for:					
Depreciation charges		254	134	250	131
Gains on investments		(886)	(200)	(886)	(200)
Pension costs		68	63	68	63
Dividends, interest and rents from investments		(285)	(300)	(285)	(300)
Loss on the sale of fixed assets		-	52	-	52
(Increase)/decrease in stocks		(35)	17	(1)	1
(Increase)/decrease in debtors		(75)	3,933	69	3,838
Increase/(decrease) in creditors		286	(1,626)	-	(1,585)
Net cash provided by /(used in) operating activities		(778)	626	(910)	554

T2 Analysis of cash and cash equivalents

Cash in hand		497	266	123	24
Total cash and cash equivalents		497	266	123	24

Accounting Policies

Basis of financial statements

The Institute of Materials, Minerals and Mining (“the Charity”) is an unincorporated charity domiciled in England. The address of the Charity’s registered office and principal place of business is 297 Euston Road, London NW1 3AD.

The Charity’s principal activities and the nature of the Charity’s operations are described in the Trustees’ Report on page 32.

The financial statements have been prepared in accordance with Accounting and Reporting by Charities: Statement of Recommended Practice 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 2015) – (Charities SORP (FRS 102)), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Charities Act 2011.

The financial statements have been prepared to give a ‘true and fair’ view and have departed from the Charities (Accounts and Reports) Regulations 2008 only to the extent required to provide a ‘true and fair’ view. This departure has involved following Accounting and Reporting by Charities preparing these accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (the Charities SORP (FRS 102) effective 1 January 2015) rather than the Accounting and Reporting by Charities: Statement of Recommended Practice effective from 1 April 2005, which has since been withdrawn.

The Institute of Materials, Minerals and Mining meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historic cost or transaction value unless otherwise stated in the relevant accounting policy notes.

The financial statements are prepared in sterling, which is the functional currency of the Charity. Monetary amounts in these financial statements are rounded to the nearest £1,000.

Preparation of the accounts on a going concern basis

The Council members confirm that at the time of approving the financial statements, there is a reasonable expectation that the Institute has adequate resources to continue in operational existence for the foreseeable future. In arriving at this conclusion the Council members have taken account of current and anticipated financial performance in the current economic conditions, and the Institute’s reserves position. For this reason, the going concern basis continues to be adopted in the preparation of the Institutes financial statements.

Group financial statements

The financial statements consolidate the results of the wholly owned subsidiary companies and companies over which the Institute exercises dominant influence on a line-by-line basis. The members’ benevolent funds are not consolidated because they are under independent control.

Details of the Institute’s total incoming resources and net movement in funds are shown in the notes.

Income

Income is recognised when the charity has entitlements to the funds, any performance conditions attached to the items of income have been met, it is probable that the income will be received and the amount can be measured reliably.

Subscription income represents the amount received in respect of current and past years. Amounts received in advance are carried forward to the following year and subscriptions in arrears have not been anticipated.

Income from conferences represents the amount receivable in respect of the current year. Amounts received in respect of conferences to be run in future years are carried forward to the following year.

Incoming resources from grants, where related to performance and specific deliverables, are accounted for as the charity earns the right to consideration by its performance.

Other income is recognised where there is entitlement, probability of receipt and the amount can be measured with sufficient reliability.

Expenditure

Expenditure is recognised once there is a legal or constructive obligation to make a payment to a third party, it is probable that settlement will be required and the amount of the obligation can be measured reliably.

All expenditure is accounted for on an accruals basis and has been classified under headings that aggregate all costs related to the category. Where costs cannot be clearly attributed to particular headings they have been allocated to activities on a basis consistent with the use of the resources. Overheads have been allocated on the basis of head count.

Grants and prizes are awarded annually, mainly to affiliated societies and individuals.

Allocation of support costs

Support costs comprise employment, establishment and administration costs in support of the charitable activities of the Institute. Allocations of these costs are made to the various activities of the Institute using standard rates based on staff time involved on each activity and facility usage. The basis on which support costs are allocated is set out in note 7.

Donated services and materials

Where services are provided to the Institute as a donation that would normally be purchased from suppliers, this contribution is included in the financial statements at an estimate based on the value of the contribution to the Institute.

Heritage Assets

A description of heritage assets held by the Charity is given in note 10. No value for these assets is recognised in these financial statements as the Trustees believe the cost of obtaining a valuation is not justified by the usefulness of such a valuation to users of the accounts.

Depreciation and amortisation

Individual fixed assets are capitalised where the purchase price exceeds £1,500.

Depreciation is calculated by reference to the cost of fixed assets using the straight line method at rates considered appropriate having regard to their expected useful lives.

The bases used are:

Leasehold property	over the term of the lease
Furniture	15%-20% p.a.
Equipment	20%-33% p.a.
Intangible assets	20% p.a.

Impairment reviews are carried out where there is an indication that the recoverable amount of a fixed asset is below its net book value. Any such impairments are charged through the statement of financial activities in the year in which the impairment occurs.

Freehold property is accounted for using the revaluation method with the building element depreciated at a rate of 2% per annum and revalued to its market value at the end of the financial year. The net value of gains on revaluation is held in the revaluation reserve.

The trustees have reviewed the value of the Institute's freehold properties. They consider the cost of 297 Euston Road to be representative of its market value as at 31 December 2016. The trustees consider the accounting value of Shelton House as at the previous year end still to be representative of its market value at 31 December 2016.

Intangible fixed assets

Intangible fixed assets, including purchased goodwill and patents, are amortised at rates calculated to write off the assets on a straight line basis over their estimated useful economic lives. Where it is not possible to make a reliable estimate of the useful life of an intangible asset, the life shall not exceed five years. Impairment of intangible assets is reviewed where circumstances indicate that the carrying value of an asset may not be fully recoverable.

Investments and investment income

Investments are shown at market value at the balance sheet date. Realised and unrealised gains or losses are taken to the fund to which they relate via the SOFA in the year in which they arise. Income is included together with the tax related credit in the financial statements of the year in which it is receivable. Investment income and any gain or loss on the asset development and service development designated funds is taken to general funds.

Stocks and work in progress

Sundry stocks are valued at cost. Work in progress is valued at cost and includes staff and other overheads.

Debtors

Trade and other debtors are recognised at the settlement amount due after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due translated at the rate of exchange ruling at the balance sheet date. Transactions in foreign currencies are recorded at an internal rate of exchange ruling at the date of the transaction. All differences are taken to the statement of financial activities.

Cash at bank and in hand

Cash at bank and in hand includes cash and short term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

Creditors and provisions

Creditors and provisions are recognised where the charity has a present obligation resulting from a past event that will probably result in the transfer of funds to a third party and the amount due to settle the obligation can be measured or estimated reliably. Creditors and provisions are normally recognised at their settlement amount after allowing for any trade discounts due.

Financial instruments

The Institute only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are measured at their settlement value.

Foreign currencies

Assets and liabilities denominated in foreign currencies are translated at the rate of exchange ruling at the balance sheet date. Transactions in foreign currencies are recorded at an internal rate of exchange ruling at the date of the transaction. All differences are taken to the statement of financial activities.

Operating leases

The rentals under operating leases are charged to the statement of financial activities on a straight line basis over the lease term.

Irrecoverable VAT

Irrecoverable VAT incurred in respect of the year is included in the statement of financial activities except for any amounts relating to capital expenditure which are included in the cost of fixed asset additions.

Pension costs

The Institute participates in both a defined benefit scheme and defined contribution schemes.

Under the defined benefit scheme, the Institute makes contributions to The Institute of Materials Pension and Life Assurance Scheme. Pension costs are assessed in accordance with actuarial advice and based on the most recent actuarial valuation of the scheme. The scheme was closed to new entrants during 2002.

The assets of the scheme are held separately from the Institute in separate trustee administered funds. Full actuarial valuations, by a professionally qualified actuary, are obtained at least every three years, and updated to reflect current conditions at the balance sheet date. Fair value is based on the market price information and in the case of quoted securities is the published bid price. The pension scheme assets are measured at fair value. The pension scheme liabilities are measured using the projected unit method and discounted at the current rate of return on a high quality corporate bond that has been rated at AA or equivalent basis of equivalent term and currency. A pension scheme asset is recognised in the balance sheet only to the extent that the surplus may be recovered by reduced future contributions or to the extent that the Council have agreed a refund from the scheme at the balance sheet date. A pension liability is recognised to the extent that the group has a legal obligation to settle the liability.

The actuarial gain or loss arising in the year included under 'other recognised gains or losses'. Contributions are charged to expenditure so as to spread the regular cost of pensions over the expected working lives of the employees in the scheme. Any difference between the cumulative amounts charged and contributions paid is included as an asset or liability on the balance sheet.

The interest element of the defined benefit cost represents the change in present value of scheme obligations relating to the passage of time and is determined by applying a discount rate to the opening present value of the benefit obligation, valuing unto account material changes in the obligation during the year. The expected return on plan assets is based on an assessment made at the beginning of the year of long-term market returns on scheme assets adjusted for the effect on the fair value of plan assets of the contributions received and benefits paid during the year. The difference between the expected return on plan assets and the interest costs is recognised in the consolidated SOFA as pension finance income or within resources expenses as appropriate.

Under the defined contribution schemes, the Institute contributes to group personal pension plans providing benefits for some employees. Pension costs are based on current salaries and charged to the statement of financial activities in the year in which they are due.

Critical accounting estimates and assumptions

The Institute makes estimates and assumptions concerning the future. The resulting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are those used by the scheme actuary in calculating the Institute's defined benefit scheme liability (see note 22 for details).

Revaluation of freehold property: the revaluation is based on the building element of freehold properties depreciated at a rate of 2% per annum and revalued to its market value at the end of the financial year.

Institute funds and reserves policy

Funds held by the Institute are:

Unrestricted general funds – these are funds that can be used in accordance with the charitable objects at the discretion of the Council. The Institute's policy is to maintain sufficient liquid reserves to cover the future expenditure of charitable and administrative costs for up to one year.

Designated funds – these are funds set aside by Council out of unrestricted general funds for specific future purposes or projects. The revaluation reserve within designated funds represents the value of gains on revaluation of freehold property.

Restricted funds – these are funds that can only be used for particular restricted purposes within the objects of the Institute. Restrictions arise when specified by the donor or when funds are raised for particular restricted purposes.

Further explanation of the nature and purpose of each fund is included in the notes to the financial statements.

Notes to financial statements

1. Consolidated statement of financial activities for the year ended
31 December 2015

	<i>Unrestricted funds</i> General £'000	<i>Designated</i> £'000	<i>Restricted funds</i> £'000	<i>Permanent endowment</i> £'000	<i>Total funds</i> 2015 £'000
INCOME AND ENDOWMENTS FROM:					
Donations and legacies	-	-	2	-	2
Charitable activities					
Membership and related activities	1,450	-	-	-	1,450
Charitable trading activities	1,707	-	-	-	1,707
Other trading activities	207	-	-	-	207
Investments	246	2	52	-	300
Other	-	-	-	-	-
Total income	3,610	2	54	-	3,666
EXPENDITURE ON:					
Raising funds	208	-	-	-	208
Charitable activities					
Membership and related activities	3,449	1	23	-	3,473
Charitable trading activities	1,627	-	-	-	1,627
Other	5	-	-	-	5
Total expenditure	5,289	1	23	-	5,313
Net gains/(losses) on investment	185	2	13	-	200
Net income/(expenditure)	(1,494)	3	44	-	(1,447)
Transfers between funds	-	-	-	-	-
Other recognised (losses)/gains:					
Gains on revaluation of fixed assets	-	-	-	-	-
Actuarial losses on defined benefit pension scheme	(107)	-	-	-	(107)
NET MOVEMENT IN FUNDS	(1,601)	3	44	-	(1,554)
Reconciliation of funds					
Total funds brought forward	6,690	13,477	1,966	33	22,166
TOTAL FUNDS CARRIED FORWARD	5,089	13,480	2,010	33	20,612

The statement of financial activities includes all gains and losses recognised in the year. All incoming and outgoing resources derive from continuing activities.

2. Charity only statement of financial activities for the year ended 31 December 2016

	<i>Unrestricted funds</i>		<i>Restricted funds</i>	<i>Permanent endowment</i>	<i>Total funds 2016</i>	<i>Total funds 2015</i>
	<i>General</i>	<i>Designated</i>				
	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>
INCOME AND ENDOWMENTS FROM:						
Donations and legacies	327	-	-	-	327	82
Charitable activities						
Membership and related activities	1,459	-	-	-	1,459	1,450
Other trading activities	-	-	-	-	-	207
Investments	230	2	53	-	285	300
Total income	2,016	2	53	-	2,071	2,039
EXPENDITURE ON:						
Raising funds	-	-	-	-	-	207
Charitable activities						
Membership and related activities	3,030	-	46	-	3,076	3,473
Other	6	-	-	-	6	5
Total expenditure	3,036	-	46	-	3,082	3,685
Net gains/(losses) on investments	745	8	133	-	886	200
Net income/(expenditure)	(275)	10	140	-	(125)	(1,446)
Transfers between funds	-	-	-	-	-	-
Other recognised (losses)/gains:						
Gains on revaluation of fixed assets	-	84	-	-	84	-
Actuarial losses on defined benefit pension scheme	(513)	-	-	-	(513)	(107)
NET MOVEMENT IN FUNDS	(788)	94	140	-	(554)	(1,553)
Reconciliation of funds						
Total funds brought forward	4,747	13,480	2,010	33	20,270	21,823
TOTAL FUNDS CARRIED FORWARD	3,959	13,574	2,150	33	19,716	20,270

The statement of financial activities includes all gains and losses recognised in the year. All incoming and outgoing resources derive from continuing activities.

3. Charitable trading activities

	2016 £'000	2015 £'000
TURNOVER		
Publishing	1,485	1,418
Conferences and exhibitions	212	301
Information services	142	50
Technology improvement awards	48	91
Training services	285	302
	2,172	2,162
Internal contribution for costs included in sales	(554)	(455)
Incoming resources	1,618	1,707
COST OF CHARITABLE TRADING ACTIVITIES		
Publishing	682	730
Conferences and exhibitions	346	385
Information services	475	456
Technology improvement awards	49	168
Training services	292	343
	1,844	2,082
Internal contribution to sales	(554)	(455)
	1,290	1,627
NET CONTRIBUTION FROM CHARITABLE TRADING ACTIVITIES		
Publishing	803	688
Conferences and exhibitions	(134)	(84)
Information services	(333)	(406)
Technology improvement awards	(1)	(77)
Training services	(7)	(41)
	328	80

4. Donations and legacies

	2016 £'000	2015 £'000
Donations for medal funds	-	2
	-	2

5. Other trading activities

The Institute has a policy to generate income from its property facilities when not required for its own purpose. Related expenditure includes direct costs, employment costs and relevant overheads. These activities are undertaken by Materials Institute Services Ltd (see note 12: Subsidiary undertakings).

6. Investment income

	2016		2015	
	<i>Unrestricted</i> £'000	<i>Restricted</i> £'000	<i>Unrestricted</i> £'000	<i>Restricted</i> £'000
Listed securities				
Fixed interest	68	25	73	25
UK equities	153	27	161	27
Overseas equities	11	-	14	-
Cash and cash equivalents	-	1	-	-
	232	53	248	52

7. Total resources expended

Summary

	2016 £'000	2016 £'000	2015 £'000	2015 £'000
Direct charitable costs		1,168		1,347
Employment costs				
Salaries	1,879		2,012	
Social security costs	203		204	
Pension costs	350		279	
Temporary and other staff costs	60		114	
Redundancy costs	-		107	
		2,492		2,716
Establishment costs				
Property costs	259		586	
Information technology	121		153	
Depreciation and amortisation	250		180	
		630		919
Administration costs				
Travel, meeting and committee expenses	84		127	
Postage and telecommunications	65		54	
Printing and stationery	32		33	
Finance costs	13		16	
Professional fees	41		94	
Office and other costs	8		7	
		243		331
		4,533		5,313

Breakdown of costs of activities

	Direct costs £'000	Support costs £'000	2016 Total £'000	2015 Total £'000
Charitable activities				
Membership and related services	1,140	1,936	3,076	3,473
Charitable trading activities	(33)	1,323	1,290	1,627
	1,107	3,259	4,366	5,100
Costs of generating funds				
Activities for generating funds	55	106	161	208
Investment management costs	6	-	6	5
	1,168	3,365	4,533	5,313

Support cost breakdown by activity

	<i>Employment costs £'000</i>	<i>Establishment costs £'000</i>	<i>Admin costs £'000</i>	<i>2016 Total £'000</i>	<i>2015 Total £'000</i>
Membership and related services	1,432	364	140	1,936	2,299
Charitable trading activities	996	230	97	1,323	1,490
Activities for generating funds	64	36	6	106	177
	2,492	630	243	3,365	3,966

Employment costs are allocated to activities based on the cost of the estimated time spent on those activities.

Establishment and administration costs are apportioned to activities on the basis of employment costs.

Admin costs include governance, finance, HR, IT and sales and marketing costs, which are apportioned to activities on the basis of employment costs.

Employee information

	<i>2016 No.</i>	<i>2015 No.</i>
The average number/(full time equivalent) employees during the year was	57 (53)	62 (55)
The number of employees who earned more than £60,000 per annum including benefits was:		
£60,001 - £70,000	2	1
£70,001 - £80,000	1	1
£160,001 - £170,000	1	1
The number of employees who earned more than £60,000 per annum and accrued benefits in the Institute's pension scheme was:		
Defined benefit scheme	1	1
Money purchase scheme	3	2
Total remuneration of key management personnel, including benefits during the year was	572	543
Total employer National Insurance contributions paid on the key management personnel remuneration	64	60
Total amount of redundancy payments made during the year was	-	107
Contributions to the pension funds during the year were:		
Defined benefit scheme	135	111
Money purchase scheme	68	63

The key management personnel of the charity are detailed on page 35.

Total expenditure includes

	2016 £'000	2015 £'000
Auditor's remuneration		
Audit fee – current year	36	36
Accountancy, taxation and other services	-	1
Travel expenses paid to 27 (2015: 29) Council Members for attending Council and other meetings	34	32
Travel expenses paid on behalf of 8 (2015: 12) Council Members for attending Council and other meetings	5	11
Operating lease charges	41	283

None of the Council members received any remuneration in either year.

	2016 £'000		2015 £'000	
Operating lease rentals expiring within:	Land and buildings	Other	Land and buildings	Other
Within one year	-	-	-	-
Within two to five years	-	11	-	14
After five years	349	-	391	-

Other transactions with trustees

No members of the Council have directly or indirectly received any remuneration during the years ended 31 December 2015 and 2016.

8. Transfers between funds

There were no transfers between funds during 2016 or 2015.

9. Intangible fixed assets

	<i>Group and parent Website and software £'000</i>	<i>Group only Patent costs £'000</i>	<i>Total £'000</i>
GROUP			
Cost			
1 January 2016	384	23	407
Additions in the year	19		19
Disposals in a year	-	-	-
31 December 2016	403	23	426
Amortisation			
1 January 2016	60	3	63
Charge for the year	81	4	85
Disposed of		-	
31 December 2016	141	7	148
Net book value			
31 December 2016	262	16	278
31 December 2015	324	20	344

10. Tangible fixed assets

	<i>Freehold property £'000</i>	<i>Short leasehold property £'000</i>	<i>Furniture, fittings & equipment £'000</i>	<i>Total £'000</i>
GROUP AND PARENT				
Cost or valuation				
1 January 2016	13,470	2,211	1,097	16,778
Additions in the year	6	8	92	106
Disposals in the year	-			
31 December 2016	13,476	2,219	1,189	16,884
Depreciation				
1 January 2016	-	1,910	874	2,784
Provided during the year	84	25	59	168
Revaluation	(84)	-	-	(84)
Disposals in the year	-	-	-	-
31 December 2016	-	1,935	933	2,868
Net book value				
31 December 2016	13,476	284	256	14,016
31 December 2015	13,470	301	223	13,994

10. Tangible fixed assets (continued)

In 2014 the trustees reviewed the Institute's accounting policies and agreed that the freehold land and buildings should be accounted for using the valuation method. The freehold property held at February 2014 was therefore revalued at its present market value of £300k by Ian Robertson MRICS on 20 February 2014. The next formal valuation of freehold properties is due to take place in 2019. In the interim the trustees will review the valuation on an annual basis. At 31 December 2016 the cost of freehold property was £13,476k.

In addition to the assets outlined above, the institute owns a collection of paintings and artefacts of historic and scientific importance which it deems to be heritage assets as defined under SORP (FRS 102). The collection comprises of portraits, paintings, artefacts and sculptures, which the Institute has commissioned, acquired or received as a donation to either enhance the fabric of its building or to celebrate its history in science, engineering and technology.

The institute maintains a register of these assets, however it is not practical to ascertain the costs of these assets. The Trustees consider that the cost of obtaining a valuation of the heritage assets is not justified by the usefulness of the information to the users of the accounts and to the charity for its own stewardship purposes, and in accordance with SORP (FRS 102) has not included them within the balance sheet.

Following the 2016 actuarial valuation of the Institute's defined benefit pension scheme and the deficit arising as a result, the Trustees of the pension scheme placed a fixed charge of £610k on the Institute's London Property (part of Freehold property). An initial £250k of the charge took effect in February 2016 and a further £360k took effect in December 2016. The charge was set to reduce deficit funding paid by the Institute to the pension scheme.

There are no other charges on any of the Institute's assets at present.

11. Investments

	<i>Group</i>		<i>Institute</i>	
	<i>2016</i>	<i>2015</i>	<i>2016</i>	<i>2015</i>
	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>
Analysis of movements in the year				
Market value at 1 January	8,922	9,472	8,922	9,472
Additions at cost	425	481	425	481
Disposals at opening market value	(1,210)	(1,231)	(1,210)	(1,231)
Revaluations	821	200	821	200
Market value at 31 December	8,958	8,922	8,958	8,922
At the balance sheet date, the portfolio was invested as follows				
<i>Listed investments</i>				
Fixed interest	2,441	2,290	2,441	2,290
UK equities	6,005	6,033	6,005	6,033
Overseas equities	354	440	354	440
<i>Unlisted investments</i>				
Cash and cash equivalents	158	159	158	159
Subsidiary undertakings (note 13)	-	-	-	-
Market value at 31 December	8,958	8,922	8,958	8,922
At the balance sheet date, the following investments represent more than 5% of the portfolio by market value				
Charinco (UK fixed interest common investment fund)	2,258	2,190	2,258	2,190
Charishare (UK equities common investment fund)	3,366	3,697	3,366	3,697
Blackrock International Equity Fund	268	404	268	404
Historical cost at 31 December	5,892	6,476	5,892	6,476

12. Subsidiary undertakings

The Institute has four subsidiary organisations:

- IOM Communications Ltd (company number 3285009, charity number 1059475), a charitable trading company limited by shares.
- The Institute of Packaging (company number 786826, charity number 295762), a company limited by guarantee.
- Materials Institute Services Ltd (company number 2882544), a company limited by shares.
- PIABC Ltd (company number 10371273) a company limited by shares.

All subsidiary companies are incorporated in the UK and file accounts with the Registrar of Companies. The accounts of IOM Communications Ltd and Materials Institute Services Ltd are audited. IOM Communications Limited and Materials Institute Services Limited and PIABC Ltd are wholly owned

subsidiaries. The Institute holds 100 shares of £1 each in IOM Communications Limited. IOM Communications Limited holds 2 shares of £1 each in Materials Institute Services Limited, which were transferred from the Institute during the year. No premium was paid on acquisition. PIABC Ltd was incorporated in the year and the Institute holds one share of £1 in PIABC Ltd.

IOM Communications Limited undertakes the charitable trading activities of the Institute of Materials, Minerals and Mining. Materials Institute Services Limited undertakes income generating activities of the Institute of Materials, Minerals and Mining. The Institute of Packaging did not trade during 2016 or 2015.

Summaries of the 2016 results and balance sheets of IOM Communications Limited and Materials Institute Services Limited together with comparative figures for 2015 are shown below.

The results and balances of PIABC Ltd in the period are immaterial to the Institute and are included in the Institute's results in these financial statements.

IOM Communications Limited

	2016 Total £'000	2015 Total £'000
Results		
Charitable trading activities	2,172	2,162
Total incoming resources	2,172	2,162
Charitable trading activities	1,844	2,082
Donation to the Institute	327	80
Total outgoing resources	2,171	2,162
Net incoming resources	1	-
Balances brought forward	340	340
Balances carried forward	341	340
Balance sheets at 31 December		
Fixed assets	16	20
Current assets	983	750
Creditors: amounts falling due within one year	(658)	(430)
Net current assets	341	340
Shareholders' funds	341	340

12. Subsidiary undertakings (continued)

Materials Institute Services Limited

	<i>2016</i>	<i>2015</i>
	<i>Total</i>	<i>Total</i>
	<i>£'000</i>	<i>£'000</i>
Results		
Turnover	180	-
Total incoming resources	180	-
Costs	161	-
Total outgoing resources	161	-
Net incoming resources	19	-
Balances brought forward	3	-
Balances carried forward	22	-
Balance sheets at 31 December		
Fixed assets	-	-
Current assets	27	3
Creditors: amounts falling due within one year	(5)	-
Net current assets	22	3
Shareholders' funds	22	3

The net assets of The Institute of Packaging at 31 December 2015 and 2016 were £nil.

13. Stock and work in progress

	<i>Consolidated</i>		<i>Institute</i>	
	<i>2016</i>	<i>2015</i>	<i>2016</i>	<i>2015</i>
	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>	<i>£'000</i>
Work in progress	48	14	-	-
Sundry stocks	3	2	3	2
	51	16	3	2

14. Debtors

Trade debtors	380	311	35	75
Other debtors	10	11	10	11
Prepayments and accrued income	187	180	143	171
	577	502	188	257

15. Creditors: Amounts falling due within one year

Trade creditors	186	219	151	164
Taxes and social security costs	119	68	114	68
Subscriptions and orders paid in advance	840	617	319	338
Other creditors and accruals	538	493	437	399
Amounts due to subsidiary companies	-	-	197	249
	1,683	1,397	1,218	1,218

Subscriptions and orders paid in advance

At 1 January	617	679	338	411
Recognised in year	(525)	(669)	(336)	(409)
Provided for in year	748	607	317	336
At 31 December	840	617	319	338

16. Analysis of net assets between funds

At 31 December 2016

Group	Unrestricted funds		Restricted	Permanent	Total
	General £'000	Designated £'000	funds £'000	Endowment fund £'000	funds £'000
Intangible assets	278	-	-	-	278
Tangible fixed assets	755	13,261	-	-	14,016
Investments	6,992	151	1,782	33	8,958
Current assets	595	162	368	-	1,125
Current liabilities	(1,683)	-	-	-	(1,683)
Net assets before pension liability	6,937	13,574	2,150	33	22,694
Pension liability	(2,616)	-	-	-	(2,616)
Total net assets	4,321	13,574	2,150	33	20,078

Institute	Unrestricted funds		Restricted	Permanent	Total
	General £'000	Designated £'000	funds £'000	Endowment fund £'000	funds £'000
Intangible fixed assets	262	-	-	-	262
Tangible fixed assets	755	13,261	-	-	14,016
Investments	6,992	151	1,782	33	8,958
Current assets	(216)	162	368	-	314
Current liabilities	(1,218)	-	-	-	(1,218)
Net assets before pension liability	6,575	13,574	2,150	33	22,332
Pension liability	(2,616)	-	-	-	(2,616)
Total net assets	3,959	13,574	2,150	33	19,716

At 31 December 2015

Group	Unrestricted funds		Restricted	Permanent	Total
	General £'000	Designated £'000	funds £'000	Endowment fund £'000	funds £'000
Intangible assets	344	-	-	-	344
Tangible fixed assets	514	13,480	-	-	13,994
Investments	7,239	-	1,650	33	8,922
Current assets	424	-	360	-	784
Current liabilities	(1,397)	-	-	-	(1,397)
Net assets before pension liability	7,174	13,480	2,010	33	22,647
Pension liability	(2,035)	-	-	-	(2,035)
Total net assets	5,089	13,480	2,010	33	20,612

Institute	Unrestricted funds		Restricted	Permanent	Total
	General £'000	Designated £'000	funds £'000	Endowment fund £'000	funds £'000
Intangible fixed assets	324	-	-	-	324
Tangible fixed assets	514	13,480	-	-	13,994
Investments	7,239	-	1,650	33	8,922
Current assets	(77)	-	360	-	283
Current liabilities	(1,218)	-	-	-	(1,218)
Net assets before pension liability	6,782	13,480	2,010	33	22,305
Pension liability	(2,035)	-	-	-	(2,035)
Total net assets	4,747	13,480	2,010	33	20,270

17. Permanent endowment fund

Group and Institute	Balance at 1 January 2016 £'000	Incoming resources £'000	Resources expended £'000	Investment gains/ (losses) £'000	Transfers between funds £'000	Balance at 31 December 2016 £'000
Mining Club	33	-	-	-	-	33

The income of the Mining Club is dealt with in a restricted fund that provides grants for travel, study or attendance at international conferences related to the minerals industry.

18. Restricted funds

Group and Institute	Balance at 1 January 2016 £'000	Incoming resources £'000	Resources expended £'000	Investment gains/ (losses) £'000	Transfers between funds £'000	Balance at 31 December 2016 £'000
Stanley Elmore Fellowship	677	16	(14)	16	-	695
Andrew Carnegie Trust Fund	533	15	(10)	51	-	589
Bosworth Smith Trust	237	7	(7)	22	-	259
Tom Seaman Travelling Scholarship	233	7	(7)	22	-	255
Metals & Metallurgy Trust Fund	98	3	(4)	8	-	105
Edgar Pam Fellowship	95	3	(2)	8	-	104
G Vernon Hobson Bequest	60	2	(2)	6	-	66
Other funds	20	-	-	-	-	20
Prize funds	57	-	-	-	-	57
	2,010	53	(46)	133	-	2,150

The income of these restricted funds is to be used for the following purposes:

Stanley Elmore Fellowship, Bosworth Smith Trust, Edgar Pam Fellowship and G Vernon Hobson Bequest - to provide grants to assist post-graduate research, together with the unexpended balance of Mining Club income.

Andrew Carnegie Trust Fund – to support the award of scholarships and awards in the field of materials.

Tom Seaman Travelling Scholarship Fund is for the purpose of awarding scholarships to persons who are engaged in or associated with the coal mining industry.

The Metals & Metallurgy Trust Fund – to support the award or grants, scholarships and prizes in the field of metals and metallurgy.

Other funds include:

- A G Charleton Fund – to award prizes to deserving students at the Imperial College of Science Technology and Medicine.
- Centenary Student Sponsorship Fund – to provide membership benefits of the Institute to students.
- Dixie Dean Bursary Fund – to provide bursaries for foreign students associated with the packaging industry.

Prize funds include the R T Holland Fund, Dennis Chapman Medal Award, Frank Fitzgerald Medal and other funds set up for the award of medals or money to appropriate recipients.

Further information about scholarships, bursaries, professional and travel grants including details of case studies are shown on our website (www.iom3.org/scholarships-grants-and-bursaries).

19. Designated funds

	<i>Balance at</i> 1 January 2016 £'000	<i>Incoming</i> <i>resources</i> £'000	<i>Resources</i> <i>expended</i> £'000	<i>Investment</i> <i>gains/</i> <i>(losses)</i> £'000	<i>Transfers</i> <i>between</i> <i>funds</i> £'000	<i>Balance</i> <i>at 31</i> <i>December</i> 2016 £'000
Asset development fund (including revaluation reserve)	13,177	-	-	84	-	13,261
Services development fund	88	-	-	-	-	88
Sir Julius Wernher Memorial Fund	124	2	-	8	-	134
Packaging education fund	50	-	-	-	-	50
Materials education	24	-	-	-	-	24
Robert A Moore Fund	17	-	-	-	-	17
	13,480	2	-	92	-	13,574

The designated funds have been set up for the following purposes:

- Asset development fund – representing selected amounts (at cost or market value less depreciation) invested in freehold and leasehold properties, furniture, equipment and computers used for the functional purposes of the Institute and amounts set aside to meet future capital requirements as deemed appropriate by the trustees.
- Services development fund – representing amounts designated by Council to develop and improve the quality of services provided by the Institute.
- Sir Julius Wernher Memorial Fund – representing amounts designated to provide for memorial lectures.
- Packaging education fund – representing amounts set aside to promote and develop packaging education.
- Materials education fund – representing income generated for and costs relating to the promotion of materials education in schools.
- Robert A Moore Fund – representing amounts designated to promote the aims of the Institute in the name of Robert A Moore.

20. Unrealised gains

	<i>Consolidated</i>		<i>Institute</i>	
	<i>2016</i> £'000	<i>2015</i> £'000	<i>2016</i> £'000	<i>2015</i> £'000
General fund	2,366	2,110	2,366	2,110
Designated funds	16	12	16	12
	2,382	2,122	2,382	2,122
Restricted funds	457	324	457	324
	2,839	2,446	2,839	2,446

21. Capital commitments

The Institute had no capital commitments at 31 December 2015 and 2016.

22. Pension schemes

22.1 Introduction

The Institute operates a funded defined benefit occupational pension scheme. The assets of the scheme are held separately from those of the Institute and are invested in an insured fund administered by the Prudential Assurance Company Limited and the Newton Exempt Fund administered by Mellon Fund Managers Limited. Under the terms of the Trust Deeds, the scheme is administered by the Trustees.

The scheme was closed to new members during 2002 and new employees are given the opportunity to join the group

personal pension arrangements with Royal London. The group personal pension plan is a defined contribution benefit scheme and complies with the stakeholder legislation.

At the year end, the scheme had eight current staff members and 81 deferred members.

Results of the most recent triennial actuarial valuations, at 1 January 2010, 2013 and 2016 showed the following results.

	<i>2010</i> £'000	<i>2013</i> £'000	<i>2016</i> £'000
Market value of the scheme's assets	6,404	7,361	13,970
Liability for projected accrued benefits	(6,925)	(9,201)	(15,593)
(Deficit)	(521)	(1,840)	(1,623)

Arrangements have been made for the deficit shown by the actuarial valuation at 1 January 2016 to be funded at the rate of:

- £42k by 31 December 2017. This was paid in a lump sum in March 2017.
- £33k payable during 2019.
- £67k p.a. increasing at 3.4% p.a. payable in equal monthly instalments from 1 January 2020 to 31 December 2031.

22.2 Principal actuarial assumptions

A valuation of the defined benefit pension scheme assets and liabilities at 31 December 2016 under FRS102 has been carried out by a qualified independent actuary. The projected unit valuation method has been used. The major financial assumptions used by the actuary were:

Years ended	2016 % p.a.	2015 % p.a.
Discount rate	2.80	3.70
Price inflation – pre-retirement (RPI)	3.40	3.10
Consumer Prices Inflation – pre-retirement (CPI)	2.40	2.10
Future salary increases	1.50	2.10
Rate of increases of pensions in payment (RPI)	3.10	3.00
Rates of increases of pensions in payment – (CPI)	1.80	1.80
Rate of increase for deferred pensioners	2.40	2.10

The following demographic assumptions were used in the valuation:

	Year ended 31/12/2016	Year ended 31/12/2015
Mortality pre-retirement	As for post retirement	As for post retirement
Mortality post-retirement	S2PXA CMI 2015 1%	S2PXA CMI 2015 1%

	Males	Females	Males	Females
Life expectancy for a current 65 year old in 2016	86.9 years	88.9 years	86.9 years	88.9 years
Life expectancy at age 65 for an individual aged 45 in 2016	88.2 years	90.4 years	88.2 years	90.4 years

22.3 Amounts recognised in the balance sheet for defined benefit scheme

	2016 £'000	2015 £'000
Present value of defined benefit obligation	(16,188)	(14,859)
Fair value of scheme assets	13,572	12,824
Pension scheme liability recognised in the balance sheet	<u>(2,616)</u>	<u>(2,035)</u>

22.4 Changes in present value of defined benefit obligation

	2016 £'000	2015 £'000
Defined benefit obligation at 1 January	(14,859)	(14,642)
Service cost	(86)	(108)
Interest cost	(542)	(507)
Member contributions	(29)	(38)
Benefits paid	529	484
Actuarial gains/(losses)	(1,201)	(48)
Defined benefit obligation at 31 Decemeber	<u>(16,188)</u>	<u>(14,859)</u>

22.5 Changes in fair value of scheme assets

	2016 £'000	2015 £'000
Plan assets at 1 January	12,824	12,777
Return on plan assets (excluding net interest on defined benefit obligations)	688	(59)
Interest income	467	441
Employer contributions	93	111
Member contributions	29	38
Benefits paid	(529)	(484)
Plan assets at 31 December	<u>13,572</u>	<u>12,824</u>
Amount recognised in balance sheet	<u>13,572</u>	<u>12,824</u>

22.6 Major categories of scheme assets

	%	%
Equities	16	27
Corporate bonds	7	8
Gilts	18	18
Properties	2	2
Cash	18	6
Annuities	33	32
Other assets	6	7
Total scheme assets	<u>100</u>	<u>100</u>

22.7 Amounts recognised in the statement of financial activities

Amounts recognised in net incoming resources are as follows:

	2016 £'000	2015 £'000
Current service cost	86	108
Net interest cost	75	66
Net charge	161	174

The actual return on scheme assets was a gain of £1,155k (2015: £382k)

The Institute expects to contribute £98k to its defined benefit pension scheme in 2017.

The actuarial losses recognised in the statement of financial activities for 2016 were £513k and the cumulative losses recognised from 2002 to 2016 amounted to £2,928k.

22.8 Outstanding pension contributions at the year end

Contributions for the defined benefit scheme amounting to £7k (2015 - £11k) were outstanding at the year-end. Contributions for the defined contributions schemes amounting to £8k (2015 - £8k) were outstanding at the year-end.



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