

2023 ANNUAL REPORT AND FINANCIAL STATEMENTS

**TWI LIMITED
REGISTERED COMPANY
NO. 03859442**



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COMPANY INFORMATION

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Leonie Stewart
Paul Woollin
David Wrathmall

INDEPENDENT AUDITORS

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BANKERS

Barclays Bank PLC
Market Place
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Essex CB10 1HR



INTRODUCING TWI LIMITED

TWI Limited 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 Limited also takes technical and practical know-how to regions which are looking to develop local expertise.

TWI Limited 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 Limited has remained dynamic in this support, with companies being invited

to work alongside our experts on-site and universities working in collaboration with TWI Limited 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 Limited 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 Limited'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 Limited remains at the forefront of providing innovative solutions to tomorrow's problems.

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

KEY STATISTICS

KEY STATISTICS

PROJECT DELIVERY

Successfully delivering projects in a fast moving dynamic environment is challenging. TWI Limited 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 Limited is ready to meet. We look forward to working with our Members on many more exciting and beneficial projects.



2043

ACTIVE PROJECTS

ONGOING PROJECTS PER ANNUM



933

SINGLE CLIENT



204

COLLABORATIVE



102

CORE RESEARCH



12

JOINT INDUSTRY

SECTORS WE SERVE



**AEROSPACE
AND SPACE**



DEFENCE



**FUTURE
INFRASTRUCTURE**



MEDICAL



**AUTOMOTIVE AND
ELECTRIFICATION**



RAIL



**ELECTRONICS
AND SENSORS**



POWER



NEW ENERGY



MARINE



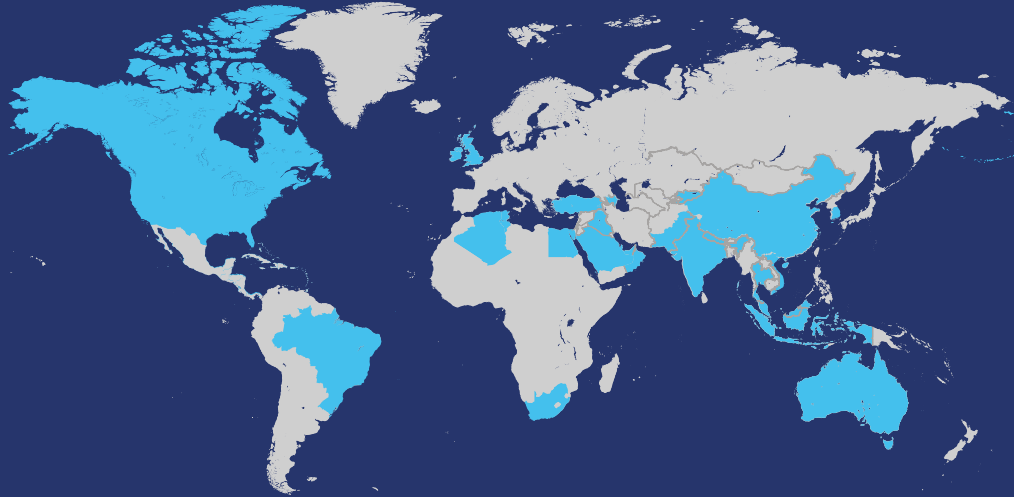
**HYDROGEN
ECONOMY**



OFF HIGHWAY



TWI LIMITED INTERNATIONAL PRESENCE



533

INDUSTRIAL MEMBERS



4000

PROFESSIONAL MEMBERS

CORPORATE IMPACT



11000

CERTIFICATES ISSUED



150+

PHD AND MSC COMPLETED



500+

WELDING SOFTWARE LICENCES



3000+

STUDENTS REACHED VIA EDUCATION OUTREACH



45+

TECHNOLOGY CONFERENCES AND SEMINARS



18000+

PEOPLE TRAINED



600

LIBRARY ENQUIRIES

A woman with curly hair and a man are smiling and looking at a tablet together. They are wearing high-visibility safety vests over blue jackets. The background is a blurred industrial setting. A large blue diagonal shape is overlaid on the left side of the image.

SPOTLIGHT ON OUR PEOPLE

OUR PEOPLE

ABBASI GANDHI - PRINCIPAL PROJECT LEADER, TECHNOLOGY



Abbasi is a Principal Project Leader in the Thermal Processing Technologies (TPT) Section at TWI Ltd. He holds a PhD in experimental physics and has 16+ years of R&D experience in highly regulated industries with a primary

focus on materials development, processing, joining, coating and testing. As well as having >35 peer-reviewed journal papers, 3 granted patents and 3 book chapters to his name, he has presented his work in 53 national/international conferences. He is a reviewer for material science related international journal and received gold medal in the Irish Medical Technology Industry Excellence. He has been involved in several UK and European collaborative research programmes, and has managed numerous high value industry projects.

Abbasi is currently leading projects investigating EV battery joining and testing, low thermal mass heater devices, superhydrophobic geothermal surfaces and compact heat exchangers using diffusion bonding, electroless plating, micro joining and testing of electronic devices and biomedical implants, and developing advanced testing capabilities for EV battery joints at TWI.

Q. What is your favourite thing about your current job ?

At TWI, I really appreciate the diverse aspects of work environment, including the variety of tasks, interactions with clients, teamwork, and core values. Embracing diversity in tasks and interactions often leads to a more engaging and fulfilling work experience for me.

Q. What's the career highlight you are most proud of ?

I am really proud of having more than 35 peer-reviewed journal papers, 3 granted patents and 3 book chapters to my name which would contribute to the advancement of knowledge and innovation.

Q. What's your favourite way to spend a day off ?

It is important for me to prioritize time for activities that bring joy and fulfillment, especially amidst the demands of work and other responsibilities. During my day off, I cherish quality time with my family, travelling and playing sports.

Q. What's one thing that can instantly make your day better ?

A positive feedback from clients/stakeholders and from my family.

BRIONY HOLMES - PRINCIPAL PROJECT LEADER



Dr Briony Holmes (CEng) is a Principal Project Leader at TWI Ltd, Cambridge, where she has worked for over 15 years. Her day-to-day responsibilities involve various failure investigations, welding qualification testing and materials selection

consultancy work on various stainless steels and corrosion topics. Her special work interests include metallurgy, corrosion and microanalysis of stainless steels.

Q. Who or what inspires you in your career ?

Using my metallurgical and corrosion knowledge to have a positive impact on Members.

Q. What is your favourite way to spend a day off ?

Walking with family and friends.

Q. What originally got you interested in your current field of work ?

Inspiring teachers.

Q. What's one thing that can instantly make your day better ?

Cake !

KANDARP AMIN - SENIOR PROJECT LEADER



Kandarp Amin is a senior project leader within the Thermal Processing Technologies team. He has been involved in a number of projects involving brazing, diffusion bonding and wire bonding of batteries and robotics.

Q. What is your favourite thing about your current job ?

The flexibility of the role and also the range of work that I am able to be involved with, from project managing and building a demonstrator for a large Horizon 2020 project investigating robotics and 5G connectivity to developing novel solutions for clients in various industrial sectors.

Q. What career highlight are you most proud of ?

An innovative process that we developed at TWI has been implemented into the production of communication satellites, our innovation will be orbiting over our heads very soon !

Q. What do you do on your commute to/from work ?

As my commute is just over an hour, I'm usually listening to podcasts or working my way through spotify playlists but I also use this time to catch up with friends and family.

Q. What's your favourite way to spend a day off ?

I would be watching or playing either cricket or football with friends followed by some good food.

MAN CHI CHEUNG - PROJECT LEADER, TECHNOLOGY



Man Chi joined the Technology Innovation Management section of TWI in 2021 while pursuing her Ph.D. focused on novel composite-to-metal joining for naval vessels.

In addition to advanced materials, she has been involved in a

wide range of product design and development projects. For example, she participated in the development of self-monitoring composite tools in the SEER project and is introducing a composite marine propeller in the CoPropel project.

She achieved Chartered Engineer (CEng) status and became a member of The Welding Institute (MWeldI) last year.

Q. Who or what inspires you in your career ?

A collaborative and fun work environment promotes innovation and inspires me in my career. Sharing knowledge and exchanging ideas with a group of professionals motivates me to pursue my career goals.

Q. What's your favourite thing about your current job ?

The variety of tasks in my current job is my favourite aspect. This diversity not only keeps me interested and engaged in my work but also helps me to develop a broader range of skills.

Q. What career advice would you give to your younger self ?

I would tell my younger self to enjoy the journey and remember to celebrate achievements, no matter how small.

Q. What's one thing that can instantly make your day better ?

A cup of coffee !

MIHALIS KAZILAS - BUSINESS GROUP MANAGER



Mihalis joined TWI in 2012 and is a chemical engineer with a specialisation in materials science (process monitoring of aerospace composites production). He participated in academic and commercial projects and holds responsibilities

in experimental design work, data analysis and extensive reporting. Non-metallics is one of the strategic growth areas of TWI Ltd, including joining technologies and phenomena that occur at the interface of composites and polymers.

Q. What is your favourite thing about your current job ?

Being able to enable (de-risk, speed up, chase) the technology teams and sections to deliver value to Members.

Q. What energizes you about your career ?

Ambition.

Q. What are your hobbies ?

Board games collecting and playing. I was heavily involved into MMORPG (Lineage, warcraft) with real life friends. One day we all gathered and play a board game called Puerto Rico... and I got hooked !



SPOTLIGHT ON OUR PROJECTS

OUR PROJECTS

TWI Limited continued to work on numerous projects to address the challenges of our Industrial Members in 2023, including:

- Development of composite hydrogen storage vessels with a polymeric liner;
- Developing novel and cost-effective coatings for high-energy industrial processing applications;
- Creating remote robotic offshore wind turbine and marine inspection solutions;
- Developing innovative manufacturing processes and in-line monitoring techniques for photovoltaic module production;
- A novel precision laser welding system optimised for use on large aerospace and automotive structures.

EXAMPLES OF RESEARCH PROJECTS WORKED ON IN 2023

MAREWIND

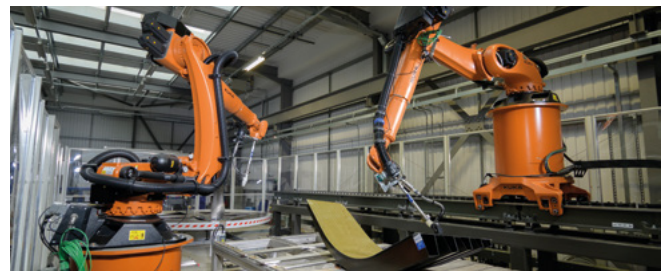


The MAREWIND Project aims to deliver solutions for the development of durable materials and recyclable solutions for offshore wind to help meet European Union climate targets. This includes enhanced durability and corrosion protection systems as well as anti-fouling solutions, erosion protection, and predictive modelling and monitoring to extend asset lifecycles along with improvements to recyclability.

The project, which includes input from

organisations from seven different nations, created new job opportunities as the consortium completes nine work packages covering the whole value chain of the offshore wind sector.

INTACOM PROJECT



TWI Ltd's NDT technology centre in Port Talbot, South Wales has led a series of projects to develop novel robotic inspection solutions. Under the umbrella of the IntACom programme, these projects have allowed for a significant time and cost reduction to the inspection of geometrically complex parts in both the aerospace and marine industries.

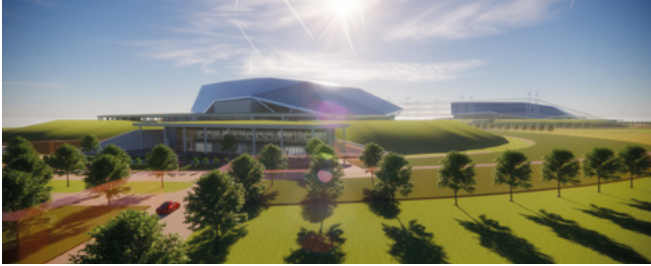
The project commenced in 2011 where work focussed on providing an automated Phased Array Ultrasonic Testing (PAUT) inspection solution for a single robotic cell. This required expertise in data acquisition, processing and visualisation and led to several key innovations including the development of water jet coupling, high-speed PAUT data acquisition with robotic synchronisation, and new methods of data analysis.

Fast forward to 2023 and the third iteration of the IntACom project now supports Kuka robotics and Universal Robotics hardware with an expanded choice of NDT inspection methods including; PAUT, conventional UT, eddy current, multi-frequency microwave, automated tap-testing, Artificial intelligence for defect detection and more.

The IntACom project was developed in TWI Ltd as a joint industry project with GKN, Rolls-

Royce, RNLI and BAE Systems.

ROLLS-ROYCE SMR



The Rolls-Royce SMR programme aims to build upon tried and tested nuclear technology that will be constructed and made operational more quickly than conventional nuclear design and build technology. To enable this, TWI was part of a large national engineering collaboration to both support related research and development, and act as a supply chain partner.

TWI Ltd supported the partnership in an initial phase to down-select welding and inspection of non-destructive technology (NDT) processes as part of the manufacturing capability acquisition strategy for the programme. This included technical and economic assessments of a large range of processes including arc and electron beam welding, radiography, eddy current and (advanced) ultrasonic testing technologies – with ongoing discussion and input from equipment and system OEMs. This extended to assessment of the viability of automation of traditional manually applied processes, as part of the key deliverable of the programme to increase production rate towards the objective of delivering of 2-4 operational plants per year. In this way, the SMR consortium received an independent expert advice to support new process adoption.

The second phase moved into predominantly lab-based development projects across multiple welding and NDT processes; moving upward through TRLs from process feasibility towards procedure (and operator) qualification. Weld process variants included narrow-gap submerged arc welding, electro-strip cladding

and mechanised tungsten inert gas (TIG) welding and cladding. This was also supported by process modelling simulation of residual stress and distortion amongst other variables. This allowed optimisation of process parameters from both a rate and quality standpoint, and also informed a continually maturing design to reduce process time and risk of defects. Modelling of advanced inspection techniques was also applied as part of production system (hardware) development. Both trials and modelling outputs were quantified using materials characterisation techniques, including metallurgical examination, mechanical testing and radiography.

D-JOINTS: LIGHTNING STRIKE TECHNOLOGIES FOR AIRCRAFT



TWI Ltd was part of the Clean Sky 2 D-Joints (Design of innovative composite hybrid joints with electromagnetic compatibility) project that successfully tested and validated two joint technologies to protect modern aircraft from lightning strikes

Modern composite materials have many advantages when used for aircraft, notably for weight reduction when compared to old-fashioned, all-metal aircraft construction.

However, the use of composite materials created a new challenge with regards to lightning strikes, since they cannot channel the electrical charge from a lightning strike.

All-metal aircraft naturally channel electricity from a lightning strike to its trailing edges, where it is safely discharged, whereas technologies need to be introduced to composites that form external parts or structures on an aircraft to achieve the same outcome

The C-Joints project, a forerunner to the D-Joints project, successfully developed two

technologies to provide a solution to the problem of discharging electricity from composite aircraft parts.

TWI Ltd's thermal spraying expertise was applied as one solution, which involves spraying metal particles onto composites to create metallic connections that can carry energy between composite panels as well as between metal and composite panels.

The other solution developed by C-Joints was 'tufting,' an industrial stitching process that uses robotics to sew a thin copper thread through a composite panel to enable electrical conductivity.

The D-Joints project was created to test and validate the effectiveness of the two solutions developed by C-Joints. Once tested, the results could be incorporated into a 'sizing tool,' which is a software tool for engineers that helps specify the technical parameters, material characteristics and joint size required when designing aircraft with composite parts.

SCALING UP EV BATTERY PACK SUPPLY CHAIN AND MANUFACTURE



TWI has been working as part of a consortium to scale up the UK's automotive battery pack manufacturing and supply chain industry.

The H1perChain (high performance EV supply chain) project is critical for the UK Government's industrial strategy to deliver a reduction in battery pack costs for the automotive sector through the introduction of UK component and sub-system supply chain capabilities.

The project consortium includes a mix of academic and industrial organisations with the aim of establishing robust and high-speed laser welding processes while also innovating design and manufacturing solutions for higher volume battery packs.

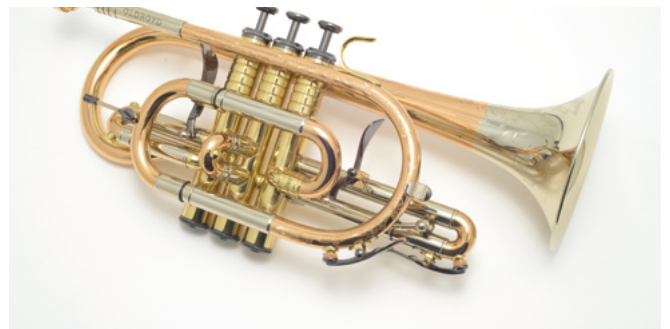
The challenge includes reducing costs for high performance batteries that are currently around four times higher than industry targets, with over 70% of these costs coming from non-cell-related components and manufacturing.

Digital manufacturing solutions are being developed to offer a digital manufacturing platform that addresses scalability and manufacturing technology developments across the supply chain for an end-to-end product lifecycle.

Our experts are working alongside Coventry University to conduct tests to quantify the quality of welded joints. These tests include four point electrical testing, tensile and fatigue testing and computed tomography (CT) scanning to provide maximum permissible defects in thin copper-aluminium joints, which are commonly seen in battery electric vehicles.

Current results show considerable variance in joint properties which can be used to provide best practice recommendations for welding of such materials to achieve desirable properties and avoid defects.

RE-ENGINEERING MUSICAL INSTRUMENTS



TWI Ltd has begun working with world-famous musical instrument makers, Geneva Brasswind Ltd to re-engineer instruments using modern techniques for manufacture.

Having produced hand-made instruments for seven generations, Geneva Group's instruments are used by the world's finest brass bands, leading orchestral artists, pop and jazz musicians, and in the recording, film and television industries.

TWI Ltd were called upon to help re-engineer a cornet, which has been made using patent parts since the 1890s. Using our technical expertise, we were called upon to provide manufacturing consultancy support to produce individual engineering drawings. This was achieved by using a combination of internal technical knowledge of manufacturing, CAD systems and a GOM laser scanning system supplied by Central Scanning Ltd. This system produced full 3D image files that captured detailed parameters including external and internal dimensions, surface geometry and part fitment, resulting in production of 2D engineering drawings of all parts, so that we could design new manufacturing solutions for the Geneva Group.

In addition, our wealth of knowledge meant that TWI Ltd was able to assist on other, related areas, such as coatings, joining methods and additive manufacturing for the instruments. This ability to bring together a range of areas of expertise has allowed us to find solutions for a variety of challenges related to the instruments' production and re-design.

While this work is perfectly suited to the needs of the Geneva Group, such re-engineering and manufacturing support can readily support many other industries including, but not limited to, aerospace, medical, power and automotive.

LAYOURED ARMOUR LIMITERS



of the Geneva Group, such re-engineering and TWI Ltd, working alongside Frazer-Nash Consultancy, has developed and manufactured layered armour limiters for the United Kingdom Atomic Energy Authority (UKAEA).

This work was delivered under the STEP (Spherical Tokamak for Energy Production) Manufacturing Support Services Framework, established to support design and construction of the UK's prototype fusion energy plant in Nottinghamshire that will generate electricity for the National Grid.

The limiters have been created for use specifically in tokamaks, and are in-vessel components designed to protect the first wall from the extremely high heat loads that occur during transient plasma events.

In some extreme and off-normal scenarios, the limiters are required to absorb thermal loads that are greater than any material would be expected to withstand without melting and would need to be replaced after such an event.

The development of the limiters included assessing the suitability of manufacturing the monoblock assemblies. This was done through a machining process to create a lower conductivity layer situated within the pure tungsten monoblock. Several designs were created for the monoblocks, allowing UKAEA to assess the thermal conductivity properties of the differing designs.

UKAEA has tested the most porous design at their HIVE facility (Heating by Induction to Verify Extremes), with results showing that the sample performed well after undergoing 500 cycles at a front face temperature of 1100°C. The limiter showed no signs of thermal performance degradation or ligament cracking, and UKAEA tests showed a drop in effective conductivity through the machined featured layer of around 60%, whilst also exhibiting no signs of debonding at the pipe interface.

Fusion energy has great potential to deliver safe, sustainable, low carbon energy for generations to come. It is based on the same processes that power the Sun and stars, and would form part of the world's future energy mix. Achieving this is a major technical challenge that involves working at the forefront of science, engineering, and technology.



STRATEGIC REPORT

STRATEGIC OBJECTIVES

Throughout the year we relentlessly focused on our efforts to push the boundaries of technology through collaboration and innovation, so that we could better position TWI Ltd to successfully provide the expertise necessary to meet the challenges of tomorrow, across our Member base.

Recognising our role as 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. To achieve this we set a five-year strategy on:

1. Improving our focus and performance on Health, Safety, Environment and Diversity & Inclusion.
2. The stable and reliable generation of cash from profits needed to invest in the company's future sustainability.
3. Building closer relationships with our key Members, and adding greater value to their operations, either individually through single client projects or collectively through the very popular and effective joint industry projects.
4. Targeting specific TWI generated knowledge and technologies for exploitation
5. Targeting high growth markets through our overseas subsidiaries around training in India, South East Asia, the Middle East and Central Asia, as well as consultancy in China, Japan and USA.
6. Exploiting TWI's property portfolio to provide underlying stability for the wider business.

The metrics used to judge our success in these

endeavours are set over five years, with annual milestones around the following strategic areas:

- Health Safety and Environment
- Diversity and Inclusion
- Technology Leadership
- Customer Satisfaction
- Governance
- Financial: Turnover, Profit, Cash Generation, Group Value
- Performance of Property Portfolio

HEALTH, SAFETY AND ENVIRONMENT

Delivering a zero harm culture change plan that would include:

- An organisational structure to remove conflicts between operations and HSE
- An evaluation framework involving a trial HSE scorecard and RACI matrix
- Greater and more frequent employee engagement across the group
- Implementing HSE appraisal objectives for greater involvement in improvements
- Better hazard identification and assessment with new risk assessment tools
- More training with a skills audit and root cause training
- Improved operational controls around investigation, change management, contractor management and lifting

DIVERSITY AND INCLUSION

The Company's Diversity & Inclusion strategy foccuses on promoting an inclusive culture at TWI, including:

- A 'Living the Values' Programme with each of the 6 TWI values being evaluated by staff in succession over the course of 2023. This was achieved through surveys and a series of meetings with breakout sessions, during which staff were asked to answer 6 questions:
 - What does the value mean to them;
 - What does the value mean at corporate level;
 - What currently works well;
 - What could we do better;
 - What policies and procedures support the value; and
 - What criteria could be used to measure the value in the appraisals
- Pay and award benchmarking with Mercers to ensure equitable pay
- Progression framework for all staff to reduce the gender pay gap

GROWING SINGLE CLIENT PROJECTS INCOME

- Focusing on Industrial Members that place single client projects (SCP) and recruiting new Members based on our 'Future Sectors'.
- Growth of membership in Asia
- Building more and better key account relationships, rebuilding the connections within Member companies and creating internal champions in Member companies.

PROFESSIONAL MEMBERS AND STRATEGY

- Improving communications with Professional Members and building the value of membership to them.
- Building closer alignment with Industrial Members (e.g. via Institute ambassadors)
- Developing overseas networks and opportunities (e.g. China, SEA)



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**

SECTION 172 STATEMENT

SECTION 172 STATEMENT

The Companies (Miscellaneous Reporting) Regulations 2018 require qualifying companies to publish a statement explaining how the directors have had regard to the matters set out in section 172(1)(a) to (f) of the Companies Act 2006 in performing their duties under section 172. In accordance with section 172, the Directors confirm that they have acted in the way that they consider, in good faith, would be most likely to promote the success of the Company for the benefit of its shareholders as a whole. The paragraphs below identify key stakeholders and provide examples of how the Directors have had regard to the matters set out in section 172(1)(a) to (f) of the Act.

S172(1)(a) - The likely long term consequences of decisions

The Directors regularly consider the long term consequences of the Board's decisions and actions. As an example of this following the sale of the zone 2 land in prior years and the resulting increase in the Company's cash resources the Directors' have, as part of the overall strategy of the Company, carefully considered how best to invest these resources to ensure that TWI can successfully provide the expertise necessary to meet the challenges of tomorrow.

S172(1)(b) - The interests of the Company's employees

The interests of TWI Limited's employees have been key to decisions made by the Directors. Subsequent to the Covid-19 pandemic there has been a shift to a more agile working environment with a greater proportion of administrative functions working from home there has been a continued focus on how to work effectively while prioritising staff safety and wellbeing. Accordingly, company-wide protocols and initiatives initially put in place in previous years have been maintained and are regularly reviewed and updated to protect and support employees. The implementation of our diversity and inclusion strategy continues to be a key component, as detailed in our Directors Report under Board Decision Making.

S172(1)(c)- The need to foster business relationships with suppliers, customers and others

The Directors have regard to the need to foster good relationships with customers through, for example, the implementation of key account management, the development and improvement of service offerings, and the on going review and strengthening of the Company's Quality Assurance procedures. The Directors take into account the need for good business relationships with suppliers when reviewing key and critical supplier lists, and supplier payment terms

S172(1)(d) - The impact of the Company's operations on the community and the environment

The Directors are conscious of the importance of investing in and caring for the physical environments and communities in which TWI Limited operates. These initiatives are detailed in our Directors Report under Environmental, Social and Governance.

S172(1)(e) - The desirability of maintaining a reputation for high standards of business conduct

The Directors are committed to high standards of business conduct throughout the Company and take into account the desirability of maintaining its reputation for the same in their decision making. To support this the company has initiated a policy review and consultation process to provide our stakeholders on clear guidelines for our operations.

S172(1)(f) - The need to act fairly as between shareholders

Due to the governance nature of TWI Limited, the Directors ensure that there are regular, formal meetings with the various committees and representatives of its key shareholder (and parent company) – The Welding Institute, this is detailed in our Director's Report under Corporate Governance.



BUSINESS REVIEW

BUSINESS REVIEW



David Wrathmall
Interim Chief Executive

I am honoured to step into the role of Interim Chief Executive at TWI Ltd, bringing with me a deep sense

of responsibility and a strong commitment to building upon the significant achievements of our organisation. My tenure as Non-Executive Director and Chair of the Audit Committee over the past three years has provided me with a thorough understanding of TWI Ltd's legacy, its unwavering commitment to innovation, and the exceptional talent within our team. I am both privileged and excited to lead TWI Ltd into its next chapter.

TWI Ltd has established itself as a global leader in welding, joining technologies, and materials integrity, with a reputation that spans industries and geographies. Our pioneering research and development initiatives continue to set benchmarks in the field, ensuring that we remain at the forefront of technological advancements. The opportunity to further strengthen these foundations, working closely with our skilled management team and dedicated staff, is what motivates me most in this role.

The strength of TWI Ltd lies not only in its global reach and impressive track record but also in its robust fundamentals and clear potential for sustained growth and impact. My experience on the TWI Ltd Board has given me first hand insight into the organisation's steadfast commitment to our Members and stakeholders, its relentless pursuit of innovation, and its dedication to the highest standards of quality and safety.

In 2023, TWI Ltd continued its strategic investment program, focusing on enhancing our operational capabilities. This included significant capital expenditure on plant and equipment, which will enable us to maintain our position at the cutting edge of research for our members. During 2023, TWI Ltd conducted £12.4 million of research and development activities for its industrial and professional Members, supported by funding from our parent company, The Welding Institute. This work underpins our commitment to driving innovation and delivering value to our Members.

Our achievements would not be possible without the tireless dedication and expertise of our staff. From our technical specialists and project leaders to our laboratory teams, every member of TWI Ltd plays a crucial role in our success. It is with great satisfaction that we acknowledge their contributions through our 'share in success' initiative, particularly in recognition of their hard work over the past two years.

As we look to the future, my primary focus will be on sustaining the momentum that TWI Ltd has built. We will continue to deliver exceptional value to our members and stakeholders, foster a culture of innovation and collaboration, and explore new avenues for growth. Together, we will navigate the challenges and opportunities that lie ahead, ensuring TWI Ltd's continued leadership and success in the years to come.

'I want to thank all of our people, including Members of Council, Boards and Committees and those who have supported us in our work over the past 12 months.'

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.

VALUES



TEAM WORK



INNOVATION AND EXPERTISE



TAKING RESPONSIBILITY



CUSTOMER FOCUS



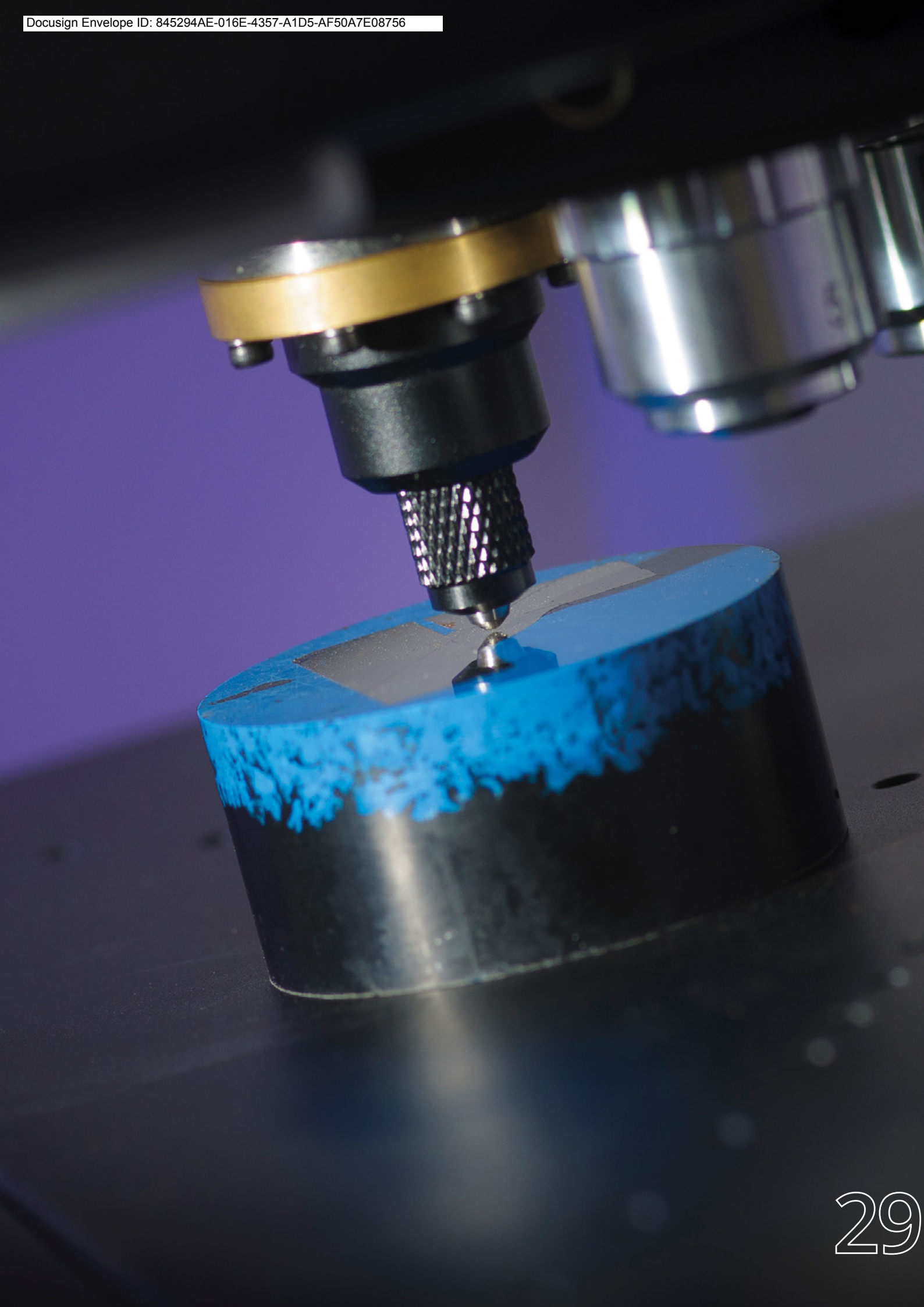
ADAPTABILITY



INCLUSION

OUR MISSION

TWI Limited 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.



A photograph showing the silhouettes of five business professionals in a meeting. One man stands on the left, while four others are seated around a table. The scene is backlit by a large window, creating a bright, high-contrast environment. A large, light blue triangle is overlaid on the image, pointing towards the right. The text 'CLIENT SATISFACTION' is written in large, white, bold, sans-serif capital letters across the middle of the image.

CLIENT SATISFACTION

CLIENT SATISFACTION

We help our Members to better design, create, operate and decommission their 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 quarterly through the use of client satisfaction surveys.

The average rate of triple excellent project responses was 54% in 2023. The following three KPI's are measured, indicating the percentage of 'good' and 'excellent' scores:

- (1) Technical Quality: 97%
- (2) Delivery Timescales: 86%
- (3) Staff Support: 98%.

SELECTION OF THE 533 INDUSTRIAL MEMBERS WE WORK FOR



FINANCIAL RESULTS

FINANCIAL RESULTS



Leonie Stewart
Director of Finance

The results of the company are set out on page 69 and show revenue of £69m (2022: £63m). This includes £12.4m of research income under subcontract from The Welding Institute (which holds Scientific Research Association status) (2022: £12.6m). The Company reported a profit before tax of £6.2m (2022: loss of £1.6m). Included within the profit before tax is £2m of unrealised fair value losses on investment property (2022: loss of £6.7m).

The net profit after tax and movements in other comprehensive income, increased to a profit of £3.8m (2022: loss of £14.6m). The following are a summary of the key movements in the statement of other comprehensive income, which are not disclosed as movements in our before tax profits. The 2023 total comprehensive income reflects the decrease (after deferred taxation) in the value of operational property (held at fair value) of £0.8m (2022: decrease of £5.6m); and the decrease in the Defined Benefit Pension Scheme deficit (net of deferred tax) of £0.1m (2022: increase of £7.8m).

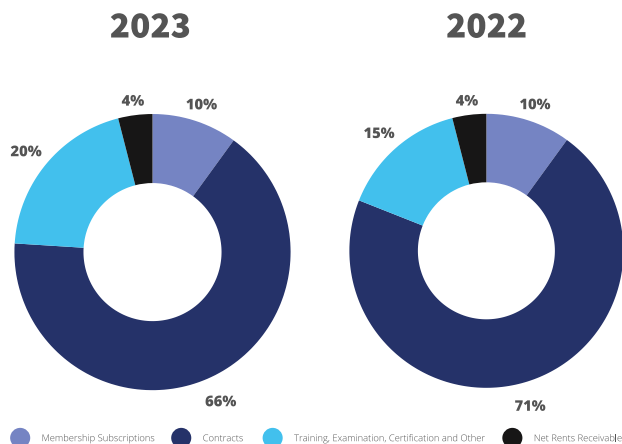
PROFIT AND LOSS RESULTS

TURNOVER

The nature of TWI Limited operations are summarised under “Introducing TWI” on page 4. The company saw an increase in turnover from £63m in 2022 to £69m in 2023. This increase in revenue is driven by increase in revenue from the training business together with increase in revenue from single client projects. The turnover includes £12.4 m of subcontracted Research activity from The Welding Institute, which holds Scientific Research Association status and is accordingly entitled to certain government incentives. During 2023 TWI Limited worked on 2,043 projects (2022: 2,083).

The majority of external turnover earned in the year is from Single Client Projects, which are the most profitable of the income streams. Collaborative projects include internal funding from The Welding Institute, and represents industrial research supported by government funding from the European Commission and UKRI. Industrial Membership subscriptions and the training income streams were greatly impacted by the pandemic in 2020, a number of courses were transitioned to online delivery and revenue continued to recover in 2023.

TWI LIMITED TURNOVER BY TYPE



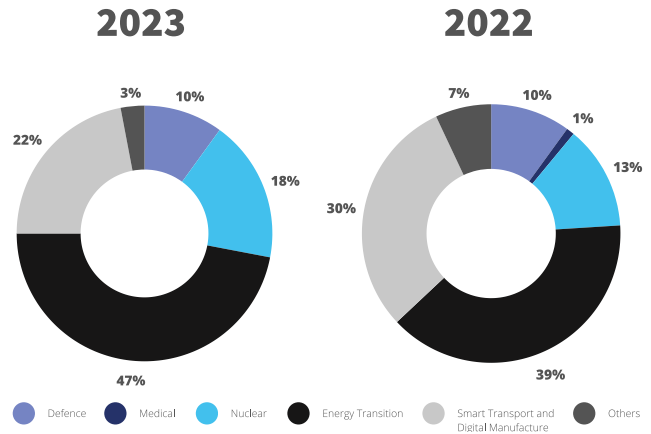
OTHER OPERATING INCOME

The company qualifies for Research and Development tax credits, which amounted to £1.8m (2020: £1.9 m). Details of other Government Grants including income recognised from an initiative from the Welsh Government (AMERI) are provided in note 6 and amounted to £0.6m in 2023 (2022 £0.9m).

COST OF SALES AND ADMINISTRATION EXPENSES

Direct costs have increase from £39.8m in the prior year to £40.3m in the current year and administration expenses increased by £1.6m to £21.8m (2022: £20.3m).

The overall increase in expenditure is reflective of the increase in activity during the year and also due to increased inflationary pressure particularly in regard to the impact that energy price inflation has on the utility costs of the Company.



TWI LIMITED - ORDER INTAKE BY SECTOR

FINANCING AND CASH

TWI Limited cash position decreased to £29.6m (2022: £48.7m). Cash flow from operating activities was -£11.4m (2022: £51.4m), from investing activities was -£8.3m (2022: -£13.41m) and from financing activities +£0.6m (2022: -£0.1m).

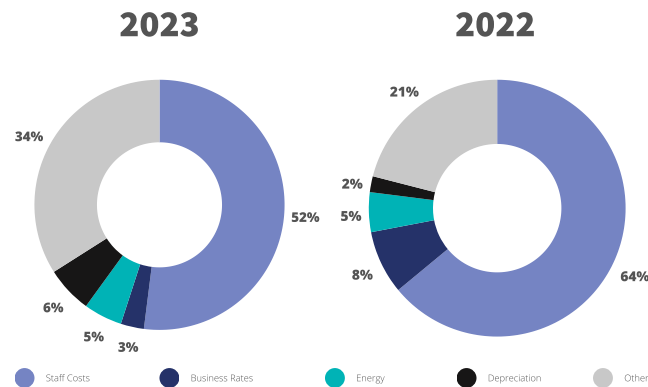
BALANCE SHEET

As at the year end, total assets less total liabilities increased to £95.7m (2022: £91.9m).

The total combined value of long leasehold property and investment property decreased in the year from £134.8m in the prior year to £132.4m in the current year. During the year the Company spent significant capital expenditure on both long leasehold property (£0.4m) and on investment property (£1.9m). This capital expenditure was offset by unrealised fair value losses in the year of £1.1m on long leasehold property and £2m on investment property.

The Defined Benefit pension scheme is recognised within TWI Limited balance sheet, however it has participating employers in the form of The Institute. During the year the obligation has increased modestly from £15m in prior year to £15.7m in the current year (see further disclosure of the defined benefit pension plan below).

At the end of 2023 TWI Limited remains in a strong balance sheet position with significant cash reserves, which will provide a solid foundation for the existing operations and the potential to pursue growth opportunities should they arise. As a result, TWI Limited is well positioned for the year ahead.



TWI LIMITED - EXPENSES BY TYPE

ORDERBOOK

At Dec-23 TWI Limited had 6.2 months of labour orders in hand (2022: 7.1 months). Single client projects (SCP) made up 73% of the labour orders, 27% on Collaborative projects (2022: 79% SCP and 21% Collaborative). The predominant sector that our orders come from are Energy Transition (Power, Oil and Gas) followed by the defence sector.

DEFINED BENEFIT PENSION PLAN

The Employer (TWI Limited) meets the costs of administration and investment management of The Welding Institute Defined Benefit Pension scheme. The deficit increased modestly from £15m in 2022 to £15.7m in 2023. This was driven by changes in market rates.

On 1 January 2000, all The Welding Institute employees were transferred to TWI Limited and the Pension Trustees agreed that the full deficit and related pension costs for the scheme be borne by TWI Limited; this has been reflected in the audited financial statements for both entities. The Welding Institute retains its designation as a participating employer of the scheme, which had allowed it to make a voluntary contribution in the prior year as agreed with the Trustees.

A guarantee remains in place between The Welding Institute as parent and TWI Limited, which would realise should TWI Limited be in an position where it is not financially able to meet its overall commitments. The likelihood of this is considered to be low, as TWI Limited continues to have strong operational prospects and is able to continue as a going-concern for the foreseeable future.

The last triennial valuation was for the period ended 31 December 2022. The recovery plan (as agreed with the Trustees and Pension Regulator) remains unchanged however, following the injection of £16.8m from The Welding Institute in 2021, no further cash payments under the current contribution schedule are required until 2025. TWI Limited closed the defined benefit pension scheme to future accruals in Sep 2020.



A person in a blue suit is holding a tablet computer. The tablet screen displays a dashboard with various charts, graphs, and data points. The background is blurred, showing what appears to be a control room or a similar environment with multiple screens and equipment. The overall scene is set against a dark blue background with a light blue diagonal line.

PRINCIPAL RISKS AND UNCERTAINTIES

PRINCIPAL RISKS AND UNCERTAINTIES

Risk Management is key to achieving the strategic objectives of the company. TWI's management continually reviews its risk management structure to ensure that the risks are managed within an acceptable risk appetite. TWI Limited has a low appetite for contextual risks. Our operations and activities have a balanced geographic and thematic spread to set overall risk levels at low. There are certain projects funded by different government bodies and institutes, where TWI operates in challenging contexts; but the risk bar for TWI remains low due to its operational approach and policies and procedure.

Risk is inherent in the challenging contexts in which we operate, so we aim to find an acceptable balance between the costs of managing the risks, and the likely costs and impacts if the risks materialize, as well as the costs of not acting. TWI Limited calculates an overall rating of an identified risk by assessing the likelihood and impact.

The Executive Board review the risk register on monthly basis and the Council of The Welding Institute review the risk register as part of the quarterly agenda. The major risks TWI is currently facing are summarised below:

RISK	NATURE OF RISK	MANAGEMENT OF RISK
Governance Risk	<ul style="list-style-type: none"> ▪ Expansion of business and failure to adhere to statutory requirements of its key markets. ▪ Sudden change in regulatory requirements (e.g. sanctions, export control and trade laws). ▪ Risk of delay or failure in submission of and/or accuracy of statutory reports to appropriate authorities. 	<p>To mitigate those governance related risks, TWI Limited is proactively reviewing its governance framework, company policies and procedures to ensure compliance with international and local legislation, where applicable.</p> <p>A policy framework to standardise the creation, adoption and implementation of policies across the organisation is being developed. This includes a review of existing policies, gap analysis, creation and implementation of new policies.</p>

RISK	NATURE OF RISK	MANAGEMENT OF RISK
Operational Risk	<ul style="list-style-type: none"> ■ Disruptions in supply chains. ■ A shortage of supply in the employment market. ■ High turnover of technical and professional staff. ■ Disruption due to breakdown or dysfunctional equipment, machines and tools. 	<p>To mitigate these risks, TWI has policies and procedures to ensure business continuity without disruption. TWI staff who have responsibility for operational activities regularly review these risks to maintain the supply chain by engaging alternative suppliers, service providers and third parties. Training and succession planning are part of our risk mitigation framework.</p>
Financial Risks	<p>The volatility of the current economic environment, political unrest and the complexity of the regulatory environment create uncertainties and put pressure on activity levels, profitability and cash flow.</p>	<p>TWI Limited has financial and accounting systems that are designed to ensure accuracy and transparency. The Finance department creates detailed monthly financial reports showing performance against budget and forecast for Executive Board, and reports regularly to Council, Finance and General Purposes Committee, and Audit Committee who provide oversight of TWI Limited operations. This allows informed decisions and mitigating actions to be taken where appropriate. The Finance department carry out gap analysis, and also develop and implement new policies to strengthen existing controls.</p>

RISK	NATURE OF RISK	MANAGEMENT OF RISK
Fraud - Bribery and Corruption	<ul style="list-style-type: none"> ■ Risk of fraud and misrepresentation by customers, suppliers and third parties. ■ Risk of bribery and corruption while dealing with government officials, third parties, suppliers and service providers. 	<p>TWI Limited has a policy of zero tolerance towards fraud, bribery, corruption, misrepresentation and misconduct. The business has comprehensive policies in place that form part of employee contracts. Third party whistle blowing channels are established where employees, clients, Members and other third parties can report incidents of misconduct and noncompliance.</p>
Health – Safety - Environment	<p>TWI Limited’s work can be hazardous and requires appropriate controls.</p>	<p>TWI Limited is an accredited organization for ISO 9001, 14001 and 45001 standards to mitigate risks of health and safety, handling and storage of hazardous material and monitor of high-risk operational activities to prevent incidents.</p> <p>Monthly health and safety incident reports are presented to the directors and appropriate actions taken. All employees undergo training in Health and Safety on joining TWI.</p>
People and Culture Risks	<p>TWI Limited’s success is built on the quality of its people and their work. People risk is the risk that ensues if TWI fails to provide a supportive and collegiate culture.</p>	<p>The risk is mitigated through:</p> <ul style="list-style-type: none"> ■ effective recruitment ■ effective succession management ■ effective management and development programmes ■ effective leadership ■ promoting diversity and inclusion throughout the business ■ wellbeing policies and processes ■ appropriate remuneration and benefits

RISK	NATURE OF RISK	MANAGEMENT OF RISK
Information Management, IT and Security Risk	Data and information systems are at threat from unauthorised access, inappropriate use, disclosure, disruption to operations, modification, or accidental and/or deliberate destruction.	TWI Limited's Chief Security Officer has implemented a security framework that includes enhanced information security policies. This framework provides greater information security assurance to TWI Limited technology users and those third parties for whom we carry out sensitive work. TWI Limited has developed a set of policies and procedures along with robust mandatory training to create awareness for its management, staff and related parties. TWI Limited systems are accredited under Cyber Essentials Plus, this is tested and renewed annually.
Global Operations Risk	Consistent corporate governance management, policies and procedures required to ensure global harmonisation around legislation regulation and culture.	<p>Directors take responsibility for risk management within their respective operating segments. The management team of each is delegated to the appropriate managers who support the directors in management of operational risk.</p> <p>In our global operations, the local operations managers take responsibility for risk management within their respective operating entities.</p> <p>Actioned through consultation and engagement and regular review of the company risk register.</p>
Reputational Risk	Reputational risk is the risk of failure to meet customer, supplier and employee expectations as a result of any event, behaviour, action or inaction, either by TWI Limited itself, our employees or those with whom we are associated, that may cause stakeholders to form a negative view of TWI Limited.	Our policies ensure reputational risk matters are managed in a consistent manner and align with TWI Limited strategic priorities. Our legal and governance team the control and oversight standards to effectively manage reputational risk and are supported by procedures across our global businesses and functions.

In addition to the principal risks and uncertainties above, TWI Limited faces other risks that include but are not limited to: increased competition; failure to retain, or loss of, customer contracts; customer concentration; technology leadership; counterparty risk; risk of adverse valuation of operational and investment properties; changes in legislation or regulations relating to trading, taxation or accounting practice.





KEY PERFORMANCE INDICATORS

KEY PERFORMANCE INDICATORS

OUR KEY PERFORMANCE INDICATORS (KPIs) ARE SELECTED TO MONITOR BOTH FINANCIAL AND OPERATIONAL PERFORMANCE



DETAILED KPI'S ARE SET AROUND:

Health Safety and Environment	Reducing emissions, delivering the HS&E culture action plan, maintaining RoSPA Gold for TWI Ltd, having more than 95% of our Management completing the IOSH Managing Safely course
People and Culture	Having greater than 25% of women in leadership positions, improving engagement scores on the annual staff satisfaction survey, reducing the gender pay gap, implementing a mentor program and revising progression (career path) frameworks.
Governance and compliance	Delivery of the compliance framework.
Technology	Delivery of the technology roadmap.
Customer satisfaction	Increasing customer satisfaction and enhancing professional membership benefits.
Financial	Meeting targets related to turnover, profit, cash generation and rental returns.

These indicators provide a detailed focus on the key elements of the business and measure progress against the company's strategic objectives. A balanced score card is reviewed by the executive team on a periodic basis which is used to monitor and assess the achievement of these KPIs. This scorecard is used to determine actions and performance targets to ensure that the KPI's are achieved.



ENVIRONMENTAL, SOCIAL, GOVERNANCE

ENVIRONMENTAL, SOCIAL, GOVERNANCE

ENVIRONMENTAL

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

Annually TWI Limited reports on its greenhouse gas emissions and 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. In 2023 we have considered the company's approach to climate change and have continued to implement additional measures that contribute to the reduction of our impact on the environment.

TWI Limited 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 Limited 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 Limited 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.

EMISSIONS AND CARBON ENERGY

This is the fourth year of mandatory reporting under SECR. The Welding Institute have however reported energy and emissions now for several years and 2019 has been chosen as a base year. Between 2019 and 2023 there has been a reduction in gross emissions of 1,266.22 tonnes of CO₂e which accounts for a 25.4 % decrease. Emissions from natural gas have decreased year-on-year with a reduction of 292 tonnes of CO₂e from the 2019 base year. Whilst electricity consumption has been decreasing year-on-year from 2019 to 2022, there was an increase of 21% in 2023 when compared to 2022, however there has still been a reduction in consumption when compared to 2019 by 11%. Emissions from air travel are returning to pre-COVID-19 levels due to increased overseas projects, in FY2021 emissions had reduced by 96%. From 2021 to 2023 emissions have risen and are now 8.4% below 2019 levels.

Activities relating to travel include air, rail, company owned vehicles, employee-owned vehicles, hire cars and taxis on business use are included in the reporting.

QUANTIFICATION AND REPORTING METHODOLOGY

HM Government Environmental Reporting Guidelines: including streamlined energy and carbon reporting guidance (March 2021) 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 2023 version.

Fugitive emissions from refrigerants adopts the screening method in annex C of the guidance.

ORGANISATIONAL BOUNDARY

The financial boundary of the business has been used to determine the reporting boundary.

OPERATIONAL SCOPE

Measurements include mandatory scope 1, 2 and 3 emissions. Negligible estimates have been made with the collation of data. Optional scope 3 emissions have also been included in the reporting.

EXCLUSIONS

There are no data exclusions in this reporting period.

BASE YEAR

The base year is chosen as 2019. This year represents a typical year for the business operations against which changes can be monitored. The recalculation policy is to review the base year against current reported emissions for relevant changes which meet a significance threshold value of 5% of base year emissions. In this report we have included carbon reporting statistics for the current year, prior year and base year.

TARGET SETTING & RESPONSIBILITIES

The target is to reduce gross scope 1, 2 and 3 emissions in tonnes of CO₂e per £100,000 turnover and per FTE used by 2% per year against the chosen base year of 2019. The performance against target will be reviewed periodically.

INTENSITY MEASUREMENT

The reporting metrics chosen are gross scope 1, 2, and 3 emissions in tonnes of per £100,000 turnover and Full Time Equivalent (FTE) members of staff, as these best reflect business activities. The intensity measurement will be reported each year, with comparison made

against previous year's performance. The gross emissions per £100,000 reduced by over 31% and the emissions per FTE reduced by 19% compared with 2019.

CARBON OFFSETTING

Electricity purchased on a green contract from October 2022 has been included within the report.

ENERGY EFFICIENCY ACTIONS

As part of TWI's commitment to reducing its environmental impact, it announced in its 5-year strategy in 2021 for 2022-2026, the goals of reducing its carbon footprint by 25% by 2025 and being carbon neutral by 2035.

In the last quarter of 2023, the senior leadership team included into the corporate plan the goal to reduce carbon emissions by developing a 5 year plan for implementation from 2025.

The consumption of electricity still remains the most carbon intensive area for TWI, and accounts for around 50% of TWI's carbon footprint.

TWI switched to a zero carbon, 100% renewable electricity supply in October 2022, and this agreement was renewed in 2023, with electricity supplied from Hydro, Solar PV and Wind renewable sources.

In line with ESOS, energy audits were conducted at all of our four UK locations in 2023, providing suggested measures and actions that will help reduce TWI's energy usage.

The 'Hybrid Working Policy' which gives staff the flexibility to work from home remains in place, helping to reduce the impact of commuting. Staff also continue to use video conferencing technologies, which reduces the need for travel between regional offices, as well as to customer sites.

In addition to this, at the beginning of quarter 2 in 2023, TWI introduced a new electric car salary sacrifice scheme for staff. Allowing more staff the opportunity to commute to work while reducing their emissions.

2023 CARBON REPORTING STATISTICS

SCOPE 1 CO2E (TONNES)		2023	2022	2019
Natural gas consumption		508.89	513.91	800.48
Company cars (essential car users)		7.91	37.56	21.38
Pool cars		1.91	1.41	109.18
LPG		1.47	1.07	0.63
Refrigeration and air condition equipment		-	339.08	48.65
Site maintenance – red diesel		0.21	0.36	1.30
Total Scope 1		520.40	893.39	981.62
SCOPE 2 CO2E (TONNES)			2022	2019
Electricity		1,866.63	1,381.92	2,583.90
Total Scope 2		1,866	1,381.92	2,583.90
SCOPE 3 CO2E (TONNES)			2022	2019
Electricity T & D losses		161.49	126.41	219.37
Hire vehicles for business use		91.63	179.56	97.68
Taxi and chauffeur		8.43	7.38	19.71
Personal lease cars - business use		2.69	5.14	9.49
Employee owned cars – business use		89.97	123.42	N/A
Domestic and international flights		938.66	416.15	1,024.72
Rail travel		2.88	3.70	29.79
Potable water		1.31	1.73	4.65
Waste water		0.06	0.03	0.07
Waste		27.60	9.53	6.96
Total Scope 3 CO2e (tonnes)		1,324.72	873.05	1,412.44
TOTAL CO2E SCOPE 1, 2, 3 GROSS EMISSIONS (TONNES)		3,711.74	3,148.38	4,977.96
Intensity Metric Measure (£100,000 turnover)		718	683	659
Intensity Metric Measure (FTE)		544	564	590
Intensity Metric (gross emissions) tCO2e/£100,000 turnover		5.17	4.61	8.44
Intensity Metric (gross emissions) tCO2e/FTE		6.82	5.58	7.55
ENERGY CONSUMPTION (EXCLUSIONS)		2023	2022	2019
KWh		16,566,227	19,683,388	19,927,491
INTENSITY METRIC (NET EMISSIONS)		2023	2022	2019
Scope 1, 2, 3 emissions (gross) tCO2e		3,730.93	3,148.38	4,975.73
Carbon Offsets		1,866.63	473.01	2,467.45
Scope 1, 2, 3 emissions (net) tCO2e		1,845.11	2,675.37	2,508.28
Intensity Metric (net emissions) tCO2e/£100,000 turnover		2.57	3.92	3.81
Intensity Metric (net emissions) tCO2e/FTE		3.39	4.74	4.26

SOCIAL RESPONSIBILITY

Social aspects are a fundamental part of TWI Limited principles, and underpin our activities across all jurisdictions where we operate. Our approach forms the basis of our decisions by focussing on business ethics and compliance, people and culture and community involvement.

We aim to foster openness, sustainability, and respect. We value everyone and strive to work as one team. We invest significantly in our people and their working environment by creating and maintaining a safe and healthy working environment and ensuring their ongoing professional and personal development.

We strive to create workplaces in which there is mutual trust and respect and where every person feels responsible for the performance and reputation of our group. We respect one another and each other's individual rights and customs. We work towards achieving a diverse workforce, recruiting, employing and promoting people only on the basis of objective criteria and the qualifications and abilities needed for the job to be performed.

We encourage our people to give something back to their local communities, whether it is time, effort or a financial contribution. It's

important that we play our part to build a better world for current and future generations.

TWI Limited has supported a number of charities during 2023 and provided donations to: the National Autistic Society, Parkinsons UK, The Kite Trust and Crisis as well as supporting a local rugby team and sponsoring staff partaking in Movember.

Our support is delivered through initiatives that support local communities and those in need. We welcome initiatives from all sources but especially those from our own people.

On a discretionary basis, the Company operates a scheme to match charitable donations raised by employees up to a specified limit. Charitable donations related to this programme were similar to the prior year. In addition, the Group made donations to local foodbanks and health-related charities local to its sites specifically to support local communities facing hardship. As a result, total charitable contributions made in 2023 were approximately £2,750 (2022: £3,000). No political donations were made during the period (2022: £nil).

CORPORATE GOVERNANCE

Corporate governance is important in delivering our long-term success and TWI Limited 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 Limited, 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 Limited is governed by the following Boards and Committees, which met regularly throughout 2023:

Executive Board	Aamir Khalid, Chair (12 meetings)
Council	Humbert Mozzi, Chair (6 meetings)
Health Safety and Environment Committee	Gareth Hopkin, Chair (2 meetings)
Audit Committee	David Wrathmall, Chair (1 meeting) Annelyse Fournier, Chair, Chair (7 meetings)
Research Board	Simon Webster, Chair (3 meetings)
Finance and General Purposes Committee	Humbert Mozzi, Chair (5 meetings)
Professional Board	Claire Kimpton, Vice-Chair (2 meetings)
Remuneration Committee	Humbert Mozzi, Chair (4 meetings)
Nominations Committee	Humbert Mozzi, Chair (2 meetings) Claire Kimpton, Chair (1 meeting)

The review of the business and its future development in this Strategic Report has been prepared solely to provide additional information to TWI Limited’s shareholder to assess the business strategies and the potential for these strategies to succeed. It should not be relied on by any other party for any other purpose. The review contains forward looking statements which are made by the Directors in good faith based on information available to them up to the time of the approval of these reports and should be treated with caution due to inherent uncertainties associated with such statements.

BOARD DECISION MAKING

BOARD DECISION MAKING

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. 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 makes a positive and important contribution to our continuing success.

Our Diversity and Inclusion 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 assist us in achieving our goal of developing the next generation of experts to address future industry challenges. Our employees need to reflect the society we seek to serve, they provide the diversity and inclusion required to find innovative solutions for our Members and 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.

We operate in a business where the safety and wellbeing of all our stakeholders is pivotal in our business decisions. That is why we have a dedicated department to oversee the health and safety of all our staff and the projects that are undertaken. However we know that the safety of our staff is not just the physical wellbeing, but also incorporates mental wellbeing. With this in mind we have trained a team of mental health first aiders to support our staff, we have an on-site Occupational Health Advisor, a well-being committee and an employee assist programme.





TWI LTD SPONSORS THE TIPPER GROUP, A STAFF LED DIVERSITY AND INCLUSION COMMITTEE, WHICH HOLDS EVENTS AND NETWORKING OPPORTUNITIES TO RAISE AWARENESS OF DIVERSITY AND INCLUSION WITHIN OUR GLOBAL COMPANY AND WITHIN OUR INDUSTRIAL PARTNERS' NETWORK.

Attracting and retaining women with careers in engineering is a key driver in our 5 year strategy. We have a committed to closing the gender pay gap from 20.6% to less than 10% and to have more than 25% of female representation in leadership roles by 2026. In 2019 we launched our Women in Leadership programme to encourage more women into management positions and this has led to the implementation of a mentor programme in 2023.

TWI 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 online resource.

More recently we have become aware of how important communications are to the engagement of our people. We have an active staff consultation committee to ensure that all staff are given a voice. The business consults regularly with the committee to ensure any staff feedback is considered and factored into decision making.

The Executive Team actively seeks ways to engage the workforce in strategy and the direction of the business, holding monthly leadership brunches and Town Hall meetings. We believe that our people play a crucial role in shaping the world around us, interacting with our Members to find sustainable solutions to the biggest engineering challenges our world faces.



CUSTOMER ENGAGEMENT

TWI Limited 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 resources, 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.





THE EXECUTIVE BOARD

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 twice 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 the Finance and General Purposes Committee;
- Executing the strategy once agreed by the Council of The Welding Institute; and
- Providing assurance to the Council of the Welding Institute in relation to overall performance and risk management.



DAVID WRATHMALL

INTERIM CHIEF EXECUTIVE

David became the Interim Chief Executive of TWI Limited in April 2024. David is a graduate of University College London and a Chartered Management Accountant who has held c-level positions with broad operational remits over the last 16 years. He has worked across Europe and emerging markets, including with internationally listed companies in digital technologies, telecoms, financial services, and the research and education sectors. David has recent experience of delivering cross-border organisational restructuring programmes, including mergers and corporate restructuring, and served as Director on the main board of The Welding Institute from 2020 to 2023, whilst also chairing its Audit Committee.



JOHN HILL

DIRECTOR OF TECHNOLOGY

John joined TWI in 2022, having spent the first decade of his forty-year career in manufacturing. He is a Chartered Production Engineer and moved into manufacturing research, training and consulting at PERA, where he spent 28 years. He rose to CEO and finally Chair. In 2016, he moved into Whitehall to better influence the government's industrial strategy and spent time as a Director in the Department for Business, Energy and Industrial Strategy (BIS) and the Department for International Trade (DIT).

In June 2024, John was awarded an OBE for his services to SME's, to the research institute sectors, to local economic development and to higher education.



LEONIE STEWART

DIRECTOR OF FINANCE

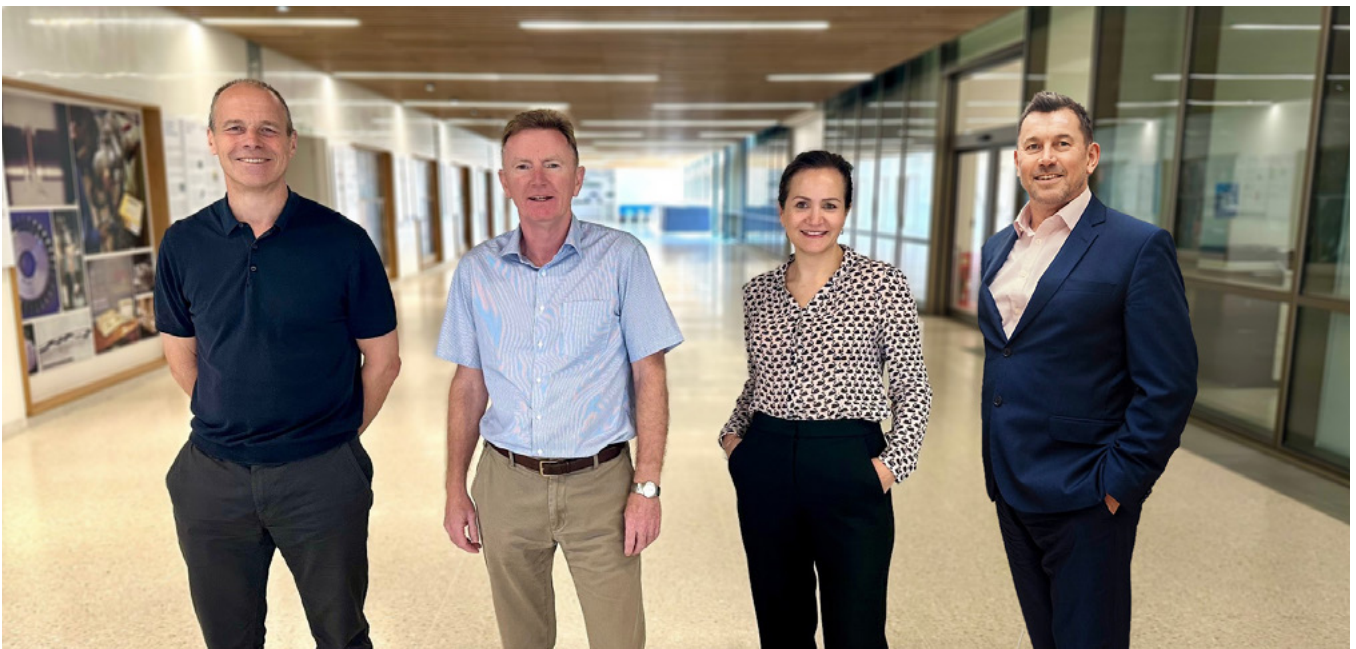
Leonie joined TWI in 2019 as Business Transformation Project Manager, where she helped to implement a programme of change to prepare the business for future growth. She has spent 25 years working in finance and operations, half of this time at Global FD and CFO level. She has worked in the USA, Middle 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.



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.





DIRECTORS REPORT

DIRECTORS REPORT

The directors present their report and the financial statements for the year ended 31 December 2023.

Accompanying the Report of the Directors is the Strategic Report and related Section 172 disclosures which include the details of risk management.

REVIEW OF THE BUSINESS AND ITS FUTURE DEVELOPMENT

A review of the business and its future development is set out in the Strategic report, incorporating the statement of the Chief Executive and Financial Report.

RESULTS AND DIVIDENDS

The results of the Company are set out in detail on page 69.

Due to the operating performance of the Company and utilisation of existing tax assets, no distribution under the Deed of Covenant is proposed for the year ended 31 December 2023.

CAPITAL STRUCTURE

Details of the Company's issued share capital are set out in Note 25 to the Financial Statements.

RESEARCH AND DEVELOPMENT

TWI Limited provides research and development consultancy to its members, and has an inherent and continuing commitment to high levels of research and development, primarily on behalf of its members but also, on its own behalf as detailed in the Spotlight on our projects on pages 15-18.

STATEMENT ON ENGAGEMENT WITH EMPLOYEES

Employees have been provided with information on matters of concern to them through the Company's intranet; revised policies and updates from the People and Culture Team; and formal and informal meetings and other communications with line managers and Senior Managers. Employees have various forms of engagement with Leadership, including platforms such as the webinars, staff engagement committee.

EMPLOYMENT POLICIES

The Company seeks to ensure that every employee, without exception, is treated equally and fairly and that all employees are aware of their responsibilities. The Company is responsive to the needs of its employees and provides full support to our disabled colleagues. This includes ensuring that robust and reasonable adjustments are made to their working environments in order to ensure that we continue to retain and attract the best talent.

STATEMENT ON ENGAGEMENT WITH CUSTOMERS, SUPPLIERS AND OTHERS

Engagement with customers, suppliers and other stakeholder in the business is an important factor in ensuring the successful implementation of the Company's strategy. For information on how the Directors have had regard to the need to foster these business relationships, see the Section 172 statement.

OVERSEAS OPERATIONS

The company operates on an international level and this is undertaken through its subsidiaries located outside of the United Kingdom. Details of our international operations are disclosed in note 32.

DIRECTORS INDEMNITIES

The Directors have the benefit of an indemnity provision contained in the Articles. The Directors have also been granted a qualifying third party indemnity provision which was in force throughout the financial year and remains in force. In addition, throughout the year the Company purchased and maintained Directors' and Officers' liability insurance in respect of itself and for its Directors and Officers.

DIRECTORS

The directors who served during the year were:

Aamir Khalid	(Resigned 1 May 2024)
John Hill	
Leonie Stewart	
Paul Woollin	
Shahid Aslam	(Resigned 21 May 2024)
Shervin Maleki	(Resigned 12 May 2023)
Tat-Hean Gan	(Resigned 29 July 2024)
Subsequent to the year-end David Wrathmall was appointed as a Director of the Company on 29 April 2024	

POST BALANCE SHEET EVENTS

There are no post balance sheet events to disclose.

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 United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards and applicable law, 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 and 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.

The directors are responsible for the maintenance and integrity of the corporate and financial information included on the company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

GOING CONCERN STATEMENT

The Directors' have assessed the continued appropriateness of preparing these financial statements on the going concern basis.

The disclosure within accounting policy 2.2 sets out the matters considered by the Directors' in performing this assessment.

Based on this assessment the Directors' remain satisfied that the Company has sufficient

resources to meet its ongoing obligations as and when they fall due and that it is appropriate for these financial statements to be prepared on the going concern basis..

AUDITOR

Grant Thornton UK LLP are willing to continue in office and a resolution to reappoint the auditors will be made at the forthcoming Council Meeting.

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 each director is aware, there is no relevant audit information of which the company's auditor is unaware, and
- The directors 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 auditor is aware of that information.

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

Signed by:

David Wrathmall

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David Wrathmall, Interim Chief Executive

Date: 25-Sep-24

INDEPENDENT AUDITORS REPORT

INDEPENDENT AUDITORS REPORT

OPINION

We have audited the financial statements of TWI Limited (the 'company') for the year ended 31 December 2023, which comprise the statement of comprehensive income, the balance sheet, the statement of changes in equity, the statement of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, 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 2023 and of its profit for the year then ended;
- the financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- the financial statements 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 'Auditor's 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 UK, including the FRC'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

We are responsible for concluding on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify the auditor's opinion. Our conclusions are based on the audit evidence obtained up to the date of our report. However, future events or conditions may cause the company to cease to continue as a going concern.

In our evaluation of the directors' conclusions, we considered the inherent risks associated with the company's business model including effects arising from macro-economic uncertainties such as impacts of inflation and interest rates on the UK commercial property market, wage inflation and investment in research, we assessed and challenged the reasonableness of estimates made by the directors and the related disclosures and analysed how those risks might affect the company's financial resources or ability to continue operations over the going concern period.

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 other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report. 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.

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 themselves. 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.

OPINIONS 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.

MATTER ON WHICH WE ARE REQUIRED TO REPORT UNDER THE COMPANIES ACT 2006

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.

MATTERS ON WHICH WE ARE REQUIRED TO REPORT BY EXCEPTION

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 pages 60 and 61, 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.

AUDITOR'S 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 auditor's 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. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below:


- We obtained an understanding of the legal and regulatory frameworks applicable the group and the industry in which it operates. We determined that the following laws and regulations were most significant; UK GAPP (FRS 102), Companies Act 2006 and the relevant tax compliance regulations that may have an effect on the determination of the amounts and disclosures in the financial statements, including laws and regulations relating to employment matters, health and safety, data security and protection.
- We obtained an understanding of how the Company is complying with those legal and regulatory requirements by making inquiries of management. We corroborated our inquiries through our examination of board minutes and risk register.
- We enquired of management, whether they were aware of any instances of non-compliance with laws and regulations or whether they had any knowledge of actual, suspected or alleged fraud. The Company's management has not noted any matters of non-compliance with laws and regulations or fraud were communicated with the audit team. We corroborated this through procedures such as unusual journals testing, assessing controls and assessing the relevant governance procedures.

- These audit procedures were designed to provide reasonable assurance that the financial statements were free from fraud or error. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error and detecting irregularities that result from fraud is inherently more difficult than detecting those that result from error, as fraud may involve collusion, deliberate concealment, forgery or intentional misrepresentations. Also, the further removed non-compliance with laws and regulations is from events and transactions reflected in the financial statements, the less likely we would become aware of it;
- It is the engagement partner's assessment that the engagement team collectively had the appropriate competence and capabilities to identify and recognise non-compliance with laws and regulations. Assessment of the appropriateness of the collective capabilities of the engagement team including the consideration of the engagement team's understanding of the experience of, and practical experience with engagements of a similar nature and complexity including appropriate training; and
- We communicated relevant laws and regulations and potential fraud risks to all engagement team members and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

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 auditor's report.

USE OF OUR REPORT

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 auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

DocuSigned by:

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 25-Sep-24

Paul Brown
 Senior Statutory Auditor
 for and on behalf of Grant Thornton UK LLP
 Statutory Auditor, Chartered Accountants
 Cambridge



A hand holding a black pen is positioned over a laptop keyboard. The background is a blurred office setting with multiple laptops. A large, dark blue diagonal shape overlays the right side of the image, containing the title text.

STATEMENT OF COMPREHENSIVE INCOME

REGISTERED NUMBER: 03859442
STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED 31 DECEMBER 2023

		2023	2022
	Note	£000	£000
Turnover	5	68,823	62,895
Cost of sales		(40,308)	(39,756)
GROSS PROFIT		28,515	23,139
Administrative expenses		(21,841)	(20,260)
Other operating income	6	3,145	3,747
Other operating charges		164	417
OPERATING PROFIT	8	9,983	7,043
Unrealised (loss)/gain on revaluation of investment property	7	(2,022)	(6,733)
Interest receivable and similar items	12	1,229	590
Interest payable and similar expenses	12	(2,242)	(2,437)
Other finance costs	13	(754)	(81)
PROFIT/(LOSS) BEFORE TAX		6,194	(1,618)
Tax on profit	14	(1,672)	319
PROFIT/(LOSS) FOR THE FINANCIAL YEAR		4,522	(1,299)
OTHER COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR			
Unrealised deficit on revaluation of tangible fixed assets		(1,146)	(7,279)
Deferred tax on revaluation of tangible fixed assets		287	1,820
Actuarial gains/(losses) on defined benefit pension scheme		181	(10,465)
Movement of deferred tax relating to pension surplus		(45)	2,616
TOTAL OTHER COMPREHENSIVE LOSS FOR THE YEAR		(723)	(13,308)
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR		3,799	(14,607)

There were no recognised gains and losses for 2023 or 2022 other than those included in the statement of comprehensive income.

The notes on pages 76 to 100 form part of these financial statements.

BALANCE SHEET

REGISTERED NUMBER: 03859442
BALANCE SHEET
AS AT 31 DECEMBER 2023

		2023	2022
	Note	£000	£000
FIXED ASSETS			
Tangible assets	15	108,475	107,290
Investment property	16	45,209	45,300
Total fixed assets		153,684	152,590
CURRENT ASSETS			
Debtors: amounts falling due within more than one year	17	5,657	6,033
Debtors: amounts falling due within one year	17	40,165	37,221
Cash at bank and in hand	18	29,567	48,729
Total Current Assets		75,389	91,983
Creditors: amounts falling due within one year	19	(46,352)	(51,047)
NET CURRENT ASSETS		29,037	40,936
TOTAL ASSETS LESS CURRENT LIABILITIES		182,721	193,526
Creditors: amounts falling due after more than one year	20	(51,492)	(66,464)
PROVISIONS FOR LIABILITIES			
Deferred tax	23	(19,068)	(19,284)
Onerous contracts provision	21	(765)	(791)
Pension liability	28	(15,656)	(15,046)
NET ASSETS		95,740	91,941
CAPITAL AND RESERVES			
Share premium account	24	10,307	10,307
Revaluation reserve	24	58,811	59,670
Profit and loss account	24	26,622	21,964
TOTAL SHAREHOLDERS FUNDS		95,740	91,941

The financial statements were approved and authorised for issue by the board and were signed on its behalf on 25-Sep-24

Signed by:

David Wrathmall

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David Wrathmall

Director

The notes on pages 76 to 100 form part of these financial statements.

STATEMENT OF CHANGES IN EQUITY

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2023

	Share premium account	Revaluation reserve	Profit and loss account	Total equity
	£000	£000	£000	£000
At 1 January 2023	10,307	59,670	21,964	91,941
COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR				
Profit for the year	-	-	4,522	4,522
Actuarial gains on pension scheme (net of deferred tax)	-	-	136	136
Deficit on revaluation of freehold property	-	(1,146)	-	(1,146)
Deferred tax on revaluation	-	287	-	287
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR	-	(859)	4,658	3,799
AT 31 DECEMBER 2023	10,307	58,811	26,622	95,740

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2022

	Share premium account	Revaluation reserve	Profit and loss account	Total equity
	£000	£000	£000	£000
At 1 January 2022	10,307	65,129	31,112	106,548
COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR				
Loss for the year	-	-	(1,299)	(1,299)
Actuarial loss on pension scheme (net of deferred tax)	-	-	(7,849)	(7,849)
Defecit on revaluation of freehold property	-	(7,279)	-	(7,279)
Deferred tax on revaluation	-	1,820	-	1,820
TOTAL COMPREHENSIVE LOSS FOR THE YEAR	-	(5,459)	(9,148)	(14,607)
AT 31 DECEMBER 2022	10,307	59,670	21,964	91,941

The notes on pages 76 to 100 form part of these financial statements.



STATEMENT OF CASHFLOWS

**STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 31 DECEMBER 2023**

	2023	2022
	£000	£000
CASH FLOWS FROM OPERATING ACTIVITIES		
Profit/(loss) for the financial year	4,522	(1,299)
ADJUSTMENTS FOR:		
Depreciation of tangible assets	4,030	4,703
Loss on disposal of tangible fixed asset	32	-
Interest receivable and similar items	(1,229)	(590)
Interest payable and similar expenses	2,242	2,437
Taxation credit/(charge)	1,672	(319)
Increase in debtors	(319)	(2,423)
(Increase)/Decrease in amounts owed by group undertaking	(2,624)	12,097
Decrease in creditors	(3,483)	(19,407)
(Decrease)/increase in amounts owed to group undertakings	(19,038)	49,752
Decrease in provisions	(26)	(378)
Net interest on defined benefit liability	754	81
Net fair value losses recognised in profit and loss	2,022	6,733
NET CASH (OUTFLOW)/INFLOW FROM OPERATING ACTIVITIES	(11,445)	51,387
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of tangible fixed assets	(6,393)	(8,995)
Purchase of investment property additions	(1,931)	(4,434)
NET CASH OUTFLOW FROM INVESTING ACTIVITIES	(8,324)	(13,429)
CASH FLOWS FROM FINANCING ACTIVITIES		
Interest receivable	1,229	590
Interest paid	(244)	(269)
Repayment of finance leases	(378)	(464)
NET CASH INFLOW/(OUTFLOW) FROM FINANCING ACTIVITIES	607	(143)
NET (DECREASE)/INCREASE IN CASH AND CASH EQUIVALENTS	(19,162)	37,815
Cash and cash equivalents at beginning of year	48,729	10,914
CASH AND CASH EQUIVALENTS AT THE END OF YEAR	29,567	48,729
CASH AND CASH EQUIVALENTS AT THE END OF YEAR COMPRISE:		
Cash at bank and in hand	26,567	48,729
	29,567	48,729

NOTES TO THE FINANCIAL STATEMENTS

NOTES TO THE FINANCIAL STATEMENTS

1. GENERAL INFORMATION

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

The principal activity of TWI Limited is independent research and technology, with expertise in solving problems in manufacturing, fabrication and whole-life integrity management technologies.

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 except for the modification to a fair value basis for long leasehold property as specified in the following accounting policies. The financial statements have been prepared in accordance with Financial Reporting Standard 102, the Financial Reporting Standard applicable in the UK and the Republic of Ireland (FRS102) and the Companies Act 2006.

The company's financial statements are presented in Sterling and all values are rounded to the nearest pound (£'000) thousands except

when otherwise stated.

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 4).

The following principal accounting policies have been applied:

2.2 GOING CONCERN

The Directors' have carefully considered the ongoing appropriateness of the going concern basis in preparing these financial statements. In making their assessment the Directors' have:

- Reviewed forecasts prepared by management and assessed the ability of the Company to meet its ongoing obligations.
- Reviewed stress test scenarios considering the impact of reasonable possible alternatives on the Company's projections, including an assessment of the potential impact of broader economic and geopolitical events on the Company.
- Considered the ability of the Company to continue to fund its defined benefit pension obligations.

In reviewing the forecasts prepared by management the Directors' have considered the forecast cash flows of the Company for a period of at least twelve months from the date of approval of these financial statements. The Directors' have also reviewed the cash flow forecasts of the Group as a whole and considered the impact that the groups' total forecast cash flows will have on the ability of the Company to continue as a going concern.

Having considered the above matters, the directors are satisfied that the Company has sufficient financial resources to meet its ongoing obligations as and when they fall due for the foreseeable future (being a period of at least twelve months from the date of approval of these financial statements).

Accordingly, the Directors' have concluded that it is appropriate for these financial statements to be prepared on a going concern basis.

2.3 TURNOVER

Turnover is the delivery and the provision of services. This can take the form of provision of skilled labour in support of research and development consultancy (including provision of technical advice); the training and upliftment of persons in accredited courses; provision of cutting edge laboratory space; and subscription fees for membership of The Welding Institute. The company recognises income at the fair value of the consideration received or receivable when the significant risks and rewards have been transferred, the amount of income can be measured reliably and it is probable that future economic benefits will flow to the company. It 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 revenue is recognised:

INCOME RECOGNITION

RESEARCH AND DEVELOPMENT CONSULTANCY

Turnover from the provision of research and development consultancy 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, with consideration to the overall cost to deliver the project to the client with an adjustment if the project is forecast to overrun. Estimates of turnover or extent of progress toward completion are revised if circumstances change. Any resulting increases or decreases in estimated turnover 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. Estimated total hours are calculated for each project and progress to completion is based on detailed timesheets submitted.

Where the estimated costs to deliver a project exceed the amount of turnover the company will receive for the deliverables of the project, the company recognises an onerous contract provision when these circumstances are identified. This is recognised through the statement of comprehensive income at the date that the circumstances are identified by the company. An annual review of all such projects is reviewed and the provision is accordingly adjusted as required.

In the case of both time and materials and fixed-price contracts, the customer pays for the value of services provided based on an invoicing and payment schedule. If the services rendered by the company at the reporting date exceed the payments received to date, a contract asset is recognised (within trade receivables if the sales invoice has been raised or amounts recoverable on contracts if the services rendered have not been invoiced). If the payments exceed the services rendered, a contract liability is recognised as a payment on account. Consideration is payable when invoiced based on contractual payment terms.

TRAINING AND UPLIFTMENT SERVICES

Turnover from training and upliftment services is recognised when the course is delivered to the candidate. Where the course is yet to be delivered, any amounts received are deferred and recognised as a liability on the balance sheet.

PROVISION OF CUTTING EDGE LABORATORY SPACES

Turnover from the provision of laboratory space is recognised over the rental period. Any amounts received in advance are deferred and recognised on a straight line basis over the rental period.

The aggregate costs of lease incentives are recognized as a reduction to the income recognized over the lease term on a straight-line basis.

SUBSCRIPTION INCOME

Subscription income for membership services is recognised on a straight-line basis over the period of membership.

2.4 GOVERNMENT GRANTS

Grants are accounted under the accruals model

in accordance with FRS 102.

Where the grant is drawn down based on expense submissions provided by the company and subject to approval by the funding body, amounts received are recognised as income at the point of approval as this is the point at which the amount of income can be measured reliably and it is probable that future economic benefits will flow to the Company. These amounts include costs incurred and a mark-up in line with the contract.

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 that are aligned to our research and development consultancy services are recognised as income in the same period as the related expenditure.

The deferred element of grants is included in creditors as deferred income.

2.5 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.

2.6 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 profit or loss 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

The company operates 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.

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 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:

- the increase in net pension benefit liability arising from employee service during the period; and
- 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'.

2.7 HOLIDAY PAY ACCRUAL

A liability is recognised to the extent of any unused holiday pay entitlement which has accrued at the balance sheet date and carried forward to future periods. This is measured at the undiscounted salary cost of the future holiday entitlement so accrued at the balance sheet date.

2.8. CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise cash at bank and in hand and on demand deposits, together with short term, liquid investments that are readily convertible to a known amount of cash and that are subject to a minimal risk of changes in value.

2.9. LEASES

LEASED ASSETS: LESSEE

Where assets are financed by leasing agreements that give rights approximating to ownership (finance leases), the assets are treated as if they had been purchased outright. The amount capitalised is the present value of the minimum lease payments payable over the term of the lease. The corresponding leasing commitments are shown as amounts payable to the lessor. Depreciation on the relevant assets is charged to profit or loss over the shorter of estimated useful economic life and the term of the lease.

Finance lease payments are analysed between capital and interest components so that the interest element of the payment is charged to profit or loss over the term of the lease and is calculated so that it represents a constant proportion of the balance of capital repayments outstanding. The capital part reduces the amounts payable to the lessor.

All other leases are treated as operating leases. Their annual rentals are charged to profit or loss on a straight-line basis over the term of the lease.

LEASED ASSETS: LESSOR

Where the Company acts as lessor, it determines at lease inception whether each lease is a finance lease or an operating lease. To classify each lease, the Company makes an overall assessment of whether the lease transfers substantially all of the risks and rewards incident to ownership of the underlying assets. If this is the case, then the lease is treated as a finance lease; if not, then the lease is treated as an operating lease. The Company recognises lease payments received under operating leases as income on a straight-line basis over the lease term. The aggregate costs of lease incentives are recognized as a reduction to the income recognized over the lease term on a straight-line basis.

2.10 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.

Deferred tax balances are not recognised in respect of permanent differences. Deferred tax is determined using Deferred tax is determined using rates and laws that have been enacted or substantively enacted by the Balance Sheet date.

2.11 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.

2.12 RESEARCH AND DEVELOPMENT

Research and development expenditure is expensed in the year in which it is incurred. Any tax credit receivable under the large company Research and Development tax scheme is recognised on an accruals basis and is included as operating income.

2.13 TANGIBLE ASSETS AND DEPRECIATION

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

Long-term leasehold property	2% per annum
Short-term leasehold property	Over the period of the lease
Plant & Machinery	10% or 20% per annum
Fixtures, Fittings and Computer Equipment	10% or 20% per annum

amount exceeds the recoverable amount.

Long-term leasehold properties are held under a 125-year lease from the parent company, The Welding Institute, with a peppercorn rent payable. These are carried at fair value at the date of the revaluation less subsequent accumulated impairment losses and depreciation. Fair values are determined from market-based evidence normally undertaken by professionally qualified valuers. Depreciation is charged so as to allocate the cost or value of assets less their residual value over their estimated useful lives, using the straight-line method.

Depreciation is provided on the following basis:

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.

2.14 REVALUATION OF TANGIBLE FIXED ASSETS

Individual leasehold properties are carried at fair value at the date of the revaluation less any subsequent accumulated depreciation and 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 other 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.

2.15 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 the statement of comprehensive income.

2.16 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.

2.17 FINANCIAL INSTRUMENTS

The Company has chosen to adopt Sections 11 and 12 of FRS 102 in respect of financial instruments. All financial assets and liabilities are initially measured at transaction price (including transaction costs), except for those financial assets classified as at fair value through profit or loss, which are initially measured at fair value (normally the transaction price excluding transaction costs), unless the arrangement constitutes a financing transaction. If an arrangement constitutes a financing transaction, the financial asset or financial liability is measured at the present value of the future payments discounted at a market rate of interest for a similar debt instrument.

Financial assets which qualify as basic financial

Financial assets are de-recognised only when (a) the contractual rights to the cash flows from the financial asset expire or are settled, (b) the company transfers substantially all of the risks and rewards of ownership or control of the financial asset, or (c) the company, despite having retained some, but not all, significant risks and rewards of ownership, has transferred control of the asset to another party.

details of collateral, loan defaults or breaches, details of hedges, hedging fair value changes recognised in profit or loss and in other comprehensive income.

The financial statements of the company are consolidated in the financial statements of The Welding Institute. These consolidated financial statements are available from its registered office, Bevan Braithwaite Granta Park, Great Abington, Cambridge, CB21 6AL.

2.19 FOREIGN CURRENCY TRANSACTIONS

In preparing these financial statements transactions in currencies other than the functional currency are recognised at the spot rate at the date of the transaction, or at an average rate where this rate approximates the actual rate at the date of the transaction.

At the end of each reporting period monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date.

Non-monetary items that are measured in terms of historical cost are translated using the exchange rate at the date of the transaction.

Non-monetary items measured at fair value are translated using the exchange rate when fair value was determined.

Exchange differences are recognised in profit or loss in the period in which they arise.

3.0 REDUCED DISCLOSURES

The company is a qualifying entity for the purposes of FRS 102, being a member of the group where the parent of that group prepares publicly available consolidated financial statements, including this company, which are intended to give a true and fair view of assets, liabilities, financial position and profit or loss of the group. The company has therefore taken advantage of exemptions from the following disclosure requirements:

- Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instrument Issues': Interest income/expense and net gains/losses for financial instruments not measured at fair value; basis of determining fair values;

4. JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

The preparation of the financial statements requires the application of certain estimates and judgements. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The material areas of either estimation or judgement are set out below.

MATERIAL JUDGEMENTS

CLASSIFICATION OF PROPERTY

The Company owns a portfolio of properties. Certain of these properties are held by the Company for their own operational use and, accordingly, are classified as long leasehold land and buildings in accordance with Section 17 of FRS 102. The Company also manages a portfolio of investment properties which are classified as investment properties in accordance with Section 16 of FRS 102.

The Directors' appointed third party valuers to carry out a valuation of the Company's property portfolio as at the 31 December 2023. In respect of the Company's main site at Granta Park, Cambridge this was valued by Bidwells. In determining the fair value of the properties at Granta park the valuer carried out an individual assessment of each of the individual properties at the site. In addition to this the valuer also considered the fair value of the site as a whole on a "stand back and look" basis to assess the value of the site as a single lot. In considering the value of the site as a single lot the valuers noted that the site benefits from an approved outline planning application for the northern part of the site and that this increases the valuation of the site such that the value of the site as a whole is £11.6m greater than the cumulative value of each of the individual properties. The valuers have determined that the combined value of the long leasehold properties and investment properties at Granta Park is assessed to be £128.3m.

In recognising this £11.6m valuation increment in the Company's financial statements the Directors' have noted that this value is attributed to the site as a whole and have therefore allocated this value based on the square footage of the total site. Accordingly £8.9m of this valuation uplift as been attributed to the operational property and £2.7m to the investment property.

Had reasonable alternative assumptions concerning the allocation of this valuation uplift been made the valuation of the Company's long leasehold property and investment property may differ to the amounts recognised in these financial statements. However any change in these amounts would not have an impact on the total valuation of the combined value of the Company's long leasehold and investment property valuation and would have £nil overall impact on the Group's total comprehensive income for the year, net assets or reserves. It is however noted that any change in assumption would result in a difference in the value of unrealised losses recognised in profit or loss with a compensating difference in other comprehensive income.

4. JUDGEMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY (CONT.)

Key sources of estimation and uncertainty made in applying the company's accounting policies:

LIABILITIES ON DEFINED BENEFIT PENSION SCHEME	
The actuaries provide a summary of the actuarial assumptions proposed based on FRS 102 requirements and these are reviewed and, where appropriate, challenged by management.	Key estimates are the rate of future salary increases, the discount rate applied, the rate of inflation and the determination of past service costs and associated obligation. A key management judgement relates to the accounting treatment applied to the voluntary pension contribution paid by The Welding Institute during the previous year and how the impacts of this are presented in the Company's financial statements.
INVESTMENT PROPERTY VALUATION	
Fair values are prepared by recognised external valuers and reviewed and challenged by management.	Key estimates include discount rates and other future market conditions.
CONTRACT INCOME	
Income on certain projects is recognised on a percentage completion basis.	Key estimates are the estimated stage of completion which is based on the proportion of costs incurred compared to total expected costs to completion, and the identification of any potential project overruns.
PROVISIONS FOR TRADE AND GROUP DEBTS	
Provisions are made for any amounts considered to be irrecoverable.	Factors considered are failure to meet payment terms and known market conditions.
DEFERRED TAX	
Deferred tax assets and liabilities are calculated based on expected timings and tax rates of reversals of timing differences.	Key estimates are the ability to meet the conditions for the reversal of the timing differences, the timing of the reversal and the tax rates at the time of reversal.
ONEROUS CONTRACTS	
A provision for onerous contracts are recognized where the estimated costs to completion will exceed the expected turnover received from the client on a fixed-priced project.	Key estimates and judgments are made on the costs and efforts in order to meet the deliverables as per the agreed customer contract. Considerations such as technological challenges and testing failures are considered.

5. TURNOVER

An analysis of turnover by class of business is as follows:

TURNOVER BY CLASS OF BUSINESS	2023	2022
	£000	£000
Membership subscriptions	6,697	6,690
Contracts	45,791	44,515
Training, examination, certification and other	13,581	9,360
Net rents receivable	2,754	2,330
TOTAL TURNOVER	68,823	62,895

An analysis of turnover by country of destination is as follows:

TURNOVER BY COUNTRY OF DESTINATION	2023	2022
	£000	£000
United Kingdom	50,819	50,570
Rest of Europe	4,460	4,240
Rest of the world	13,544	8,085
TOTAL TURNOVER	68,823	62,895

6. OTHER OPERATING INCOME

OTHER OPERATING INCOME	2023	2022
	£000	£000
Research & development expenditure credit	1,791	1,905
Government grants released	345	392
Other operating income	571	919
Management charge	438	531
TOTAL OTHER OPERATING INCOME	3,145	3,747

Income recognised from an initiative with the Welsh Government, (AMERI) is recognised as follows; 2023 £570,000 (2022: £919,000).

7. UNREALISED FAIR VALUE MOVEMENTS ON INVESTMENT PROPERTIES

UNREALISED FAIR VALUE MOVEMENTS ON INVESTMENT PROPERTIES	2023	2022
	£000	£000
Revaluation (loss)/gain on Investment Property	(2,022)	(6,733)

8. OPERATING PROFIT

The operating profit is stated after charging/(crediting) the following:

	2023	2022
	£000	£000
Research & development charged as an expense	12,412	12,089
Exchange Differences	164	(417)
Depreciation	4,030	4,703
Profit and loss on disposal of tangible fixed assets	32	92

9. AUDITORS REMUNERATION

	2023	2022
	£000	£000
The auditing of accounts of the company pursuant to legislation	190	117
TOTAL AUDITORS REMUNERATION	190	117

10. EMPLOYEES

Staff costs, including directors' remuneration, were as follows:

	2023	2022
	£000	£000
Wages and salaries	25,920	24,792
Social security costs	2,598	2,659
Cost of defined contribution scheme	2,049	1,973
TOTAL STAFF COSTS	30,567	29,424

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

	2023	2022
	No. Employees	No. Employees
Average number of employees	512	520

11. DIRECTORS' REMUNERATION

	2023	2022
	£000	£000
Directors' emoluments	1,704	1,850

Included within Director's emoluments above is amounts payable to Directors' in respect of the compensation for loss of office which, in aggregate, amount to £282,000 (2022: £nil).

During the year retirement benefits were accruing to 0 directors (2022: 0) in respect of the defined benefit pension scheme. During the year retirement benefits were accruing to 8 (2021: 8) directors in respect of the defined contribution plan pension scheme. The value of the Company's total contributions paid to the defined contribution pension scheme was £205,000 (2022: £113,000)

The highest paid director received remuneration of £320,000 (2022: £333,000). The value of the company's contributions paid to a defined contribution pension scheme in respect of the highest paid director amounted to £75,000 (2022: £71,000).

12. INTEREST RECEIVABLE AND INTEREST PAYABLE

	2023	2022
	£000	£000
Bank interest receivable	1,229	590
TOTAL INTEREST RECEIVABLE AND SIMILAR ITEMS	1,229	590

	2023	2022
	£000	£000
Bank interest payable	158	170
Interest on loans from group undertakings	1,998	2,169
Finance leases	86	98
TOTAL INTEREST PAYABLE AND SIMILAR CHARGES	2,242	2,437

13. OTHER FINANCE COSTS

	2023	2022
	£000	£000
Net interest on net defined benefit obligation (note 28)	754	81

14. TAXATION

	2023	2022
	£000	£000
CORPORATION TAX		
Current tax on profits for the year	855	122
Foreign income tax	122	-
Adjustment in respect of prior periods	293	4
TOTAL CURRENT TAX	1,270	126
DEFERRED TAX		
Origination and reversal of timing differences	1,041	(445)
Adjustments in respect of prior periods	(639)	-
TOTAL DEFERRED TAX	402	(445)
TAXATION ON PROFIT/(LOSS) ON ORDINARY ACTIVITIES	1,672	(319)

FACTORS AFFECTING TAX CHARGE FOR THE YEAR

The tax assessed for the years is lower than (2022: lower than) the standard rate of corporation tax in the UK of 25% (2022: 19%). The differences are explained below:

	2023	2022
	£000	£000
Profit/(loss) on ordinary activities before tax	6,194	(1,618)
Profit/(loss) on ordinary activities multiplied by standard rate of corporation tax in the UK of 23.52% (2022: 19%)	1,457	(307)
EFFECTS OF:		
Fixed asset differences	415	246
Expenses not deductible for tax purposes	559	1,344
Income not taxable for tax purposes	(202)	(208)
Other permanent differences	(29)	-
Chargeable gains/(losses)	(458)	(1,154)
Foreign tax credits	122	-
Research and development expenditure tax credits	109	299
Adjustments to tax charge in respect of previous periods	293	4
Remeasurement of deferred tax for changes in tax rates	45	(543)
Adjustments to deferred tax in respect of previous periods	(639)	-
TOTAL TAX CHARGE FOR THE YEAR	1,672	(319)



15. TANGIBLE FIXED ASSETS

	Long Leasehold Property	Short-term Leasehold Property	Plant and Machinery	Fixtures, Fittings and Computers	Total
	£000	£000	£000	£000	£000
COST OR VALUATION					
At 1 January 2023	97,091	7,192	40,470	4,895	149,648
Additions	412	147	4,820	1,014	6,393
Disposals	-	-	(207)	-	(207)
Revaluations in year	(1,146)	-	-	-	(1,146)
At 31 December 2023	96,357	7,339	45,083	5,909	154,688
At 1 January 2023	7,624	1,637	29,153	3,944	42,358
Charge for the year on owned assets	1,554	306	1,762	408	4,030
Eliminated on disposals	-	-	(175)	-	(175)
At 31 December 2023	9,178	1,943	30,740	4,352	46,213
NET BOOK VALUE					
At 31 December 2023	87,179	5,396	14,343	1,557	108,475
At 31 December 2022	89,467	5,555	11,317	951	107,290

The short-term leasehold property is held under finance lease. The net book value of this asset as at the 31 December 2023 is £5,396,000 (2022: 5,555,000). The short-term leasehold property acts as security for the leases liabilities.

The valuations in both 2023 and 2022 valuations were made by a qualified external party, on an open market value for existing use basis.

16. INVESTMENT PROPERTY

LONG-LEASEHOLD INVESTMENT PROPERTY

	2023	2022
	£000	£000
VALUATION		
At beginning of year	45,300	17,700
Additions	1,931	4,434
Transfer from freehold property	-	29,899
Loss on revaluation	(2,022)	(6,733)
AT END OF YEAR	45,209	45,300

The valuations in both 2023 and 2022 valuations were made by a qualified external party, on an open market value for existing use basis.

17. DEBTORS

	2023	2022
	£000	£000
DUE WITHIN MORE THAN ONE YEAR		
Deferred tax asset	5,657	6,033

	2023	2022
	£000	£000
DUE WITHIN ONE YEAR		
Trade debtors	10,470	10,045
Amounts owed by group undertakings	13,998	11,374
Other debtors	3,060	1,809
Prepayments and accrued income	3,566	2,935
Amounts recoverable on long-term contracts	5,938	7,664
Tax recoverable	3,133	3,394
TOTAL DEBTORS DUE WITHIN ONE YEAR	40,165	37,221

An impairment loss of £552,000 (2022: £197,000) was recognised against trade debtors. A provision for impairment losses on amounts owed by group undertakings of £2,401,000 (2022: £3,187,000).

18. CASH AND CASH EQUIVALENTS

	2023	2022
	£000	£000
Cash at bank and in hand	29,567	48,729
TOTAL CASH AND CASH EQUIVALENTS	29,567	48,729

19. CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	2023	2022
	£000	£000
Payments received on account	8,123	10,739
Trade creditors	5,106	7,468
Amounts owed to group undertakings	13,356	17,239
Other taxation and social security	1,404	602
Corporation tax	1,397	126
Obligations under finance lease	464	464
Other creditors	1,980	1,825
Accruals and deferred income	14,522	12,584
TOTAL CREDITORS FALLING DUE WITHIN ONE YEAR	46,352	51,047

Details on the terms for amounts owed to group undertakings are included in note 21.

20. CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR

	2023	2022
	£000	£000
Net obligations under finance leases	2,063	2,441
Amounts owed to group undertakings	42,724	55,881
Accruals and deferred income	6,705	8,142
	51,492	66,464

Amounts owed to group undertakings are unsecured. These amounts attract an interest rate of 3.015% per annum.

21. PROVISIONS

ONEROUS CONTRACT PROVISION	2023	2022
	£000	£000
At 1 January	791	1,168
Additions in the year	611	478
Utilised in the year	(637)	(855)
At 31 December	765	791

Where the estimated costs to deliver a project exceed the amount of turnover the company will receive for the deliverables of the project, the company recognizes an onerous contract provision when these circumstances are identified. Onerous contracts are reviewed on an annual basis.

22. FINANCE LEASES

Minimum lease payments under finance lease fall due as follows:

	2023	2022
	£000	£000
Within one year	464	464
Between 1-5 years	1,475	1,660
Over 5 years	588	781
TOTAL FINANCE LEASES	2,527	2,905

Finance leases are secured against the Company's short-term leasehold property.

23. DEFERRED TAXATION

	2023	2022
	£000	£000
At 1 January	(13,251)	(18,132)
Credited/(charged) to profit or loss	(402)	445
Credited/(charged) to other comprehensive income	242	4,436
AT 31 DECEMBER	(13,411)	(13,251)

The deferred tax balance is made up as follows:

	2023	2022
Capital gains	(15,792)	(16,583)
Accelerated capital allowances	(3,276)	(2,701)
Other short term timing differences	1,560	1,294
Losses and other deductions	4,097	4,739
	(13,411)	(13,251)
COMPRISING:		
Asset - due after one year	5,657	6,033
Liability	(19,068)	(19,284)
	(13,411)	(13,251)

24. SHARE CAPITAL

	2023	2022
	£	£
ALLOTTED, CALLED UP AND FULLY PAID		
Ordinary shares of £1.00 each	2	2

There is a single class of ordinary shares. There are no restrictions on dividends and the repayment of capital.

25. 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 the revaluation of long leasehold properties held within tangible fixed assets (excluding investment properties).

PROFIT AND LOSS ACCOUNT

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

26. ANALYSIS OF NET DEBT

	At 1 January 2023	Cash flows	Other non-cash movements	At 31 December 2023
	£000	£000	£000	£000
Cash at bank and in hand	48,729	(19,162)	-	29,567
Finance leases	(2,905)	378	-	(2,527)
TOTAL	45,824	(18,784)		(27,040)

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 £2,049,000 (2022: £1,973,000). Contributions totalling £314,588 (2022: £277,673) were payable to the funds at the balance sheet date and are included in other creditors.

There were 521 active members of the Defined Contribution Pension Scheme as at the end of 2023 (2022: 510).

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 triennial valuation was carried out at 31 December 2022 by Mercer Limited independent of the scheme's sponsoring employer. The major assumptions used by the actuary are shown below.

The most recent completed triennial actuarial valuation as at 31 December 2022 showed a deficit of £17,634,000. 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. Following the sale of a parcel of land in 2021 and one-off pension contribution of £16m was made into the pension scheme. Following this contribution a pension holiday was agreed with the trustees of the pension scheme until the end of 2025, at which point monthly repayments into the scheme will resume.

The scheme closed to accruals on 11 September 2020.

As agreed with the trustees, the company will not be liable to pay any deficit reduction contributions in 2024. Repayments are expected to recommence in 2026 based on an updated triennial review.

There were nil active members of the Defined Benefit Pension Scheme at the end of 2023 (2022: Nil).

PENSION COMMITMENTS – CONTINUED

Reconciliation of present value of plan liabilities:

RECONCILIATION OF PRESENT VALUE OF PLAN LIABILITIES	2023	2022
	£000	£000
At the beginning of the year	15,046	4,468
Interest income	791	113
Loss/(gain) on settlement or curtailment	(181)	10,465
AT THE END OF THE YEAR	15,656	15,046

ANALYSIS OF ACTUARIAL GAIN/(LOSS) RECOGNISED IN OTHER COMPREHENSIVE INCOME	2023	2022
	£000	£000
Return on plan assets (excluding amounts included in net interest costs)	(2,412)	65,914
Experience gains and losses arising on the plan liabilities	(2,606)	12,055
Effects of changes in the demographic and financial assumptions underlying the present value of the plan liabilities - Gain/(loss)	4,837	(67,504)
TOTAL	(181)	10,465

Composition of plan assets:

PLAN ASSETS	2023	2022
	£000	£000
Other assets	39,573	32,931
Equities	50,553	58,310
Debt instruments	10,586	10,491
Cash and cash equivalents	12,043	9,705
TOTAL PLAN ASSETS	112,755	111,437
PENSION SCHEME LIABILITY	2023	2022
	£000	£000
Fair value of plan assets	112,755	111,437
Present value of plan liabilities	(128,411)	(126,483)
NET PENSION SCHEME LIABILITY	(15,656)	(15,046)

PENSION COMMITMENTS – CONTINUED

The amounts recognised in profit or loss are as follows:

	2023	2022
	£000	£000
Interest on obligation	754	81
Expenses	37	32
TOTAL	791	113

Reconciliation of opening and closing balances of the defined benefit obligation were as follows:

CHANGES IN DEFINED BENEFIT OBLIGATION	2023	2022
	£000	£000
Opening defined benefit obligation	126,483	184,309
Interest cost	6,163	3,267
Actuarial gains and (losses)	2,231	(55,449)
Benefits paid	(6,466)	(5,644)
CLOSING DEFINED BENEFIT OBLIGATION	128,411	126,483

Reconciliation of opening and closing balances of fair value of the plans assets were as follows:

CHANGE IN FAIR VALUE OF PLAN ASSETS	2023	2022
	£000	£000
At the beginning of the year	111,437	179,841
Interest income	5,409	3,186
Return on plan assets in excess of interest income	2,412	(65,914)
Benefits paid	(6,466)	(5,644)
Administrative expenses	(37)	(32)
TOTAL	112,755	111,437

PENSION COMMITMENTS – CONTINUED

Principal actuarial assumptions at the balance sheet date (expressed as weighted averages):

	2023	2022
	%	%
Discount rate	4.8	5.00
Salary increase rate	2.4	2.50
Price inflation rate (RPI)	3.15	3.25
Price inflation rate (CPI)	2.65	2.75
Mortality rates		
For a male aged 65 now	22.4	21.9
At 65 for a male aged 45 now	23.7	23.2
For a female aged 65 now	24.4	23.8
At 65 for a female member aged 45 now	25.8	25.3

29. COMMITMENTS UNDER OPERATING LEASES

At 31 December 2023 the company had future minimum lease payments due under non-cancellable operating leases for each of the following periods:

	2023		2022	
	LAND AND BUILDINGS	OTHER	LAND AND BUILDINGS	OTHER
	£000	£000	£000	£000
Not later than 1 year	-	-	-	14
Later than 1 year and not later than 5 years	-	-	-	-
Later than 5 years	-	-	-	-
TOTAL OPERATING LEASES - LAND AND BUILDINGS	-	-	-	14

RENTS RECEIVABLE UNDER NON-CANCELLABLE OPERATING LEASES	2023	2022
	£000	£000
Not later than 1 year	2,468	1,153
Later than 1 year and not later than 5 years	9,136	3,940
Later than 5 years	5,878	1,285
TOTAL OPERATING LEASE COMMITMENTS - LAND AND BUILDINGS	17,482	6,378

At 31 December 2023 the company had future minimum lease payments receivable under non-cancellable operating leases for each of the above periods.

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.

No member of the directors or key management had any related party transactions during the period.

31. ULTIMATE PARENT UNDERTAKING AND CONTROLLING PARTY

The sole shareholder is The Welding Institute. The ultimate parent company and controlling entity is The Welding Institute, which is the parent company of the smallest and largest group to consolidate these financial statements. Copies of the financial statements of The Welding Institute are available at its registered office, Bevan Braithwaite Building, Granta Park, Great Abington, Cambridge, CB21 6AL.

32. INVESTMENTS AND SUBSIDIARY COMPANIES

NAME	Location	Class of shares	Holding
TWI Training and Consultancy Limited	Canada	Ordinary	100%
TWI (India) Pvt. Limited	India	Ordinary	100%
TWI Middle East FZ-LLC	UAE	Ordinary	100%
TWI Technology Engineering (Private) Ltd	Pakistan	Ordinary	100%
TWI Turkey Muhendislik Tic. Ltd.sti	Turkey	Ordinary	50%
TWI Gulf WLL	Bahrain	Ordinary	100%
TWI Kazakhstan LLP	Kazakhstan	Ordinary	100%
Fullagar Technologies Limited	England	Ordinary	100%
TWI Hellas	Greece	Ordinary	100%

In previous years the cost of investments were expensed in the period that they arose. The initial costs of the investments are not material.

DETAILS OF REGISTERED OFFICES

NAME	Registered office
TWI Training and Consultancy Limited	Office 36 & 44, 4620 Manilla Road S.E., Calgary, Alberta, T2G 4B7, Canada
TWI (India) Pvt. Limited	Old No.85, New No.60, Ellaiamman colony, Vellala Teynampet, Chennai 600086, India
TWI Middle East FZ-LLC	Dubai Knowledge Park, Block 13 Office F104A, P.O. Box 502931 Dubai, UAE
TWI Technology Engineering (Private) Ltd	Office No. 706/707 A-B, 7TH Floor, DHA Haly Tower, Sector R, Phase 2, DHA Lahore, Punjab, Pakistan
TWI Turkey Muhendislik Tic. Ltd.sti	Tatlı Su Mahallesi, Şenol Güneş Bulvarı, Mira Tower, No:2/A, Kat:7, Daire:25, Ümraniye / Istanbul, Postcode:34770; Turkey
TWI Gulf WLL	13th Flr., Unit 1302, Al Wahda City Commercial Tower, Hazza Bin Zayed Street, PO Box 39237, Abu Dhabi, UAE
TWI Kazakhstan LLP	Business Centre, Atyrau Plaza, 7-th floor, Office No.707; Satpayev street 17B; P.O 060000, Atyrau city, Kazakhstan
Fullagar Technologies Limited	Bevan Braithwaite Building, Granta Park, Great Abington, Cambridge, CB21 6AL, UK
TWI Hellas	Leof. Kifisias 280, GR-152 32 Chalandri, Greece

