



TWI Limited

2020 Annual Report & Financial Statements



THURSDAY



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30/09/2021

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COMPANIES HOUSE

JOINING | INNOVATION | EXPERTISE

Registered Company No: 03859442

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Company Information

DIRECTORS

Aamir Khalid
Leonie Stewart
Mike Russell
Paul Woollin
Shahid Aslam
Shervin Maleki
Steve Shi
Tat-Hean Gan

INDEPENDENT AUDITORS

Peters Elworthy & Moore

Chartered Accountants & Statutory Auditors
Salisbury House, Station Road, Cambridge CB1 2LA

REGISTERED OFFICE

Bevan Braithwaite Building

Granta Park, Great Abington, Cambridge CB21 6AL

BANKERS

Barclays Bank PLC

Market Place, Saffron Walden, Essex CB10 1HR

Introducing **TWI Ltd**

TWI Ltd is a fully owned subsidiary of The Welding Institute. The Welding Institute is a company limited by guarantee. TWI Ltd carries out activities for the Members of The Welding Institute.

TWI Ltd is one of the world's foremost independent research and technology organisations, with expertise in solving problems in manufacturing, fabrication and whole-life integrity management technologies. The company has a first-class reputation for service through its teams of internationally respected consultants, scientists, engineers and support staff. Supported by a successful international training and examinations network, TWI Ltd also takes technical and practical know-how to regions which are looking to develop local expertise.

TWI Ltd has been serving the needs of The Welding Institute's Professional and Industrial members for over 75 years, and this still leads the direction of our work today. The constantly shifting needs of industry over the years has meant that TWI Ltd has remained dynamic in this support, with companies being

invited to work alongside our experts on-site and universities working in collaboration with TWI Ltd within the structure of our innovation centres. Our experts not only support innovation driven by universities and the needs of industry, but also create underpinning technology and research to develop products that can be brought to market by subsidiary companies.

TWI Ltd actively supports the development of the next generation of trained and competent employees through our training and certification programmes. The advancement of the next generation of global engineering experts is coupled with the development of our own staff through sponsored Master's programmes, apprenticeships, the National Structural Integrity Research Centre and our diversity and inclusion initiatives.



As the UK government seeks to address future challenges through the development of areas such as artificial intelligence, big data, clean growth and the future of mobility, so our work aligns with this strategy to provide solutions for the future of industry and society in general. This innovation and expertise works alongside the needs of our Members on a regional, national and international level.

Our responsibilities do not end with industry and academia. TWI Ltd's corporate and social responsibility work uses educational outreach programmes to promote science, technology, engineering and maths (STEM) in schools, colleges and at university. We have a demonstrable

commitment to caring for the environment. By meeting the needs of industry with a view to the environment and changes in the global population year on year, TWI Ltd remains at the forefront of providing innovative solutions to tomorrow's problems.

TWI Ltd operates management systems which are independently certified by Lloyds Register Quality Assurance to BS EN ISO 9001, for Quality Management Systems, as well as for Health and Safety (BS ISO 45001) and Environment (BS EN ISO 14001).

TWI Ltd is a world leader in joining, materials and structural integrity.

Key Statistics

Project Delivery

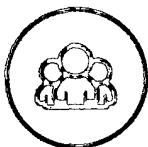
Successfully delivering projects in a fast moving dynamic environment is challenging. TWI Ltd has been delivering technically demanding projects to our members that provide value and competitive advantage for many years. We have a team of dedicated project management professionals that follow established project management principles to ensure delivery meets expectation. Across the organisation we

strive to continuously improve our project management processes as the business grows into new markets and the demands of these manifest in new requirements for the teams to meet. We see from our members an increasing need for improved delivery and communication that TWI Ltd is ready to meet. We look forward to working with our members on many more exciting and beneficial projects.

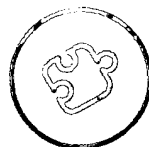
1888
Active
projects



Ongoing Projects Per Annum



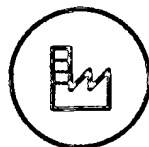
565
Single client



160
Collaborative



63
Core Research



7
Joint Industry

Sectors We Serve



**Aerospace
and Space**



Defence



**Future
Infrastructure**



Medical



**Automotive and
Electrification**



Rail



**Electronics
and Sensors**



Power



New Energy



Marine

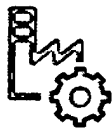
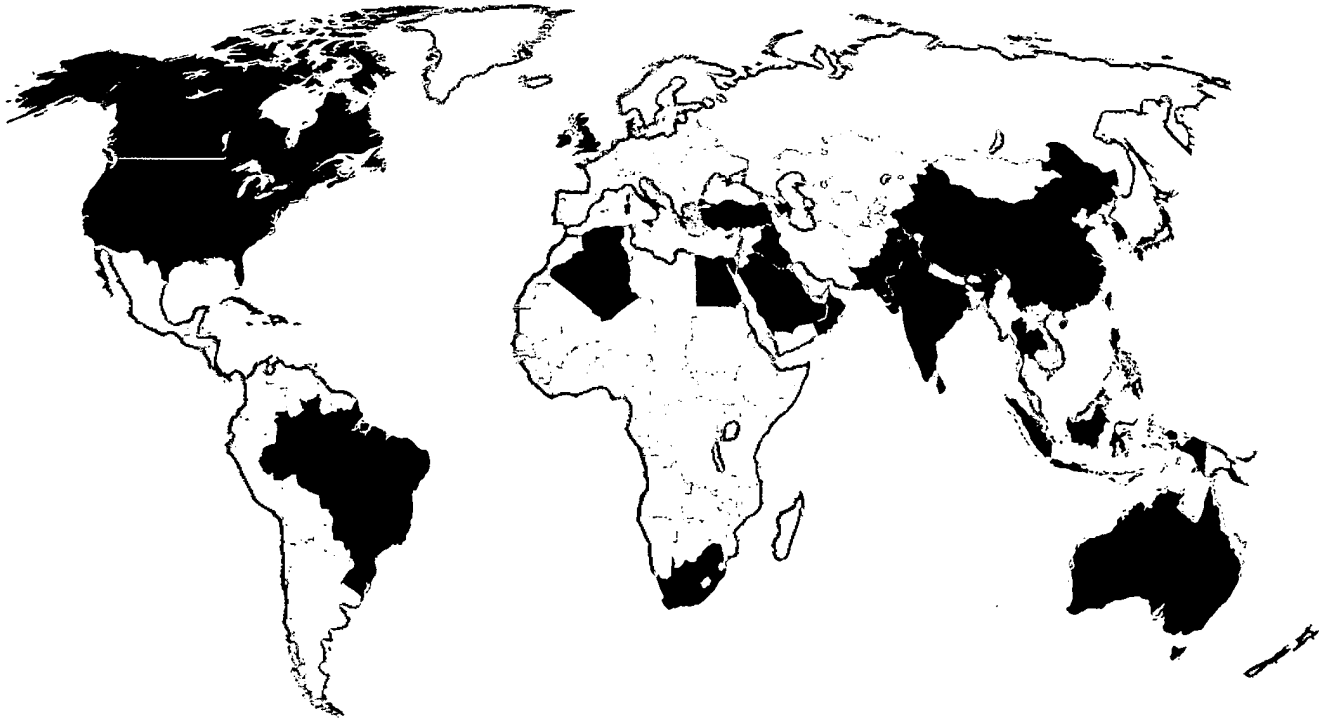


**Hydrogen
Economy**



Off Highway

TWI Ltd International Presence



533 Industrial Members



4,000 Professional Members

Corporate Impact



10,000 Certificates Issued



112 PhD and MSc Completed



500+ Welding Software Licenses



3,000 New Weldasearch Abstracts



3,000+ Students Reached via Education Outreach



40+ Technology Conferences and Seminars



20,000 People Trained



2,850 Library Enquiries

Spotlight on Our People



Bernadette Craster
Technology Fellow

"I joined TWI in 2012 as a Materials Specialist in Polymers and am now a Technology Fellow on Polymeric Materials and Ageing through Permeation Processes in the Materials and Structural Integrity group. I work with Member companies and colleagues to ensure that TWI is prepared to provide relevant technical support now and in the years to come.

I have contributed towards a facility that allows TWI to do scientific study that underpins the introduction of non-metallic materials at various scale into traditional oil and gas and now new energy areas. Specifically the novel permeation methodologies and corresponding data interpretation I have worked on, give the client a better understanding of how a material is ageing in environments with a reduced cost to them.

I plan to consolidate the topic of permeation for TWI so in 10 years' time the activity we have created remains as a lasting legacy."



Ben Forrest
Technician

"I joined TWI in November of 2018 as an apprentice technician and am currently working with the radiography team in our Wales office. Growing up I was always interested in engineering. Having family members and friends who work in Non Destructive Testing it seemed fitting to find myself also with a career in this sector.

Since working with the radiography team I've completed many computed tomography scans and from March 2020 have been working on a project that is inspecting high quantity aerospace parts for a production engine, these parts require a quick turnaround time to meet production schedules. I am studying for an HNC, have qualified as a level 1 in radiography and will be doing my exams for level 2 within the next couple of months."



Yin Jin Janin
Principal Project Leader

"Upon completing my EngDoc in Nuclear Engineering, I chose to pursue a career in fracture mechanics and haven't looked back since! I am currently working as a fracture mechanics engineer in FTM section where I have delivered several projects that have had a significant impact across industry. The most rewarding part of my job is getting to work with colleagues from different backgrounds (of both expertise and geographies) and delivering optimised solutions to our Members. I always feel the most pride and am the most relieved to learn that our Members' operations are able to proceed safely with high confidence."



Colin Ribton
Technology Fellow

Colin has been with TWI since 1985 and specialises in the design and customisation of electron beam systems for welding, melting, x-ray generation and other processes. He also works on magnetic design, high voltage design and control & monitoring systems. Colin is a Chartered Engineer, Chartered Physicist, a Fellow of the Institute of Physics and holds a joint honours degree in Pure and Applied Physics and a PhD from Brunel University. Widely published, Colin is the inventor and co-inventor on several granted patents, including the RF excited plasma gun and the array probe device for measuring electron beam intensity. He project leads TWI's activities on government funded collaborative projects looking at higher productivity additive manufacture (3D printing) using electron beams for the aerospace industry.



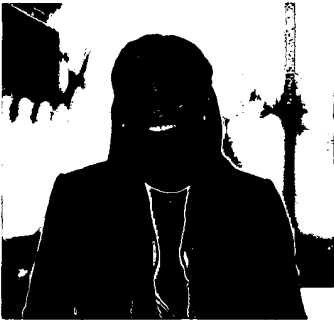
Kate Franklin
Senior Project Leader

"Every project I work on has the potential to make a beneficial impact on society, whether that be by increasing product safety, reducing cost or reducing environmental impact. The wide range of members we work for is incredible, and each opportunity to contribute to a change in the way we make things for the better is relished and enjoyed."



Rob Scudamore
Group Manager

"I support Rolls-Royce as a key client manager, and lead our efforts in the UK on Small Modular Reactor (SMR). I'm also the AMIC Innovation Centre Director with Lancaster University. I enjoy leading/managing a large team and enjoy networking outside TWI. An important part of my role is supporting our sales activities; the diversity of the role is particularly suited to me. It's cheesy but I do find the staff at TWI are incredibly good and interesting people. My biggest achievement to date, apart from the obvious ones of raising my children and reaching the level at TWI that I'm at, is playing in the English Hockey National League. I am also very proud of the work I did on the AM National Strategy."



Dorothy Winful
Senior Project Leader

"I came to TWI in 2014 to pursue a PhD with TWI and Brunel University through NSIRC. I then became a project leader at TWI in 2017 within the Materials, Performance and Characterisation section. I lead and support various single client projects, which range from failure investigation of ferritic components, to testing of metals under extreme environments including, elevated temperatures, gaseous hydrogen and sour environments. I enjoy the diversity of projects.

Supporting characterisation of materials for the hydrogen industry is the technology that I feel most proud of developing. This is a growing area and it is great to be able to contribute towards developing a safe infrastructure to support the drive towards a carbon neutral future.

My short-term ambitions are to continue to flourish at TWI, diversify my knowledge, support more clients and obtain chartership. My long-term ambitions are to see more of the world and ultimately become a 'fountain of knowledge' in order to encourage and support others."



Tyler London
Section Manager

Tyler joined TWI in 2010 and specialises in computational engineering. Work currently focuses on developing digital technologies to help assess and optimise the performance of engineering structures using predictive models. He is an internationally recognised Keynote speaker with over 35 technical articles published. Tyler has developed bespoke and novel solutions to address complex engineering challenges and provide fundamental insights into material performance and structural integrity. Contributions have resulted in modifications to British and European design standards.

Spotlight on Our Global Impact

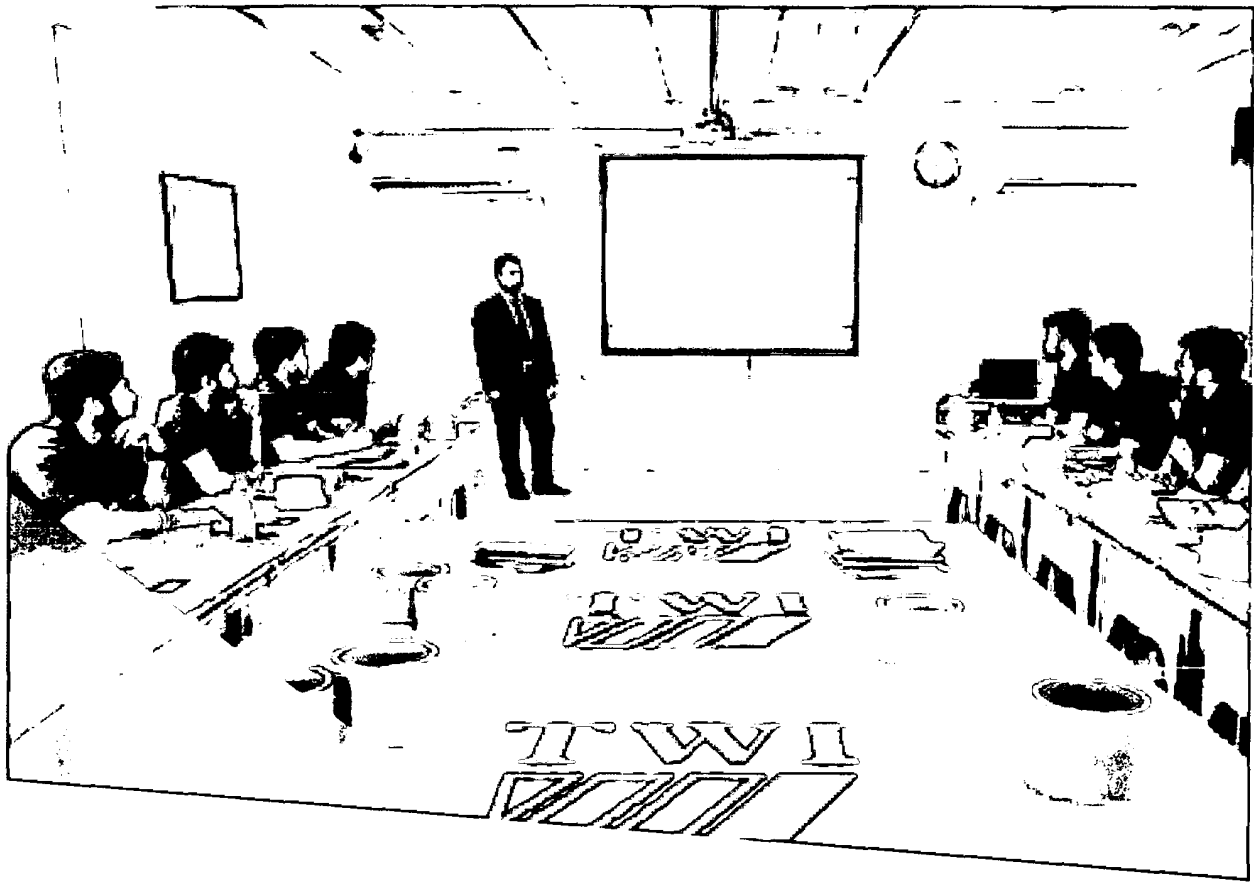
TWI Ltd and Lloyds Register Foundation – Making the World A Safer Place

The South East Asia Skills Enhancement Programme (SEASEP) was launched by TWI Ltd and the Lloyd's Register Foundation in 2018. Throughout 2020 we continued to boost the vocational skills and safety of more than 4000 workers from under-represented communities with accredited safety-related training in South East Asia and India. Workers joining the training programme were given a bursary funded by the Lloyd's Register Foundation and TWI Ltd.

SEASEP is not only increasing skills levels in the workforce. It has been very successful in empowering a whole new generation of talented women engineers to enter traditionally male careers such as welding inspection and non-destructive testing.

Tackling in-country skills shortages and reducing occupational fatalities by bringing engineering-related skills and education to disadvantaged and under-represented groups were the objectives of this programme.





Improving the opportunities and livelihoods for global communities

50% of the Indian population are under 25 years of age, with only 2% of the existing workforce having undergone skills training. 30% of the population live in rural areas where there is very limited access to training. In these areas most families work in agriculture and farming, incomes are low and the cost of training is unaffordable.

Many of our candidates from these regions will seek employment and gain 2 to 3 years of work experience domestically in Welding Inspection and the Non Destructive Testing (NDT) fields. They then apply for a Certification Scheme for Welding Inspection Personnel (CSWIP) through TWI Ltd. This internationally recognised certificate provides many with the opportunity to work globally in industry, many end up within the oil industry. Following this experience,

many go on to support and fund the next candidate from their local villages, allowing their communities to prosper and a new generation of skilled workers to emerge. TWI Ltd fully supports this initiative by providing discounts and financial support to these candidates.

Community Service during Covid-19

The Covid-19 pandemic was a devastating global event that impacted all. TWI Ltd assisted our communities by donating PPE to local NHS and emergency services, providing our services free of charge (technical advice and support to ventilator challenge companies, modelling and manufacturing support to the development of novel face masks and improved PPE solutions). At our premises we hosted the Cambridge NHS blood donor services during the lockdown periods and provided free advice and support on NHS equipment and consumables.

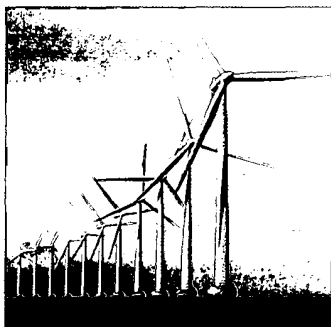
Spotlight on Our Projects

TWI Ltd worked on 1,888 projects in 2020, including:

- work on an ultrasonic sensor able to operate close to the core of a nuclear reactor;
- a nano-composite coating material capable of detecting liquid hydrocarbon leaks;
- the prevention of dangerous ice build-up on aircraft;
- a graphene sensor able to detect defects in composite materials;
- robotic inspection systems for ships and offshore wind turbine blades.

We were proud to see the friction stir welding technology created at TWI Ltd being used for the crew capsule used in the SpaceX test flight.

Some of the Research projects worked on in 2020



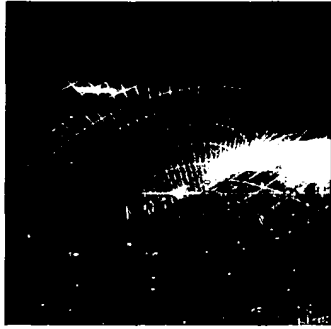
WindTwin

Develop a combined wind turbine inspection solution that utilises both data and physics based modelling to reduce the maintenance costs of wind turbines, optimising operations and energy generation.



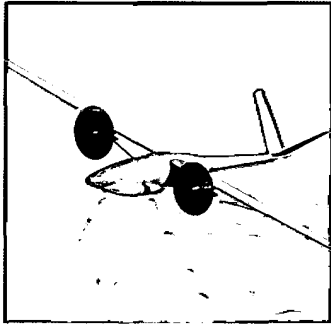
TCTool

Aerospace project to develop thermoplastic welding and assembly solutions for fuselage components, reducing costs, and improving lightweighting and environmental benefits.



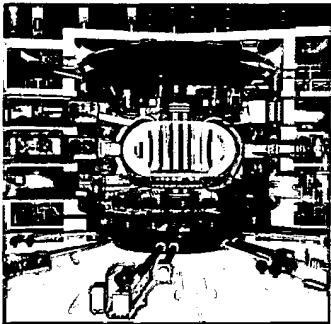
5GEM

Working alongside Vodafone and the Ford Motor Company to trial the use of 5G technology in manufacturing, providing improved connectivity between machines to provide real-time feedback, control, analysis and remote expert support.



Hydrogen Fuel Cells

Bespoke hydrogen testing capability and materials performance assessments to support the testing and certification of a fuel cell power system for hydrogen powered, remotely piloted aircraft that will operate in the stratosphere to deliver improved 4G and 5G coverage.



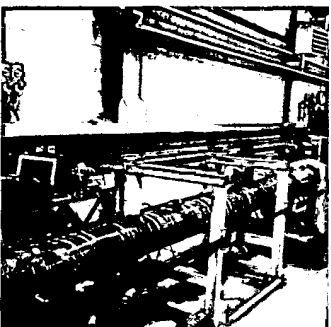
ITER

Design and engineering support to the manufacturing, welding, joining and NDT inspection of parts for a Tokamak magnetic confinement device being developed to produce controlled thermonuclear fusion power in Cadarache, France.



FIBRESHIP

One of 18 partners from 11 nations, this project focused on the innovative use of composite materials for the construction of large-length commercial vessels of over 50m in length.



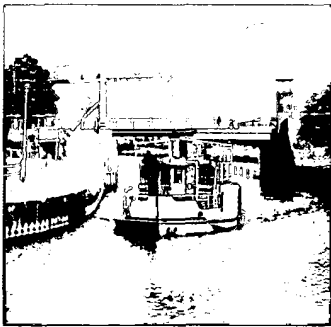
S4CE

Develop, test and implement technologies to detect, quantify and mitigate against the risks associated with sub-surface geo-energy operations.



ISOPREP

Helping to improve the environment by developing a method to recycle polypropylene (PP) products. PP is the second-most used commodity polymer in the world, yet only 1% of PP products are currently recycled.



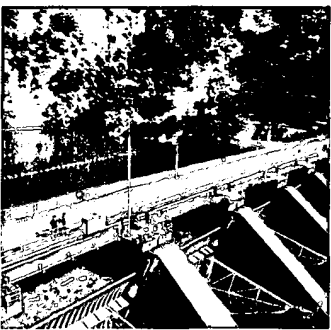
PILESENSE

To develop an ultrasonic guided wave system for the inspection of sheet piles, used in a wide range of applications including docks, flood defences and piers.



EV Joining

Providing comprehensive assessment of joining and recycling options for electric vehicle (EV) battery pack manufacture.



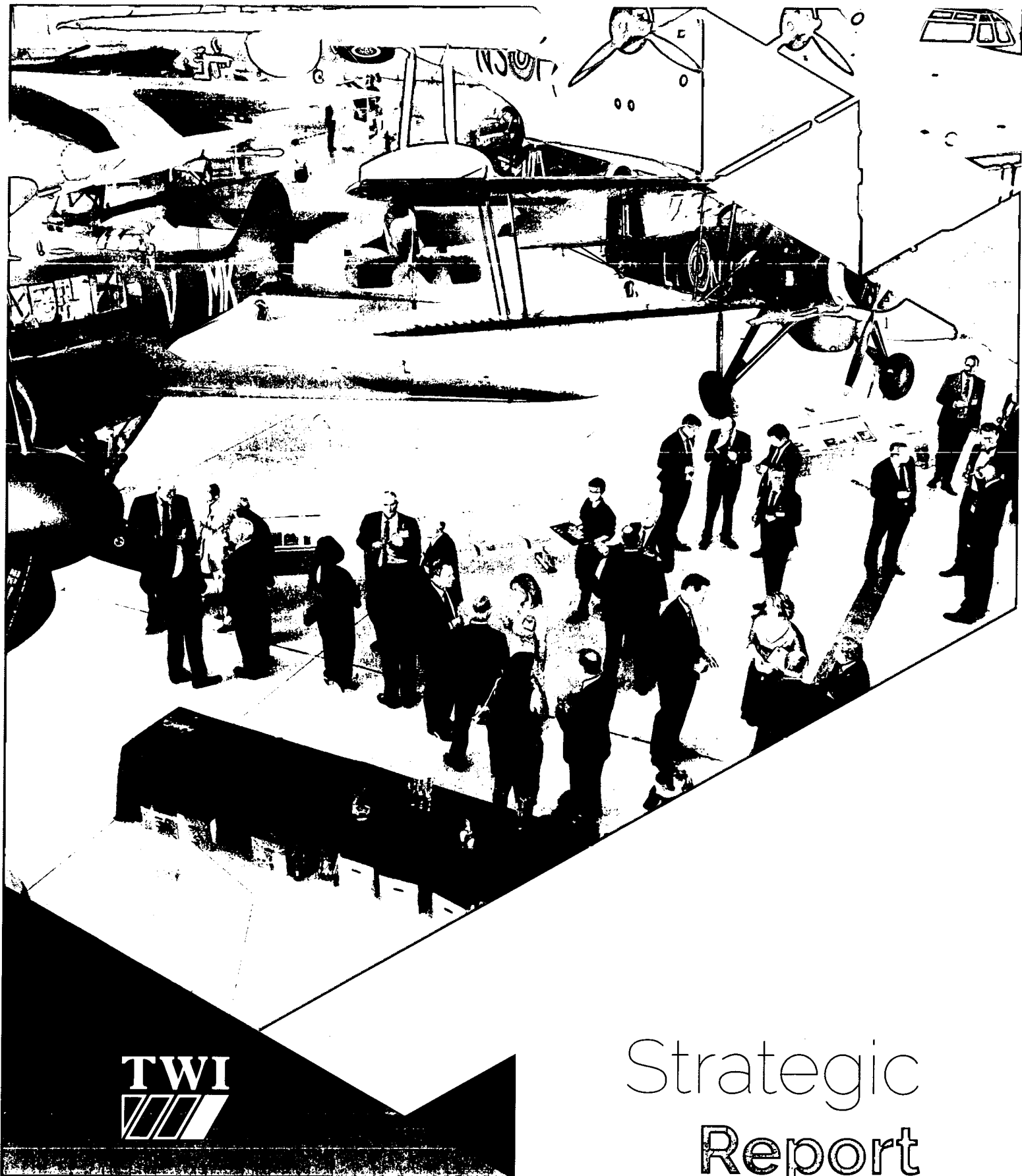
DamGPR

Develop drones fitted with ground penetrating radar (GPR) capable of automatically inspecting dams and other structures for fault detection and analysis.



PROTECT

Manufacture a multi-material crash-box that enables tailored behaviour/performance to improve crash performance during low-speed automotive vehicle accidents.



Strategic Report

Strategic Objectives

Our vision is to push the boundaries of technology through collaboration and innovation to provide the expertise necessary to meet the challenges of tomorrow.

We are a world leader in joining, materials and structural integrity. We develop our people, capabilities and networks to provide stakeholders with independent and authoritative support, innovation and expertise.

This is achieved through the application of our core values (**Teamwork, Innovation and Expertise, Taking Responsibility, Customer Focus, Adaptability and Inclusion**), and focusing on the following strategic priorities:

1. Growth of direct work with TWI Ltd's Industrial Members (Single Client Projects).
2. Targeting specific technologies for exploitation.
3. Expanding overseas in high growth economies, by exploiting our technological and training expertise.
4. Growth through collaboration and innovation - including delivering TWI Ltd capabilities to existing customers for whom that capability is new.

Business Transformation

In 2019 TWI Ltd embarked on an ambitious Business Transformation Project that saw the finance department restructured with enhanced controls and processes established, corporate governance updated, and the introduction of a comprehensive Diversity and Inclusion (D&I) programme. This work was ongoing through 2020 and underpins our 5 year strategic plan for the company, providing scalable financial systems and processes to support future growth.

5 Year Strategy

TWI Ltd has created a 5-year strategy to enhance the services we provide to our Industrial and Professional Members while also ensuring the best-possible working environment for our staff. This strategy includes:

Health, Safety and Environment

TWI Ltd is dedicated to creating a 'zero harm' culture, which includes ongoing design of operational controls and enhanced staff training. Our environmental impact remains a key driver for how we work in line with applicable codes and standards.

Diversity and Inclusion

We are dedicated to creating a safe and inclusive workplace for all staff irrespective of gender, ability, class, sexual orientation or race. This includes fair career development and performance management and the creation of a more diverse and representative Council.

Technology Leadership

TWI Ltd is known for its research and development and this continues to be of importance as we meet the needs of industry through our single client and collaborative projects. We have close relationships with our Members and

will work with them to target specific technologies for exploitation. By investing in leading technologies and making them accessible we aim to provide materials solutions, promote robotics and automation, and help drive the core competencies highlighted by government for the continued growth of industry. TWI Ltd will support and drive these future advances through technology transfer and through the use of our innovation centres.

Promoting Growth Overseas

As a global business, TWI Ltd will continue to develop and deliver training, consultancy and technology implementations across our global subsidiaries including in India, South East Asia, the Middle East, Central Asia, Europe and the USA.

Professional Membership

Our Professional Members remain an important aspect of the business through The Welding Institute. We aim to provide value for our Members while building closer ties between our Professional and

Industrial Membership bases. TWI Ltd will continue to assist with professional development, including recognition, networking and community support while also inspiring the next generation to pursue STEM careers.

Marketing

Our work is promoted through a comprehensive marketing strategy to increase visibility and accessibility while generating more opportunities through proactive Member engagement.

Target Markets



Transition to net zero



Energy (renewables, H2 and new nuclear)



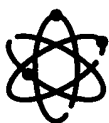
Transport (electric vehicles, space)



Defence



Circular economy including decommissioning



Digital economy including modelling and simulation

TWI


th
75
anniversary



Business Review



Aamir Khalid
Chief Executive

2020 was an extremely challenging year for all and I would like to extend my sincere thoughts to all those affected by the **Covid-19 pandemic**.

My condolences go out to our staff and those in the TWI community who lost loved ones over the past year. I am immensely proud of how TWI Ltd responded and in particular how colleagues have supported each other over this very difficult period.

TWI Ltd's trading in 2020 was inevitably dominated by the consequences of Covid-19. In response to the pandemic, TWI Ltd offered its services free of charge to companies who were helping to provide vital equipment and care products to the NHS. We supported small production companies in making parts to keep medical equipment operational, and supported industry in the development of ventilators, face-masks and hand sanitizer. We actively worked with our Industrial Members, many of whom were

essential service providers, to ensure we could meet their needs throughout the crisis. The pandemic was a stark reminder of the fragility of human health, and it also amplified inequalities in our society. We reflected on our purpose, positioning and strategy during 2020. We invested further in health and safety, diversity and inclusion, and increased our engagement with staff to help with the inevitable isolation the new working conditions brought. We streamlined operations in order to strengthen future performance.

TWI Ltd saw an immediate loss of trade in our training school business due to the closure of classrooms, and witnessed major restructuring within a number of our key customers who fought to stabilise their businesses in order to ride out the pandemic. Despite

the extreme challenges, we saw a swift transformation in the way we worked. The pandemic demanded a rapid adaptation by management and all employees. TWI Ltd responded in three ways:

1. We Stabilised the Core – all support staff were moved to homeworking. Capital expenditures were deferred to conserve cash. We focused on safeguarding our people and providing support to those Industrial Members providing essential services. We continued to operate our laboratories and deliver work where it was safe to do so. To mitigate the impact of the pandemic on our activities, we digitised content and moved to online delivery of our conferences, events and professional development programmes.
2. We Ran Lean – we implemented a recruitment freeze as well as a freeze on the use of consultants, stopped discretionary spending, executive salaries were temporarily reduced and we took advantage of the Government Job Retention Scheme. Like many

other companies we made the difficult decision to reduce our staff numbers and carried out redundancies in 2020. We closed the defined benefit pension scheme to future accruals in 2020. We worked closely with our bankers and Council to monitor our liquidity throughout the pandemic, putting in place contingent financing as a backstop.

3. A Focus on Recovery – Our 5 year strategy was adjusted in light of Covid-19 to 'Stabilise. Focus. Grow.' this strategy will run from 2021 - 2025. We continued with the Business Transformation initiatives started in 2019; putting in place enhanced governance, diversity and inclusion, systems and financial reporting structures to allow a platform for future growth.

I have witnessed tremendous support and kindness in the face of the challenges of the past year. Our staff have innovated and worked tirelessly, at times in the face of much personal worry and whilst trying to home school or care for relatives and elderly parents.

I want to thank all of our people including our members of Council, Boards and Committees and those who have supported us in our work. The challenges of Covid-19 in our lives is not over yet, but we begin to see light at the end of the tunnel thanks to the vaccination roll out. We have become a stronger, more resilient business. We ended 2020 on solid ground and are poised to navigate the future with renewed optimism.

Aamir Khalid
Chief Executive

Our Purpose

Pushing the boundaries of technology through collaboration and innovation to provide our Members with the expertise necessary to meet the challenges of tomorrow.

Our Values

- Teamwork
- Innovation and Expertise
- Taking Responsibility
- Customer focus
- Adaptability
- Inclusion

Our Mission

TWI Ltd is a world leader in joining, materials and structural integrity. We develop our people, capabilities and networks to provide Members and stakeholders with independent and authoritative support, innovation and expertise.

Client Satisfaction

TWI Ltd consistently scores above 90%

We help our Members to create and operate better, safer products. We put ourselves in our Members' shoes to identify their specific issues and challenges. We then figure out innovative ways to help solve these. In order to remain competitive, we have actively monitored client satisfaction rates for the past 10 years and collate data monthly through the use of client satisfaction surveys.

The average survey return rate was 53% in 2020. The following three KPI's are measured:

- (1) Technical Quality
- (2) Delivery Timescales
- (3) Staff Support.

Selection of the 533 Industrial Members we work for



Financial Results

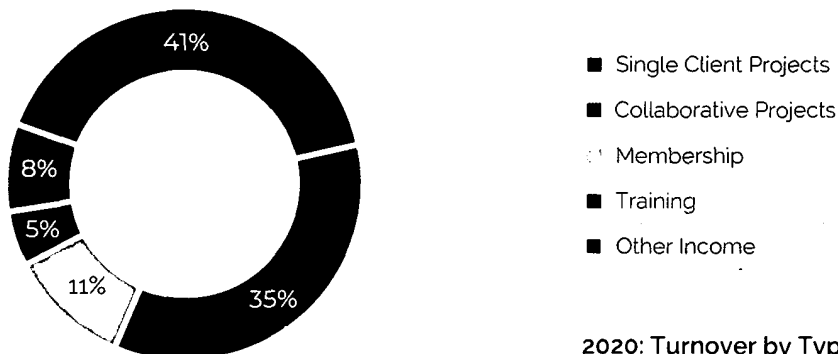
The results of the company are set out on page 53 and show income of £60.8m (2019: £58.6m) and a profit before tax and adjustments of £13m (2019: £2.8m). The balance sheet shows a net current asset position of £1.7m (2019: £0.5m) and total reserves of £31.5m (2019: £17m). Given the extraordinary global events of 2020, this is a strong performance and reflects the business adapting quickly to the new working environment brought about by the pandemic.

Profit & Loss Results

TWI Ltd saw an increase in turnover from £58.6m in 2019 to £60.8m in 2020. This turnover includes £10.5m of subcontracted Research activity from The Welding Institute (2019: £6m), which holds Scientific Research Association status. TWI Ltd carries out research activity on behalf of the Institute and disseminates the results for the benefit of members.

TWI Ltd worked on 1,888 projects during the year. Billable work was prioritised and our technicians remained on site to keep laboratories operational, protecting project income. Our Member companies frequently provide essential services to the public, as a result TWI was considered essential and continued to physically deliver these projects in our laboratories throughout 2020.

Single Client Projects (SCP) represented the majority of our work, making up 41% of turnover. SCP projects are the most profitable of the income streams. 35% of the turnover came from Collaborative projects (industrial research supported by government funding from the European Commission and UKRI). Industrial Membership subscriptions represented 11% of turnover and the training business 5% of turnover; this part of the business was greatly impacted by the pandemic as the majority of training is delivered via practical and face to face teaching. A number of courses transitioned to online delivery and the school recovered to 60% of the 2019 income levels by year end.



2020: Turnover by Type

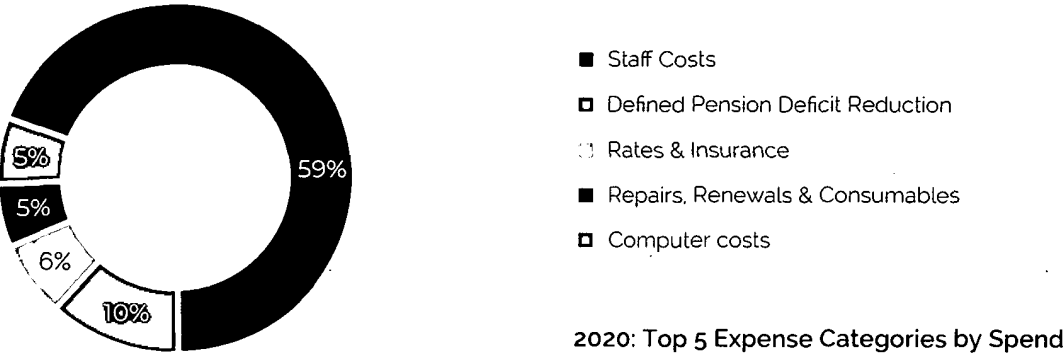
TWI Ltd accessed the government's Coronavirus Job Retention scheme and received subsidies of £1.3m from the furlough of 200 staff. A further £4.8m of government grants were recognised in Other Income (2019: £1.9m), the majority of this came from the Regional Growth Fund grant that had final milestone deliverables agreed as completed in 2020.

The business sublet more operational property during the year, leading to a small increase in rental income (2020: £1m, 2019: £0.8m) which is expected to grow in 2021 and beyond. Due to the increasing rental activity, some operational property was recategorised as investment property on the balance sheet.

Administration expenses reduced (2020: £11.6m, 2019: £12.4m) due to cost and efficiency savings made in response to the Covid-19 crisis. The business reacted swiftly following the first lockdown; a recruitment freeze was implemented, executive staff took temporary salary cuts. Unfortunately, staff numbers were reduced by 87 following redundancies. The cost of this exercise was taken up in 2020 and will yield annual savings of £3m from 2021. TWI Ltd ended the year with 568 FTE staff.

There was additional cost in the year due to enhanced health and safety measures implemented onsite, and in the move to working from home. We saw an increase in the annual leave accrual, as staff deferred holidays due to the travel ban and instead helped the business to ride out the pandemic.

Direct costs reduced (2020: £43.2m, 2019: £45.8m) due to reduced travel and lower use of consultants. Due to lockdown restrictions only 48 international flights were booked in the year post lockdown, versus 2,339 flights booked in the same period the year before.



Balance Sheet Position

TWI Ltd total assets less total liabilities increased to £31.5m (2019: £17m). The value of Freehold and Investment Property increased 6% to £89.8m (2019: £84.8m), reflecting significant demand for and growth in science park property in the Cambridge area. In 2020 we recategorised part of the Freehold property as Investment property (2020: £8.5m, 2019: £0) reflecting the change in use.

Business liquidity was closely monitored throughout the pandemic with monthly review meetings between the Executive Board and Council, used to assess the cashflow position and review actions taken by management to manage liquidity during the crisis. Cashflow is a key performance metric for the Executive Board and all TWI Ltd Directors received enhanced financial training in this area.

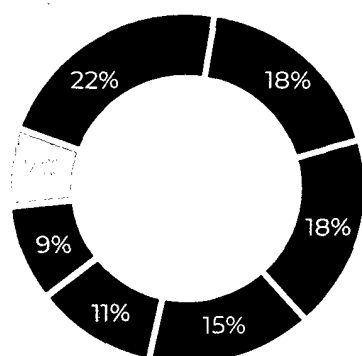
TWI Ltd started the year in a strong cash position, having benefited from the sale of a ground lease at the end of 2019. We saw a £13.4m outflow of cash during 2020. Funds were applied to clearing a loan balance of £5.6m initially used to construct 3 buildings in 2013 at our site at Granta Park in Cambridge. A further £2.7m was spent on Plant & Machinery acquisitions during the year. We also invested in our infrastructure to move staff to home working, providing tools to allow teams to collaborate remotely with our customers and each other. We paid down £3.5m during the year to EC partners who we work with on Collaborative projects and utilised £1.3m of working capital.

Pensions

The Employer (TWI Ltd) meets the costs of administration and investment management of The Welding Institute Defined Benefit Pension scheme. The deficit increased from £41.7m to £43.3m in 2020, an increase of £1.6m. The triennial valuation was completed for Dec-2019 and the repayment plan (as agreed with the Trustees and Pension Regulator) remains unchanged. TWI Ltd closed the defined benefit pension scheme to future accruals in Sep 2020.

Orderbook

At Dec-20 TWI Ltd had 6.7 months of labour orders in hand. 60% of the 2020 labour orders won were on SCP work, 32% on Collaborative projects. The predominant sector that our orders come from are Energy Transition (inc. Oil and Gas) (22%) followed by Aerospace (18%).



- Energy Transition (inc. Oil and Gas)
- Aerospace
- Others (Medical, Sensors etc)
- Construction
- Power
- Automotive
- Equip & Cons

2020: Orderbook by Sector



TWI
///

Principal Risks and Uncertainties

Effective risk management is fundamental to achieving our strategic objectives. The directors regularly monitor key risks and enhance processes and controls so that risks are managed within an acceptable risk appetite. The principal risks faced by TWI Ltd are:

Health and Safety

The well-being of staff and clients is paramount. Health and safety is at the core of all our processes and senior committee reporting. TWI Ltd's work can be hazardous and appropriate controls must be in place before such work commences. Staff are empowered to stop work if they identify any areas that require further mitigation. A 'Zero Harm' culture is in place and HSE metrics are measured monthly and monitored at senior committees.

People Risk

Our reputation is built on the quality of our people and their work. People risk is the risk that ensues when we fail to provide a supportive and collegiate culture. We mitigate people risk through: appropriate remuneration and benefits; wellbeing policies and processes;

promoting diversity and inclusion throughout the business; effective leadership; recruiting, managing and developing colleagues; and effective succession management.

Information Security Risk

Information security is how we protect information (data) and information systems from unauthorised access, inappropriate use, disclosure, disruption to operations, modification, or accidental and/or deliberate destruction. TWI Ltd appointed a new chief security officer in 2020 and implemented a security framework which included enhanced information security policies. This framework provides greater information security assurance to TWI Ltd technology users and those third parties for whom we carry out sensitive work.

Financial Risk

Liquidity risk is closely monitored to ensure that banking facilities are sufficient to meet business needs and that liabilities are met as they fall due. Foreign exchange risk is managed by netting out payables and receivables in the same currency wherever possible. Where foreign exchange transactions are required, vanilla foreign exchange products are used. Credit risk is managed by closely monitoring customer payment performance and proactively liaising with customers.

Final Salary Pension Risk

The final salary pension scheme was closed to future accruals in September 2020. The pension deficit continues to be at risk of lower than expected yields on the investments and is sensitive to decreasing discount rates, used to calculate the future liabilities. A deficit recovery plan is in place, and is reviewed every three years where factors including actuarial assumptions, investment performance and deficit contributions to date are considered. The Pension Trustees oversee the performance of the assets under management.

Covid-19

The pandemic has had a significant impact on the global economy and poses a risk to TWI Ltd, which we have mitigated by stress testing cashflows and putting in place contingent financing (which has not been utilised to date). The current uncertainty around the scale, timing and impact of future Coronavirus variants means it is difficult at this time to accurately quantify the level of risk associated with the pandemic.

Brexit

The UK formally left the EU on 31 January 2020 and entered a transition period which ended on 31 December 2020. The direct impact on TWI Ltd has been assessed and is manageable. European orders are a relatively small portion of the Single Client Projects order book. For Collaborative Projects, as the UK has obtained Associated Country status from the European Commission, TWI Ltd remains eligible to participate in the Horizon Europe programme with the exception of the European Innovation Council instruments. This is a positive outcome from the negotiations and we will continue to work with our European research partners.

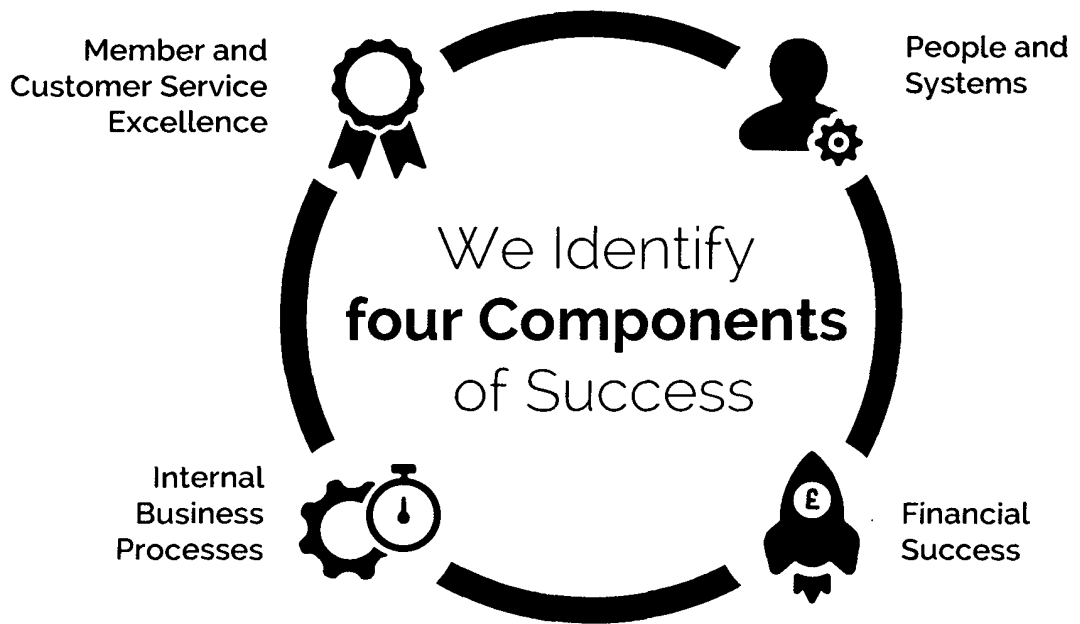
Staff retention risk has been assessed and mitigation measures are in place. We have assessed import / export and supply chain factors and have no significant concerns. We are working with the CBI to understand the Government's developments in relation to visas for specialist roles so that we can continue to recruit the world's best talent.

Geopolitical Risk

The uncertainty associated with working internationally, and more specifically the degree to which uncertainties could lead to losses for TWI Ltd. These uncertainties can arise from factors including: political (including sanctions), economic, exchange-rate, or changes in taxation.

Key Performance Indicators

Our Key Performance Indicators (KPIs) are selected to monitor both financial performance and the projects that we undertake, reflecting the overall strength of the company.



These indicators provide a detailed focus on the key elements of the business and measure progress against the company's strategic objectives. The KPIs and performance targets are reviewed and updated annually.

[Emissions and Carbon Energy]

This is the first year of mandatory reporting under the Streamlined Energy & Carbon Reporting (SECR). The Welding Institute have however reported energy and emissions now for several years. Between 2019 and 2020 there was a reduction in both total emissions and relative emissions, when compared against turnover and Full Time Equivalent (FTE) members of staff. Relative group emissions of FTE reduced by 25% between 2019 and 2020 and emissions per £100,000 of turnover fell by almost 26%. The Covid-19 pandemic has had an impact on emissions in 2020. Staff travel was significantly reduced during 2020. As 84% of the Group operations are within the UK (based on turnover), the data for this reporting is based on the UK consumption. TWI Ltd represents 93% of the UK operations.

Quantification and Reporting Methodology

HM Government 'Environmental Reporting Guidelines: including streamlined energy and carbon reporting guidance (March 2020)' has been used for the collation of data sources and reporting of emissions. 'UK Government GHG Conversion Factors for Company Reporting' has been used for the reporting of emissions, using the 2020 version. Fugitive emissions from refrigerants adopts the screening method in annex C of the guidance.

The scope of reporting covers all UK energy use, which involves:

- Combustion of gases (natural gas, methane, propane, butane, hydrogen etc.)
- Purchase of electricity for the companies own use
- Transport (Fuel used in company cars/ fleet vehicles/ personal and hire cars which are operated on business use, fuel used in aircraft, trains, ships and onsite transport such as forklift trucks)
- Any significant business activity contributing to environmental emissions

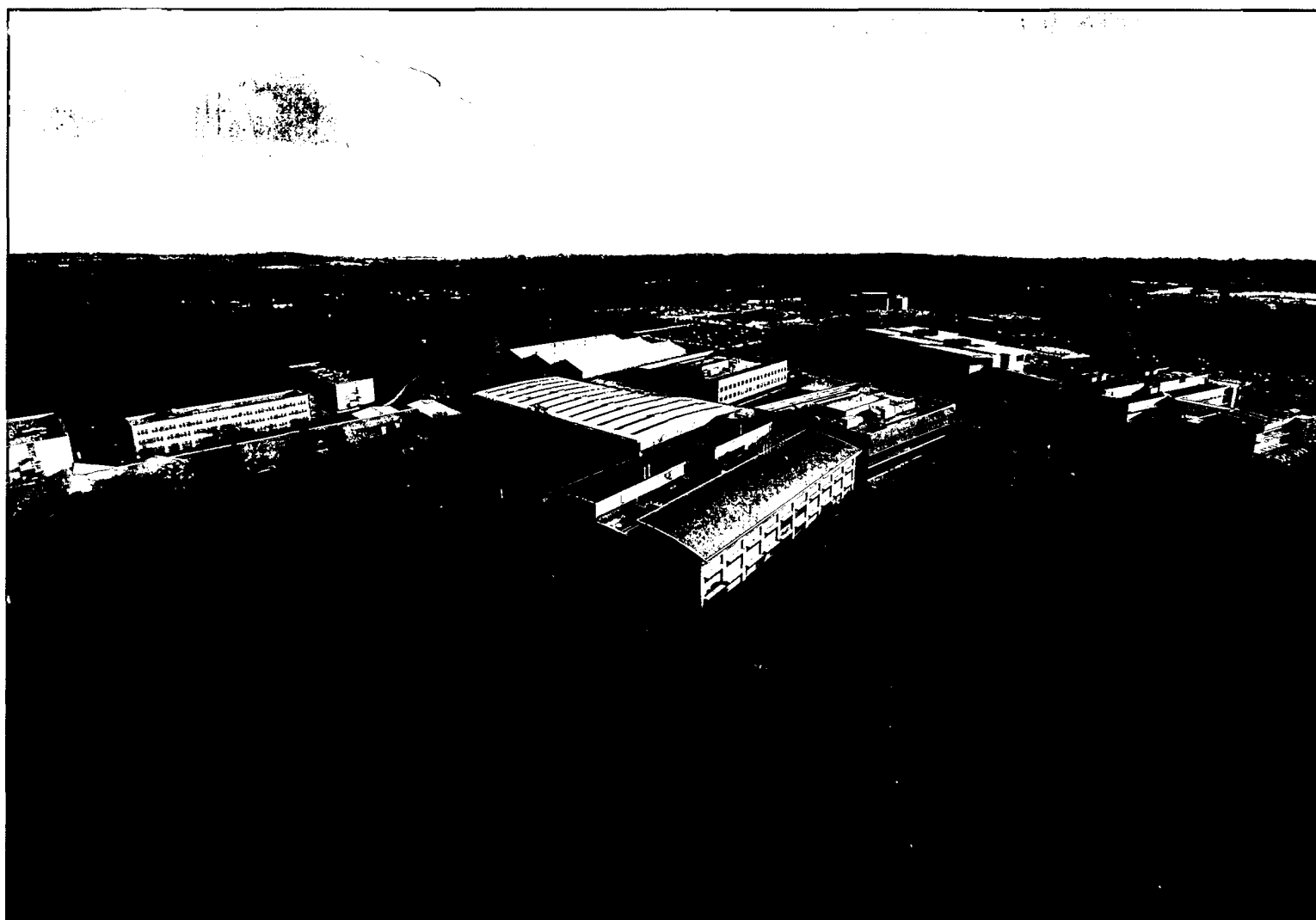
Emission Sources, Energy Use and Carbon Emissions

Emissions source		Operational Area	Energy (kWh)	Emissions (tCO ₂ e)
Direct emissions arising from owned or leased stationary sources that use fossil fuels		Combustion of Natural Gas	3,648,332	670.82
Direct emissions arising from owned or leased stationary sources that emit fugitive emissions		Refrigeration		73.86
		Pool Cars	222,283	45.93
		Company Cars	72,305	7.36
Direct emissions from owned or leased mobile sources		Diesel for maintenance vehicles	10,742	2.76
		Liquid Petroleum Gas for Fork-Lifts	2,960	0.64
Emissions from the generation of purchased electricity		Electricity	9,743,150	2,271.52
Energy consumed by self-generated supplies		Solar PV	119,877	0
Purchased goods and services	Water supplied to organisation	Potable Water		3.86
Fuel and energy related activities	Transmission and distribution losses	Electricity		195.35
Waste generated in operations	Wastewater	Wastewater		0.09
	Other waste and recycling	Waste		18.14
Business travel	All transportation by air, public transport (rail), chauffeured vehicles and taxis	Air Travel	970,965	240.62
		Rail Travel	23,064	5.83
		Hire Cars	177,446	43.99
		Taxi's & Chauffeured Cars	21,703	6.39
		Personal lease cars	Grey Fleet	12,754
	Employee owned cars	Grey Fleet	Insignificant	Insignificant
Total			15,025,581	3,590.32

Energy Efficiency Actions

In the financial period 2020 The Welding Institute have helped to minimise energy consumption by:

- Continuing its site wide upgrade of the lighting to LEDs in two of its main buildings at Head Office.
- Investing in improved video conferencing facilities for remote meetings allowing all office staff to work from home. There has been a reduction in staff travelling between the regional and overseas offices due to these improved facilities.
- At TWI Middlesbrough, all non-essential equipment was switched off during the lockdown periods and ring mains isolated to areas that were unoccupied. Minimal heating was also provided to areas that were permanently unoccupied and air-conditioning temperatures were continually adjusted throughout the lockdown periods as and when staff were present on site. Furthermore, the Middlesbrough Dive Tank was out of use during this period, so plant was set to Low Flow, further reducing consumption.



Board Decision Making (s172 statement)

The directors recognise their duty to act in good faith, and in a manner which would most likely promote the success of the company for the benefit of its Members as a whole. When making decisions, the directors consider the interests of all key stakeholder groups and seek to arrive at decisions which do not adversely impact those groups as a whole.

Employee Engagement

As one of the world's leading independent research and technology organisations, we are committed to attracting, motivating and retaining the best talent from around the world. Our goal is to develop the next generation of experts to address future industry challenges.

TWI Ltd implemented a number of effective employee engagement mechanisms in 2020. Employees are kept informed of performance and strategy through regular presentations and updates from the Chief Executive and members of the Executive Board.

Our 2020 engagement was considerable, as we actively took steps to explain performance issues, staffing changes and the impact of COVID-19 on our operations. Throughout the year we provided updates on our strategic priorities and performance through a

broad range of communication channels including meetings, emails, videos, intranet, webinars, virtual town halls and employee publications. As you would expect, we significantly stepped up communication to all TWI Ltd and Group staff during the Covid-19 crisis, so that employees understood how TWI Ltd was responding to the situation. We also ensured that staff were made aware of the latest health and safety advice from governments and public health bodies. We conducted a number of staff surveys and the feedback told us that during the prolonged lockdown period, employees had adjusted well to new ways of working.

The Head of HR attends certain meetings of the Executive Board to brief on employee related matters, including workforce demographics, engagement activities, results of employee opinion surveys, staff retention rates, diversity, disciplinary and grievance procedures, learning and development activity, pay



and reward including gender pay gap and HR initiatives. The directors consider that these arrangements deliver an effective means of ensuring the Executive Team stays alert to the views of the workforce.

Diversity

We are committed to creating a culture that recognises and respects the differences between people while valuing the contribution everyone makes to TWI Ltd. The diversity of our staff and students make a positive and important contribution to our continuing success.

Our D&I Statement underpins our D&I Strategy and forms our long-term mission. We recognise that a diverse and inclusive workforce provides a wealth of talent that will help us develop the next generation of experts to address future industry challenges. Our employees should reflect the society we seek to serve, they provide the diversity required to find innovative solutions for customers, and create a workforce that feels engaged and empowered to achieve to the best of

their ability. Our D&I strategy provides the direction to shape an inclusive culture at TWI Ltd and play a crucial role in shaping the world around us.

TWI Ltd encourages an environment in which diversity is valued. An important part of putting this into practice is a commitment to prohibit discrimination on any grounds in all employment matters, including that of disability. We seek to increase employment opportunities for people who have a disability and to ensure that recruitment and selection processes are fully accessible.

At TWI Ltd we understand that many staff are carers for more vulnerable members of society and to that end we look to provide flexible working arrangements to allow staff to effectively manage both work and domestic commitments.

TWI Ltd considers that the safety and wellbeing of staff is pivotal in our business decisions. We have a dedicated department to oversee the health and

safety of all our staff. The health and safety of our staff is not just the physical well-being, but also includes mental wellbeing and to that end, staff have access to an Occupational Health Advisor, a Wellbeing Committee and an Employee Assist Programme.

Attracting and retaining women with careers in engineering is a key driver in our 5 year strategy. We have a commitment to reduce the gender pay gap and have a third of female representation in leadership roles by 2025. In 2019 TWI Ltd launched a Women in Leadership programme to encourage more women into management positions. This initiative is ongoing and part of the D&I program.

TWI Ltd sponsors the Tipper Group, a staff led D&I committee, which holds events and networking opportunities to raise awareness of D&I within our global company and within our Industrial partners' network.

TWI Ltd provides regular appraisal, training and subsidised education to staff. We promote transparency and communication across all levels of the business, through weekly news briefings, monthly employee engagement newsletters, frequent business updates from the CEO, monthly executive briefings, and our comprehensive intranet resource. We have an active Staff Consultation Committee to ensure that all staff have a voice. The business consults regularly with the Committee to ensure any staff feedback is considered and factored into decision making. We have employed a dedicated communications lead, recognising the necessity of robust

communications as we change our working practices following the pandemic.

The Chief Executive actively promotes our people strategy and speaks openly at forums to support inclusion and is committed to putting D&I at the heart of our people practices. We believe that the work our staff do at TWI Ltd plays a crucial role in shaping the world around us, working with the Institute's members to find sustainable solutions to the biggest engineering challenges our world faces.

Environmental Matters

The most carbon intensive areas of TWI Ltd's UK operations are the consumption of electricity, and business travel. TWI Ltd is committed to understanding and reducing its environmental impacts year on year.

Annually TWI Ltd reports on its greenhouse gas emissions and also participates in the Energy Savings Opportunity Scheme (ESOS) from which a number of recommendations for improving energy efficiency have been implemented across its facilities. The Executive Board supports the company's goals and initiatives with regard to reducing adverse impacts on the environment and intends to give further consideration in 2021 to the company's approach to climate change and further measures we can take to contribute to the reduction of our impact on the environment.

TWI Ltd supports a number of different environmental sectors and is working with large companies and SMEs to help

drive technological improvements and innovation in these areas. Growth areas for TWI Ltd include pioneering research in geothermal resources to improve the efficiency of geothermal heat and power systems, supporting the automotive and aerospace industries through various e-mobility solutions and its continued provision of technical support for the renewables sector including research into concentrating solar power (CSP).

TWI Ltd will continue to take an active role in managing its own environmental impact as well as influencing the wider industry through our expertise and the advice that we provide to our customers.

Customer Engagement

TWI Ltd focusses on delivering excellent service and meeting or exceeding expectations is at the heart of everything we do. Each month we review our performance using Client Satisfaction Surveys. We continuously engage with the Institute's members throughout the project lifecycle, using enhanced CRM tools to monitor all communications, and are backed by an extensive commercial team which oversees the work ensuring work is delivered on time and within budget.

Members' experiences do not fall just to our project and commercial teams,

colleagues across the entire business are involved in creating exceptional service. Our goal is to solve the challenges of members, so we align strategically with their needs and invest heavily in technical resource, equipment and capacity. This positioning is reflected in our 5 year strategy, which is driven by the future needs of members - it is important we engage and understand the factors that influence their industries.

Supplier Engagement

Given the range of projects we work on, the ability to source materials and resources efficiently is imperative. We have a specialist purchasing department which secures our supply chain to ensure it can continue to meet the demands of the business. We actively engage and have long established relationships with our suppliers. We acknowledge that our business contributes to the local and wider community, we have an indirect corporate responsibility to this economic supply chain. Our Diversity and Inclusion initiative is being driven across the business, in instances where we are tendering for new services/ suppliers we embed an element of this to the selection process. We want to deal with suppliers who are aligned to our values.

Post Balance Sheet Events

COVID-19

On 30 January 2020 the World Health Organisation announced Covid-19 as a global health emergency, and announced it to be a global pandemic on 11 March 2020. Following two lockdowns, the UK Government announced wider Tier 4 restrictions on 26 Dec 2020 and England entered a third national lockdown on 4 January 2021. To date this lockdown has had limited financial impact, any material impacts in 2021 are likely to derive from the consequences of change in the global economy (such as discount rate movements which effect the valuation of the defined pension scheme liabilities). As such, no adjustment has been made in our 2020 financial statements.

Divestment

TWI Group benefited from a substantial gain on the divestment of a non-income generating asset in Q3 2021, which impacted TWI Ltd favourably. The injection of funds will be used to discharge the overdraft facility held with Barclays Plc and to accelerate the growth plans of the business. The value of the Group reserves of £87m at Dec 2020 is expected to increase by 70% in 2021 due to the divestment.

The executive team took a number of significant steps to put the business on a stable footing in 2020 and this involved considerable sacrifice from staff. The executive team is grateful for the hard work and loyalty shown.

We will use the proceeds of sale to:

- invest in our staff and attract the best candidates;
- invest in technology, research, infrastructure;
- accelerate the business transformation initiatives started pre-pandemic;
- build an even greater legacy to support our Members and the very important contribution they make to Society.

Looking Forward

We look forward to 2021 with great expectation and hope for a healthier and more secure future for our people and our communities. Covid-19 has tested us as a business and as a community, these challenges will continue into 2021 and beyond. Because of these challenges, we are stronger and more resilient and are resolved to make the business sustainable for the future by delivering on our 5 year strategy.

We've set our sights on driving the changes necessary to build the future we want. In 2021 we will establish an internal audit function in collaboration with Price Waterhouse Coopers, we will utilise our global footprint and take advantage of the lower cost bases in our international offices. We look forward to the 'Living Our Values Campaign' in 2021, a Diversity and Inclusion initiative. We also look forward to significant digital transformation in 2021 with many of our systems due to be upgraded or replaced. These new systems will provide efficiency through automation and ultimately improve our bottom line.

We began 2021 with a healthy order book, and are grateful for the ongoing support of the Welding Institute Members in continuing to place work with us. The Executive Team is confident that our people and business have the ability to rise to meet the challenges ahead and embrace the opportunities - for the benefit of our members, staff and our stakeholders.

This report was approved by the board and signed on its behalf.



Aamir Khalid Chief Executive
Date: 22 September 2021

Corporate Governance

Corporate governance is important in delivering our long-term success and TWI Ltd works towards the UK Corporate Governance Code as it seeks to improve transparency, accountability and promote the values of the business as a whole.

Representation from The Welding Institute Industrial and Professional Members enables the organisation to set and deliver the strategic aims of the business.

For TWI Ltd, corporate governance also involves matters such as commitment to corporate and social responsibility, minimising impact on the environment, and sustainable procurement. These factors need to be balanced with effective leadership and accountability to maintain confidence while pushing a continued improvement in standards, decision-making and policy.

An important aspect of our day-to-day activities, it has been shown that companies who are well governed also perform better commercially.

TWI Ltd is governed by the following Boards and Committees, which met regularly throughout 2020:

Executive Board	Aamir Khalid, Chair (12 meetings)
Health and Safety Committee	Norman Cooper, Chair (4 meetings)
Audit Committee	David Wrathmall, Chair (7 meetings)
Research Board	Simon Webster, Chair Darren Wood, Vice Chair (1 annual meeting)
Engineering Sub Committee	Gary Jones, Chair (3 meetings)
Materials Sub Committee	Gareth Hopkin, Chair (3 meetings)
Joining and Fabrication Sub Committee	Ernst Miklos, Chair (3 meetings)
Finance and General Purposes Committee	Ruth Boumphrey, Chair (4 meetings)
Professional Board	Stephen Webster, Chair Steve Jones, Vice Chair (2 meetings)
Certification Management	Julio Tolaini, Chair (2 meetings)
Remuneration Committee	Ruth Boumphrey, Chair (4 meetings)
Nominations Committee	Ruth Boumphrey, Chair (1 meeting)

The Executive Board

The Executive Board provides input and recommendations to assist the Chief Executive in the day to day management of the business and its operations. It meets thrice weekly, and meets formally one full day per month.

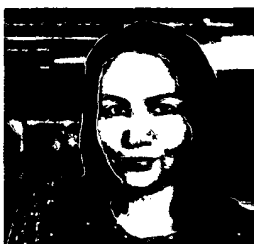
The Executive Board assists the Chief Executive in:

- Developing the group strategy and budgets for approval by FGP Committee;
- Executing the strategy once agreed by the Council; and
- Providing assurance to Council in relation to overall performance and risk management.



Aamir Khalid
Chief Executive

Aamir became the Chief Executive of TWI Ltd in February 2019 and has worked at TWI Ltd for the past 20 years. He obtained an Applied Physics degree from University College London, a Masters and PhD in NDT from Brunel and Cranfield Universities and later an MBA from London South Bank University. He spent several years in industry before joining TWI as NDT section manager, specialising in applying robotics to non-destructive testing. From here, he progressed to lead the company's non-destructive testing technology group in 2004 and became TWI Technology Director in 2010.



Leonie Stewart
Director of Finance

Leonie joined TWI in 2019 as Business Transformation Project Manager, where she helped to implement a program of change to prepare the business for future growth. She has spent 25 years working in Finance and Operations, half of this time at Global FD and CFO level. She has worked in the USA, Middle East, Europe and Asia Pacific regions, predominantly with high growth companies in the Financial Markets and IT sectors. Leonie is a contributor and guest lecturer on the 'Entrepreneurship for Physicists' course at Imperial College, London.



Mike Russell
Director of Technology

An expert in friction welding, Mike Russell began working at TWI in 1999 as part of a government-supported postgraduate studentship programme. He headed the friction and forge processes section for over ten years, becoming group manager of TWI's joining technologies team in 2014 and Operations Director in 2016, before becoming Technology Director in 2020. Mike is a Chartered Engineer and recipient of The Welding Institute's Lidstone Medal and the Larke-Lillicrap award. He has authored over 60 technical papers and represents the UK in ISO standards development for friction processes.



Paul Woollin
Director of Research

Paul joined the Materials Department at TWI in 1992, earlier graduating and gaining a doctorate from the University of Cambridge. He specialises in the metallurgy, weldability and weld properties of stainless steels and nickel alloys. In 2000, he became Head of the Materials Department and was appointed Director of Research in 2010.



Shahid Aslam
Director of Legal
Affairs and Operations

Shahid joined TWI as the Director of Legal Affairs and Operations in February 2020, having over 30 years' experience in the legal profession. He has an LLB (Hons) degree from University College London, Solicitors Finals from the College of Law and a Masters level qualification in Media Law from UCL. Shahid is a qualified Civil and Commercial Mediator and a fully qualified solicitor of the Supreme Court of England and Wales and a Commissioner for Oaths. Shahid has also served as a local Councilor for the Borough of Gravesham as well as having been the Secretary of Gravesend and Dartford Muslim Association (2002-2003) a registered charity, during which time he took a leading role in developing strong community relations and updating the governance structure.



Shervin Maleki
Director of Global
Development

Shervin joined TWI in 2006 and worked for seven years as the Associate Director in Global Training and Technical Services, as well as the Group Manager in Asset and Fracture Integrity Management. With expertise in risk and reliability engineering, risk assessment, risk-based inspection, and fitness-for-service, Shervin was appointed to the position of Global Development Director in 2019.



Steve Shi
Director of Industrial
Membership

Steve joined TWI in 2001 as a Senior Project Leader following the completion of his PhD. From there he became the China Programme Manager in 2005 and Section Manager of Laser and Sheet Processes in 2008. In 2011, Steve became the Group Manager of the Metallurgy, Corrosion and Surfacing Technology Group. Steve was appointed as the Director of Industrial Members in 2019.



Tat-Hean Gan
Director of Innovation
and Skills

Tat-Hean joined TWI in 2006 after graduating with a first-class honours degree in electrical and electronics engineering from the University of Nottingham before pursuing an MSc in Advanced Mechanical Engineering, his PhD in Engineering from Warwick University and his Executive MBA degree from the University of Birmingham. Tat-Hean's areas of expertise include non-destructive testing, signal processing and imaging techniques, structural and condition monitoring, technology transfer and exploitation, business and technology development, IP and patents, project management, collaborative programmes, public funding, international business and recruitment for engineering services.

Directors Report

The directors present their report and the financial statements for the year ended 31 December 2020.

Directors

The directors who served during the year were:

The Welding Institute	A company limited by guarantee, held 100 percent of the company's share capital throughout the year Resigned 19 January 2021
Aamir Khalid	Appointed 1 February 2019
Shervin Maleki	Appointed 1 January 2020
Mike Russell	Appointed 1 January 2020
Steve Shi	Appointed 1 January 2020
Paul Woollin	Appointed 1 January 2020
Gillian Leech	Resigned 1 January 2020
Zafar Hasnain	Appointed 2 January 2020 Resigned 1 January 2021
Shahid Aslam	Appointed 1 February 2020
Tat-Hean Gan	Appointed 1 March 2020

Subsequent to the year end, **Rebecca Archer** was appointed on 19th Apr 2021, and resigned on 15th Jun 2021, **Leonie Stewart** was appointed on 17th Jul 2021.

Directors' Responsibilities Statement

The directors are responsible for preparing the Strategic Report, the Directors' Report and the financial statements in accordance with applicable law and regulations.

Company law requires the directors to prepare financial statements for

each financial year. Under that law the directors have elected to prepare the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice), including Financial Reporting Standard 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland'. Under company law the

directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period.

In preparing these financial statements, the directors are required to:

- select suitable accounting policies for the company's financial statements and then apply them consistently;
- make judgements and accounting 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 company will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and to enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Going Concern Statement

The directors have reviewed the company's expenditure requirements and expected cash flows with regard to

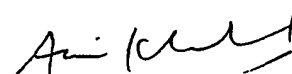
the financial strategy. Having reviewed the forecast model for 2021 and given the substantial cash injection from asset divestment in Q3 2021, the directors have formed a judgement that, at the time of approving the financial statements, there is a reasonable expectation that TWI Ltd has adequate resources, and is expected to continue in operational existence for a period of at least 12 months from the date of issue of the financial statements. Accordingly, they have adopted the going concern basis in preparing the report and accounts.

Disclosure of Information to Auditors

Each of the persons who are directors at the time when this Directors' Report is approved has confirmed that:

- So far as the director is aware, there is no relevant audit information of which the company's auditors are unaware, and
- The director has taken all the steps that ought to have been taken as a director in order to be aware of any relevant audit information and to establish that the company's auditors are aware of that information.

This report was approved by the board and signed on its behalf by:



Aamir Khalid Chief Executive

Date: 22 September 2021



Independent Auditors' **Report**

Opinion

We have audited the financial statements of TWI Ltd (the 'Company') for the year ended 31 December 2020, which comprise the Statement of Comprehensive Income, the Balance Sheet, the Statement of Cash Flows, the Statement of Changes in Equity and the related notes, 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, including Financial Reporting Standard 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

- give a true and fair view of the state of the Company's affairs as at 31 December 2020 and of its profit 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 Companies Act 2006.

Basis For Opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the United Kingdom, including the Financial Reporting Council's Ethical Standard and we have

fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions Relating to Going Concern

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Other information

The directors are responsible for the other information. The other information comprises the information included in the Annual Report, other than the financial statements and our Auditors' Report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other

information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Opinion on Other Matters Prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- The information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- The Strategic Report and the Directors' Report have been prepared in accordance with applicable legal requirements.

Matters on Which We are Required to Report by Exception

In the light of the knowledge and understanding of the Company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic Report or the Directors' Report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- Adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- The financial statements are not in agreement with the accounting records and returns; or
- Certain disclosures of directors' remuneration specified by law are not made; or
- We have not received all the information and explanations we require for our audit.

Responsibilities of Directors

As explained more fully in the Directors' Responsibilities Statement set out on page 46, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an Auditors' Report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below:

Our approach to identifying and assessing the risks of material misstatement in respect of irregularities, including fraud and non-compliance with laws and regulations, was as follows:

- The engagement partner ensured that the engagement team collectively had the appropriate competence, capabilities and skills to

identify or recognise non-compliance with applicable laws and regulations;

- We identified the laws and regulations applicable to the company through discussions with directors and other management, and from our commercial knowledge and experience of the sector;
- We focused on specific laws and regulations which we considered may have a direct material effect on the financial statements or the operations of the company, including the Companies Act 2006, taxation legislation and data protection, anti-bribery, employment and health and safety legislation;
- We assessed the extent of compliance with the laws and regulations identified above through making enquiries of management and inspecting correspondence available; and
- Identified laws and regulations were communicated within the audit team regularly and the team remained alert to instances of non-compliance throughout the audit.

We assessed the susceptibility of the company's financial statements to material misstatement, including obtaining an understanding of how fraud might occur by:

- Making enquiries of management as to where they considered there was susceptibility to fraud, their knowledge of actual, suspected and alleged fraud; and
- Considering the internal controls in place to mitigate risks of fraud and non-compliance with laws and regulations.

To address the risk of fraud through management bias and override of controls, we:

- Performed analytical procedures to identify any unusual or unexpected relationships;
- Tested journal entries to identify unusual transactions;
- Assessed whether judgements and assumptions made in determining the accounting estimates were indicative of potential bias; and
- Investigated the rationale behind significant or unusual transactions.
- In response to the risk of irregularities, including fraud and non-compliance with laws and regulations, we designed procedures which included, but were not limited to:
 - Agreeing financial statement disclosures to underlying supporting documentation;
 - Enquiring of management as to actual and potential litigation and claims; and
 - Reviewing correspondence made available to us such as that correspondence with HMRC, relevant regulators and the company's legal advisors (where applicable).

There are inherent limitations in our audit procedures described above. The more removed that laws and regulations are from financial transactions, the less likely it is that we would become aware of non-compliance. Auditing standards also limit the audit procedures required to identify non-compliance with laws and regulations to enquiry of the directors and other management and the inspection of regulatory and legal correspondence, if any. Material misstatements that arise due

to fraud can be harder to detect than those that arise from error as they may involve deliberate concealment or collusion.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our Auditors' Report.

Use of Our Reports

This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's members those matters we are required to state to them in an Auditors' 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 Company and the Company's members, as a body, for our audit work, for this report, or for the opinions we have formed.



Warren Tilbury (Senior Statutory Auditor)

For and on behalf of
Peters Elworthy & Moore

Chartered Accountants Statutory Auditors
Salisbury House Station Road Cambridge
CB1 2LA

Date: 28 September 2021

Statement of Comprehensive Income for the Year Ended 31 December 2020

		2020	2019
	Note	£000	£000
Turnover	4	60,786	58,610
Cost of sales		(43,236)	(45,820)
GROSS PROFIT		17,550	12,790
Administrative expenses		(11,666)	(12,433)
Exceptional administrative expenses	13	(290)	(1,219)
Other operating income	5	9,263	5,330
Other operating charges	6	(5)	615
OPERATING PROFIT	6	14,852	5,083
Amounts written off investments		-	(35)
Interest payable and expenses	8	(995)	(1,012)
Other finance costs	9	(824)	(1,188)
PROFIT BEFORE TAX		13,033	2,848
Tax on profit	12	122	111
PROFIT AFTER TAX		13,155	2,959
OTHER COMPREHENSIVE INCOME FOR THE YEAR			
Unrealised surplus on revaluation of tangible fixed assets	14	4,935	1,366
Deferred tax on revaluation of tangible fixed assets	21	(481)	(223)
Actuarial losses on defined benefit pension scheme	28	(3,915)	(872)
Movement of deferred tax relating to pension deficit	21	743	(834)
OTHER COMPREHENSIVE INCOME FOR THE YEAR		1,282	(563)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR		14,437	2,396

There were no recognised gains and losses for 2020 or 2019 other than those included in the statement of comprehensive income.

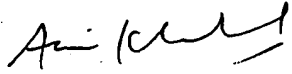
The notes on pages 58 - 79 need to be read in conjunction with the financial statements.

Balance Sheet as at 31 December 2020

Company number: 03859442

		2020	2019
	Note	£000	£000
FIXED ASSETS			
Tangible assets	14	94,615	96,934
Investment property	15	8,535	-
Total Fixed Assets		103,150	96,934
CURRENT ASSETS			
Debtors: amounts falling due after more than one year	16	8,241	9,641
Debtors: amounts falling due within one year	16	38,946	34,004
Cash at bank and in hand	17	5,775	6,899
Total Current Assets		52,962	50,544
Creditors: amounts falling due within one year	18	(51,244)	(50,032)
NET CURRENT ASSETS		1,718	512
TOTAL ASSETS LESS CURRENT LIABILITIES		104,868	97,446
Creditors: amounts falling due after more than one year	19	(22,125)	(31,852)
PROVISIONS FOR LIABILITIES			
Deferred tax	21	(7,791)	(6,730)
Pension liability	28	(43,377)	(41,726)
NET ASSETS		31,575	17,138
CAPITAL AND RESERVES			
Share premium account	23	10,307	10,307
Revaluation reserve	23	31,567	27,113
Profit and loss account	23	(10,299)	(20,282)
SHAREHOLDER FUNDS		31,575	17,138

The financial statements were approved and authorised for issue by the board and were signed on its behalf by


Aamir Khalid Chief Executive
Date: 22 September 2021

The notes on pages 58 - 79 need to be read in conjunction with the financial statements.

Statement of Changes in Equity for the Year Ended 31 December 2020

	Share Premium Account	Revaluation reserve	Cash flow hedge reserve	Profit and loss account	Total equity
	£000	£000	£000	£000	£000
At 1 January 2019	10,307	25,970	(3,517)	(18,018)	14,742
Profit for the year	-	-	-	2,959	2,959
Actuarial losses on pension scheme	-	-	-	(1,706)	(1,706)
Surplus on revaluation of freehold property (as restated)	-	1,366	-	-	1,366
Deferred tax on revaluation	-	(223)	-	-	(223)
Realised loss on hedging instruments	-	-	3,517	(3,517)	-
At 1 January 2020	10,307	27,113	-	(20,282)	17,138
Profit for the year	-	-	-	13,155	13,155
Actuarial losses on pension scheme	-	-	-	(3,172)	(3,172)
Surplus on revaluation of freehold property	-	4,935	-	-	4,935
Deferred tax on revaluation	-	(481)	-	-	(481)
AT 31 DECEMBER 2020	10,307	31,567	-	(10,299)	31,575

The notes on pages 58 - 79 need to be read in conjunction with the financial statements.

Statement of Cash Flows for the Year Ended 31 December 2020

	2020	2019
	£000	£000
CASH FLOWS FROM OPERATING ACTIVITIES		
Profit for the year	13,155	2,959
ADJUSTMENTS FOR:		
Depreciation of tangible assets	1,904	2,905
Loss on disposal of tangible assets	(14)	48
Amounts written off investments	-	35
Government grants	187	(2,503)
Interest paid	417	1,013
Taxation charge	(122)	(111)
(Increase) in debtors	(905)	(2,464)
(Increase)/decrease in amounts owed by groups	(2,340)	7,810
(Decrease)/increase in creditors	(11,067)	8,366
Increase/(decrease) in amounts owed to groups	1,365	(4,384)
(Increase) in net pension liability	(1,116)	(3,724)
NET CASH GENERATED FROM OPERATING ACTIVITIES	1,465	9,950
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of tangible fixed assets	(3,270)	(3,100)
Sale of tangible fixed assets	100	166
NET CASH FROM INVESTING ACTIVITIES	(3,170)	(2,934)

Statement of Cash Flows (continued) for the Year Ended 31 December 2020

	2020	2019
	£000	£000
CASH FLOWS FROM FINANCING ACTIVITIES		
Repayment of loans	(5,590)	(6,500)
Net repayment of finance leases	(346)	(336)
New loans from group companies	-	17,735
Loans from group companies repaid	(5,370)	-
Interest paid	(417)	(1,013)
Loss on financial instruments	-	(3,339)
NET CASH USED IN FINANCING ACTIVITIES	(11,723)	6,547
(DECREASE)/INCREASE IN CASH AND CASH EQUIVALENTS		
Cash and cash equivalents at beginning of year	4,933	(8,630)
CASH AND CASH EQUIVALENTS AT THE END OF YEAR	(8,495)	4,933
CASH AND CASH EQUIVALENTS AT THE END OF YEAR COMPRISE:		
Cash at bank and in hand	5,775	6,899
Bank overdrafts	(14,270)	(1,966)
Total	(8,495)	4,933

The notes on pages 58 - 79 need to be read in conjunction with the financial statements.

Notes to the Financial Statements for the Year Ended 31 December 2020

1. General Information

TWI Ltd is a private limited company incorporated in the UK. The registered office is Bevan Braithwaite Building, Granta Park, Great Abington, Cambridge, CB21 6AL.

The company is exempt from producing consolidated accounts as it is included in the group accounts of a larger group, The Welding Institute.

The directors consider that The Welding Institute, a company limited by guarantee registered in England and Wales, is the company's ultimate holding company. Copies of the group financial statements of The Welding Institute may be obtained from the Institute's registered office at Granta Park, Great Abington, Cambridge, CB21 6AL.

2. Accounting Policies

2.1 Basis of Preparation of Financial Statements

The financial statements have been prepared under the historical cost convention unless otherwise specified within these accounting policies and in accordance with Financial Reporting Standard 102, the Financial Reporting Standard applicable in the UK and the Republic of Ireland and the Companies Act 2006.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the company's accounting policies (see note 3).

The following principal accounting policies have been applied:

2.2 Going Concern

The business is in a net current asset position and the financial statements have been produced on a going concern basis. The directors consider that the Group has sufficient financial resources, which include property assets plus banking facilities. The bank increased the sterling overdraft facility during 2020 from £14m to £16m (the £2m increase for a 6 month term from 1st October 2020) to mitigate risks including the impact of Covid-19 and Brexit on the Group's business model.

The directors have reviewed the company's expenditure requirements and expected cash flows with regard to the financial strategy. Having reviewed the forecast model for 2021 and given the substantial cash injection from asset divestment in Q3 2021, the directors have formed a judgement that, at the time of approving the financial statements, there is a reasonable expectation that The Welding Institute has adequate resources, and is expected to continue in operational existence for a period of at least 12 months from the date of issue of the financial statements. Accordingly, they have adopted the going concern basis in preparing the report and accounts.

2.3 Turnover

Turnover is recognised to the extent that it is probable that the economic benefits will flow to the company and

the turnover can be reliably measured. Turnover is measured as the fair value of the consideration received or receivable, excluding discounts, rebates, value added tax and other sales taxes. The following criteria must also be met before turnover is recognised:

Rendering of Services

Turnover from a contract to provide services is recognised in the period in which the services are provided in accordance with the stage of completion of the contract when all of the following conditions are satisfied:

- The amount of turnover can be measured reliably;
- It is probable that the company will receive the consideration due under the contract;
- The stage of completion of the contract at the end of the reporting period can be measured reliably; and
- The costs incurred and the costs to complete the contract can be measured reliably.

Income Recognition

- Turnover from the provision of engineering and consultancy services is recognised in the accounting period in which the services are rendered. The majority of contracts are fixed-price, where turnover is recognised based on the proportion of deliverables provided to the client with an adjustment if the project is forecast to overrun. Turnover is measured and recognised using the contractual fee rates of the project. Estimates of turnover or extent of progress toward completion are revised if circumstances change. Any resulting increases or decreases in

estimated turnovers are reflected in the profit or loss statement in the period in which the circumstances that give rise to the revision become known by management. The customer pays for the value of services provided based on an invoicing and payment schedule. Consideration is payable when invoiced based on contractual payment terms.

- Turnover from training services is recognised when the course is delivered to the candidate. Where the course is yet to be delivered income is deferred and recognised as a liability on the balance sheet.
- Group provides services to the European Commission for Collaborative Projects. The Group receives cash from the European Commission which are pass through funds solely for the purpose of payment to project partners. These monies are pass through funds held on behalf of the client/partners for which no turnover is recognised.
- Subscription income for membership services provided over an annual contractual period is recognised in the income statement on a straight-line basis over the period of the contract.
- Product and associated Turnover is recognised upon the transfer of control of promised products or services and for the majority of Turnover, transfer of control occurs once the product has shipped.
- The Group recognises contract liabilities for consideration received in respect of unsatisfied performance obligations and reports these amounts as liabilities on the balance sheet. Similarly, if the Group satisfies a performance

obligation before it receives the consideration, the Group recognises an asset on the balance sheet.

2.4 Tangible Fixed Assets

Long-term leasehold properties are held under a 125 year lease from the parent company with peppercorn rent payable. These are carried at fair value at the date of the revaluation less subsequent accumulated impairment losses. Revaluations are undertaken with sufficient regularity to ensure the carrying amount does not differ materially from that which would be determined using fair value at the Balance Sheet date.

Fair values are determined from market based evidence normally undertaken by professionally qualified valuers.

Revaluation gains and losses are recognised in the Statement of Comprehensive Income unless losses exceed the previously recognised gains or reflect a clear consumption of economic benefits, in which case the excess losses are recognised in profit or loss.

Tangible fixed assets under the cost model are stated at historical cost less accumulated depreciation and any accumulated impairment losses. Historical cost includes expenditure that is directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

At each reporting date the company assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is

determined which is the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

The company adds to the carrying amount of an item of fixed assets the cost of replacing part of such an item when that cost is incurred, if the replacement part is expected to provide incremental future benefits to the company. The carrying amount of the replaced part is derecognised. Repairs and maintenance are charged to profit or loss during the period in which they are incurred.

Depreciation is charged so as to allocate the cost of assets less their residual value over their estimated useful lives, using the straight-line method.

Depreciation is provided on the following basis:

Short-term leasehold property Over the period of the lease	Over the period of the lease
Plant, machinery and motor vehicles	10%, 20% or 33.33%
Fixtures, fittings and office equipment	20%

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in profit or loss.

2.5 Valuation of Investments

Investments in subsidiaries are measured at cost less accumulated impairment.

Investments in unlisted company shares, whose market value can be reliably determined, are remeasured to market value at each balance sheet date. Gains and losses on revaluations are recognised in the Statement of Comprehensive Income for the period. Where market value cannot be reliably determined, such investments are stated at historic cost less impairment.

2.6 Investment Property

Investment property is carried at fair value determined annually by external valuers and derived from the current market rents and investment property yields for comparable real estate, adjusted if necessary for any difference in the nature, location or condition of the specific asset. No depreciation is provided. Changes in fair value are recognised in profit or loss.

2.7 Debtors

Short term debtors are measured at transaction price, less any impairment. Loans receivable are measured initially at fair value, net of transaction costs, and are measured subsequently at amortised cost using the effective interest method, less any impairment.

2.8 Cash and Cash Equivalents

Cash is represented by cash in hand and deposits with financial institutions repayable without penalty on notice of not more than 24 hours. Cash equivalents are highly liquid investments that mature in no more than three months from the date

of acquisition and that are readily convertible to known amounts of cash with insignificant risk of change in value.

In the Statement of Cash Flows, cash and cash equivalents are shown net of bank overdrafts that are repayable on demand and form an integral part of the company's cash management.

2.9 Financial Instruments

Debt instruments (other than those wholly repayable or receivable within one year), including loans and other accounts receivable and payable, are initially measured at present value of the future cash flows and subsequently at amortised cost using the effective interest method. Debt instruments that are payable or receivable within one year, typically trade debtors and creditors, are measured, initially and subsequently, at the undiscounted amount of the cash or other consideration expected to be paid or received. However, if the arrangements of a short-term instrument constitute a financing transaction, like the payment of a trade debt deferred beyond normal business terms or in case of an out-right short-term loan that is not at market rate, the financial asset or liability is measured, initially at the present value of future cash flows discounted at a market rate of interest for a similar debt instrument and subsequently at amortised cost, unless it qualifies as a loan from a director in the case of a small company, or a public benefit entity concessionary loan.

Financial assets that are measured at cost and amortised cost are assessed at the end of each reporting period for objective evidence of impairment. If objective evidence of impairment is

found, an impairment loss is recognised in the Statement of Comprehensive Income.

For financial assets measured at amortised cost, the impairment loss is measured as the difference between an asset's carrying amount and the present value of estimated cash flows discounted at the asset's original effective interest rate. If a financial asset has a variable interest rate, the discount rate for measuring any impairment loss is the current effective interest rate determined under the contract.

For financial assets measured at cost less impairment, the impairment loss is measured as the difference between an asset's carrying amount and best estimate of the recoverable amount, which is an approximation of the amount that the company would receive for the asset if it were to be sold at the balance sheet date.

Financial assets and liabilities are offset and the net amount reported in the Balance Sheet when there is an enforceable right to set off the recognised amounts and there is an intention to settle on a net basis or to realise the asset and settle the liability simultaneously.

2.10 Creditors

Short term creditors are measured at the transaction price. Other financial liabilities, including bank loans, are measured initially at fair value, net of transaction costs, and are measured subsequently at amortised cost using the effective interest method.

The company recognises a provision for annual leave accrued by employees

as a result of services rendered in the current period, and which employees are entitled to carry forward and use within the next 12 months. The provision is measured at the salary cost payable for the period of absence.

2.11 Hedge Accounting

The company uses variable to fixed interest rate swaps to manage its exposure to cash flow risk on its loans. These derivatives are measured at fair value but no adjustment is made for this as it is immaterial to the financial statements.

2.12 Government Grants

Grants are accounted under the accruals model as permitted by FRS 102. Grants relating to expenditure on tangible fixed assets are credited to profit or loss at the same rate as the depreciation on the assets to which the grant relates. The deferred element of grants is included in creditors as deferred income.

Grants of a revenue nature are recognised in the Statement of Comprehensive Income in the same period as the related expenditure.

2.13 Current and Deferred Taxation

The tax expense for the year comprises current and deferred tax. Tax is recognised in profit or loss except that a charge attributable to an item of income and expense recognised as other comprehensive income or to an item recognised directly in equity is also recognised in other comprehensive income or directly in equity respectively.

The current income tax charge is calculated on the basis of tax rates

and laws that have been enacted or substantively enacted by the balance sheet date in the countries where the company operates and generates income.

Deferred tax balances are recognised in respect of all timing differences that have originated but not reversed by the Balance Sheet date, except that:

- The recognition of deferred tax assets is limited to the extent that it is probable that they will be recovered against the reversal of deferred tax liabilities or other future taxable profits; and
- Any deferred tax balances are reversed if and when all conditions for retaining associated tax allowances have been met.

Deferred tax balances are not recognised in respect of permanent differences except in respect of business combinations, when deferred tax is recognised on the differences between the fair values of assets acquired and the future tax deductions available for them and the differences between the fair values of liabilities acquired and the amount that will be assessed for tax. Deferred tax is determined using tax rates and laws that have been enacted or substantively enacted by the balance sheet date.

2.14 Research and Development

Research and development expenditure is written off in the year in which it is incurred. Any tax credit receivable under the large company R & D tax scheme is included as operating income.

2.15 Pensions

Defined Contribution Pension Plan

The company operates a defined contribution plan for its employees. A defined contribution plan is a pension plan under which the company pays fixed contributions into a separate entity. Once the contributions have been paid the company has no further payment obligations.

The contributions are recognised as an expense in the Statement of Comprehensive Income when they fall due. Amounts not paid are shown in accruals as a liability in the Balance Sheet. The assets of the plan are held separately from the company in independently administered funds.

Defined Benefit Pension Plan

In the financial year, the company operated a defined benefit plan for certain employees. A defined benefit plan defines the pension benefit that the employee will receive on retirement, usually dependent upon several factors including but not limited to age, length of service and remuneration. A defined benefit plan is a pension plan that is not a defined contribution plan.

The liability recognised in the Balance Sheet in respect of the defined benefit plan is the present value of the defined benefit obligation at the end of the balance sheet date less the fair value of plan assets at the balance sheet date (if any) out of which the obligations are to be settled.

The defined benefit obligation is calculated using the projected unit

credit method. Annually the company engages independent actuaries to calculate the obligation. The present value is determined by discounting the estimated future payments using market yields on high quality corporate bonds that are denominated in sterling and that have terms approximating to the estimated period of the future payments.

The fair value of plan assets is measured in accordance with the FRS 102 fair value hierarchy and in accordance with the company's policy for similarly held assets. This includes the use of appropriate valuation techniques.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to other comprehensive income. These amounts together with the return on plan assets, less amounts included in net interest, are disclosed as 'Remeasurement of net defined benefit liability'.

The cost of the defined benefit plan, recognised in profit or loss as employee costs, except where included in the cost of an asset, comprises:

- a. The increase in net pension benefit liability arising from employee service during the period; and
- b. The cost of plan introductions, benefit changes, curtailments and settlements.

The net interest cost is calculated by applying the discount rate to the net balance of the defined benefit obligation and the fair value of plan assets. This cost is recognised in profit or loss as a 'finance expense'.

2.16 Finance Costs

Finance costs are charged to profit or loss over the term of the debt using the effective interest method so that the amount charged is at a constant rate on the carrying amount. Issue costs are initially recognised as a reduction in the proceeds of the associated capital instrument.

2.17 Borrowing Costs

All borrowing costs are recognised in profit or loss in the year in which they are incurred.

2.18 Provisions for Liabilities

Provisions are made where an event has taken place that gives the company a legal or constructive obligation that probably requires settlement by a transfer of economic benefit, and a reliable estimate can be made of the amount of the obligation.

Provisions are charged as an expense to profit or loss in the year that the company becomes aware of the obligation, and are measured at the best estimate at the Balance Sheet date of the expenditure required to settle the obligation, taking into account relevant risks and uncertainties.

When payments are eventually made, they are charged to the provision carried in the Balance Sheet.

2.19 Exceptional Items

Exceptional items are transactions that fall within the ordinary activities of the Company but are presented separately due to their size or incidence.

3. Judgements in Applying Accounting Policies and Key Sources of Estimation Uncertainty

Preparation of the financial statements requires management to make significant judgements and estimates. The items in the financial statements where these judgements and estimates have been made include:

Defined Benefit pension scheme - the pension scheme is included at fair value, based on professional advice required.

Depreciation on fixed assets - Depreciation is charged so as to allocate

the cost of assets less their residual value over their estimated useful lives.

Fair value of land and buildings - land and buildings are included at fair value, based on advice received from Bidwells LLP.

Provisions - provisions are made for trade and group debts considered to be irrecoverable once they exceed payment terms.

Project income - income on contracts is recognised based on the estimated stage of completion.

No other significant judgements have been made by management in preparing the financial statements.

4. Turnover

	2020	2019
	£000	£000
An analysis of turnover by class of business is as follows:		
Subscriptions	18,032	12,789
Contracts	36,690	36,785
Training, examination and other	6,064	9,036
Total	60,786	58,610
Analysis of turnover by country of destination:		
United Kingdom	43,165	30,968
Rest of Europe	6,925	12,606
Rest of the world	10,696	15,036
Total	60,786	58,610

5. Other Operating Income

	2020	2019
	£000	£000
R&D expenditure credit	1,942	1,959
Net rents receivable	1,050	868
Government grants released	4,889	2,503
Job retention scheme	1,382	-
Total	9,263	5,330

Job retention scheme represent amounts receivable under the Coronavirus Job Retention Scheme (CJRS) of £1,382,000 (2019 - £NIL) to cover salaries of furloughed staff.

6. Operating Profit

	2020	2019
	£000	£000
The operating profit is stated after charging:		
Research & development charged as an expense	15,230	16,328
Exchange differences	5	(615)
Other operating lease rentals	485	2,699
Defined contribution pension cost	2,909	2,177
Defined benefit pension cost	1,869	2,351

7. Auditors' Remuneration

	2020	2019
	£000	£000
The auditing of accounts of associates of the company pursuant to legislation	58	55
Audit of other group Companies' annual accounts	22	21
Other audit services	96	127
Other services relating to taxation	41	27
All other services	9	16

8. Interest Payable and Similar Charges

	2020	2019
	£000	£000
Bank interest payable	299	829
Loans from group undertakings	578	55
Finance leases	118	128
Total	995	1,012

9. Other Finance Costs

	2020	2019
	£000	£000
Net interest on net defined benefit obligation (note 28)	824	1,188

10. Employees

	2020	2019
	£000	£000
Staff costs, including directors' remuneration, were as follows:		
Wages and salaries	24,551	25,313
Social security costs	2,273	2,907
Cost of defined benefit scheme	1,869	2,351
Cost of defined contribution scheme	2,909	2,177
Total	31,602	32,748

The average monthly number of employees, including the directors, during the year was as follows:

	No.	No.
Employees	579	590

11. Directors and Key Management Remuneration

	2020	2019
	£000	£000
Directors emoluments	1,621	639

During the year retirement benefits were accruing to 5 directors (2019 - 4) in respect of defined benefit pension schemes.

The highest paid director received remuneration of £282,000 (2019 - £281,000).

The value of the company's contributions paid to a defined contribution pension scheme in respect of the highest paid director amounted to £97,000 (2019 - £77,000).

Key management personnel are considered to be the members of the Executive Team. The total remuneration (including salaries and other benefits) of key management personnel in the year, including directors, was £1,621,000 (2019 - £1,725,000).

During the year retirement benefits were accruing to 5 (2019 - 8) members of the Executive Team, including 5 directors (2019 - 4) in respect of defined benefit pension schemes.

12. Taxation

	2020	2019
	£000	£000
CORPORATION TAX		
Current tax on profits for the year	25	-
TOTAL CURRENT TAX	25	-
DEFERRED TAX		
Origination and reversal of timing differences	(147)	(111)
TOTAL DEFERRED TAX	(147)	(111)
TAXATION ON PROFIT ON ORDINARY ACTIVITIES	(122)	(111)

12. Taxation (continued)

	2020	2019
	£000	£000
FACTORS AFFECTING TAX CHARGE FOR THE YEAR		
The tax assessed for the year is lower than (2019 - lower than) the standard rate of corporation tax in the UK of 19% (2019 - 19%). The differences are explained below:		
Profit on ordinary activities before tax	13,033	2,848
Profit on ordinary activities multiplied by standard rate of corporation tax in the UK of 19% (2019 - 19%)	2,476	541
EFFECTS OF:		
Expenses not deductible for tax purposes, other than goodwill amortisation and impairment	5	240
Capital allowances for year in excess of depreciation	(420)	(121)
Increase or decrease in pension fund prepayment leading to an increase (decrease) in tax	(430)	(549)
Other timing differences leading to an increase (decrease) in taxation	37	18
Non-taxable income	(1,298)	(668)
Adjustment in research and development tax credit leading to an increase (decrease) in the tax charge	369	372
Changes in provisions leading to an increase (decrease) in the tax charge	(77)	285
Unrelieved tax losses brought forward (carried forwards)	(449)	318
Movement on deferred tax	(147)	(111)
Other differences leading to an increase (decrease) in the tax charge (grant income)	(188)	(436)
TOTAL TAX CHARGE FOR THE YEAR	(122)	(111)
FACTORS THAT MAY AFFECT FUTURE TAX CHARGES		
Deferred tax has been calculated at a rate of 19% with planned move to 25%.		

13. Exceptional Items

	2020	2019
	£000	£000
Impairment of intercompany debt	290	1,219

Included above were write offs of intercompany debt from overseas subsidiaries in jurisdictions where these entities are ceasing to trade independently. There are also further one-off impairment costs of £0.3 million (2019 - £1.2 million) due to a more prudent approach towards providing for intercompany debt.

14. Tangible Fixed Assets

	Long leasehold property	Short-term leasehold property	Plant & machinery	Fixtures, fittings and computers	Total
	£000	£000	£000	£000	£000
COST OR VALUATION					
At 1 January 2020	84,871	5,625	31,835	3,949	126,280
Additions	71	320	2,728	151	3,270
Disposals	-	-	(128)	-	(128)
Transfers between classes	(8,535)	-	-	-	(8,535)
Revaluations	4,935	-	-	-	4,935
At 31 December 2020	81,342	5,945	34,435	4,100	125,822
DEPRECIATION					
At 1 January 2020	-	698	25,571	3,077	29,346
Charge for the year on owned assets	-	255	1,276	373	1,904
Disposals	-	-	(43)	-	(43)
At 31 December 2020	-	953	26,804	3,450	31,207
NET BOOK VALUE					
At 31 December 2020	81,342	4,992	7,631	650	94,615
At 31 December 2019	84,871	4,927	6,264	872	96,934

15. Investment Property

	Long- leasehold investment property
	£000
VALUATION	
Transfers between classes	8,535
AT 31 DECEMBER 2020	8,535

16. Debtors

	2020	2019
	£000	£000
DUE AFTER MORE THAN ONE YEAR		
Deferred tax asset (note 21)	8,241	9,641
DUE WITHIN ONE YEAR		
Trade debtors	6,618	9,535
Amounts owed by group undertakings	10,536	8,197
Other debtors	943	83
Prepayments and accrued income	2,123	3,284
Amounts recoverable on long term contracts	10,330	7,885
Tax recoverable	5,346	4,840
Deferred taxation (note 21)	3,050	180
Total	38,946	34,004

17. Cash and Cash Equivalents

	2020	2019
	£000	£000
Cash at bank and in hand	5,775	6,899
Less: bank overdrafts	(14,270)	(1,965)
Total	(8,495)	4,934

18. Creditors: Amounts Falling Due Within One Year

	2020	2019
	£000	£000
Bank overdrafts	14,270	1,965
Bank loans	-	5,590
Payments received on account	16,694	19,780
Trade creditors	9,602	10,729
Amounts owed to group undertakings	3,459	2,094
Other taxation and social security	1,344	1,418
Obligations under finance lease and hire purchase contracts	356	345
Other creditors	724	935
Accruals and deferred income	4,795	7,176
Total	51,244	50,032

Secured loans

Bank loans were secured by a mortgage over part of the company's property and by a floating charge over other assets. The loans incurred interest at between 0.95% and 2.5% above LIBOR.

19. Creditors: Amounts Falling Due After More Than One Year

	2020	2019
	£000	£000
Net obligations under finance leases and hire purchase contracts	3,241	3,597
Payments received on account	1,249	4,647
Amounts owed to group undertakings	12,365	17,735
Accruals and deferred income	5,270	5,873
Total	22,125	31,852

During the year the company refinanced its loans with its parent company, The Welding Institute, and fellow subsidiary, Granta Park Estates Ltd. Repayment instalments of both these loans will commence in 2021 and they will bear interest of 3.015% per annum.

20. Finance Leases

	2020	2019
	£000	£000
Minimum lease payments under hire purchase fall due as follows:		
Within one year	356	346
Between 1-5 years	1,535	1,491
Over 5 years	1,706	2,106
Total	3,597	3,943

21. Deferred Taxation Asset/(Liability)

	2020	2019
	£000	£000
At beginning of year	3,091	4,037
Charged to profit or loss	147	111
Charged to other comprehensive income	262	(1,057)
At end of year	3,500	3,091
The deferred tax balance is made up as follows:		
Capital gains	(4,572)	(4,091)
Tax losses carried forward	3,050	2,548
Defined Benefit pension	8,241	7,093
Accelerated capital allowances	(1,747)	(2,639)
Other short term timing differences	(1,472)	180
Total	3,500	3,091
Comprising:		
Asset - due after one year	8,241	9,641
Asset - due within one year	3,050	180
Liability	(7,791)	(6,730)
Total	3,500	3,091

22. Share Capital

	2020	2019
	£000	£000
ALLOTTED, CALLED UP AND FULLY PAID		
2 (2019 - 2) Ordinary shares of £1.00 each	-	-

23. Reserves

Share premium account

This reserve records the amount above the nominal value received for shares sold, less transaction costs

Revaluation reserve

This reserve represents the cumulative gain, net of deferred tax, on long leasehold properties at the year end.

Cash flow hedge reserve

This reserve represents the cumulative gain or loss on hedging instruments in place at the year end.

Profit and loss account

This reserve includes all current and prior period retained profits and losses.

24. Financial Instruments

	2020	2019
	£000	£000
FINANCIAL ASSETS		
Financial assets measured at fair value through profit or loss	89,877	84,871

Financial assets measured at fair value through profit or loss comprise freehold and investment property.

25. Analysis of Net Debt

	At 1 January 2020	Cash flows	At 31 December 2020
	£000	£000	£000
Cash at bank and in hand	6,899	(1,124)	5,775
Bank overdrafts	(1,965)	(12,305)	(14,270)
Debt due after 1 year	(17,735)	5,370	(12,365)
Debt due within 1 year	(5,590)	5,590	-
Finance leases	(3,943)	346	(3,597)
Total	(22,334)	(2,123)	(24,457)

26. Capital Commitments

	2020	2019
	£000	£000
At 31 December 2020 the company had capital commitments as follows:		
Contracted for but not provided in these financial statements	49	495

27. Pension Commitments - Defined Contribution Pension Scheme

The company operates a defined contribution pension scheme in the UK. The assets of the scheme are held separately from those of the company in independently administered funds. The pension cost charge represents contributions payable by the company to the funds and amounted to £2,909,000 (2019 - £2,177,000). Contributions totalling £285,000 (2019 - £209,000) were payable to the funds at the balance sheet date and are included in other creditors.

There were 535 active members of the Defined Contribution Pension Scheme as at the end of 2020 (2019 - 511).

28. Pension Commitments - Defined Benefit Pension Scheme

The company operates a Defined Benefit Pension Scheme.

This is a separate trustee administered fund holding the pension scheme assets to meet long term pension liabilities. The preliminary results of the triennial valuation carried out at 31 December 2019 were updated to 31 December 2020 by Mercer Ltd, independent of the scheme's sponsoring employer. The major assumptions used by the actuary are shown below.

This most recent completed actuarial valuation as at 31 December 2019 showed a deficit of £56.9m. The company has agreed with the trustees that it will aim to eliminate the deficit over a period of 8 years 9 months from 1 April 2021 by the payment of monthly contributions of £296,667 increasing at a rate of 4% p.a. In addition, the company will meet the cost of levies to the Pension Protection Fund. The scheme closed to accruals on 11 September 2020.

There were no active members of the Defined Benefit Pension Scheme as at the end of 2020 (2019 - 103).

	2020	2019
	£000	£000
Reconciliation of Present Value of Plan Liabilities		
Fair value of plan assets	149,117	134,962
Present value of plan liabilities	(192,494)	(176,688)
Net pension scheme liability	(43,377)	(41,726)
Composition of plan assets:		
LDI	20,407	18,042
Equities	88,964	82,772
Bonds	14,844	10,614
Diversified Growth Funds	18,481	18,298
Cash	6,421	5,236
Total plan assets	149,117	134,962

28. Pension Commitments - Defined Benefit Pension Scheme (continued)

	2020	2019
	£000	£000
The amounts recognised in profit or loss are as follows:		
Current service cost	1,140	2,227
Interest on obligation	824	1,188
Expenses	40	45
Losses (gains) on settlements	-	(118)
Total	2,004	3,342
Return on plan assets (excluding amounts included in net interest costs) - Gain/(loss)	13,126	16,603
Experience gains and losses arising on the plan liabilities - Gain/(loss)	295	(2)
Effects of changes in the demographic and financial assumptions underlying the present value of the plan liabilities - Gain/(loss)	(17,336)	(17,473)
Total	(3,915)	(872)
Reconciliation of opening and closing balances of the defined benefit obligation were as follows:		
At the beginning of the year	176,688	161,902
Current service cost	1,140	2,227
Expenses	40	45
Interest cost	3,573	4,511
Actuarial gains and (losses)	17,041	17,475
Contributions by scheme participants	287	532
Liabilities extinguished on settlements	-	(3,288)
Benefits paid	(6,275)	(6,716)
CLOSING DEFINED BENEFIT OBLIGATION	192,494	176,688

28. Pension Commitments - Defined Benefit Pension Scheme (continued)

	2020	2019
	£000	£000
Reconciliation of opening and closing balances of fair value of the plan assets were as follows:		
At the beginning of the year	134,962	118,158
Interest income	2,749	3,323
Return on plan assets in excess of interest income	13,126	16,603
Assets distributed on settlements	-	(3,170)
Contributions by the company	4,268	6,232
Contributions by scheme participants	287	532
Benefits paid	(6,275)	(6,716)
Total	149,117	134,962
Principal actuarial assumptions at the Balance Sheet date (expressed as weighted averages):		
	%	%
Discount rate	1.40%	2.05%
Inflation (RPI)	3.00%	2.85%
Inflation (CPI)	2.50%	2.05%
Salary growth	1.50%	2.50%
Allowance for revaluation of deferred pensions of CPI or 5% p.a. if less	2.50%	2.05%
Allowance for pension in payment increases of RPI or 5% p.a. if less, minimum 3% p.a.	3.20%	3.05%
Allowance for commutation of pension for cash at retirement	100% of Post A Day	100% of Post A Day
	Life expectancy at age 65 (Years)	
Male retiring in 2020	21.6	
Female retiring in 2020	23.5	
Male retiring in 2040	22.6	
Female retiring in 2040	24.7	

The best estimate of contributions to be paid by the institute to the scheme for the period commencing 1 January 2021 is £3,525,000.

29. Commitments Under Operating Leases

	2020	2019
	£000	£000
At 31 December 2020 the company had future minimum lease payments due under non-cancellable operating leases for each of the following periods:		
Not later than 1 year	403	351
Later than 1 year and not later than 5 years	1,257	1,730
Later than 5 years	446	617
Land and Buildings Total	2,106	2,698
Not later than 1 year	63	60
Later than 1 year and not later than 5 years	11	-
Other Total	74	60

30. Related Party Transactions

The parent company prepares consolidated group accounts and, accordingly, the company has taken advantage of the exemptions contained within FRS 102 paragraph 33.1A not to disclose transactions with wholly owned group undertakings.

Key management personnel are considered to be the members of the Executive Team. The total remuneration (including salaries and other benefits) of key management personnel in the year, including directors, was £1,621,000 (2019 - £1,725,000).

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