Judges Scientific plc

Annual Report and Accounts 2019

Strategic Report
Chairman's Statement
For the year ended 31 December 2019

I am delighted to report that in the financial year ended 31 December 2019, the Group achieved new records in order intake, revenues, cash generation, adjusted pre-tax profit and adjusted earnings per share. The Group was able to complete a small acquisition, pay a special dividend of £12.4 million and still finish the year with minimal net debt, maintaining a robust ability to take advantage of opportunities as they arise.

As the acquisition of Moorfield Nanotechnology Limited ("Moorfield") completed in December 2019, the growth and record performance this year was predominantly organic. The long-term growth drivers in the scientific instruments industry remain robust and exchange rates continued to favour us throughout the year. Demand for our products, which had been very strong since June 2016, was more volatile in 2019 but order intake still finished ahead of the previous year.

Delivering returns to our shareholders remains the core objective of the Group and as such the Board is pleased to be recommending a final dividend of 35p, making a total of 50p in respect of 2019, a 25% increase on the prior year (2018: 40p); this excludes the special dividend of £2 paid in December 2019. Since the payment of the first dividend in respect of 2006, regular dividends have grown at a compound annual rate of 24.2%.

Strategy
The Group's strategy continues to be based on creating shareholder returns through highly selective and carefully structured acquisitions, underpinned by diversified, solid and consistent earnings and cashflows arising from our existing businesses.

The Group's model is to acquire small/medium-sized scientific instrument companies, paying a disciplined multiple of earnings and to finance any acquisition, ideally, through existing cash resources and/or bank borrowings. We are highly selective in acquiring businesses with sustainable profits and cashflows in order to obtain immediate and enduring earnings enhancement for our shareholders. It is paramount that acquisitions are completed only when the Directors are satisfied that the target business has sound underlying strength. As a result of the consistent growth of our Group it has been able to promptly reduce the acquisition debt, generating the resources to reinvest in further acquisitions, subject always to our prudent approach on gearing.

The underlying market for scientific instruments remains robust and the sector's long-term growth drivers provide comfort that the Group will continue to deliver durable returns for shareholders despite, as we have observed since 2014, the potential for some short-term variability in performance. Long-term market drivers are rooted in the global expansion of higher education and the need for improved measurement to support the relentless worldwide search for optimisation across science and industry.

Our team
David Barnbrook, our valued colleague, passed away in early January 2020. He contributed his experience and intelligence to the Group for thirteen years with hard work and fierce loyalty including nine years on the board until his recent retirement. His contribution to the early years of the Group was invaluable and the sadness of the Directors is shared by many of our co-workers.

The whole team worked hard in 2019 to produce these results. The energy deployed since 2018 under the leadership of Chief Operating Officer, Mark Lavelle, to achieve operating excellence contributed significantly to the 2019 performance.

The Board and, I am sure, our shareholders are grateful to all our colleagues for the efforts that have delivered such a positive performance.

Alex Hambro
Chairman
17 March 2020

Strategic Report
Chief Executive's Report
For the year ended 31 December 2019

Revenues
Group revenues for the financial year ended 31 December 2019 progressed from £77.9 million to £82.5 million, an increase of 5.9%. This reflects Organic* growth of 5.6% and a minor contribution from Moorfield Nanotechnology (Moorfield") which was acquired in December 2019.

The Group continues to be a strong exporter and is well diversified across the globe, with 30% of the Group's revenues earned in North America, 28% in the Rest of Europe and 11% in China/Hong Kong. Revenues grew strongly in North America (up 17%) and in China/Hong Kong (up 23%); the good progress in China/Hong Kong follows a pause in 2018 after a few years of strong growth. The UK receded 10%, continuing the erratic trend observed since 2016; the Rest of Europe was stationary and so was the Rest of the World. In absolute values and among the countries where the frequency and volume of trade makes comparisons meaningful, the most impressive swings were in the USA (up £3.5 million) and in China/Hong Kong (up £1.7 million) followed by Germany, Australia and Japan. Switzerland, Denmark and the Netherlands receded by £0.5 million each and the UK gave back £1.1 million of its £1.5 million progress the previous year.

Profits
Profit before tax and adjusting items progressed 19% to £17.0 million (2018: £14.3 million). Organic operating contribution was up 13%; the majority of the Group businesses showed good or excellent progress and a small number reduced their contribution. Demand was more variable than in the past couple of years and the main drivers of growth within our businesses were the effect of the efforts deployed since 2018 to improve their operating performance and the continuation of very favourable exchange rates prevailing since the Brexit vote. The operating subsidiaries combined produced a Return on Total Invested Capital of 31.4% (2018: 27.6%).

The Group has continued to invest in the improvement of its existing products and the development of new products. Investment in research and development amounted to £5.2 million in 2019 (2018: £4.6 million), equivalent to 6.4% of Group revenue (2018: 5.9%).

The progress in pre-tax profits was replicated in earnings per share: EPS before adjusting items advanced by 21% to 222.5p from 183.4p; fully diluted earnings per share before adjusting items also improved 21% to 218.4p (2018: 180.6p).

Order intake
Order intake was positive but the strong momentum benefitting the Group since June 2016 decelerated; some businesses fared much better than others and periods of buoyancy alternated with spells of quiet. We experienced strong growth in order intake across China/Hong Kong (39%) and of 10% in the Rest of the World. Europe was flat, in line with revenue, but we experienced decreases of 2.7% in North America and 14% in the United Kingdom. This resulted in an overall 3% increase in Organic order intake compared to 2018. The uneven but positive demand and the operational improvement efforts enabled the increased sales and left the Group with a still healthy order book at 31 December 2019 representing 13.2 weeks of budgeted sales (2018: 14.4 weeks). The year-end value of the order book is static compared to its opening value, implying that the progress in profits and earnings per share was not enhanced by order book compression.

Cashflow
Cashflow was fuelled by the solid trading performance and the 110% cash conversion, with cash generated from operations of £19.1 million (2018: £15.7 million). This enabled the payment on 10 December 2019 of a £2 special dividend, still leaving the Group with cash balances amounting to £14.1 million at 31 December 2019. After the £12.4 million cost of the special dividend and the £2.3 million cost of the Moorfield acquisition, the Group ended the year in a statutory net debt position of £0.3 million (2018: statutory net cash of £0.7 million) with adjusted net debt (excluding subordinated debt owed to non-controlling shareholders but including sums still due in respect of the acquisition) amounting to £2.0 million (2018: £0.9 million adjusted net cash).

Dividends
Your Board is recommending a final dividend of 35p per share subject to approval at the forthcoming Annual General Meeting on 20 May 2020, which will make a total distribution (excluding the special dividend) of 50p per share in respect of 2019 (2018: 40p per share). Despite the proposed 25% increase, the total dividend per share is 4.5 times covered by adjusted earnings per share (2018: 4.6 times).

The proposed final dividend, if approved by shareholders, will be payable on 3 July 2020 to shareholders on the register on 5 June 2020 and the shares will go ex-dividend on 4 June 2020.

The Company's shareholders are reminded that a Dividend Reinvestment Plan (DRIP) is in place to enable shareholders to automatically reinvest their dividends into additional Judges shares should they so wish.

* "Organic" in this report describes the performance of the Group excluding Moorfield as it was acquired since 1 January 2018; in most cases the difference is minimal and the Organic qualification is omitted.

Strategic Report
Chief Executive's Report
For the year ended 31 December 2019

Trading environment
The long-term fundamentals supporting demand for scientific instruments remain positive. Market demand is being driven primarily by increased worldwide investment in higher education and a growing trend towards optimisation across science and industry; optimisation requires measurement.

Despite these positive long-term trends, the markets across which Judges and its peers operate are characterised by a degree of shorter-term variability, influenced mostly by government spending, currency fluctuations and the business climate in major trading blocs, particularly the USA and China. In smaller territories, year-on-year comparisons are not necessarily illustrative of performance, partly due to the high value of some individual orders and the long gestation period often occurring before purchasing intentions crystallise into orders and sales. Alongside these external variables, the uncertainty in research funding in the UK resulting from Brexit may have a continuing influence on UK sales.

As a large percentage of the Group's revenue is overseas, exchange rates have a significant influence on the Group's business: Judges' manufacturing costs are largely denominated in Sterling and most of its revenue originates from countries where the standard of value is the Euro (one quarter of total revenue) or the US Dollar (two thirds of total revenue). The currency movements in the run-up to the Brexit vote and since have had a positive influence (mitigated to an extent by hedging) on our margins and our competitiveness.

Acquisitions
As a buy and build group, the acquisition of new businesses is a fundamental feature of Group strategy. Executing this effectively is required to ensure that long-term value is generated for shareholders, as we are highly selective in relation to both the acquisition cost and long-term quality of any potential addition to our Group.

The industry in which we operate contains a multitude of small global niches as highlighted by the diverse nature of the new entrants to our Group. The UK is recognised in this arena as a centre of excellence for product innovation and manufacturing with world-leading businesses. Our Group has built a reputation over the past decade as an experienced and well-financed buyer and a supportive home for businesses in our sector whose owners wish to sell. We are trusted to act decisively and to complete deals under the initial terms agreed. For the businesses we acquire, the Group offers advice and support wherever necessary, participates in succession planning and implements robust financial controls. We trust subsidiary management teams with the day-to-day running of their businesses. This has been a successful operating model for the Group, as management teams are given responsibility for their own destinies, as well as an environment in which they can thrive.

On 3 December 2019, the Group acquired 100% of the share capital of Moorfield for a cash consideration of £2.3 million, including a £0.7 million earn-out. In addition, the value of Moorfield's excess cash was calculated and paid after the year-end and the property it occupies was purchased for its £0.3 million valuation. In the year ended 30 June 2019, Moorfield generated £0.6 million EBIT.

Following the 2018 buy-in of half of the shares held by its founders, PE.fiberoptics ("PFO") purchased further shares from a minority shareholder using part of its surplus cash. As a result, the Group's percentage holding in PFO increased from 67.5% to 74.5%.

Outlook and COVID-19
Ten weeks into the new financial year, the world is in a period of great uncertainty. The Group started the year in a strong financial position with the visibility provided by a solid order book. Orders since then have been slower compared to the excellent start in 2019 but the order book is still robust. The next few months are however unpredictable as the COVID-19 epidemic is now global. The pandemic will affect scientific conventions and our ability to travel safely to our customers and therefore impact order intake, sales and installations. We are ensuring that our businesses are taking all necessary precautions, in line with government guidelines, and of course we hope that our factories and employees will remain safe and that production is unaffected. It is impossible, at this stage, to quantify any impact on current year trading as the duration of the pandemic is unpredictable. We are currently in a strong financial position with high cash balances and low gearing together with a robust order book, however, the only guidance your Board can provide on trading performance is that the effect will be limited if the outbreak lasts only a further two months and will have a progressively growing and more significant impact thereafter.

Your directors do however believe that the Group will only be affected temporarily and that with its robust financial position, its ability to conduct its business model will remain intact.

David Cicurel
Chief Executive
17 March 2020

Finance Director's Report

For the year ended 31 December 2019

The Group's strategy is based on the acquisition of companies operating in the scientific instruments sector and the continuing generation of profitable performance at its existing subsidiary businesses.

The Group's Key Performance Indicators, which are aligned with the ability to reduce acquisition debt and fund dividend payments to shareholders, are earnings per share, operating margins, return on invested capital and cashflow generation. All four KPIs have improved in 2019 which reflects positive order intake, proactive deliveries and their subsequent conversion into cash.

Revenue

Group revenues increased by 5.9% to £82.5 million compared with £77.9 million in the prior year. This revenue growth was almost entirely Organic as we acquired Moorfield in December 2019 (2018: Organic growth of 5.5%).

Across our two segments, Materials Sciences revenues reduced slightly by 0.7% to £34.8 million whilst Vacuum revenues improved strongly by £4.9 million to £47.7 million (2018: £42.8 million).

Profits

Adjusted operating profits grew strongly to £17.4 million from £14.7 million in 2018, an increase of 18.0%. This improvement was driven by the overall revenue growth, good control of our cost base together with operational improvements across our businesses and, as a Group that exports more than 85% of our instruments, we continued to benefit from the weakness in Sterling that has prevailed over the past three years. As our business has a fairly high fixed cost base, marginal sales improve operating performance and together with the operational improvements. we have seen operating margins continue to improve to 21.1% (2018: 18.9%). Adjusted profit before tax was £17.0 million compared to £14.3 million in 2018, an increase of 18.7%.

Statutory operating profit increased to £14.1 million (2018: £10.7 million), and statutory profit before tax was £13.6 million compared to £10.2 million in 2018.

Adjusting items

The total pre-tax adjusting items recorded in 2019 were £3.3 million compared to £4.1 million in 2018. The main constituent, amortisation of intangible assets recognised upon acquisition, totalled £2.7 million (2018: £3.6 million) and this reduced as we only acquired Moorfield in December 2019; there was £0.3 million of acquisition costs relating to this transaction.

Finance costs

Net finance costs (excluding adjusting items) totalled £0.4 million (2018: £0.4 million). Whilst interest income increased in 2019 due to the higher cash balances held through most of 2019, we recorded a charge of £0.1 million relating to interest arising from the right-of-use liabilities recognised due to the new IFRS 16 standard on leases. Statutory net finance costs were £0.5 million (2018: £0.5 million), the £0.1 million difference between the statutory and adjusted figures is attributable to the net finance cost arising from the defined benefit pension scheme acquired with Armfield in 2015.

Taxation

The Group's tax charge arising from adjusted profit before tax was £2.5 million (2018: £2.1 million). The effective tax rate for adjusted profit is 14.7% compared with 15.0% in the prior year. The effective tax rate is influenced by the wider regime of reducing UK and US corporate tax rates and by claims for UK research and development tax credits. This year the Group's effective tax rate has marginally decreased due to higher claims from R&D tax credits. The Group benefits from a tax rate lower than the standard UK corporation rate as we continue to invest heavily in R&D and as we have remained an SME for R&D tax credits (with the Group having less than 500 full-time equivalent employees during 2019).

Earnings per share

Adjusted basic earnings per share significantly improved to 222.5p 21.3% ahead of 2018's 183.4p and adjusted diluted earnings per share increased by 20.9% to a total of 218.4p (2018: 180.6p).

Statutory basic earnings per share, after reflecting adjusting items which are influenced by the amortisation of intangible assets arising from recent acquisitions, was 183.1p (2018: 137.5p) and statutory diluted earnings per share totalled 179.8p (2018: 135.4p).

New accounting standard
From 1 January 2019, the Group adopted the new accounting standard IFRS 16 "Leases", which meant that the original method of accounting for leases as a rental charge has been replaced with a combination of depreciation from right-of-use leased assets and an interest charge from right-of-use lease liabilities. In the year of adoption, the Group's operating profit has increased, but profit before tax has decreased, and earnings per share is likewise reduced.

The overall impact of the new standard on our results for the year to 31 December 2019 has been to lower earnings per share from 223.4p to 222.5p. This is a reduction of less than 1%, and the effect is summarised in the table below:

	£000
Rental lease charges under previous accounting standard	927
Depreciation of right-of-use leased assets	(863)
Increase in operating profit due to IFRS 16	**64**
Interest charge from right-of-use liabilities	(135)
Decrease in profit before tax due to IFRS 16	**(71)**
Decrease in earnings per share due to IFRS 16	**(0.9p)**

Subject to no further changes to existing leases, in future years the increase to operating profit endures however the interest charge will reduce as the discount unwinds.

In relation to the impact of the new standard on the balance sheet, a right-of-use asset of £3.0m was recognised with an offsetting right-of-use lease liability. The cashflow statement was also impacted as lease repayments are now treated as a financing activity instead of within operating cashflows. This has resulted in Cash generated from operations increasing by £0.9 million and cash outflows from financing activities increasing by £0.9 million. There is no overall impact on total cashflow, but the new standard has created a small artificial improvement to the Group's cash conversion as explained below in the Cashflow section of this report. There is no change to the prior year comparatives as this standard was implemented prospectively from 1 January 2019.

Order intake
The Group benefited from healthy but uneven order intake in 2019. Overall Organic order intake was up by 3.3% compared to 2018, and this order intake contributed to the strong financial performance over 2019 and we have been able to retain a substantial order book with which to start 2020. Your Board considers order intake and the resultant year-end order book as an important bellwether to the Group's ability to achieve its expected results. Our Organic order book at 1 January 2020 was a robust 13.2 weeks of budgeted sales (1 January 2019: 14.4 weeks). Total order book was 13.6 weeks, including Moorfield Nanotechnology.

Return on Capital
The Group closely monitors the return it derives on the capital invested in its subsidiaries. The annual rate of Return on Total Invested Capital ("ROTIC") at 31 December 2019 was 31.4% which is a creditable improvement on the 27.6% achieved at the end of 2018. This reflects an overall strong performance across our businesses, whilst noting that not all our businesses were better than in previous years, meaning there is still room for improvement.

The annual rate of ROTIC is calculated by comparing attributable earnings excluding central costs, adjusting items and before interest, tax and amortisation ("EBITA") with the amounts invested in plant and equipment, net current assets (excluding cash) and unamortised intangible assets and goodwill (as recognised at the initial acquisition date).

ROTIC is influenced by the overall performance of our businesses and the size of, and multiple paid for, acquisitions. We continue to aim for improved ROTIC although we remain cognisant of the downward impact that acquiring businesses at higher multiples has on overall ROTIC.

Dividends
In relation to the financial year ended 31 December 2019 the Company paid an interim dividend of 15.0p per share in November 2019. The Board is recommending a final dividend of 35.0p per share giving a total dividend for the year of 50.0p per share (2018: 40.0p per share), an increase of 25%. Dividend cover is approximately four and a half times adjusted earnings per share. The Group also paid a one-off special dividend in December 2019 of 200.0p per share.

Your Group's policy is to pay a progressively increasing dividend provided the Group retains sufficient cash and borrowing resources with which to pursue its longstanding business acquisition policies.

Headcount
The Group's full time equivalent (FTE) employees for 2019 stood at 497 (2018: 467). The change in staff numbers during the year was due to growth in all areas of our businesses. We expect that FTEs will exceed 500 in 2020, particularly following the acquisition of Moorfield Nanotechnology in December 2019.

Share capital and share options
The Group's issued share capital at 31 December 2019 totalled 6,226,291 Ordinary shares (2018: 6,196,678). The shares issued during 2019 arose from the exercise of share options by various members of staff during the year.

Share options issued during the year under the 2015 scheme totalled 13,905 (2018: 4,000) and the total share options in issue at the year-end under both the 2005 and 2015 schemes amounted to 224,967 (2018: 249,675).

Defined benefit pension scheme
The Group has a defined benefit pension scheme which was assumed as part of the acquisition of Armfield in 2015. This scheme has been closed to new members from 2001 and closed to new accrual in 2006. The next full actuarial valuation for the scheme will be from March 2020 and, subject to this valuation, the annual contributions to the scheme are £0.2 million. The Group accounts for postretirement benefits in accordance with IAS 19 Employment Benefits. The Consolidated balance sheet reflects the net deficit on the pension scheme, based on the market value of the assets of the scheme and the valuation of liabilities using year end AA corporate bond yields. At 31 December 2019, the pension liability (net of deferred tax) was £1.7 million (31 December 2018: £1.5 million). The net liability has increased due to a sizeable reduction in discount rates during 2019 from 2.8% to 2.1% offset partially by improvements to fund assets. Armfield takes its responsibility seriously to ensure the pension is adequately funded whilst also continuing to review appropriate deficit control strategies.

Cashflow and net debt
This year's strong trading performance resulted in cash generated from operations of £19.1 million (2018: £15.7 million). The Group has a strong track record of converting profit into cash, and this is reflected in the high cash conversion rate of 110% (2018: 106%). It is to be noted that the new accounting standard on leases has caused rental payments to be reclassified lower down in the cashflow statement and hence on a like-for-like basis, cash conversion would have otherwise been 105%. Total capital expenditure on property, plant and equipment amounted to £1.3 million (2018: £1.0 million). Year-end cash balances totalled £14.1 million compared to £15.7 million in 2018.

The Group finished 2019 with adjusted net debt of £2.0 million compared to £0.9 million of adjusted net cash at the end of 2018. Statutory net debt was £0.3 million (2018: statutory net cash of £0.7 million). This small overall outflow reflects the excellent cash generation achieved throughout 2019 from strong operational performance across our businesses as a whole, supporting the business model we continue to deliver of enabling investment in acquisitions (Moorfield Nanotechnology in December 2019) and payment of progressively increasing dividends (£2.7 million in 2019). Further, we were able to return to shareholders £12.4 million in the form of a special dividend in December 2019. Gearing at 31 December 2019 was 0.12 times adjusted operating profit and we remain committed to maintaining a conservative gearing position whilst at the same time taking the opportunities of acquiring strong, sound businesses at disciplined multiples as illustrated over the history of our Group.

The Group's financial position continues to be strong and we have appropriate banking facilities to support suitable inorganic growth. Our Group bank facility is for an aggregate £35.0 million consisting of a £10.0 million term loan ("Term Loan"), a committed £20.0 million revolving credit facility ("RCF") plus a £5.0 million accordion facility, which can be drawn at the discretion of the Bank; the facility expires in April 2023 ("the Borrowing Term"). The Term Loan amortises on a straight-line basis via quarterly payments and the RCF is repayable in a bullet at the end of the Borrowing Term.

The existing lending facilities via Bordeaux Acquisition ("Bordeaux"), the Group's 75.5% owned subsidiary, which owns Deben UK and Oxford Cryosystems, remain unchanged.

At the year-end the Term Loan had reduced to £6.5 million (2018: £8.5 million) and the RCF was drawn down to £5.2 million (2018: £2.9 million). At 31 December 2019, the Bordeaux loan had also reduced to £2.6 million (2018: £3.4 million).

The ongoing long-term support of Lloyds Banking Group continues to provide the Group with significant capacity to finance acquisitions in support of the Group's buy and build strategy.

Overall, your Group has had a positive year for performance and we are well placed, with a strong balance sheet and significant available borrowing capacity, to continue with its enduring strategy of achieving growth in earnings via selective acquisitions of strong niche businesses in the scientific instruments sector, alongside the ongoing performance of its existing businesses.

Brad Ormsby
Group Finance Director
17 March 2020

Strategic Report
Section 172 statement
For the year ended 31 December 2019

As required by Section 172 of the Companies Act, a director of a company must act in the way he or she considers, in good faith, would likely promote the success of the company for the benefit of the shareholders.

In doing so, the director must have regard, amongst other matters, to the following issues:

- Likely consequences of any decisions in the long-term;
- Interests of the company's employees;
- Need to foster the company's business relationships with suppliers/customers and others;
- Impact of the company's operations on the community and environment;
- The company's reputation for high standards of business conduct;
- Need to act fairly between members of the company.

The Group's ongoing engagement with stakeholders and consideration of their respective interests in its decision-making process is as described below.

Our culture
Judges has always espoused a long-term perspective, from its first interaction with a prospective acquisition and thereafter on an ongoing basis. This is part of what makes the Group unique. Further detail is explained in the Environmental, social and governance ("ESG") statement on page 8.

Shareholders
The primary mechanism for engaging with shareholders is through the Company's AGM and also through the annual cycle of investor meetings held alongside the publication of the Group's financial results for the half year and full year. Further information is disclosed in the Corporate Governance statement on pages 13 to 15.

Customers and suppliers
Our companies operate in global niche markets and hence reputation is key to our ongoing success. Maintaining the strong reputation with our customer base for providing instruments and service of the highest quality is therefore of paramount importance. Likewise, we have long-standing close relationships with our locally situated suppliers, as evidenced via the payment terms on page 21 in the Directors' Report.

Employees
A key to the Group's success has been its engaged workforce. The Group's Directors, alongside our subsidiary management teams, work hard to provide a positive work environment with opportunities for all our staff to grow and achieve their potential as well-respected local employers within each of our businesses' respective communities. As disclosed in the ESG statement on page 8, we are also proud that over one-third of our staff are shareholders.

Community and environment
Our businesses are proud of their contribution to the local community both as a local employer, contributor to local charitable causes and also of their generally low impact on the environment. More information can be found in the ESG statement on pages 8 to 9.

Our culture
Judges' unique culture starts from when we first interact with the vendors of acquisition prospects. We believe that each company that joins our Group is staying for the long-term, and hence we must commence that relationship properly from our first contact with them. We are acquiring successful businesses and we expect them to stay that way, so it is very important that we treat the vendors with respect, and never seek to reduce the terms of a deal once heads of terms are agreed. We also treat their staff in the same manner showing openness, honesty and integrity in all our actions.

Our businesses have all built a respected place in their local community, dealing fairly with their own staff, customers and suppliers as well as often being active contributors to local charitable causes. We expect them to continue to do this, understanding that as a public company we must continue to uphold high standards of behaviour. We always encourage decision-making for the long term as we expect our businesses to build for the future and not just for the present.

We also encourage all our employees to act like entrepreneurs and treat the company as if they are its owner. Over one-third of our team are Judges shareholders, having acquired shares through the Judges Share Incentive Plan, an HMRC approved scheme, which enables our staff to acquire Judges shares from pre-tax earnings and Judges matches their contribution up to a certain level.

The environment
Judges recognises that environmental concerns, inclusive of climate change, must be addressed by all businesses across the globe. We recognise that all of our trading activities have an environmental impact. We try to minimise this impact where possible across different aspects of our business. As a manufacturer of niche scientific instruments, we do not have capital-intensive manufacturing. Our instruments are largely for research, to help progress scientific advancement.

An example of this is seen at one of our subsidiaries, CoolLED, which manufactures LED illumination systems for fluorescence microscopy. Their technology, of using a small LED to replace mercury lamps in light microscopes, is helping eliminate mercury lamps, a toxic product and previously the light source of choice for light microscopes. This technology is also far superior to the mercury lamp, enabling researchers to generate a higher volume of, and more reliable, results together with reducing wastage of precious test samples in their experiments.

Our businesses are also switching to lower energy lighting and more environmental packaging wherever possible as they try to reduce their energy consumption and the inevitable volume of packaging that we use in transporting our instruments to our customers around the world.

Health and safety
Health and safety is of paramount importance to the Judges Group and a key priority for our subsidiary management teams. Our employees must be and feel safe at work and we therefore aim to provide a safe and comfortable working environment for them. The Group encourages all its subsidiary companies to seek continuous improvement and promote a strong health and safety culture.

The Group routinely monitors health and safety adherence across our trading subsidiaries. As we operate a decentralised autonomous operating structure, performance is monitored at a Group level with the board of each trading subsidiary directly responsible for compliance with local health and safety regulations. We have also instituted a Group-wide annual independent health and safety review which assesses compliance and provides local management with feedback to continually improve health and safety.

During 2019, we had 10 minor incidents and no significant injuries across all our businesses. All incidents are followed up with changes to procedures and/or training of our employees as appropriate to prevent recurrence.

Anti-bribery and corruption
Judges has a zero-tolerance policy on bribery and corruption in relation to all business transactions in which the Group is involved. This policy includes the offering or receiving of inappropriate gifts or making payments to influence the outcome of business transactions. We also require customers and suppliers who contract with the Group on our standard business terms to comply with anti-corruption and anti-bribery laws.

Equal opportunities
Judges supports equal opportunity for all our employees and those that wish to join our Group. Our aim is to build a meritocratic work environment where everyone can make the most of their skills and talents, without discrimination or harassment. In the event of a member of staff becoming disabled, every effort is made to ensure that they can continue their employment with the Group with suitable support. It is the Group's policy that disabled people should have access to the same career path, training and promotion opportunities as all other employees.

It is a Group policy to not discriminate against staff or candidates on the basis of age, disability, gender reassignment, marital or civil partner status, pregnancy or maternity, race, colour, nationality, ethnic or national origin, religion or belief, or sex or sexual orientation.

Human rights
Judges Scientific supports the provisions set out in the Modern Slavery Act and endorses the core requirements of the Universal Declaration of Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work. We do not tolerate practices which contravene these international standards. Further information is included within the Judges Modern Slavery statement on our website.

Acquisitions
The most significant risk for the Group is that an acquired company does not meet its expected profitability. As an important element of the Group's business strategy is development through acquisition, the Group's growth is also exposed to the risk of insufficient availability of target companies of requisite quality or available within the disciplined price range to which the Group adheres. The Group manages these risks by maintaining relationships with organisations that market appropriate targets and by performing detailed research into potential acquisitions; post-acquisition, the Group provides advice and support to entity management teams as appropriate, in order to facilitate their ongoing performance.

Covid-19
The COVID-19 pandemic will impact order intake, deliveries and installations. The longer the outbreak lasts, the more this will affect the Group's revenue and profitability. Moderate supply chain issues could also become challenging and the pursuit of our staff's welfare could interfere with operations.

Key personnel
The Group's future success is dependent on its senior management and key personnel and, given the small niche-serving nature of the Group's businesses, it is always a challenge to maintain back-up support in respect of key roles or to replace key staff should they leave our organisation. Finding quality executives in our sector is a challenge and it can take a long time to replace and/or to prove the suitability of any new executive. The Group encourages succession planning wherever possible and seeks to provide a positive work environment with opportunities for career growth coupled with appropriate remuneration and, where appropriate, longer-term rewards.

Currency and foreign exchange
The Group exports the large majority of its products, hence it is exposed to fluctuations in exchange rates which may impact on its competitiveness. Brexit has temporarily improved exchange rates but may cause uncertainty and greater volatility in the medium term alongside any wider global economic risk. The Group seeks, so far as is practicable, to mitigate these currency effects for the financial year via hedging foreign exchange rates but foreign exchange fluctuations affect the Group's competitiveness in the medium term. Additional detail is set out in note 27.

Economic conditions
The Group's customers are internationally located and are often state owned or those whose liquidity are closely linked to government spending. Accordingly, the prevailing uncertainties in the world economy, and particularly the borrowing constraints currently affecting many western nations, represent a risk to the Group's prospects. The Group seeks to trade globally as it operates in small worldwide niches. In the short to medium term, the decision by the UK to leave the EU also creates some uncertainty as it is still not yet clear what shape Brexit will have and hence its impact on Research funding in the UK, on the UK economy and on foreign exchange rates.

R&D and products
The Group continues to invest in the development of new products to meet the needs of our end customers. There is a risk that our businesses may be unable to develop suitably commercial and technically reliable new products with which to maintain and drive revenue performance. There is also a risk that new developments in science will make certain of the Group's products obsolete. The Group maintains a focus on ensuring there are ongoing R&D roadmaps for our businesses and that we continue to invest in well trained and qualified R&D and operations teams to deliver quality, well-engineered products for our customers.

Competition
The Group faces competition across all its businesses and there can be no certainty that each business will achieve the market penetration it seeks. There is also no guarantee that there will be no new competition or new entrant to the market with better products. The Group seeks to mitigate this through detailed market analysis when considering acquisitions and seeks to acquire companies in small global niches. Additionally, the Group continues to listen carefully to its customers' aspirations for product development and, where possible, satisfy those product development requests.

On behalf of the Board

David Cicurel
Director
17 March 2020
Company registration number: 04597315

Board of Directors

For the year ended 31 December 2019

Hon. Alexander Hambro N R

Chairman

Alex Hambro has been active in the small company investment sector both in the UK and the USA for some 30 years, during which time he acted as a principal investor, manager and sponsor of private equity and venture capital management teams.

In addition to his responsibilities at Judges Scientific plc, Alex is also Chairman of Falanx Group Ltd and a Non-Executive Director of Octopus Apollo VCT plc, Hertsford Capital plc, Whitley Asset Management Ltd and Crescent Capital Ltd.

Alex is currently a founder partner of Welbeck Capital Partners LLP, a specialist investment syndicate that deploys secured convertible loan notes to finance growth opportunities for small-cap AIM companies.

David Cicurel E

Chief Executive

David Cicurel founded Judges in 2002 having spent much of his career as a turnaround specialist and, subsequently, as an “active value” investor operating with his own funds.

He has been responsible for several corporate recovery exercises including two UK public companies, International Media Communications plc (later known as Continental Foods) and International Communication and Data plc.

Brad Ormsby E

Group Finance Director

Brad Ormsby is a Chartered Accountant who has significant senior finance and operational experience acquired during nine years at PwC followed by six years at Eurovestech plc, the pan-European development capital fund, and associated companies.

Prior to joining Judges Scientific in 2015, Brad was Chief Financial Officer at Kalibrate Technologies plc where he led the company’s IPO.

Mark Lavelle E

Chief Operating Officer

Mark Lavelle gained sales & marketing experience with PerkinElmer, and finance experience with Bank of America in London and the USA, then moved into Industrial general management, most recently with 15 years at Halma plc. At Halma he was Managing Director of two separate businesses (in Medical Devices and Ion Beam Coating), ran Acquisitions for the group, and led two Divisions (Industrial Safety and Water Analysis & UV) comprising a total of 15 companies in the UK, Europe, the USA and Asia-Pacific. He also had responsibility for Innovation at Halma, and subsequently the group’s Indian presence. He has been a Pension trustee for the last 12 years. Mark is a Chemistry graduate of the University of Cambridge and holds an MBA from INSEAD in France.

Charles Holroyd N I A R

Non-Executive

Charles Holroyd has a BSc in Electrical and Electronics Engineering from the University of Bristol and an MBA from INSEAD. He is a Chartered Engineer and a Fellow of the Institution of Engineering and Technology. Charles has held senior management positions within a number of publicly quoted companies. Most recently Charles worked at Oxford Instruments plc, which he joined in 1999 and where he served on the board from 2005 until 2013 and was responsible for group business development including M&A activities.

He is the Senior Independent Director and is Chairman of the Remuneration Committee.

Ralph Cohen N A

Non-Executive

Ralph Cohen was the Finance Director of Judges Scientific plc for nearly ten years until his retirement in April 2015. He held various senior executive positions within the energy and water divisions of the Paris based Vivendi group between 1981 and 2001, including eight years as Finance Director of a listed subsidiary, followed by positions as Managing Director within that group.

He previously spent nine years at Ernst & Young. Latterly he was the founding partner of MC Consultancy Services, where he was closely associated with major projects, including electricity supply opportunities in Europe and M&A projects.

Ralph Elman N A R

Non-Executive

Ralph Elman is a former Finance Director of quoted companies Paramount plc, Delyn plc and International Communication & Data plc and Finance Director of businesses within GUS plc and RR Donnelley.

Ralph was Senior Partner of accountancy firm Elman Wall and is a Non-Executive Director of a number of private companies. He is Chairman of the Judges Audit Committee.

Glynn Reece N

Company Secretary

Glynn Reece is a graduate of Oxford University and a qualified solicitor. Since 1987, he has specialised in providing corporate finance deal origination and advisory services, working for (inter alia) Coopers & Lybrand, Arthur Andersen and CLB, a specialist AIM firm.

He is currently a Proprietor of Carl Reiss Meyer, a business that acts as an arranger of pre-flotation finance for small fast growing companies.

Committee membership

E Executive N Non-Executive I Independent A Audit Committee R Remuneration Committee

Corporate Governance Statement

For the year ended 31 December 2019

Introduction

I have pleasure in introducing the Corporate Governance Statement. In accordance with the requirements of being AIM quoted we recognise that the application of sound corporate governance is essential in the Group's ongoing success and adopt the principal provisions of the QCA Corporate Governance Code for Small and Mid-Size Quoted Companies ("QCA guidelines"). This report sets out our approach to Judges' governance.

Board composition

The Board is responsible to the shareholders and sets the Group's strategy for achieving long-term success. It is also ultimately responsible for the management, governance, controls, risk management, direction and performance of the Group.

During the year the Board comprised of three Executive Directors, together with the Non-Executive Chairman and three further Non-Executive Directors, supported by the Company Secretary.

The Group has one independent Non-Executive Director as under the QCA guidelines, all other Non-Executive Directors are not considered independent by virtue of their tenure, as they have served more than nine years from the date of their first election or were previously an Executive Director of the Company. At the same time, the Company considers that these Non-Executive Directors act independently of the Executive management and that the value of their long association with the Company alongside their deep understanding of the Group's business model ensures that they are best placed to appropriately police adherence to the Group's enduring strategy, which continues to provide shareholders with long-term market-beating performance.

Board operation

The Board is responsible for the Company's strategy and for its overall management. The operation of the Board is documented in a formal schedule of matters reserved for its approval, which is reviewed annually. These include (although not exhaustively) matters relating to:

- the Group's strategic aims and objectives;
- the approval of significant acquisitions and expenditure;
- financial reporting, financial controls and dividend policy;
- the approval of the Group's annual budget;
- the structure, capital and financing of the Group;
- internal control, risk and the Group's risk appetite;
- effective communication with shareholders; and
- any changes to Board membership or structure.

Board decision making

The Board has a schedule of matters covering business, financial and operational matters ensuring that all areas of Board responsibility are addressed throughout the year. The Chairman, supported by the Company Secretary, is responsible for ensuring the Directors receive accurate and timely information. The Company Secretary compiles the Board papers which are circulated to Directors in advance of meetings. The Company Secretary prepares and provides minutes of each meeting and every Director is aware of the right to formally minute any concerns.

Board meetings

The main Board meets monthly (except in August) in addition to any ad hoc Board meetings that may be required during the year, such as in November 2019 when the Board met to discuss and approve the special dividend. Non-Executive Directors communicate directly with Executive Directors between formal Board meetings as necessary.

Directors are expected to attend all meetings of the Board, and the Committees on which they sit, and to devote sufficient time to the Company's affairs to enable them to fulfil their duties as Directors. In the event that Directors are unable to attend a meeting in person they will endeavour to attend via phone, Skype or similar arrangement. Where they cannot attend, their comments on papers to be considered at the meeting will be discussed in advance with the Chairman so that their contribution can be included in the wider Board discussion.

The Directors' attendance at Board and Committee meetings during the year is disclosed in the table below:

	Board	Audit	Remuneration
AR Hambro	12/12	—	2/2
DE Cicurel	12/12	—	—
BL Ormsby	12/12	—	—
MS Lavelle	11/12	—	—
RL Cohen	12/12	3/3	—
RJ Elman	11/12	3/3	2/2
CJA Holroyd	12/12	3/3	2/2

Board Committees
The Board has delegated specific responsibilities to the Audit and Remuneration Committees, details of which are set out below. As the Board is small, there is no separate nominations committee and consideration of future recommendations for appointments to the Board is considered by a committee of Directors set up at that time.

Each Committee has written terms of reference setting out its duties, authority and reporting responsibilities. Copies of all the Committee terms of reference are available on the Company's website (www.judges.uk.com) or on request from the Company Secretary. The terms of reference of each Committee are kept under continuous review to ensure they remain appropriate to the Group. Each Committee is comprised of three of the Non-Executive Directors of the Company. The Company Secretary is the secretary of each Committee.

Audit Committee
The Audit Committee is chaired by Ralph Elman and the other members are Ralph Cohen and Charles Holroyd. The Audit Committee has primary responsibility for monitoring the quality of internal controls and ensuring that the financial performance of the Group is properly measured and reported on. It receives and reviews information and reports from the Group's management and Auditor relating to the annual financial statements and the accounting and internal control systems in use throughout the Group. It also advises the Board on the appointment of the Auditor, reviews their fees and discusses the nature, scope and results of the audit with the Auditor. The Audit Committee meets at least twice a year and has unrestricted access to the Group's Auditor. The Executive Directors and the Chairman attend the Committee meetings by invitation as required.

The Audit Committee Report on pages 16 to 17 contains more detailed information on the Committee's role.

Remuneration Committee
The Remuneration Committee is chaired by Charles Holroyd, the Senior Independent Non-Executive Director. The other members of this Committee are Ralph Elman and Alex Hambro. The Remuneration Committee reviews the performance of the Executive Directors and makes recommendations to the Board on matters relating to their remuneration and terms of employment. The Remuneration Committee also makes recommendations to the Board on proposals for the granting of share options and other equity incentives pursuant to any share option scheme or equity incentive scheme in operation from time to time. The remuneration and terms and conditions of appointment of the Non-Executive Directors of the Company are set by the Board. The Chief Executive and Group Finance Director are invited to attend for some parts of the Committee meetings where their input is required although they do not take part in any discussion on their own benefits and remuneration. The Remuneration Committee meets at least once per year.

The Remuneration Report on pages 18 to 20 contains more detailed information on the Committee's role and the Directors' remuneration and fees.

Board effectiveness
Biographies of the Board on pages 11 and 12 set out the skills, knowledge and experience of the Board. This mix of capabilities enables them to constructively challenge strategy and review performance.

Induction of new Directors
New Directors undergo a programme tailored to the existing knowledge and experience of the Director concerned and ensures they develop the requisite knowledge about the Group such that they can contribute fully from an early stage.

Time commitments
All Directors are aware of the time required to fulfil the role prior to appointment and have confirmed their ability to meet the required commitment prior to appointment. This requirement is also included in their letters of appointment or service contract. The Board is satisfied that the Chairman and each of the Non-Executive Directors is able to devote sufficient time to the Group.

Development
The Company Secretary ensures that all Directors are made aware of changes in relevant legislation and regulations, with the assistance of the Company's advisers where appropriate. Executive Directors are subject to the Company's performance development review process and will obtain additional professional training as appropriate.

External appointments
In the appropriate circumstances, the Board may authorise Executive Directors to take Non-Executive positions in other companies and organisations, provided the time commitment does not impact upon the Director's ability to perform their role, since such appointments should widen their experience. The Chairman will approve any such appointment.

Conflicts of interest
The Board regularly reviews any Directors' conflicts of interest. The Company's Articles of Association provide for the Board to authorise any actual or potential conflicts of interest.

Independent professional advice
Directors have access to independent professional advice at the Company's expense. In addition, they have access to the advice and services of the Company Secretary who is responsible to the Board for advice on corporate governance matters.

Directors' and Officers' liability insurance
The Company has obtained Directors' and Officers' liability insurance during the year as permitted by the Company's articles.

Election of Directors
In accordance with the Company's Articles of Association, David Cicurel will retire and offer himself for re-election at the Annual General Meeting.

Performance evaluation

The Chairman discusses with each of the Non-Executive Directors their ongoing effectiveness. He is also responsible for the Executive composition of the Board. The Chief Executive assesses each Executive Director and provides informal feedback on their performance on a timely basis.

Internal controls

The Board has ultimate responsibility for the Group's system of internal control and for reviewing its effectiveness. However, any such system of internal control can provide only reasonable, but not absolute, assurance against material misstatement or loss. The Board considers that the internal controls in place are appropriate for the size, complexity and risk profile of the Group.

The principal components of the Group's internal control system include:

- overview of the day to day activities of the Group by the Executive Directors;
- all proposed acquisitions are comprehensively reviewed by the Board;
- a comprehensive annual budgeting process which is approved by the Board;
- a decentralised organisational structure with defined levels of responsibility for all trading subsidiaries, to encourage principled entrepreneurial behaviour whilst minimising risks;
- rotational visits by the Board to the trading subsidiaries;
- detailed monthly reporting of performance against budget and forecast; and
- central control over key areas such as cash/banking facilities and capital expenditure.

The Group continues to assess and develop its internal control system to ensure compliance with best practice for a Group of its size. An internal audit function has also been established in 2019.

Relations with shareholders

The Group maintains communication with institutional shareholders through individual meetings with Executive Directors, particularly following publication of the Group's interim and full year results. The Group's results presentations are recorded on video and are available on the Judges website for all shareholders to view. Additionally, the Group operates a twice-yearly site visit (most recently in May 2019 and November 2019), where a group of significant shareholders/potential shareholders are shown around a number of the Group's subsidiaries to view their operations and meet with the local management. All shareholders are also encouraged to attend the Annual General Meeting which is on 20 May 2020 (full details in the Directors' Report on page 23).This is the main opportunity for all shareholders to meet with all the Executive and Non-Executive Directors and where the Group's activities are considered and questions answered.

General information about the Group is also available on the Group's website (www.judges.uk.com). This includes a Group overview, detailed information about our trading businesses (including short videos introduced by each subsidiary managing director), details of all recent Group announcements and other relevant investor information.

Whistleblowing

The Group has had in place for several years a whistleblowing policy which sets out the formal process by which an employee of the Group may, in confidence, raise concerns about possible improprieties in financial reporting or other matters. Whistleblowing is a standing item on the Board's agenda with updates provided at each meeting. During 2019, one matter was raised anonymously which required further investigation. Independent third-party advice was obtained and, following a thorough and detailed investigation, no evidence of wrongdoing was found and the matter was closed.

Alex Hambro
Chairman
17 March 2020

Audit Committee Report

For the year ended 31 December 2019

On behalf of the Board, I am pleased to present the Audit Committee report for the year ended 31 December 2019.

Composition of the Committee

The Committee consists of myself (as Chairman), Ralph Cohen and Charles Holroyd. The Company Chairman and Executive Directors may be invited to attend Committee meetings. During the year, the Committee met three times, to undertake our responsibilities as set out below and, in particular, review the audit and interim findings and approve the audit plan. The Board is satisfied that I, as Chairman of the Committee, have recent and relevant financial experience. I am a Chartered Accountant; I have served as Finance Director in a number of quoted companies and am Non-Executive Director of a number of other companies. Glynn Reece acts as Secretary to the Committee. I report the Committee's deliberations at the next Board meeting and the minutes of each meeting are made available to all members of the Board.

Responsibilities

The main duties of the Audit Committee are set out in its Terms of Reference, which are available on the Company's website (www.judges.uk.com) and are available on request from the Company Secretary. The Committee's main duties are to:

- ensure the integrity of the financial statements (including annual and interim accounts and results announcements);
- review significant financial reporting judgements and the application of accounting policies thereon;
- ensure the Annual Report and Accounts are fair, balanced and understandable and recommend their approval to the Board;
- manage the relationship with the Group's external Auditor and review their suitability and independence;
- negotiate and approve the external Auditor's fee, the scope of their audit and terms of engagement;
- advise on the appointment of external Auditors and to review and monitor the extent of the non-audit services undertaken by the Group's external Auditor;
- review of the risk management and internal control systems;
- review the assessment of going concern; and
- assess the need for and reporting by the internal audit function.

Role of the external auditor

The Audit Committee monitors the relationship with the external Auditor, Grant Thornton UK LLP, to ensure that auditor independence and objectivity are maintained. As part of its review the Committee also monitors the provision of non-audit services by the external Auditor. An analysis of fees shared between audit and non-audit services is disclosed in note 8 to the Group's financial statements. Non-audit fees charged by Grant Thornton UK LLP to the Group relate to the provision of financial due diligence services to the Group and cyber security assessments and were less than 100% of the annual audit fee. In advance of the expected changes to regulations which will restrict auditors from providing non-audit services to their clients, the Audit Committee has proactively decided to adopt a policy to restrict work of the Auditor to audit only from the earlier of 31 December 2020 and any date prescribed under future regulation. No issues impacting upon the Auditor's independence were observed or brought to the Committee's attention.

Audit process

The external Auditor prepares an audit plan for its review of the full year financial statements. The audit plan sets out the scope of the audit, specific areas of risk to target and audit timetable. This plan is reviewed and agreed in advance by the Audit Committee (and due to the timing of the acquisition of Moorfield Nanotechnology Limited, the audit committee also reviewed and agreed an updated plan). Following its review, the Auditor presents their findings to the Audit Committee for discussion. No matters of significant concern relating to either the Group's internal controls or accounting practices were highlighted by the Auditor during the year, however, areas of significant risk and other matters of audit relevance are regularly communicated.

Internal audit

During 2019, an internal audit function was implemented. The scope of the internal audit work performed was determined following feedback from the 2018 audit and also via selection of subsidiary undertakings on a random basis. The scope of the internal audit work in 2019 focused on the Group's holding of demonstration stock and 2 subsidiaries were also recipients of a separate internal audit review. The Committee considers that management is generally able to derive assurance as to the adequacy and effectiveness of internal controls and risk management procedures but that the internal audit work performed provides additional assurance.

Risk management and internal controls
As described in the Corporate Governance Statement on pages 13 to 15, the Group has established a framework of risk management and internal control systems and procedures. The Audit Committee is responsible for reviewing the risk management and internal control framework and ensuring that it operates effectively. During the year, the Committee has reviewed the framework and the Committee is satisfied that the internal control systems in place are currently operating effectively.

Ralph Elman
Audit Committee Chairman
17 March 2020

Remuneration Report

For the year ended 31 December 2019

On behalf of the Board, I am pleased to present the 2019 Directors' Remuneration Report, which sets out the remuneration policy and the Directors' remuneration for the year.

Composition of the Committee

The Committee consists of myself (as Committee Chairman), Alex Hambro and Ralph Elman. The Chief Executive and Group Finance Director may be invited to attend Committee meetings if required. The Committee met twice during the year.

Executive Director remuneration policy

Our remuneration arrangements are designed to align the interests of the Executive Directors with shareholders over the short and longer term. The Committee is aware of recent developments in corporate governance and good practice in Executive remuneration and ensures that it is able to benchmark Executive remuneration against similar AIM quoted businesses, in order to attract, motivate and retain high quality individuals who will, over time, contribute to the ongoing success of the Group. No external remuneration consultants are currently utilised to support the Committee's deliberations.

To achieve our goal of alignment between shareholders and the Executive Directors, the Group provides competitive pay, split between fixed and performance-related elements. Overall remuneration is reviewed annually and the key elements are explained below:

Base salary

This is set to reflect the market value of the role and the individual's performance and contribution to the Group. Base salary is reviewed annually with any changes applied from 1 January.

Pension and other benefits

The Group provides matching a contribution of up to 5% of base salary, consistent with that offered to employees within the Group. Additionally, the Group may provide additional market-competitive benefits such as private healthcare, car allowance and life assurance.

Annual bonus

The annual bonus for the Executive Directors is set at 25% of base salary upon achieving annual earnings per share targets set within the annual budget. Additionally, no bonus can be achieved if earnings per share is below a historical high watermark.

Share options

Share options are issued to incoming Executive Directors and/or in the course of their employment in order to drive sustained long-term performance supporting the creation of shareholder value. Share options are issued at market value and vest over a period of three years. The Remuneration Committee would like to encourage and reward steady annual growth hence for all future awards of share options to Executive Directors, a performance condition of 6% compound annual growth of earnings per share over the three-year vesting period will be required to be met in order for them to be exercisable. The Executive Directors can 'bank' 1/3 of the award each year subject to meeting this annual requirement.

Non-Executive Director fee policy

Non-Executive Director fees are set such that the Chairman and Non-Executive Directors receive a base fee for their respective roles designed to be comparable to similar AIM quoted companies. Further fees are payable for additional services such as chairing any of the Board's Committees.

Fees payable to the Chairman and Non-Executive Directors are fixed and determined by the Board and are reviewed at least every three years.

Key Committee activities in 2019

The Remuneration Committee operates under the Group's agreed Terms of Reference and determines the Group's remuneration policy in respect of the terms of employment of Executive Directors and their remuneration packages.

During the year the Committee met twice and its main activities were:

- approval of Executive Directors' bonuses relating to 2018;
- benchmarking of and review of Executive Director remuneration arrangements for 2020;
- determining the performance target for the 2020 Executive Director annual bonus arrangements;
- determining appropriate performance conditions for Executive Director share options; and
- review of developments in corporate governance and best practice.

Service contracts

Executive Directors

The Executive Directors are all employed on service contracts. These are not of a fixed duration and are terminable by either party giving 12 months' written notice.

Executive Director	Date of Service Contract
DE Cicurel	24 December 2002
BL Ormsby	3 March 2015
MS Lavelle	15 November 2017

Non-Executive Directors

The Non-Executive Directors signed letters of appointment with the Company upon appointment for the provision of Non-Executive Directors' services, terminable by three months' written notice given by either party.

Non-Executive Director	Appointment Date
Hon. AR Hambro	24 December 2002
RJ Elman	25 October 2005
RL Cohen	1 May 2015
CJA Holroyd	1 June 2018

Directors' remuneration (audited)

The remuneration paid to or receivable by each person who served as a Director during the year was as follows:

	Salary/fees £000	Bonus £000	Pension £000	Benefits £000	**2019 total £000**	2018 total £000
Non-Executive Directors						
Hon. AR Hambro	36	—	—	—	**36**	39
CJA Holroyd (appointed 1 June 2018)	30	—	—	—	**30**	16
RL Cohen	26	—	—	—	**26**	26
RJ Elman	30	—	—	—	**30**	30
GC Reece (retired 1 June 2018)	—	—	—	—	**—**	20
Executive Directors						
DE Cicurel	190	48	—	5	**243**	218
BL Ormsby	166	42	8	2	**218**	197
MS Lavelle	172	43	—	18	**233**	236
Total	650	133	8	25	**816**	782

The 2019 annual bonus of 25% of base salary was awarded to the Executive Directors as a result of exceeding the earnings per share target. During 2019 no Directors exercised options over the Ordinary shares of the Company (2018: one Director).

Implementation of remuneration policy for 2020

Base salary

During the year, the Committee reviewed the base salary of the Executive Directors and considered individual performance, experience and comparable market rates and approved the following salaries for 2020:

	2020 £000	**2019 £000**
DE Cicurel	**200**	**190**
BL Ormsby	**180**	**166**
MS Lavelle	**220**	**172**

Pension and other benefits

Mark Lavelle receives 5% of his base salary as cash in lieu of contributions into a pension scheme. He previously received a car allowance however this has been commuted into his base salary for 2020. Brad Ormsby receives 5% of his base salary partly as matched pension contributions into a pension scheme and partly as cash in lieu of contributions.

Share options

The Remuneration Committee has agreed that the each of the Executive Directors be awarded 1,000 share options with the performance conditions as set out in the remuneration policy section, at the earliest opportunity following the issue of the 2019 financial statements.

Chairman and Non-Executive fees

The Chairman and Non-Executive Directors' fees have been amended as of 1 January 2020 and fixed for three years as follows:

	£000
Chairman base fee	40
Non-Executive Director base fee	30
Fee for chairing Audit or Remuneration Committee	5

Chief Executive Remuneration Level

The new pay ratio regulations for large UK listed companies came into force at the start of 2019. Whilst we, as an AIM-quoted group, are not required to adhere to these regulations, the Remuneration Committee felt it important to provide additional disclosure in line with most of the regulations to enable comparison of the Chief Executive's total remuneration for 2019.

	£000
Chief Executive total remuneration	243
Upper quartile UK employee total remuneration	49
Median UK employee total remuneration	36
Lower quartile UK employee total remuneration	28

Directors' interests

At 31 December 2019, the Directors had the following beneficial interests in the Company's Ordinary shares of 5p each and options to subscribe for shares:

Ordinary shares of the Company

	31 December 2019		1 January 2019	
	Shares	**Options**	Shares	Options
Non-Executive Directors				
Hon. AR Hambro	**64,000**	**—**	64,000	—
RL Cohen	**64,341**	**1,775**	64,341	1,775
RJ Elman	**62,512**	**—**	62,435	—
CJA Holroyd	**2,016**	**—**	2,016	—
Executive Directors				
DE Cicurel	**759,411**	**9,275**	759,339	9,275
BL Ormsby	**2,677**	**30,000**	2,584	30,000
MS Lavelle	**247**	**60,000**	175	60,000

Dividends paid in the year to Directors who hold shares amounted to £2,320,000 in aggregate (2018: £325,000).

In 2019, the Group continued to award a free "matching share" under the Judges Scientific Share Incentive Plan for every share purchased up to a maximum value of £600 per employee per tax year for all eligible employees who have completed 3 months' service within the Group. Shares acquired by Directors, including matching shares, were 72 shares acquired by DE Cicurel (2018: 97 shares), 72 shares by BL Ormsby (2018: 96 shares) and 72 shares by MS Lavelle (2018: 175 shares).

Options over Ordinary shares in the Company

	Number of shares			
Date of option issue	DE Cicurel	MS Lavelle	BL Ormsby	RL Cohen
2005 Option Scheme				
28 April 2008 at 124p	—	—	—	—
23 July 2009 at 92p	—	—	—	—
9 May 2011 at 470p	—	—	—	—
25 October 2013 at 1690p	1,775	—	—	1,775
30 March 2015 at 1437.5p	—	—	30,000	—
2015 Option Scheme				
21 October 2015 at 1402.5p	7,500	—	—	—
23 November 2017 at 1935.0p	—	60,000	—	—
	9,275	60,000	30,000	1,775

Post Year End Option Exercise

On 17 January 2020, Brad Ormsby exercised 20,000 unapproved share options. The transaction generated a gain (before tax) on exercise of £708,000. He subsequently sold 19,000 ordinary shares and his holding in the Company's shares increased by 1,000 shares to 3,680 shares. He still retains 10,000 unapproved share options.

Charles Holroyd

Remuneration Committee Chairman

17 March 2020

The Directors present their report and audited consolidated financial statements for the year ended 31 December 2019. Comparative information is provided for the year ended 31 December 2018.

Results and dividends
The results for the financial year to 31 December 2019 are set out in the Consolidated Statement of Comprehensive Income. The Company paid an interim dividend of 15.0p per Ordinary share on 1 November 2019. At the forthcoming Annual General Meeting, the Directors will recommend payment of a final dividend for the year of 35.0p per Ordinary share to be paid on Friday 3 July 2020 to shareholders on the register on Friday 5 June 2020. The shares will go ex-dividend on Thursday 4 June 2020. The total dividend proposed for the 2019 financial year will aggregate to 50.0p, an increase of 25% (2018: 40.0p). Additionally, a special dividend of 200.0p per Ordinary share was paid on 10 December 2019.

Going concern
The consolidated financial statements have been prepared on a going concern basis. The Directors have taken note of guidance issued by the Financial Reporting Council on Going Concern Assessments in determining that this is the appropriate basis of preparation of the financial statements. The Group ended 2019 with adjusted net debt of £2.0 million (equal to 7% of equity) compared to adjusted net cash of £0.9 million at 31 December 2018. This arose through satisfactory performance of the Group's principal operating companies generating healthy cashflows, offset by the continued execution of the Group's buy and build strategy where we acquired Moorfield Nanotechnology Limited for £2.3 million and £0.4 million was allocated to increasing the Group's shareholding in one of its majority-owned businesses, together with payment of the aforementioned special dividend which totalled £12.4 million.

The Group entered 2020 with a continued strong order book on the back of satisfactory trading throughout 2019. Whilst the global economic environment remains uncertain particularly with the COVID-19 pandemic causing widespread concern, we are currently in a strong financial position with high cash balances and low gearing together with a robust order book. The Directors have also planned for reasonably foreseeable worsening scenarios and, as a result, consider that the Group is appropriately placed to manage its business risks .

The Directors therefore have a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future. Therefore, they continue to adopt the going concern basis in preparing the Annual Report and Accounts.

Payment policy
The Group's policy is to agree terms and conditions with suppliers in advance and to pay agreed invoices in accordance with the agreed terms of payment. Creditor days of the Company at the end of the year represented 12 days (2018: 16 days).

Financial risk management objectives and policies
The Group utilises financial instruments (see note 23), comprising borrowings, cash and cash equivalents and various other items such as trade receivables and payables that arise directly from its operations. The main purpose of these financial instruments is to raise finance for the Group's operations. The main risks arising from the Group's financial instruments relate to interest rates, liquidity, credit and foreign currency exposure. The Directors review and agree policies for managing each of these risks, which are described and evaluated in more detail in note 27 and which are summarised below. Except as stated, the policies have remained unchanged from previous years.

1. Interest rate risk

The Group finances its operations through a mixture of bank borrowings, equity and retained profits. With adjusted net debt of £2.0 million (31 December 2018: adjusted net cash of £0.9 million) (see note 21), exposure to interest rate fluctuations remains a low risk to the Group; however, the Group's loans are subject to interest rate hedges, as described in note 27.

2. Liquidity risk

The Group seeks to manage liquidity risk by ensuring that sufficient funds are available to meet foreseeable needs and to invest cash assets safely and profitably. Primarily this is achieved through loans arranged at Group level. Short-term flexibility is achieved through the significant cash balances that the Group currently holds. Additionally, where the Group has already repaid funds into the revolving credit facility, it is able to subsequently redraw these funds should the need arise.

3. Credit risk

The Group reviews the credit risk relating to its customers by ensuring, wherever possible, that it deals with long-established trading partners, agents and government/university-backed bodies, where the risk of default is considered low. Where considered appropriate, the Group insists on upfront payment or requires letters of credit to be provided.

4. Currency risk

With exports representing a significant proportion of its sales, the main risk area to which the Group is exposed is that of foreign currencies (principally US$ and Euros). The Group adopts a strategy to hedge against this risk by entering into currency options/forward exchange contracts and/or by maintaining a proportion of its bank loans in these currencies as appropriate, although this strategy does not represent hedging under IFRS 9. The Directors review the value of this economic hedging on a regular basis. There remains, nevertheless, an ongoing threat to the Group's competitive position in international markets from any sustained period of Sterling strength. Forward and option contracts are entered into in both US Dollars and Euros maturing in the subsequent year, aimed at protecting the ensuing year's competitive position and margins from adverse currency movements.

5. Cashflow risk

The Group manages its cashflow through a mixture of working capital, bank borrowings, equity and retained profits. With adjusted net debt of £2.0 million (31 December 2018: adjusted net cash of £0.9 million) (see note 21) and cash and cash equivalents of £14.1 million, the Group's cash position is considered to be a key strength.

Disabled employees

Applications for employment by disabled persons are given full and fair consideration for accordance with their particular aptitudes and abilities. In the event of employees becoming disabled, every effort is given to retrain them in order that their employment with the Group may continue. It is the policy of the Group that training, career development and promotion opportunities should be available to all employees.

Directors

The following Directors have held office during the year and until the date of signing this report:

Hon. AR Hambro – Non-Executive Chairman

DE Cicurel

BL Ormsby

MS Lavelle

CJA Holroyd – Non-Executive

RL Cohen – Non-Executive

RJ Elman – Non-Executive

Statement of Directors' responsibilities

The Directors are responsible for preparing the Annual 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 Group consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union (IFRSs) and the parent company financial statements in accordance with United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice). 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 of the profit or loss of the Group and the parent company for that period.

In preparing each of the Group and parent company financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable IFRSs or UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group and the parent company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the parent company's transactions and disclose with reasonable accuracy at any time the financial position of the parent company and the Group and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and 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. Information published on the website is accessible in many countries and legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Provision of information to the Auditor
The Directors confirm 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 have taken all the steps that they ought to have taken as Directors in order to make themselves aware of any relevant audit information and to establish that the Auditor is aware of that information.

Auditor
The Auditor, Grant Thornton UK LLP, has expressed willingness to continue in office. In accordance with section 489(4) of the Companies Act 2006, a resolution to re-appoint Grant Thornton UK LLP will be proposed at the Annual General Meeting.

Annual General Meeting
The Annual General Meeting of the Company will be held on Wednesday 20 May 2020 at 12.00 noon at 52c Borough High Street, London SE1 1XN.

On behalf of the Board

Brad Ormsby
Director
17 March 2020

Company registration number: 04597315 (England and Wales)

Independent auditor's report

To the members of Judges Scientific plc

Opinion

Our opinion on the financial statements is unmodified

We have audited the financial statements of Judges Scientific plc (the 'parent company') and its subsidiaries (the 'group') for the year ended 31 December 2019, which comprise the Consolidated statement of comprehensive income, the Consolidated and parent company balance sheets, the Consolidated and parent company statements of changes in equity, the Consolidated cashflow statement and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in the preparation of the group financial statements is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union. The financial reporting framework that has been applied in the preparation of the parent company financial statements is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 101 'Reduced Disclosure Framework' (United Kingdom Generally Accepted Accounting Practice).

In our opinion:

- the financial statements give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2019 and of the group's profit for the year then ended;
- the group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the parent company 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 group and the parent 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 as applied to listed entities, 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.

The impact of uncertainties arising from the UK exiting the European Union on our audit

Our audit of the financial statements requires us to obtain an understanding of all relevant uncertainties, including those arising as a consequence of the effects of Brexit. All audits assess and challenge the reasonableness of estimates made by the directors and the related disclosures and the appropriateness of the going concern basis of preparation of the financial statements. All of these depend on assessments of the future economic environment and the group's and parent company's future prospects and performance.

Brexit is one of the most significant economic events for the UK, and at the date of this report its effects are subject to unprecedented levels of uncertainty, with the full range of possible outcomes and their impacts unknown. We applied a standardised firm-wide approach in response to these uncertainties when assessing the group's and parent company's future prospects and performance. However, no audit should be expected to predict the unknowable factors or all possible future implications for a group and parent company associated with a course of action such as Brexit.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the group's or the parent company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

In our evaluation of the directors' conclusions, we considered the risks associated with the group's and parent company's business model, including effects arising from Brexit, and analysed how those risks might affect the group's and parent company's financial resources or ability to continue operations over the period of at least twelve months from the date when the financial statements are authorised for issue. In accordance with the above, we have nothing to report in these respects.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of reference to a material uncertainty in this auditor's report is not a guarantee that the company will continue in operation.

Overview of our audit approach

- Overall materiality: £678,000, which represents 5% of the group's profit before tax;
- Key audit matters were identified as goodwill impairment and business combinations accounting; and
- We performed full scope audit procedures on the financial statements of Judges Scientific plc and on the financial information of all significant components. We performed specified audit procedures on the financial information of the other components as detailed in the 'An overview of the scope of our audit' section below.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those that had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key Audit Matter – Group	How the matter was addressed in the audit – Group
Goodwill impairment There is a risk that goodwill recognised on historical acquisitions may be impaired. In accordance with International Accounting Standard (IAS) 36 'Impairment of Assets', goodwill is tested annually for impairment by reference to the value in use of the relevant cash-generating units. Management's assessment of the potential impairment of the group's goodwill incorporates significant judgements in assumptions, such as timing and extent of future profits and cash flows and relevant income-generating units and an estimate of their values in use whilst applying an appropriate discount rate. We therefore identified the goodwill impairment as a significant risk, which was one of the most significant assessed risks of material misstatement**.**	Our audit work included, but was not restricted to: • Considering the appropriateness of the methodology applied by management in their assessment of impairment and the judgements applied; • Assessing the accounting policy to check it is in accordance with the financial reporting framework, including IAS 36; • Checking of the mathematical accuracy of the impairment models; • Checking the appropriateness of the forecast growth rates; • Comparison of historical forecasts against actual results; • Assessing the discount rate applied to future cash flows; • Performing sensitivity analysis on key assumptions made in calculations; and • Evaluating the information included in management's impairment models through our knowledge of the business and discussions with management. The group's accounting policies on impairment testing of goodwill (and other assets) is shown in note 2 to the consolidated financial statements and related disclosures are included in note 13. **Key observations** Our audit testing did not identify any material impairment of goodwill to be recognised within the financial statements and we found no errors in calculations completed.
Business combinations accounting The group has a business model based on acquiring businesses and during the year, one acquisition was made. There is a risk that the intangible assets, including goodwill, are not recognised in accordance with IFRS 3 'Business Combinations'. Due to the high level of judgement and assumptions necessary to perform valuations of separately identifiable intangible assets arising from the acquisition of a business, and due to the materiality of the intangible assets and goodwill recognised by the group as a result, business combinations accounting has been identified as a significant risk, which was one of the most significant assessed risks of material misstatement.	Our audit work included, but was not restricted to: • Assessing the accounting for acquisitions in the year to check if it was in accordance with the financial reporting framework, including IFRS 3; • Assessing whether the disclosures made are in accordance with the financial report framework; • Using our internal valuations team to assess the valuation models prepared by management in respect of the acquisition, including the basis and methodology adopted for identifying separate intangibles distinct from goodwill; • Obtaining the business combination workings for the acquisition prepared by management, checking its mathematical accuracy, and obtaining corroboration of the judgements used; and • Checking the appropriateness of discount rates and growth rates applied.

Key Audit Matter – Group	How the matter was addressed in the audit – Group
	The group's accounting policy on intangible assets acquired as part of a business combination is shown in note 2 to the consolidated financial statements and related disclosures are included in note 28. **Key observations** Our audit testing did not identify any material misstatements in the accounting for business combinations. Based on our audit work, intangibles recognised in the year as a result of business combinations are in accordance with IFRS 3 in all material respects and we found no material errors in the calculations.

We did not identify any key audit matters relating to the audit of the financial statements of the parent company.

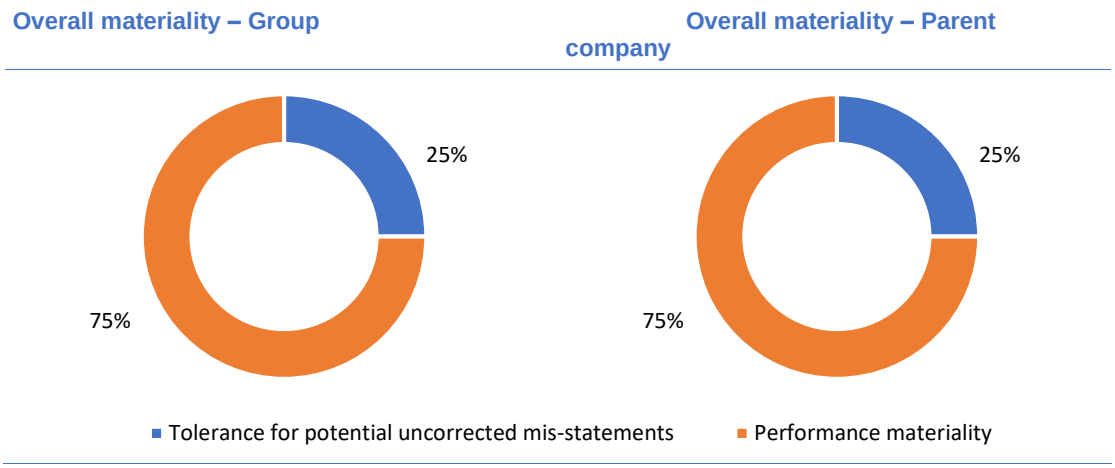
Our application of materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality in determining the nature, timing and extent of our audit work and in evaluating the results of that work.

Materiality was determined as follows:

Materiality measure	Group	Parent company
Financial statements as a whole	£678,000, which represents 5% of the group's profit before tax. This benchmark is considered the most appropriate because maximisation of shareholder return is a key measure used by management in assessing performance of the business. Materiality for the current year is higher than the level that we determined for the year ended 31 December 2018, which reflects the increase in the group's profit before tax from the prior year and the change in benchmark and measurement percentage from 3.5% of the group's adjusted profit before tax last year.	£508,000, which represents 1% of the parent company's total assets, capped at its component materiality, being 75% of group materiality. This benchmark is considered the most appropriate because the parent company is primarily a holding company of investments and other assets. This benchmark is unchanged from the prior year. Materiality for the current year is higher than the level that we determined for the year ended 31 December 2018, which reflects the increase in group materiality, and the capping referred to above.
Performance materiality used to drive the extent of our testing	75% of financial statement materiality.	75% of financial statement materiality.
Specific materiality	We also determined a lower level of specific materiality for certain areas such as directors' remuneration and related party transactions.	We also determined a lower level of specific materiality for certain areas such as directors' remuneration and related party transactions.
Communication of misstatements to the audit committee	£34,000 and misstatements below that threshold that, in our view, warrant reporting on qualitative grounds.	£25,500 and misstatements below that threshold that, in our view, warrant reporting on qualitative grounds.

The graph below illustrates how performance materiality interacts with our overall materiality and the tolerance for potential uncorrected misstatements.



An overview of the scope of our audit

Our audit approach was a risk-based approach founded on a thorough understanding of the group's business, its environment and risk profile and in particular included:

- Judges Scientific plc has centralised processes and controls. Whilst group management are responsible for all judgemental processes and significant risk areas in respect of the consolidated financial statements, each trading subsidiary has a decentralised local accounting function which reports to the local subsidiary management who are responsible for the operations and financial management of the subsidiary companies. We have tailored our audit response accordingly with all group audit work undertaken by the group audit team. In assessing the risk of material misstatement of the group financial statements we considered the transactions undertaken by each entity and therefore where the focus of our work was required;
- We performed full scope audit procedures on the financial statements of Judges Scientific plc, and on the financial information of all significant components. We completed full scope audit procedures on the financial information of each UK trading subsidiary except Moorfield Nanotechnology Limited. The other components were Moorfield Nanotechnology Limited, on which we performed specified audit procedures on the acquisition balance sheet and the three overseas components, Armfield Inc., Scientifica LLC and Dia-Stron Inc., on which we performed specified audit procedures to audit material transactions and balances affecting the group financial statements; and
- Our audit approach in the current year is consistent with that of the prior year.

Other information

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

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Our opinion on other matters prescribed by the Companies Act 2006 is unmodified

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

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report under the Companies Act 2006

In the light of the knowledge and understanding of the group and the parent 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 by the parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the parent company 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 for the financial statements

As explained more fully in the statement of directors' responsibilities set out on page 22, 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 group's and the parent 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 group or the parent 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.

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.

Alison Seekings
Senior Statutory Auditor
for and on behalf of Grant Thornton UK LLP
Statutory Auditor, Chartered Accountants
Leicester
17 March 2020

Consolidated statement of comprehensive income

For the year ended 31 December 2019

	Note	**Adjusted £000**	**Adjusting items £000**	**2019 Total £000**	Adjusted £000	Adjusting items £000	2018 Total £000
Revenue	3	**82,499**	**—**	**82,499**	77,868	—	77,868
Operating costs	3	**(65,115)**	**—**	**(65,115)**	(63,137)	—	(63,137)
Adjusted operating profit	3	**17,384**	**—**	**17,384**	14,731	—	14,731
Adjusting items	4	—	**(3,274)**	**(3,274)**	—	(4,045)	(4,045)
Operating profit/(loss)		**17,384**	**(3,274)**	**14,110**	14,731	(4,045)	10,686
Interest income	9	**101**	—	**101**	41	—	41
Interest expense	9	**(532)**	**(48)**	**(580)**	(485)	(54)	(539)
Profit/(loss) before tax		**16,953**	**(3,322)**	**13,631**	14,287	(4,099)	10,188
Taxation (charge)/credit	10	**(2,484)**	**707**	**(1,777)**	(2,138)	1,085	(1,053)
Profit/(loss) for the year		**14,469**	**(2,615)**	**11,854**	12,149	(3,014)	9,135
Attributable to:							
Owners of the parent		**13,828**	**(2,446)**	**11,382**	11,329	(2,834)	8,495
Non-controlling interests		**641**	**(169)**	**472**	820	(180)	640
Profit/(loss) for the year		**14,469**	**(2,615)**	**11,854**	12,149	(3,014)	9,135
Other comprehensive income							
Items that will not be reclassified subsequently to profit or loss							
Retirement benefits actuarial (loss)/gain				**(375)**			168
Items that may be reclassified subsequently to profit or loss							
Exchange differences on translation of foreign subsidiaries				**(62)**			66
Other comprehensive income for the year, net of tax				**(437)**			234
Total comprehensive income for the year				**11,417**			9,369
Attributable to:							
Owners of the parent				**10,945**			8,729
Non-controlling interests				**472**			640

		2019 Pence	**2019 Pence**	2018 Pence	2018 Pence
Earnings per share – adjusted					
Basic	12	**222.5**		183.4	
Diluted	12	**218.4**		180.6	
Earnings per share – total					
Basic	12		**183.1**		137.5
Diluted	12		**179.8**		135.4

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated balance sheet

As at 31 December 2019

	Note	**2019 £000**	2018 £000
ASSETS			
Non-current assets			
Goodwill	13	**15,265**	14,650
Other intangible assets	14	**4,458**	5,373
Property, plant and equipment	15	**6,107**	5,524
Right-of-use leased assets	16	**4,428**	—
Deferred tax assets	17	**1,873**	719
		32,131	26,266
Current assets			
Inventories	18	**12,543**	10,502
Trade and other receivables	19	**11,814**	13,231
Cash and cash equivalents		**14,123**	15,727
		38,480	39,460
Total assets		**70,611**	65,726
LIABILITIES			
Current liabilities			
Trade and other payables	20	**(15,322)**	(13,977)
Trade and other payables relating to acquisitions	28	**(1,896)**	—
Borrowings	21	**(3,051)**	(3,058)
Right-of-use lease liabilities	22	**(757)**	—
Current tax liabilities		**(2,258)**	(2,204)
		(23,284)	(19,239)
Non-current liabilities			
Borrowings	21	**(11,399)**	(11,968)
Right-of-use lease liabilities	22	**(3,689)**	—
Deferred tax liabilities	17	**(1,447)**	(1,477)
Retirement benefit obligations	29	**(2,100)**	(1,836)
		(18,635)	(15,281)
Total liabilities		**(41,919)**	(34,520)
Net assets		**28,692**	31,206
EQUITY			
Share capital	24	**311**	310
Share premium account		**15,453**	15,164
Other reserves	26	**2,059**	2,121
Retained earnings		**10,048**	13,049
Equity attributable to owners of the parent company		**27,871**	30,644
Non-controlling interests	30	**821**	562
Total equity		**28,692**	31,206

The accompanying notes form an integral part of these consolidated financial statements.

The financial statements were approved by the Board on 17 March 2020.

David Cicurel **Brad Ormsby**
Director ***Director***

Consolidated statement of changes in equity

For the year ended 31 December 2019

	Share capital £000	Share premium £000	Other reserves £000	Retained earnings £000	Total attributable to owners of the parent £000	Non-controlling interests £000	Total equity £000
At 1 January 2019	310	15,164	2,121	13,049	30,644	562	31,206
Dividends	—	—	—	(15,126)	(15,126)	—	(15,126)
Adjustment arising from change in non-controlling interest	—	—	—	(204)	(204)	(213)	(417)
Issue of share capital	1	289	—	—	290	—	290
Deferred tax on share-based payments	—	—	—	1,027	1,027	—	1,027
Share-based payments	—	—	—	295	295	—	295
Transactions with owners	1	289	—	(14,008)	(13,718)	(213)	(13,931)
Profit for the year	—	—	—	11,382	11,382	472	11,854
Retirement benefit actuarial loss	—	—	—	(375)	(375)	—	(375)
Foreign exchange differences	—	—	(62)	—	(62)	—	(62)
Total comprehensive income for the year	—	—	(62)	11,007	10,945	472	11,417
At 31 December 2019	**311**	**15,453**	**2,059**	**10,048**	**27,871**	**821**	**28,692**
At 1 January 2018	307	14,529	2,055	6,688	23,579	1,077	24,656
Dividends	—	—	—	(2,103)	(2,103)	(162)	(2,265)
Adjustment arising from change in non-controlling interest	—	—	—	(518)	(518)	(993)	(1,511)
Issue of share capital	3	635	—	—	638	—	638
Share-based payments	—	—	—	319	319	—	319
Transactions with owners	3	635	—	(2,302)	(1,664)	(1,155)	(2,819)
Profit for the year	—	—	—	8,495	8,495	640	9,135
Retirement benefit actuarial gain	—	—	—	168	168	—	168
Foreign exchange differences	—	—	66	—	66	—	66
Total comprehensive income for the year	—	—	66	8,663	8,729	640	9,369
At 31 December 2018	310	15,164	2,121	13,049	30,644	562	31,206

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated cashflow statement

For the year ended 31 December 2019

	2019 £000	2018 £000
Cashflows from operating activities		
Profit after tax	**11,854**	9,135
Adjustments for:		
Financial instruments measured at fair value:		
Hedging contracts	**(37)**	56
Share-based payments	**295**	319
Depreciation of property, plant and equipment	**771**	746
Depreciation of right-of-use leased assets	**863**	—
Amortisation of intangible assets	**2,739**	3,633
Loss on disposal of property, plant and equipment	**1**	18
Charge on exit from right-of-use leases	**39**	—
Foreign exchange (gain)/loss on foreign currency loans	—	(18)
Interest income	**(101)**	(41)
Interest expense	**397**	485
Retirement benefit obligation net finance cost	**48**	54
Interest payable on right-of-use lease liabilities	**135**	—
Contributions to defined benefit plans	**(236)**	(236)
Tax expense recognised in the Statement of Comprehensive Income	**1,777**	1,053
Increase in inventories	**(1,794)**	(122)
Decrease/(increase) in trade and other receivables	**1,566**	(1,404)
Increase in trade and other payables	**763**	2,000
Cash generated from operations	**19,080**	15,678
Tax paid	**(2,205)**	(2,351)
Net cash from operating activities	**16,875**	13,328
Cashflows from investing activities		
Paid on acquisition of subsidiaries	**(2,288)**	(599)
Gross cash inherited on acquisition	**2,201**	—
Acquisition of subsidiaries, net of cash acquired	**(87)**	(599)
Purchase of property, plant and equipment	**(1,303)**	(955)
Proceeds on disposal of property, plant and equipment	**22**	18
Interest received	**101**	41
Net cash used in investing activities	**(1,267)**	(1,495)
Cashflows from financing activities		
Proceeds from issue of share capital	**290**	638
Finance costs paid	**(393)**	(525)
Repayments of borrowings*	**(2,868)**	(3,183)
Repayments of right-of-use lease liabilities	**(926)**	—
Proceeds from bank loans*	**2,288**	—
Equity dividends paid	**(15,126)**	(2,103)
Share repurchase – non-controlling interest in subsidiary	**(417)**	(1,511)
Dividends paid – non-controlling interest in subsidiary	—	(162)
Net cash used in financing activities	**(17,152)**	(6,846)
Net change in cash and cash equivalents	**(1,544)**	4,986
Cash and cash equivalents at the start of the year	**15,727**	10,681
Exchange movements	**(60)**	60
Cash and cash equivalents at the end of the year	**14,123**	15,727

* On 27 April 2018, £12,896,000 of outstanding loans were repaid and simultaneously reborrowed as the Group renewed its banking facilities (see note 21).

The accompanying notes form an integral part of these consolidated financial statements.

1. General information

Judges Scientific plc is the ultimate parent company of the Group, whose principal activities comprise the design, manufacture and sale of scientific instruments.

Judges Scientific plc is incorporated and domiciled in the UK and its registered office is 52c Borough High Street, London SE1 1XN.

2. Summary of significant accounting policies

Basis of preparation

The consolidated financial statements have been prepared under the historical cost convention except for certain financial instruments which are carried at fair value.

Being quoted on the Alternative Investment Market of the London Stock Exchange, the Company is required to present its consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union. Accordingly, these financial statements have been prepared in accordance with the accounting policies set out below which are based on the IFRS in issue as adopted by the European Union (EU) and in effect at 31 December 2019.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements, are disclosed under "Use of key accounting estimates and judgements".

Changes in accounting policies

Standards adopted for the first time

IFRS 16 'Leases' (effective date 1 January 2019)

The Group has adopted IFRS 16 'Leases' as of 1 January 2019. The modified retrospective approach was applied on transition. Prior period comparatives have not been restated, and there was no adjustment to equity on transition.

IFRS 16 requires the capitalisation of operating leases, such as the Group's building and vehicle leases, as right-of-use leased assets with an offsetting financial liability. The Group has elected to measure the right-of-use leased assets at an amount equal to the lease liabilities adjusted for any prepaid or accrued lease payments that existed at the date of transition. Right-of-use assets and liabilities are presented separately in the Consolidated Balance Sheet. On transition to IFRS 16 the weighted average incremental borrowing rate used to measure lease liabilities was 4.25%.

In the Consolidated Statement of Comprehensive Income the previous rental charge has been replaced with a combination of depreciation from the right-of-use leased assets and an interest charge from the lease liabilities. Further details on the right-of-use assets and liabilities are in notes 16 and 22 respectively. The effect for the year ended 31 December 2019 is as follows:

	Year to 31 December 2019 £000
Rental lease charges under previous accounting standard	927
Depreciation of right-of-use leased assets	(863)
Increase in operating profit due to IFRS 16	**64**
Interest charge from right-of-use liabilities	(135)
Decrease in profit before tax due to IFRS 16	**(71)**
Decrease in earnings per share due to IFRS 16	(0.93p)

In the year of adoption operating profit increases, but profit before tax decreases, and earnings per share is reduced. Assuming no further changes to the Group's leases, the increase in operating profit will endure, however in future years the interest charge will reduce as the discount unwinds.

The following is a reconciliation of total operating lease commitments at 31 December 2018 to the right-of-use lease liabilities and assets recognised at 1 January 2019:

	1 January 2019 £000
Total operating lease commitments disclosed at 31 December 2018	3,363
Adjustments to commitments disclosures	(155)
Right-of-use lease liabilities before discounting	3,208
Discounted using incremental borrowing rate	(296)
Right-of-use lease liabilities recognised at 1 January 2019	**2,912**
Adjustments for prepaid rent at 31 December 2018	135
Adjustments for accrued rent at 31 December 2018	(42)
Right-of-use leased assets recognised at 1 January 2019	**3,005**

Standards, amendments and interpretations to existing standards that are not yet effective

At the date of approval of these consolidated financial statements, certain new standards, amendments to and interpretations of existing standards have been published but are not yet effective. None of these pronouncements have been adopted early by the Group, and they have not been disclosed as they are not expected to have a material impact on the Group's financial statements. Management anticipates that all relevant pronouncements will be adopted for the first period beginning on or after their effective date.

Consolidation

The consolidated financial statements include those of the parent company and its subsidiaries. Subsidiaries are entities where the Group is exposed, or has rights, to variable returns from its involvement with the subsidiary and has the ability to affect those returns through its power over the subsidiary. The Group obtains and exercises control through voting rights. Income, expenditure, unrealised gains and intra-Group balances arising from transactions within the Group are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred.

The Group uses the purchase method of accounting for the acquisition of a subsidiary. Acquisition consideration is measured at the fair value of the consideration given, equity instruments issued and liabilities incurred or assumed at the date of exchange.

Business combination costs directly attributable to the acquisition are immediately written off through the Consolidated Statement of Comprehensive Income. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date irrespective of the extent of any non-controlling interest. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill. If the cost of the acquisition is less than the fair value of the net assets of the subsidiary acquired, the difference is recognised directly in the Consolidated Statement of Comprehensive Income.

The parent company has taken the merger relief that is required by section 612 of the Companies Act 2006 in respect of the fair value of the consideration received in excess of the nominal value of the equity shares issued in connection with the acquisition of Fire Testing Technology Limited, UHV Design Limited, Scientifica Limited and Armfield Limited.

Goodwill

Goodwill is the difference between the fair value of the consideration paid and the fair value of the net identifiable assets and liabilities acquired in a business combination. Following recognition, it is not amortised; however, it is subject to impairment testing on an annual basis or more frequently if circumstances indicate that the asset may have become impaired and is carried at cost less accumulated impairment losses. Goodwill is allocated to cash-generating units for the purpose of impairment testing.

Revenue recognition

In accordance with IFRS 15 'Revenues from Contracts with Customers', revenue is measured by reference to the fair value of consideration received or receivable by the Group, excluding value added tax (or similar local sales tax), in exchange for transferring the promised goods or services to the customer. The consideration is allocated to each separate performance obligation that is identified in a sales contract, based on stand-alone selling prices. Sales of instruments and spares, and sales of services, such as non-specialised installation, support, training or consultancy, are assessed to be separate performance obligations.

Revenue is recognised when (or as) the Group satisfies the identified performance obligation. For sales of instruments and spares, the performance obligation is satisfied at a point in time; for revenue from services, the performance obligation is satisfied over time. As the period of time between payment and performance is less than one year, the Group does not adjust revenue for the effects of financing.

Revenue from sales of instruments and spares is recognised at the point at which the customer obtains control of the asset. This is usually on despatch of the instrument; however, for sales from overseas subsidiaries, it is when the customer receives the goods. For large, complex instruments which require highly specialised installation, revenue is recognised at the point at which installation is completed.

Revenue from services is recognised when the service is performed. Revenue from extended warranty and maintenance contracts is recognised once the performance obligation to the customer has been satisfied.

Interest income is recognised using the effective interest method which calculates the amortised cost of a financial asset and allocates the interest income over the relevant period. Dividend income is recognised when the shareholder's right to receive payment is established.

Segment reporting

The Group's activities are predominantly in or in support of the design and manufacture of scientific instruments. The Group operates two main operating segments: Materials Sciences and Vacuum. No operating segments have been aggregated.

Operating segments are reported in a manner consistent with internal reporting provided to the Board of Directors, which is responsible for allocating and assessing performance of operating segments, and which is considered to be the Chief Operating Decision Maker. Each segment's range of instruments has its individual requirements in terms of design, manufacture and marketing.

Intangible assets acquired as part of a business combination

In accordance with IFRS 3 'Business Combinations', an intangible asset acquired in a business combination is deemed to have a cost to the Group of its fair value at the acquisition date. The fair value of the intangible asset reflects market expectations about the probability that the future economic benefits embodied in the asset will flow to the Group.

Amortisation charges are included as adjusting items in operating costs in the Consolidated Statement of Comprehensive Income. Amortisation is provided at rates calculated to write off the cost of each intangible asset over its expected useful life, as follows:

Acquired customer relationships	3 years
Acquired non-competition agreements	2 years
Acquired distribution agreements	Between 2 and 5 years
Acquired technology	5 years
Acquired sales order backlog	On shipment (this is usually consumed within six months of initial recognition)
Acquired brand and domain names	Between 1 and 5 years

Subsequent to initial recognition, intangible assets are stated at deemed cost less accumulated amortisation.

Research and development

Research and development expenditure is recognised in the Consolidated Statement of Comprehensive Income as an expense until it can be demonstrated that the conditions for capitalisation under IAS 38 'Intangible Assets' apply.

The criteria for capitalisation include demonstration that the project is technically and commercially feasible, the Group has sufficient resources to complete development and the asset will generate probable future economic benefit.

Property, plant and equipment

Property, plant and equipment is stated at historical cost, less accumulated depreciation.

Disposal of assets: the gain or loss arising on the disposal of an asset is determined as the difference between the disposal proceeds and the carrying amount of the asset and is recognised in the Consolidated Statement of Comprehensive Income.

Depreciation: provided at annual rates calculated to write off the cost less residual value of each asset over its expected useful life, within the following ranges:

Property	50 years (excluding the estimated cost of land)
Plant and machinery	7 years
Fixtures, fittings and equipment	Between 3 and 7 years
Motor vehicles	4 years
Building improvements	Over the minimum term of the lease

Material residual value estimates and expected useful lives are updated as required but at least annually.

Impairment testing of goodwill, other intangible assets and property, plant and equipment

For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are largely independent cash inflows (cash-generating units). As a result, some assets are tested individually for impairment and some are tested at cash-generating unit level. Goodwill is allocated to those cash-generating units that are expected to benefit from synergies of the related business combination and represent the lowest level within the Group at which management monitors goodwill.

Cash-generating units to which goodwill has been allocated are tested for impairment at least annually. All other individual assets or cash-generating units are tested whenever events or changes in circumstances indicate that the carrying amount may not be recoverable.

An impairment loss is recognised for the amount by which the asset's or cash-generating unit's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of fair value, reflecting market conditions less costs to sell, and value in use. Value in use is based on estimated future cashflows from each cash-generating unit, discounted at a suitable rate in order to calculate the present value of those cashflows. The data used for impairment testing procedures is directly linked to the Group's latest approved budgets, adjusted as necessary to exclude any future restructuring to which the Group is not yet committed. Discount rates are determined individually for each cash-generating unit and reflect their respective risk profiles as assessed by the Directors.

Impairment losses for cash-generating units reduce first the carrying amount of any goodwill allocated to that cash-generating unit. Any remaining impairment loss is charged pro rata to the other assets in the cash-generating unit. With the exception of goodwill, all assets are subsequently reassessed for indications that an impairment loss previously recognised may no longer exist. Impairment charges are included in operating costs in the Statement of Comprehensive Income. An impairment charge that has been recognised is reversed if the cash-generating unit's recoverable amount exceeds its carrying amount.

Leases

Any contract entered into, which contains an identified asset, whose use the Group has the right to direct throughout the period of the lease, and the right to obtain substantially all of the economic benefits from, is accounted for as a lease. At lease commencement date, the Group recognises a right-of-use leased asset and a lease liability on the balance sheet. The lease liability is measured at the present value of the total lease payments due, discounted using the interest rate implicit in the lease if readily available, or at the Group's incremental borrowing rate. The right-of-use asset is measured at cost, being the lease liability, plus any initial direct costs incurred by the group, or lease payments made in advance of the commencement date.

Right-of-use assets are depreciated on a straight-line basis to the end of the lease term.

The Group assesses the right-of-use asset for impairment when such indicators exist. Lease liabilities are remeasured to reflect any reassessment or modification of the lease – when the lease liability is remeasured, the corresponding adjustment is reflected in the right-of-use leased asset, or in the Statement of Comprehensive Income if the asset is already reduced to zero.

Inventories

Inventories are recorded at the lower of cost and net realisable value. Costs of ordinarily interchangeable items are assigned using the first-in, first-out cost formula. Cost includes materials, direct labour and an attributable proportion of manufacturing overheads based on normal levels of activity.

Taxation

Current tax is the tax currently payable based on taxable profit for the year.

Deferred taxes are calculated using the liability method on temporary differences. Deferred tax is generally provided on the difference between the carrying amounts of assets and liabilities and their tax bases. However, deferred tax is not provided on the initial recognition of goodwill, nor on the initial recognition of an asset or liability unless the related transaction is a business combination or affects tax or accounting profit. Deferred tax on temporary differences associated with shares in subsidiaries is not provided if reversal of those temporary differences can be controlled by the Group and it is probable that reversal will not occur in the foreseeable future. In addition, tax losses available to be carried forward as well as other income tax credits to the Group are assessed for recognition as deferred tax assets.

Deferred tax liabilities are provided in full, with no discounting. Deferred tax assets are recognised to the extent that it is probable that the underlying deductible temporary differences will be able to be offset against future taxable income. Current and deferred tax assets and liabilities are calculated at tax rates that are expected to apply to their respective period of realisation, provided they are enacted or substantively enacted at the balance sheet date.

Changes in deferred tax assets or liabilities are recognised as a component of tax expense in the Statement of Comprehensive Income, except:

- where they relate to items that are charged or credited directly to equity in which case the related deferred tax is also charged or credited directly to equity; or
- where items are recognised in other comprehensive income, in which case the related deferred tax is recognised in other comprehensive income.

Share-based employee compensation

The Group operates equity-settled share-based compensation plans for remuneration of its Directors and employees.

All employee services received in exchange for the grant of any share-based compensation are measured at their fair values. The fair value is appraised at the grant date and excludes the impact of any non-market vesting conditions (e.g. profitability or sales growth targets).

Share-based compensation is recognised as an expense in the Statement of Comprehensive Income with a corresponding credit to other reserves. If vesting periods or other vesting conditions apply, the expense is allocated over the vesting period, based on the best available estimate of the number of share options expected to vest. Non-market vesting conditions are included in assumptions about the number of options that are expected to become exercisable. Estimates are subsequently revised if there is any indication that the number of share options expected to vest differs from previous estimates.

The proceeds received net of any directly attributable transaction costs are credited to share capital and share premium when the options are exercised.

Financial assets

Financial assets consist of loans, receivables and derivatives.

Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and in hand and short-term deposits which are subject to an insignificant risk of changes in value.

Trade receivables

Trade receivables are recognised and carried at the original invoice amount less a provision for uncollectable amounts. An estimate of uncollectable amounts is made on initial recognition of each receivable and updated should collection of the amount become no longer probable. The Group uses historical experience and external information to determine the need for, and quantum of, any such provision. Uncollectable amounts are written off to the Statement of Comprehensive Income when identified.

Financial liabilities

Financial liabilities are obligations to pay cash or other financial assets and are recognised when the Group becomes a party to the contractual provisions of the instrument. Financial liabilities are recorded initially at fair value net of direct issue costs if they are not held at fair value through profit and loss. Derivatives are recorded at fair value through profit or loss. The fair value of derivative financial instruments is determined by reference to active market transactions or using a valuation technique where no active market exists.

All financial liabilities with the exception of interest rate swaps and foreign currency options are recorded at amortised cost using the effective interest method, with interest-related charges recognised as an expense in finance cost in the Statement of Comprehensive Income.

These financial liabilities include trade and other payables and borrowings, including bank loans, subordinated loans and hire purchase commitments. Finance charges, including premiums payable on settlement or redemption and direct issue costs, are charged to the Statement of Comprehensive Income on an accruals basis using the effective interest method and are added to the carrying amount of the instrument to the extent that they are not settled in the period in which they arise.

Interest rate swaps and foreign currency options are treated as derivative financial instruments and are accounted for at fair value through profit and loss.

A financial liability is derecognised only when the obligation is extinguished, that is, when the obligation is discharged or cancelled or expires.

Employee benefits – Defined contribution plans

The Group operates defined contribution pension schemes for employees and Directors. The assets of the schemes are held by investment managers separately from those of the Group. The contributions payable to these schemes are recorded in the Statement of Comprehensive Income in the accounting period to which they relate.

Employee benefits – Defined benefit plans

The Group operates a funded defined benefit scheme, where payments are made to trustee administered funds. The asset or liability recognised in the Consolidated Balance Sheet is calculated as the present value of the defined benefit obligation less the fair value of the plan assets, as at the balance sheet date.

The defined benefit obligation is calculated at least triennially by independent actuaries using the projected unit credit method and is determined by discounting the estimated future cash outflows using interest rates of high quality corporate bonds, matched to the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension obligation. The plan administration expenses and past service costs or credits are recognised as an operating expense in the Consolidated Statement of Comprehensive Income. There is no current service cost. The retirement benefits obligation net finance cost is the change during the year in the net defined benefit liability due to the passage of time and is recognised as an interest expense in the Consolidated Statement of Comprehensive Income. The interest rate is based on the yield on high quality corporate bonds. Actuarial gains and losses arising from changes in actuarial assumptions and experience adjustments are recognised in the Consolidated Statement of Comprehensive Income in the year which they arise.

Foreign currencies

Transactions in foreign currencies are translated at the exchange rate ruling at the date of the transaction. Monetary assets and liabilities in foreign currencies are translated at the rates of exchange ruling at the balance sheet date. Exchange differences arising on the settlement of monetary items or on translating monetary items at rates different from those at which they were initially recorded are recognised in the Statement of Comprehensive Income in the period in which they arise. In respect of overseas subsidiaries on consolidation, assets and liabilities have been translated at the closing rate and income and expenses have been translated at the average rate over the reporting period. Exchange differences are recorded in other comprehensive income.

Dividends

Final dividend distributions payable to equity shareholders are included in trade and other payables when the dividends are approved in general meeting but not paid prior to the balance sheet date. Interim dividends are recognised in the period in which they are paid.

Equity

Equity comprises the following:

Share capital

Share capital represents the nominal value of equity shares.

Share premium

Share premium represents the excess over nominal value of the fair value of consideration received for equity shares, net of expenses of the share issue.

Capital redemption reserve

Capital redemption reserve represents amounts set aside from retained earnings on conversion of convertible redeemable shares equal to the reduction then arising in the overall nominal value of share capital of all classes.

Merger reserve

Merger reserve represents the fair value of the consideration received in excess of the nominal value of equity shares issued in connection with acquisitions where the Company has taken the merger relief that is required by section 612 of the Companies Act 2006.

Retained earnings

Retained earnings represents retained profits and losses.

Non-controlling interests

Non-controlling interests represent retained profits and losses attributable to minority shareholders in subsidiary companies.

Adjusting items

Adjusting items (and their related tax impact) are those which by their size or nature the Directors consider should be disclosed separately for the purposes of presenting results and earnings per share figures so as to enable users of the financial statements to evaluate more effectively the underlying operating performance of the Group.

Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of a past event, it is likely that an outflow of resource will be required to settle the obligation and that the amount of the probable outflow can be reasonably estimated. Where the Group expects all or some of the obligation to be reimbursed, the reimbursement is recognised as a separate asset to the extent that it is virtually certain to be reimbursed. The expense relating to any provision is presented in the Statement of Comprehensive Income net of any reimbursement.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the year-end date. If material, provisions are determined by discounting the expected future cashflows using rates that reflect current market assessments of the time value of money.

Use of key accounting estimates and judgements

Many of the amounts included in the consolidated financial statements involve the use of judgement and/or estimation. These judgements and estimates are based on management's best knowledge of the relevant facts and circumstances, having regard to prior experience, but actual results may differ from the amounts included in the consolidated financial statements. Information about such judgements and estimation is contained in the accounting policies and/or the notes to the consolidated financial statements and the key areas are summarised below.

Judgements in applying accounting policies

- ***Revenue recognition:*** The Group makes a judgement whether all of the conditions required for revenues to be recognised in the Statement of Comprehensive Income have been met.
- ***Research and development:*** The Group makes judgement as to whether all of the conditions required for assets to be recognised have been met.

Sources of estimation uncertainty

- ***Retirement benefits:*** The costs and present value of any related pension assets and liabilities depend on factors such as life expectancy of the members, the salary progression of current employees, the returns that plan assets generate and the discount rate used to calculate the present value of the liabilities. The Group uses estimates based on the previous experience and independent external actuarial advice in determining these future cashflows and the discount rate. See note 29 for additional information.
- ***Inventory:*** Inventory is carried at the lower of cost and net realisable value which requires an estimation of products' future selling prices. A provision is also recorded to reduce any slow-moving, obsolete or demonstration inventory to net realisable value. See note 18 for additional information.
- ***Fair value assessment of a business combination:*** Following an acquisition the Group makes an assessment of all assets and liabilities, inclusive of identification of intangible assets and acquired and/or related goodwill. The valuation process for the intangible assets requires a number of estimates to be made regarding future performance of an acquisition, together with other asset-specific factors. In order to estimate the fair value of separately identifiable assets in business combinations certain assumptions must be made about future trading performance, royalty rates and customer attrition rates. The fair values of assets and liabilities acquired in business combinations are disclosed in note 28 and the carrying values of separately identifiable intangible assets initially measured at fair value are disclosed in note 14.
- ***Carrying value of intangible assets and goodwill:*** Estimates are required as to intangible asset carrying values, their useful lives and goodwill carrying value. These are assessed by reference to budgeted profits and cashflows for future periods for the relevant income-generating units and an estimate of their values in use. See note 13 for information on this assessment.
- ***Right-of-use lease liabilities:*** The Group makes judgement to estimate the incremental borrowing rate used to measure lease liabilities based on expected third party financing costs when the interest rate implicit in the lease cannot be readily determined. This is explained further in the Leases accounting policy.

3. Segmental analysis

For the year ended 31 December 2019	Note	Materials Sciences £000	Vacuum £000	Unallocated items £000	Total £000
Revenue		**34,819**	**47,680**	**—**	**82,499**
Operating costs		**(27,169)**	**(35,569)**	**(2,377)**	**(65,115)**
Adjusted operating profit		**7,650**	**12,111**	**(2,377)**	**17,384**
Adjusting items	4				**(3,274)**
Operating profit					**14,110**
Net interest expense					**(479)**
Profit before tax					**13,631**
Income tax charge					**(1,777)**
Profit for the year					**11,854**

For the year ended 31 December 2018	Note	Materials Sciences £000	Vacuum £000	Unallocated items £000	Total £000
Revenue		35,058	42,810	—	77,868
Operating costs		(27,018)	(33,445)	(2,674)	(63,137)
Adjusted operating profit		8,040	9,365	(2,674)	14,731
Adjusting items	4				(4,045)
Operating profit					10,686
Net interest expense					(498)
Profit before tax					10,188
Income tax charge					(1,053)
Profit for the year					9,135

Unallocated items relate to the Group's head office costs.

Segment assets and liabilities

At 31 December 2019	Materials Sciences £000	Vacuum £000	Unallocated items £000	Total £000
Assets	**20,392**	**30,351**	**19,868**	**70,611**
Liabilities	**(10,357)**	**(17,027)**	**(14,535)**	**(41,919)**
Net assets	**10,035**	**13,324**	**5,333**	**28,692**
Capital expenditure	**411**	**836**	**56**	**1,303**
Depreciation of property, plant and equipment	**189**	**552**	**30**	**771**
Depreciation of right-of-use leased assets	**410**	**399**	**54**	**863**
Amortisation	**1,209**	**1,530**	**—**	**2,739**

At 31 December 2018	Materials Sciences £000	Vacuum £000	Unallocated items £000	Total £000
Assets	17,275	24,410	24,041	65,726
Liabilities	(7,888)	(11,838)	(14,794)	(34,520)
Net assets	9,387	12,572	9,247	31,206
Capital expenditure	185	770	—	955
Depreciation	231	481	34	746
Amortisation	1,519	2,114	—	3,633

Unallocated items are borrowings, intangible assets and goodwill arising on acquisition, deferred tax, defined benefit obligations and parent company net assets.

Geographic analysis	Year to 31 December 2019 £000	Year to 31 December 2018 £000
UK (domicile)	**9,690**	10,729
Rest of Europe	**23,418**	23,156
North America	**24,459**	20,884
China/Hong Kong	**9,487**	7,716
Rest of the world	**15,445**	15,383
	82,499	77,868

Segmental revenue is presented on the basis of the destination of the goods where known, otherwise the geographical location of customers is utilised.

No customer makes up more than 10% of the Group's revenues.

4. Adjusting items

	2019 £000	2018 £000
Amortisation of intangible assets	**2,739**	3,633
Financial instruments measured at fair value:		
Hedging contracts	**(37)**	56
Share-based payments	**295**	319
Acquisition costs	**277**	37
Total adjusting items in operating profit	**3,274**	4,045
Retirement benefits obligation net interest cost	**48**	54
Total adjusting items	**3,322**	4,099
Taxation	**(707)**	(1,085)
Total adjusting items net of tax	**2,615**	3,014
Attributable to:		
Owners of the parent	**2,446**	2,834
Non-controlling interest	**169**	180
	2,615	3,014

5. Operating costs

	2019 £000	2018 £000
Raw materials and consumables	**30,696**	30,774
Other external charges	**8,789**	9,460
Staff costs	**23,996**	22,157
Depreciation of property, plant and equipment	**771**	746
Depreciation of right-of-use leased assets	**863**	—
Other operating costs, excluding adjusting items	**65,115**	63,137
Amortisation of intangible assets	**2,739**	3,633
Hedging contracts	**(37)**	56
Share-based payments	**295**	319
Acquisition costs	**277**	37
Total operating costs	**68,389**	67,182

Research and development expensed in the year totalled £5,247,000 (2018: £4,567,000).

6. Remuneration of key senior management

	2019 £000	2018 £000
Short-term employee benefits:		
Salaries including bonuses and social security costs	**2,452**	2,199
Company car allowance and other benefits	**89**	86
Total short-term employee benefits	**2,541**	2,285
Post-employment benefits:		
Defined contribution pension plans	**87**	80
Total post-employment benefits	**87**	80
	2,628	2,365

Key management personnel comprise Directors of the parent company and the managing directors of the principal operating companies and totalled 20 (2018: 20).

Remuneration of Directors is disclosed in the Remuneration Report on pages 18 to 20.

7. Employees

Employment costs

	2019 £000	2018 £000
Wages and salaries	**21,003**	19,396
Social security costs	**2,009**	1,871
Pension costs	**984**	890
	23,996	22,157
Share-based payments	**295**	319
	24,291	22,476

Average number of employees

	2019 No.	2018 No.
By function:		
Manufacturing	**198**	188
Sales and administration	**299**	279
	497	467
By operating segment:		
Materials Sciences	**219**	202
Vacuum	**268**	254
Head office (includes Non-Executive Directors in both years)	**10**	11
	497	467

8. Operating profit

	2019 £000	2018 £000
Operating profit is stated after charging:		
Fees payable to the Company's auditor:		
for the audit of the Company's annual accounts	**31**	31
Fees payable to the Company's auditor for other services:		
for the audit of the Company's subsidiaries, pursuant to legislation	**159**	118
for audit-related assurance services	**5**	5
for other assurance services	**10**	—
for corporate finance services	**30**	—
for other non-audit services	**19**	—
Depreciation of property, plant and equipment	**771**	746
Depreciation of right-of-use fixed assets	**863**	—
Amortisation of intangible assets	**2,739**	3,633

9. Interest income and expense

	2019 £000	2018 £000
Interest income – short-term bank deposits	**101**	41
Interest expense – bank loans	**(397)**	(485)
Interest expense – payable on right-of-use lease liabilities	**(135)**	—
Retirement benefits obligation net finance cost	**(48)**	(54)
	(580)	(539)
Net interest expense	**(479)**	(498)

10. Taxation charge/(credit)

	2019 £000	2018 £000
UK corporation tax at 19% (2018: 19%)		
Current year	**2,719**	2,509
Prior years	**(772)**	(925)
Foreign tax suffered	**198**	102
	2,145	1,686

The prior year's current tax adjustments represent claims for UK Research and Development tax credits.

Deferred tax – origination and reversal of temporary differences:		
Current year	**(437)**	(741)
Prior years	**21**	30
Effect of changes in tax rates	**48**	78
	(368)	(633)
Tax on profit for the year – current year	**2,528**	1,948
Tax on profit for the year – prior years	**(751)**	(895)
	1,777	1,053

Factors affecting the tax charge for the year:		
Profit before tax	**13,631**	10,188
Profit before tax multiplied by standard rate of UK corporation tax of 19% (2018: 19%)	**2,590**	1,936
Share options	**(125)**	(128)
Provisions and expenditure not deductible for tax purposes	**10**	52
Changes in tax rates	**46**	78
Overseas tax	**42**	10
Utilisation of previously unrecognised losses	**(35)**	—
Tax on profit for the year – current year	**2,528**	1,948
Tax on profit for the year – prior years	**(751)**	(895)
Total net taxation charge	**1,777**	1,053

11. Dividends

	2019		2018	
	Pence per share	**£000**	Pence per share	£000
Final dividend for the previous year	**28.0**	**1,742**	22.0	1,361
Interim dividend for the current year	**15.0**	**933**	12.0	742
Total final and interim dividend	**43.0**	**2,675**	34.0	2,103
Special dividend	**200.0**	**12,451**	—	—
	243.0	**15,126**	34.0	2,103

The Directors will propose a final dividend of 35.0p per share, amounting to £2,179,000, for payment on 3 July 2020. As the final dividend remains conditional on shareholders' approval at the Annual General Meeting, provision has not been made for this dividend in these consolidated financial statements.

Dividends declared by subsidiaries that are not wholly owned are paid to the non-controlling interest in the period in which they are declared and amounted to £nil in the year (2018: £162,000).

12. Earnings per share

	Note	**2019 £000**	2018 £000
Profit attributable to owners of the parent			
Adjusted profit		**13,828**	11,329
Adjusting items	4	**(2,446)**	(2,834)
Profit for the year		**11,382**	8,495

	Pence	Pence
Earnings per share – adjusted		
Basic	**222.5**	183.4
Diluted	**218.4**	180.6
Earnings per share – total		
Basic	**183.1**	137.5
Diluted	**179.8**	135.4

	Note	**Number**	Number
Issued Ordinary shares at the start of the year		**6,196,678**	6,141,128
Movement in Ordinary shares during the year	24	**29,613**	55,550
Issued Ordinary shares at the end of the year		**6,226,291**	6,196,678
Weighted average number of shares in issue		**6,215,817**	6,176,315
Dilutive effect of share options		**115,517**	96,800
Weighted average shares in issue on a diluted basis		**6,331,334**	6,273,115

Adjusted basic earnings per share is calculated on the adjusted profit, which excludes any adjusting items, attributable to the Company's shareholders divided by the weighted average number of shares in issue during the year.

Adjusted diluted earnings per share is calculated on the adjusted basic earnings per share, adjusted to allow for the issue of Ordinary shares on the assumed conversion of all dilutive share options and any other dilutive potential Ordinary shares. The calculation is based on the treasury method prescribed in IAS 33. This calculates the theoretical number of shares that could be purchased at the average middle market price in the period out of the proceeds of the notional exercise of outstanding options. The difference between this theoretical number and the actual number of shares under option is deemed liable to be issued at nil value and represents the dilution.

Total earnings per share are calculated as above whilst substituting total profit for adjusted profit.

13. Goodwill

	2019 £000	2018 £000
Cost		
1 January	**14,650**	14,650
Acquisitions	**615**	—
31 December	**15,265**	14,650

Goodwill of £7,895,000 is allocated to the Material Sciences segment and £7,370,000 to the Vacuum segment. This is tested annually for impairment by reference to the value in use of each of the relevant cash-generating units. This is calculated on the basis of projected cashflows for five years. These are derived from detailed budgets for the coming year, with subsequent years including revenue and cost growth of 3% per annum and maintained gross margins. The 3% long-term growth rate takes into account both UK and overseas markets. These cashflows are discounted using a discount rate of 10.8% (2018: 11.6%) per annum, calculated by reference to year-end data on equity values and interest, dividend and tax rates. The long-term growth rate and discount rate are consistent for all segments on the basis that the businesses operate in similar markets and are exposed to similar risks. The residual value at the end of the five years, computed by reference to projected year six cashflows and discounted, is also included. There was no requirement for any impairment provision at 31 December 2019 (2018: £nil).

The Directors have considered the sensitivity of the key assumptions, including the discount rate and long-term growth rates, and have concluded that any possible changes that may be reasonably contemplated in these key assumptions would not result in the value in use falling below the carrying value of goodwill, given the amount of headroom available.

14. Other intangible assets

	Acquired distribution agreements £000	Acquired technology £000	Acquired sales order backlog £000	Acquired brand and domain names £000	Acquired customer relationships £000	Total £000
Gross carrying amount						
1 January 2018	3,483	9,956	4,748	12,472	8,601	39,260
31 December 2018	3,483	9,956	4,748	12,472	8,601	39,260
Acquisitions	301	583	159	302	479	1,824
31 December 2019	**3,784**	**10,539**	**4,907**	**12,774**	**9,080**	**41,084**
Amortisation						
1 January 2018	2,877	6,244	4,748	8,767	7,618	30,254
Charge for the year	296	1,254	—	1,470	613	3,633
31 December 2018	3,173	7,498	4,748	10,237	8,231	33,887
Charge for the year	211	1,114	40	1,029	345	2,739
31 December 2019	**3,384**	**8,612**	**4,788**	**11,266**	**8,576**	**36,626**
Carrying amount 31 December 2019	**400**	**1,927**	**119**	**1,508**	**504**	**4,458**
Carrying amount 31 December 2018	310	2,458	—	2,235	370	5,373
Carrying amount 31 December 2017	606	3,712	—	3,705	983	9,006

15. Property, plant and equipment

	Plant and machinery £000	Fixtures, fittings and equipment £000	Motor vehicles £000	Property and building improvements £000	Total £000
Cost					
1 January 2018	1,167	1,896	441	4,670	8,174
Additions	369	457	67	62	955
Disposals	(43)	(20)	(37)	—	(100)
Exchange differences	7	4	13	—	24
31 December 2018	1,500	2,337	484	4,732	9,053
Additions	418	529	24	332	1,303
Acquisitions	6	50	12	9	77
Disposals	(14)	(318)	(251)	(38)	(621)
Exchange differences	—	(7)	(6)	—	(13)
31 December 2019	**1,910**	**2,591**	**263**	**5,035**	**9,799**
Accumulated depreciation					
1 January 2018	714	1,194	303	619	2,830
Charge for the year	162	358	97	129	746
Disposals	(36)	(15)	(13)	—	(64)
Exchange differences	6	2	9	—	17
31 December 2018	846	1,539	396	748	3,529
Charge for the year	193	370	71	137	771
Disposals	(14)	(306)	(248)	(30)	(598)
Exchange differences	—	(6)	(4)	—	(10)
31 December 2019	**1,025**	**1,597**	**215**	**855**	**3,692**
Net book value – 31 December 2019	**885**	**994**	**48**	**4,180**	**6,107**
Net book value – 31 December 2018	654	798	88	3,984	5,524
Net book value – 31 December 2017	453	702	138	4,051	5,344

16. Right-of-use leased assets

	Plant and machinery £000	Fixtures, fittings and equipment £000	Motor vehicles £000	Property £000	Total £000
Cost					
1 January 2019	—	—	—	—	—
Recognition of right-of-use assets on adoption of IFRS16	114	84	56	2,751	3,005
New leases	—	62	25	3,031	3,118
Exit from leases	—	—	—	(1,040)	(1,040)
Exchange differences	—	—	—	(1)	(1)
31 December 2019	**114**	**146**	**81**	**4,741**	**5,082**
Accumulated depreciation					
1 January 2019	—	—	—	—	—
Charge for the year	33	29	25	776	863
Exit from leases	—	—	—	(208)	(208)
Exchange differences	—	—	—	(1)	(1)
31 December 2019	**33**	**29**	**25**	**567**	**654**
Net book value – 31 December 2019	**81**	**117**	**56**	**4,174**	**4,428**
Net book value – 31 December 2018	—	—	—	—	—

17. Deferred tax

	2019 £000	2018 £000
Assets		
1 January	**719**	730
Acquisitions in the year (note 28)	**20**	—
Adjustments in respect of prior years	**(12)**	(30)
Movement in other comprehensive income – retirement benefits actuarial loss/(gain)	**81**	(35)
Credit to the Statement of Comprehensive Income in the year	**38**	55
Credit/(charge)/credit to equity in the year	**1,027**	(1)
31 December	**1,873**	719
Deferred tax balances relate to temporary differences as follows:		
Provisions allowable for tax in subsequent periods	**106**	62
Share options	**1,409**	344
Defined benefit obligation	**358**	313
	1,873	719
Liabilities		
1 January	**1,477**	2,087
Acquisitions in the year (note 28)	**312**	—
Adjustments in respect of prior years	**9**	—
Credit to the Statement of Comprehensive Income in the year	**(351)**	(610)
31 December	**1,447**	1,477
Deferred tax balances relate to temporary differences as follows:		
Accelerated capital allowances	**531**	459
Intangible assets	**916**	1,018
	1,447	1,477

Deferred tax is recognised at 17% (2018: 17%) being the UK tax rate substantively enacted from 1 April 2020.

18. Inventories

	2019 £000	2018 £000
Raw materials	**8,084**	7,633
Work in progress	**2,348**	1,469
Finished goods	**2,111**	1,400
	12,543	10,502

In 2019, a total of £30,696,000 of inventories was included in the Statement of Comprehensive Income as an expense (2018: £30,774,000). This includes an amount of £250,000 (2018: £580,000) resulting from write-downs of inventories and an amount of £52,000 (2018: £76,000) which is the reversal of previous write-downs. The carrying amount of inventories held at fair value less costs to sell is £515,000 (2018: £441,000). All Group inventories form part of the assets pledged as security in respect of bank loans.

19. Trade and other receivables – current

	2019 £000	2018 £000
Trade receivables	**9,593**	10,944
Other receivables	**931**	1,022
Prepayments and accrued income	**1,290**	1,265
	11,814	13,231

The fair value of receivables approximates to their carrying value. All trade and other receivables have been reviewed for impairment with no material provision being required.

Trade receivables which were past due at the balance sheet date are analysed as follows:

	2019 £000	2018 £000
Not more than three months	**2,157**	2,055
More than three months but not more than six months	**356**	353
More than six months but not more than twelve months	**364**	81
Greater than one year	**86**	28
	2,963	2,517

Trade and other receivables are denominated in the following currencies:

	2019 £000	2018 £000
Sterling	**8,040**	9,800
US Dollars	**2,775**	2,595
Euros	**999**	836
	11,814	13,231

20. Trade and other payables – current

	2019 £000	2018 £000
Trade payables	**5,531**	5,379
Social security and other taxes	**667**	821
Other payables	**1,690**	1,617
Accruals and deferred income	**7,434**	6,160
	15,322	13,977

The fair value of trade and other payables approximates to their carrying value.

21. Borrowings

	2019 £000	2018 £000
Current		
Bank loans	**2,861**	2,868
Subordinated loans	**190**	190
	3,051	3,058
Non-current		
Bank loans	**11,399**	11,968
	11,399	11,968

The movement in borrowings over the year was as follows:

	2019 £000	2018 £000
At 1 January	**15,026**	18,262
Proceeds from drawdown of loans	**2,288**	—
Repayment of loans	**(2,868)**	(3,183)
Interest payable	**397**	485
Interest paid	**(393)**	(525)
Revaluation of foreign currency loans	**—**	(13)
At 31 December	**14,450**	15,026

In April 2018, the Group entered into new banking facilities (the “Facility”) replacing its existing banking arrangements with Lloyds Banking Group. The Facility is for an aggregate £35.0 million consisting of a £10.0 million term loan, a committed £20.0 million revolving credit facility (“RCF”) plus a £5.0 million accordion facility, which can be drawn at the bank’s discretion. The Facility replaces the previous facilities for which the Group had a total of £12.9 million outstanding. The £12.9 million outstanding loans were repaid and simultaneously reborrowed under the Facility. The Facility has a five-year term (“Borrowing Term”) with covenants and interest consistent with the previous bank facilities. The term loan amortises over the Borrowing Term by quarterly instalments. The RCF is repayable in a bullet at the end of the Borrowing Term. The existing facilities via Bordeaux Acquisition Limited, the Group’s 75.5% owned subsidiary, remain unchanged.

At the year end, the Group’s four bank loans are summarised as follows:

- The first loan of £6,500,000 (2018: £8,500,000) is repayable in quarterly instalments over the period ending 31 March 2023 and bears interest at 1.6% to 2.75% (depending upon gearing) above LIBOR-related rates.
- The second loan of £5,188,000 (2018: £2,896,000) is repayable by 31 March 2023 and bears interest at 1.75% to 2.75% (depending upon gearing) above LIBOR-related rates. The increase relates to the acquisition of Moorfield Nanotechnology Limited in December 2019 (see note 28).
- The third loan of £nil (2018: £11,000) was repaid on 31 March 2019. This loan bore interest at 3.75% above LIBOR-related rates.
- The fourth loan of £2,572,000 (2018: £3,429,000) is repayable in quarterly instalments over the period ending 31 December 2022 and bears interest at 1.75% to 2.75% (depending upon gearing) above LIBOR-related rates.

The subordinated loans were advanced by non-controlling shareholders in Bordeaux Acquisition Limited. They are unsecured, interest free and repayable at the discretion of that company.

Borrowings mature as follows:

31 December 2019	Bank loans £000	Subordinated loan £000	Total £000
Repayable in less than six months	**1,614**	**190**	**1,804**
Repayable in months seven to twelve	**1,593**	**—**	**1,593**
Current portion of long-term borrowings	**3,207**	**190**	**3,397**
Repayable in years one to five	**11,896**	**—**	**11,896**
Total borrowings	**15,103**	**190**	**15,293**
Less: interest included above	**(843)**	**—**	**(843)**
Less: cash and cash equivalents	**(14,123)**	**—**	**(14,123)**
Total net debt	**137**	**190**	**327**
Adjusting items			
Subordinated debt to non-controlling shareholders			**(190)**
Accrued deferred consideration			**1,896**
Adjusted net debt			**2,033**

31 December 2018	Bank loans £000	Subordinated loan £000	Total £000
Repayable in less than six months	1,639	190	1,829
Repayable in months seven to twelve	1,611	—	1,611
Current portion of long-term borrowings	3,250	190	3,440
Repayable in years one to five	12,653	—	12,653
Total borrowings	15,903	190	16,093
Less: interest included above	(1,067)	—	(1,067)
Less: cash and cash equivalents	(15,727)	—	(15,727)
Total net cash	(891)	190	(701)
Adjusting items			
Subordinated debt to non-controlling shareholders			(190)
Adjusted net cash			(891)

22. Right-of-use lease liabilities

The movement in the right-of-use lease liability over the year was as follows:

	2019 £000
At 1 January 2019	**—**
Recognition of right-of-use lease liabilities on adoption of IFRS 16	**2,912**
New leases	**3,118**
Interest payable	**135**
Exits from leases	**(793)**
Repayments of lease liabilities	**(926)**
At 31 December 2019	**4,446**

Lease liabilities mature as follows:

	2019 £000	2018 £000
Minimum right-of-use lease liabilities falling due:		
Within one year – land and property	818	—
Within one year – vehicles	29	—
Within one year – plant and machinery	34	—
Within one year – fixtures, fittings and equipment	37	—
	918	—
Between one and five years – land and property	2,315	—
Between one and five years – vehicles	31	—
Between one and five years – plant and machinery	52	—
Between one and five years – fixtures, fittings and equipment	94	—
	2,492	—
Greater than five years – land and property	**1,769**	—
Total commitment	**5,179**	—
Less: finance charges included above	**(733)**	—
Net present value of lease liabilities	**4,446**	—
Current	**757**	—
Non-current	**3,689**	—

23. Financial instruments

The Group's policies on treasury management, capital management objectives and financial instruments are given in the Directors' Report commencing on pages 20 to 21.

Fair value of financial instruments

Financial instruments include the borrowings set out in note 21. The Group enters into derivative financial instruments in order to manage its interest rate and foreign currency exposure. The principal derivatives used include foreign currency options and interest rate swaps. Material changes in the carrying values of these instruments are recognised in the Statement of Comprehensive Income in the periods in which the changes arise. Such recognition is treated as an adjusting item in the Statement of Comprehensive Income where the foreign currency hedge was entered into in order to protect profits in later accounting periods. In such cases, the charge or credit will be reversed out of adjusting items in the accounting period for which the hedge was intended and will be shown in results before adjusting items. All financial instruments denominated in foreign currencies are translated at the rate of exchange ruling at the balance sheet date. The Directors believe that there is no material difference between the book value and fair value of all financial instruments.

Borrowing facilities

The Group has a revolving acquisition facility of £20 million. At 31 December 2019 the Group had drawn £5,188,000 (2018: £2,896,000).

Trade payables

All amounts are short term (all payable within six months) and their carrying values are considered reasonable approximations of fair value. The values are set out in note 20.

Fair value hierarchy

The fair value hierarchy has the following levels:

Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The interest rate swaps and foreign currency hedges are measured at fair value in accordance with the fair value hierarchy and are classed as level 2.

	2019 £000	2018 £000
Summary of financial assets and financial liabilities by category		
Financial assets		
Trade and other receivables	**10,524**	11,966
Cash and cash equivalents	**14,123**	15,727
Total financial assets	**24,647**	27,693
Financial liabilities – amortised cost		
Trade payables	**(5,531)**	(5,379)
Accruals	**(3,893)**	(3,244)
Other payables	**(1,644)**	(1,533)
Trade and other payables relating to acquisitions	**(1,896)**	—
Current portion of long-term borrowings	**(3,051)**	(3,058)
Long-term borrowings	**(11,399)**	(11,968)
Financial liabilities – fair value		
Derivative financial instruments	**(46)**	(84)
Total financial liabilities	**(27,460)**	(25,266)
Net financial (liabilities)/assets	**(2,813)**	2,427
Non-financial assets and liabilities		
Goodwill	**15,265**	14,650
Other intangible assets	**4,458**	5,373
Property, plant and equipment	**6,107**	5,524
Right-of-use leased assets	**4,428**	—
Inventories	**12,543**	10,502
Prepayments and accrued income	**1,290**	1,265
Social security and other taxes	**(667)**	(821)
Deferred income	**(3,541)**	(2,916)
Retirement benefit obligations	**(2,100)**	(1,836)
Right-of-use lease liabilities	**(4,446)**	—
Current tax payable	**(2,258)**	(2,204)
Deferred tax assets	**1,873**	719
Deferred tax liabilities	**(1,447)**	(1,477)
	31,505	28,779
Total equity	**28,692**	31,206

Financial assets

The Group's financial assets (which are summarised above) comprise cash and cash equivalents and trade and other receivables.

The amounts derived from these assets and included as interest income in the Statement of Comprehensive Income are £101,000 (2018: £41,000) (see note 9).

Cash and cash equivalents are principally denominated in Sterling and earn interest at floating rates.

Financial liabilities

The Group's principal financial liabilities are bank loans, trade and other payables and derivative financial instruments. The Group also holds interest rate swaps and foreign currency forward contracts and options.

The costs attributable to these liabilities and included as interest expense in the Statement of Comprehensive Income amounted to £532,000 (2018: £485,000) (see note 9).

24. Share capital

	2019 £000	2018 £000
Allotted, called up and fully paid – Ordinary shares of 5p each		
1 January: 6,196,678 shares (2018: 6,141,128 shares)	**310**	307
Exercise of share options: 29,613 shares (2018: 55,550 shares)	**1**	3
31 December: 6,226,291 shares (2018: 6,196,678 shares)	**311**	310

Allotments of Ordinary shares in 2019 were made to satisfy the exercise of 29,613 share options in aggregate on 23 occasions during the year when the share price was within the range of 2660p to 5040p (2018: exercise of 55,550 share options when the share price was within the range 2290p to 2550p).

Throughout 2019, the Group continued to award a free "matching share" under the Judges Scientific plc Share Incentive Plan for every share purchased up to a maximum value of £600 per employee per tax year. During 2019, an average of 135 employees participated in the scheme each month (2018: 136 employees), purchasing 6,999 shares in total, including matching shares (2018: 8,690 shares). At 31 December 2019, there were 183 employee shareholders in this Share Incentive Plan.

The market price of the Company's Ordinary shares at 31 December 2019 was 5650p. The share price range during the year was 2400p to 6020p.

25. Share-based payments

Equity share options

At 31 December 2019, options had been granted and remained outstanding in respect of 224,967 Ordinary shares in the Company, all priced by reference to the mid-market price of the shares on the date of grant and all exercisable, following a three-year vesting period, between the third and tenth anniversaries of grant, as below:

	At 1 January 2019 Number	Granted Number	Lapsed Number	Exercised Number	**At 31 December 2019 Number**	Of which exercisable Number	Weighted average exercise price (p)
2005 Approved Option Scheme	29,925	—	—	(4,500)	**25,425**	25,425	887.3
2005 Unapproved Option Scheme	53,200	—	—	(10,000)	**43,200**	43,200	92.0
2015 Approved Option Scheme	46,366	4,637	(1,892)	(14,962)	**34,149**	23,703	1506.2
2015 Unapproved Option Scheme	120,184	9,268	(7,108)	(151)	**122,193**	41,834	1715.0
	249,675	13,905	(9,000)	(29,613)	**224,967**	134,162	

2005 Option Scheme

Exercise prices for the year ended 31 December 2019 ranged between 92.0p and 2317.5p per share (2018: between 92.0p and 2180.0p per share), with a weighted average remaining contractual life of 3.84 years (2018: 4.20 years).

2015 Option Scheme

Exercise prices for the year ended 31 December 2019 ranged between 1402.5p and 1715.0p per share (2018: 1402.5p), with a weighted average remaining contractual life of 7.19 years (2018: 7.93 years).

In accordance with IFRS 2, a Black Scholes valuation model has been used. The key assumptions used in the model are as follows:

- interest rate – 1.0%;
- historical volatility – 29.6%;
- dividend yield – 1.6%; and
- expected life of option – 5.0 years.

Growth reward plan

The Group introduced a new annual scheme for subsidiary management whereby upon achievement of certain compound growth targets they will receive Judges shares. Any award will be deferred for three years, consistent with the vesting of share options.

The charge for the year ended 31 December 2019 was £295,000 (2018: £319,000).

26. Other reserves

	Capital redemption reserve £000	Merger reserve £000	Translation reserve £000	Total £000
Balance at 1 January 2019	23	1,968	130	2,121
Issue of share capital	**—**	**—**	**—**	**—**
Transactions with owners	**—**	**—**	**—**	**—**
Exchange differences on translation of foreign subsidiaries	**—**	**—**	**(62)**	**(62)**
Total comprehensive income	**—**	**—**	**(62)**	**(62)**
Balance at 31 December 2019	**23**	**1,968**	**68**	**2,059**

	Capital redemption reserve £000	Merger reserve £000	Translation reserve £000	Total £000
Balance at 1 January 2018	23	1,968	64	2,055
Issue of share capital	—	—	—	—
Transactions with owners	—	—	—	—
Exchange differences on translation of foreign subsidiaries	—	—	66	66
Total comprehensive income	—	—	66	66
Balance at 31 December 2018	23	1,968	130	2,121

27. Risk management objectives and policies

The Group is exposed to market risks, arising predominantly from currency exposure resulting from its export activities, interest rate fluctuation on its loans and deposits and credit and liquidity risks. Risk management strategies are co-ordinated by the Directors.

Foreign currency sensitivity

The Group exports a substantial proportion of its sales, frequently denominated in foreign currencies (principally in US$ and Euros). Exposure to currency rate fluctuations exists from the moment a sales order is confirmed through to the time when the related remittance is converted into Sterling. This exposure is computed monthly (along with offsetting exposure on purchases, generally of minimal amounts) and economically hedged, predominantly through the use of currency forward contracts and options. The net exposure to risk is therefore substantially reduced. This does not, however, represent a hedge under IFRS 9.

The table below summarises the foreign currency hedged at year-end, and which is expected to be settled within the first four months of 2020. Residual exposure is the difference between the net exposure and the amounts of currency hedges, both translated into Sterling at each measurement date.

31 December 2019	**Sterling equivalent of US$ £000**	**Sterling equivalent of € £000**
Amount of foreign currency hedged at year end	**3,250**	**1,500**
Residual exposure at year end – long/(short)	**656**	**(117)**
Impact on pre-tax profits of a 5% variation in exchange rate on year-end residual exposure	**33**	**(6)**
Impact on equity of a 5% variation in exchange rate on year-end residual exposure	**27**	**(5)**

31 December 2018	Sterling equivalent of US$ £000	Sterling equivalent of € £000
Amount of foreign currency hedged at year end	3,250	1,500
Residual exposure at year end – long/(short)	1,063	(37)
Impact on pre-tax profits of a 5% variation in exchange rate on year-end residual exposure	53	(2)
Impact on equity of a 5% variation in exchange rate on year-end residual exposure	43	(2)

In addition to the hedging of this foreign currency exposure, the Group seeks to mitigate the impact of currency fluctuations on future trading performance. This was achieved at 31 December 2019 by entering into currency options to sell €2.6 million and $6.4 million for the rest of 2020, at predetermined exchange rates.

The fair value of the hedging financial instruments is a liability of £20,000 (2018: £105,000).

Interest rate sensitivity

The Group's interest rate exposure arises in respect of its bank loans, which are LIBOR linked for interest rate purposes, and its cash, which are bank base rate linked. To hedge this risk the Group is party to interest rate swaps at predetermined rates. The fair value of these financial instruments has been recognised in these accounts and the fair value of interest rate swaps is a liability of £26,000 (2018: asset of £21,000). The Group's sensitivity to interest rate changes is as follows:

	2019 £000	2018 £000
Unhedged bank loans outstanding at year end	**6,688**	6,407
Impact on pre-tax profits of a 1% change in LIBOR	**67**	64
Impact on equity of a 1% change in LIBOR	**54**	52
Cash at year end	**14,123**	15,727
Impact on pre-tax profits of a 1% change in bank base rates	**141**	157
Impact on equity of a 1% change in bank base rates	**114**	127

Credit risk

The Group's exposure to credit risk is limited to the carrying amounts of financial assets recognised at the balance sheet date, as follows:

	2019 £000	2018 £000
Cash and cash equivalents	**14,123**	15,727
Trade and other receivables	**10,524**	11,966
	24,647	27,693

The Group reviews the credit risk relating to its customers by ensuring wherever possible that it deals with long-established trading partners, and agents and government/university-backed bodies, where the risk of default is considered low. Where considered appropriate, the Group insists on upfront payment and requires letters of credit to be provided. The Directors consider that all the Group's financial assets that are not impaired at each of the reporting dates under review are of good credit quality, including those that are past due (see note 19). None of the financial assets are secured by collateral or other credit enhancements.

Group companies generally trade through overseas agents and distributors, and credit exposure to an individual agent or distributor can be significant at times. At 31 December 2019, no counterparty owed more than 10% of the Group's total trade and other receivables (2018: none).

The credit risk for liquid funds and other short-term financial assets is considered small. The substantial majority of these assets are deposited with Lloyds Banking Group.

Liquidity risk

Longer-term finance is required to enable the Group to pursue it strategic goal of growing through acquisitions as well as through organic development. This requirement for financing is satisfied for the foreseeable future by a £20 million revolving acquisition facility together with a £5 million uncommitted accordion facility provided by Lloyds Banking Group. The Group's strategy envisages the servicing of this debt to be achieved from the cashflow arising from the businesses acquired. For short and medium-term financial needs, the Group regularly compares its projected requirements with available cash and borrowing facilities.

The periods of maturity of the Group's borrowings are set out in note 21. The maturity of all trade and other payables is within the period of less than six months.

28. Acquisitions

On 3 December 2019, in accordance with the Group's buy and build strategy, Judges' wholly owned subsidiary, Quorum Technologies Limited ("Quorum") acquired 100% of the issued share capital of Moorfield Nanotechnology Limited ("Moorfield"). Moorfield is based in Knutsford, Cheshire and specialises in the design and manufacture of physical and chemical vapour deposition instruments used to cover materials with thin films.

The purchase price of Moorfield, paid in cash at completion amounted to £2.3 million (inclusive of an earn-out based on Moorfield's adjusted EBIT in the year to 30 June 2019, capped at £0.7 million). An additional amount was payable to reflect any excess cash and working capital over and above the ongoing requirements of the business. This was covered by cash inherited at the completion date and was paid in February 2020.

The summary provisional fair value of the cost of this acquisition includes the components stated below:

Consideration	£000
Initial cash consideration	1,568
Earn-out	720
	2,288
Gross cash inherited on acquisition	2,201
Cash retained in the business	(305)
Payment in respect of surplus working capital*	1,896
Total consideration	4,184
Acquisition-related transaction costs charged to the Statement of Comprehensive Income	277

*Paid in February 2020

The acquisition of Moorfield was financed via drawdown from the Group's £35 million acquisition facility from Lloyds Bank Corporate Markets.

The summary provisional fair values recognised for the assets and liabilities acquired are as follows:

	Book value £000	Fair value adjustments £000	Fair value £000
Intangible assets	—	1,824	1,824
Property, plant and equipment	77	—	77
Deferred tax assets	—	20	20
Inventories	297	(50)	247
Trade and other receivables	329	(45)	284
Cash and cash equivalents	2,201	—	2,201
Total assets	2,904	1,749	4,653
Deferred tax liabilities	—	(312)	(312)
Trade payables	(639)	(20)	(659)
Current tax liability	(113)	—	(113)
Total liabilities	(752)	(332)	(1,084)
Net identifiable assets and liabilities	2,152	1,417	3,569
Total consideration			4,184
Goodwill recognised			615

Management performed a detailed review of each of the acquiree's intangible assets. The intangible assets recognised reflect recognition of acquired customer relationships, the value of the acquired future committed order book, internally generated technology, trademarks, domain names and distributor relationships. A significant amount of the value of the acquired business is attributable to its workforce and sales knowhow. As no assets can be recognised in respect of these factors, they contribute to the goodwill recognised upon acquisition. This goodwill has been allocated to the Vacuum segment.

The deferred tax liabilities recognised represent the tax effect which will result from the amortisation of the intangible assets, estimated using the tax rate substantively enacted at the balance sheet date and the fair value of the assets. Additional fair value adjustments include stock, bad debt and warranty provisions together with any related deferred tax.

This acquisition resulted in a profit after tax (before adjusting items) attributable to owners of the parent company of £53,000 in the period post-acquisition. After amortisation of intangible assets, the contribution to owners of the parent company's results amounted to a loss of £10,000 after tax.

If the acquisition had completed on 1 January 2019, based on pro-forma results, revenue for the Group for the year ended 31 December 2019 would have increased by £2,300,000 and profit after tax (before adjusting items) attributable to owners of the parent company would have increased by £400,000 after allowing for interest costs. Were a full year's amortisation of intangible assets charged, the pro-forma result (after adjusting items) would have been reduced by £430,000.

Increased shareholding in PE.fiberoptics Limited

On 29 March 2019 PE.fiberoptics Limited ("PFO"), one of the Company's subsidiaries, acquired the remaining shares of a third party shareholder for a consideration of £0.4 million. As a result, the Group's interest in PFO increased from 67.5% to 74.5%.

29. Retirement benefit obligations

Defined benefit obligations

The Group's subsidiary, Armfield Limited, operates a defined benefit scheme for certain of its employees. A full actuarial valuation was carried out as at 31 March 2017 and the retirement benefit liability was independently revalued as at 31 December 2019.

The scheme has been closed to new members from 2001 and closed to new accrual in 2006. The average duration of the plan's liabilities has been calculated to be approximately 15 years. The trustees are drawn partly from Armfield's employees and also from nominees of the Judges Group.

The full actuarial valuation carried out as at 31 March 2017 was in accordance with the scheme funding requirements of the Pensions Act 2004 and the funding of the plan is agreed between Armfield and the pension trustees in line with those requirements. These in particular require the surplus/deficit to be calculated using prudent, as opposed to best estimate, actuarial assumptions. It was agreed with the trustees that contributions be increased to £236,000 per annum to eliminate the deficit over a period of nine years. The next full actuarial valuation will be carried out no later than 31 March 2020. The asset investment strategy is the responsibility of the trustees.

Summary	**31 December 2019 £000**	31 December 2018 £000	31 December 2017 £000
Fair value of plan assets	**6,349**	5,612	5,983
Present value of defined benefit obligation	**(8,449)**	(7,448)	(8,204)
Deficit in scheme	**(2,100)**	(1,836)	(2,221)
Deferred tax	**357**	312	378
Net retirement benefit obligation	**(1,743)**	(1,524)	(1,843)

Changes in the fair value of plan assets	**31 December 2019 £000**	31 December 2018 £000
1 January	**5,612**	5,983
Interest income	**158**	146
Return on plan assets (excluding amounts in interest income)	**505**	(301)
Contributions by the Company	**236**	236
Benefits paid	**(162)**	(452)
31 December	**6,349**	5,612

The actual return on plan assets for the year ended 31 December 2019 was £663,000 (2018: reduction of £155,000).

Changes in the fair value of defined benefit pension obligations	**31 December 2019 £000**	31 December 2018 £000
1 January	**7,448**	8,204
Current service cost	**—**	—
Expenses	**—**	—
Interest expense	**206**	200
Actuarial losses due to scheme experience	**—**	—
Actuarial gains due to changes in demographic assumptions	**(82)**	(50)
Actuarial losses/(gains) due to financial assumptions	**1,039**	(454)
Benefits paid	**(162)**	(452)
31 December	**8,449**	7,448

There were no plan amendments, curtailments or settlements in the above years. Following an independent assessment, the estimated Guaranteed Minimum Pension ("GMP") equalisation impact, that which would equalise for the different effects of GMPs between men and women, is expected to have no impact on the defined benefit obligation above.

Major categories of plan assets	**31 December 2019 £000**	31 December 2018 £000	31 December 2017 £000
Quoted equities	**3,423**	2,801	3,111
Bonds	**2,421**	2,276	2,359
Property	**495**	494	473
Cash and other assets	**10**	41	40
	6,349	5,612	5,983

Principal actuarial assumptions	**31 December 2019 %**	31 December 2018 %
Discount rate	**2.10**	2.80
Inflation rate	**3.00**	3.30
In payment pension increases	**3.30**	3.40
In deferment pension increases	**5.00**	5.00

The mortality assumptions used in valuing the liabilities of the plan are based 100% on the standard tables S2PxA, projected using the CMI 2018 model with a 1.00% per annum long-term rate of improvement.

The life expectancies assumed are as follows:

	Life expectancy at age 65 (years)
Male retiring in 2019	21.6
Female retiring in 2019	23.5
Male retiring in 2039	22.6
Female retiring in 2039	24.7

Sensitivity

The significant actuarial assumptions in determining the defined benefit obligation are the discount rate, the rate of mortality and the rate of inflation. Changes to these actuarial assumptions may impact this obligation as follows:

	Change in liabilities £000
Discount rate – decrease by 0.25% per annum	422
Mortality rate – increase of one year in life expectancy	313

The above shows the impact on the defined benefit obligation if the assumptions were changed as shown (assuming all other assumptions remain constant). There is zero sensitivity to inflation due to the nature of the scheme. The sensitivity analysis may not be representative of the actual change in the obligation as it is unlikely that any change in assumption would happen in isolation.

Risk management

There is a risk that changes in discount rates, price inflation, asset returns and/or mortality assumptions could lead to a materially greater deficit. Given the long-term time horizon of the pension plan cashflows, the assumptions used are uncertain. The assumptions can also be volatile from year to year due to changes in investment market conditions. A higher pension deficit could directly impact the Group's equity valuation and credit rating and may lead to additional funding requirements in future years. Any deficit relative to the actuarial liability for funding purposes, which may differ from the funding position on an accounting basis, will generally be financed over a period that ensures the contributions are reasonably affordable to the Group and in line with local regulations.

30. Non-controlling interests

Summarised financial information of the Group's non-controlling interests is set out below:

	2019 £000	2018 £000
Non-current assets	**1,224**	1,554
Current assets	**7,515**	6,243
Total assets	**8,739**	7,797
Current liabilities	**(3,522)**	(1,718)
Non-current liabilities	**(1,933)**	(4,220)
Total liabilities	**(5,455)**	(5,938)
Total equity	**3,284**	1,859
Attributable to:		
Owners of the parent	**2,463**	1,297
Non-controlling interest	**821**	562

	2019 £000	2018 £000
Revenue	**11,518**	11,377
Profit for the year	**1,856**	1,937
Attributable to:		
Owners of the parent	**1,384**	1,297
Non-controlling interest	**472**	640

	2019 £000	2018 £000
Net cash from operating activities	**3,645**	2,935
Net cash used in investing activities	**(98)**	(129)
Net cash used in financing activities	**(1,506)**	(3,893)
Net cash inflow/(outflow)	**2,041**	(1,087)

Dividends totalling £nil were paid to a non-controlling interest during the year (2018: £162,000).

Parent company balance sheet

As at 31 December 2019

	Note	**2019 £000**	2018 £000
Fixed assets			
Tangible assets	3	**671**	645
Right-of-use leased assets	4	**275**	—
Investments in subsidiaries	5	**40,611**	40,611
		41,557	41,256
Current assets			
Debtors	6	**21,841**	20,360
Cash and cash equivalents		**—**	3,400
		21,841	23,760
Creditors: amounts falling due within one year	7	**(6,529)**	(3,836)
Right-of-use lease liabilities	9	**(54)**	—
Net current assets		**15,258**	19,924
Total assets less current liabilities		**56,815**	61,180
Creditors: amounts falling due after more than one year	8	**(9,684)**	(9,396)
Right-of-use lease liabilities	9	**(227)**	—
Total net assets		**46,904**	51,784
Capital and reserves			
Called up share capital	11	**311**	310
Share premium		**15,453**	15,164
Capital redemption reserve		**23**	23
Retained earnings		**31,117**	36,287
Shareholders' funds		**46,904**	51,784

The accompanying notes form an integral part of these financial statements.

In accordance with the exemptions permitted by section 408 of the Companies Act 2006, the Statement of Comprehensive Income of the parent company has not been presented. Profit for the year totalled £8,634,000 (2018: £8,084,000).

These parent company financial statements were approved by the Board on 17 March 2020.

David Cicurel **Brad Ormsby**
Director ***Director***

Parent company statement of changes in equity

For the year ended 31 December 2019

	Share capital £000	Share premium £000	Capital redemption reserve £000	Retained earnings £000	Total equity £000
At 1 January 2019	**310**	**15,164**	**23**	**36,287**	**51,784**
Dividends	**—**	**—**	**—**	**(15,126)**	**(15,126)**
Issue of share capital	**1**	**289**	**—**	**—**	**290**
Deferred tax on share-based payments	**—**	**—**	**—**	**1,027**	**1,027**
Share-based payments	**—**	**—**	**—**	**295**	**295**
Transactions with owners	**1**	**289**	**—**	**(13,804)**	**(13,514)**
Profit for the year	**—**	**—**	**—**	**8,634**	**8,634**
Total comprehensive income for the year	**—**	**—**	**—**	**8,634**	**8,634**
At 31 December 2019	**311**	**15,453**	**23**	**31,117**	**46,904**
At 1 January 2018	307	14,529	23	29,987	44,846
Dividends	—	—	—	(2,103)	(2,103)
Issue of share capital	3	635	—	—	638
Share-based payments	—	—	—	319	319
Transactions with owners	3	635	—	(1,784)	(1,146)
Profit for the year	—	—	—	8,084	8,084
Total comprehensive income for the year	—	—	—	8,084	8,084
At 31 December 2018	310	15,164	23	36,287	51,784

The accompanying notes form an integral part of these financial statements.

Notes to the parent company financial statements

For the year ended 31 December 2019

1. Statement of compliance

The financial statements were prepared in accordance with FRS 101 'Reduced Disclosure Framework'.

2. Summary of significant accounting policies

Basis of preparation

As permitted by FRS 101, for both periods presented, the Company has taken advantage of the disclosure exemptions available under that standard in relation to financial instruments, capital management, presentation of a cashflow statement, share-based payments, fair value measurements, comparative reconciliations for tangible and intangible assets, standards not yet effective, related party transactions with other wholly owned members of the Group, and key management personnel compensation. Equivalent disclosures are, where required, given in the publicly available Group accounts of Judges Scientific plc.

The financial statements have been prepared on the historical cost basis.

Use of key accounting estimates and judgements

Many of the amounts included in the financial statements involve the use of judgement and/or estimation. These judgements and estimates are based on management's best knowledge of the relevant facts and circumstances, having regard to prior experience, but actual results may differ from the amounts included in the financial statements. Information about such judgements and estimates is contained in the accounting policies and/or the notes to the financial statements, and the key areas are summarised below.

Sources of estimation uncertainty

The carrying value of investments is assessed based on the current trading performance, the expected future performance and net assets of the investment.

Tangible fixed assets

Tangible fixed assets are stated at historical cost, less accumulated depreciation.

Depreciation is provided at annual rates calculated to write off the cost less residual value of each asset over its expected useful life at the following rate:

Leasehold improvements	Over the minimum term of the lease
Fixtures, fittings and equipment	Between three and seven years

Taxation

Current tax is provided at amounts expected to be paid or recovered either directly or through Group relief arrangements.

Deferred tax assets and liabilities are calculated at rates that are expected to apply to their respective period of realisation, provided they are enacted or substantively enacted at the balance sheet date.

Employee benefits – defined contribution plans

The Company operates defined contribution pension schemes for employees and Directors. The assets of the schemes are held by investment managers separately from those of the Group. The contributions payable to these schemes are recorded in the Statement of Comprehensive Income in the accounting period to which they relate.

Share-based employee compensation

The Group operates equity-settled share-based compensation plans for remuneration of its Directors and employees.

All employee services received in exchange for the grant of any share-based compensation are measured at their fair values. The fair value is appraised at the grant date and excludes the impact of any non-market vesting conditions (e.g. profitability or sales growth targets).

Share-based compensation is recognised as an expense in the Statement of Comprehensive Income with a corresponding credit to other reserves. If vesting periods or other vesting conditions apply, the expense is allocated over the vesting period, based on the best available estimate of the number of share options expected to vest. Non-market vesting conditions are included in assumptions about the number of options that are expected to become exercisable. Estimates are subsequently revised if there is any indication that the number of share options expected to vest differs from previous estimates.

The proceeds received net of any directly attributable transaction costs are credited to share capital and share premium when the options are exercised.

Foreign currencies

Monetary assets and liabilities denominated in foreign currencies are translated into Sterling at the rates of exchange prevailing at the balance sheet date. Transactions in foreign currencies are recorded at the rate of exchange prevailing at the date of transaction. All differences are taken to the Statement of Comprehensive Income.

Financial assets

Financial assets consist of loans, debtors, derivatives and investments in subsidiaries.

Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and in hand and short-term deposits which are subject to an insignificant risk of changes in value.

Debtors

Debtors are recognised and carried at the original invoice amount less an allowance for uncollectable amounts. An estimate of uncollectable amounts is made upon initial recognition of the debtor, and also when collection of the amount is no longer probable. Uncollectable amounts are written off to the Statement of Comprehensive Income when identified.

Investments

Fixed asset investments in subsidiaries are stated at cost less provision for impairment.

Financial liabilities

Financial liabilities are obligations to pay cash or other financial assets and are recognised when the Group becomes a party to the contractual provisions of the instrument. Financial liabilities are recorded initially at fair value net of direct issue costs if they are not held at fair value through profit and loss. Derivatives are recorded at fair value through profit or loss. The fair value of derivative financial instruments is determined by reference to active market transactions or using a valuation technique where no active market exists.

All financial liabilities with the exception of interest rate swaps and foreign currency options are recorded at amortised cost using the effective interest method, with interest-related charges recognised as an expense in finance cost in the Statement of Comprehensive Income.

These financial liabilities include creditors and borrowings, including bank loans, subordinated loans and hire purchase commitments. Finance charges, including premiums payable on settlement or redemption and direct issue costs, are charged to the Statement of Comprehensive Income on an accruals basis using the effective interest method and are added to the carrying amount of the instrument to the extent that they are not settled in the period in which they arise.

Interest rate swaps and foreign currency options are treated as derivative financial instruments and are accounted for at fair value through profit and loss.

A financial liability is derecognised only when the obligation is extinguished, that is, when the obligation is discharged or cancelled or expires.

Leases

The company has adopted IFRS 16 'Leases' as of 1 January 2019. The modified retrospective approach was applied on transition. Prior period comparatives have not been restated, and there was no adjustment to equity on transition.

IFRS 16 requires the capitalisation of operating leases, such as the Company's building lease, as right-of-use leased assets with an offsetting financial liability. The Company measured the right-of-use leased assets at an amount equal to the lease liabilities adjusted for any prepaid or accrued lease payments that existed at the date of transition. Right-of-use assets and liabilities are presented separately in the balance sheet. On transition to IFRS 16 the incremental borrowing rate used to measure lease liabilities was 4.25%.

In the statement of comprehensive income the previous rental charge has been replaced with a combination of depreciation from the right-of-use leased assets and an interest charge from the lease liabilities. The effect for the year ended 31 December 2019 is as follows:

	Year to 31 December 2019 £000
Rental lease charges under previous accounting standard	60
Depreciation of right-of-use leased assets	(54)
Increase in operating profit due to IFRS 16	**6**
Interest charge from right-of-use liabilities	(11)
Decrease in profit before tax due to IFRS 16	**(5)**

In the year of adoption operating profit increases, but profit before tax decreases. Assuming no further changes to the company's leases, the increase in operating profit will endure, however in future years the interest charge will reduce as the discount unwinds.

The following is a reconciliation of total operating lease commitments at 31 December 2018 to the right-of-use lease liabilities and assets recognised at 1 January 2019:

	1 January 2019 £000
Total operating lease commitments disclosed at 31 December 2018	383
Adjustments to commitments disclosures	(16)
Right-of-use lease liabilities before discounting	367
Discounted using incremental borrowing rate	(35)
Right-of-use lease liabilities recognised at 1 January 2019	**332**
Adjustments for prepaid rent at 31 December 2018	16
Adjustments for accrued rent at 31 December 2018	(19)
Right-of-use leased assets recognised at 1 January 2019	**329**

Any new contract entered into on or after 1 January 2019 which contains an identified asset, whose use the Company has the right to direct throughout the period of the lease, and the right to obtain substantially all of the economic benefits from, is accounted for as a lease. At lease commencement date, the Company recognises a right-of-use leased asset and a lease liability on the balance sheet. The lease liability is measured at the present value of the total lease payments due, discounted using the interest rate implicit in the lease if readily available, or at the Company's incremental borrowing rate. The right-of-use asset is measured at cost, being the lease liability, plus any initial direct costs incurred by the company, or lease payments made in advance of the commencement date.

Right-of-use assets are depreciated on a straight-line basis to the end of the lease term.

The Company assesses the right-of-use asset for impairment when such indicators exist. Lease liabilities are remeasured to reflect any reassessment or modification of the lease – when the lease liability is remeasured, the corresponding adjustment is reflected in the right-of-use leased asset, or in the Statement of Comprehensive Income if the asset is already reduced to zero.

Equity

Equity comprises the following:

Share capital

Share capital represents the nominal value of equity shares.

Share premium

Share premium represents the excess over nominal value of the fair value of consideration received for equity shares, net of expenses of the share issue.

Capital redemption reserve

Capital redemption reserve represents amounts set aside from retained earnings on conversion of convertible redeemable shares equal to the reduction then arising in the overall nominal value of share capital of all classes.

Retained earnings

Retained earnings represents retained profits and losses.

Dividends

Final dividend distributions payable to equity shareholders are included in trade and other payables when the dividends are approved in general meeting but not paid prior to the balance sheet date. Interim dividends are recognised in the period in which they are paid. Dividend income is recognised when the shareholder's right to receive payment is established.

3. Tangible assets

	Property and leasehold improvements £000	Fixtures, fittings and equipment £000	Total £000
Cost			
1 January 2019	797	20	817
Additions	—	56	56
31 December 2019	797	76	873
Depreciation			
1 January 2019	152	20	172
Charge for the year	29	1	30
31 December 2019	181	21	202
Net book value – 31 December 2019	**616**	**55**	**671**
Net book value – 31 December 2018	645	—	645

4. Right-of-use leased assets

	Land and property £000	Total £000
Cost		
1 January 2019	—	—
Recognition of right-of-use assets on adoption of IFRS 16	329	329
31 December 2019	329	329
Depreciation		
1 January 2019	—	—
Charge for the year	54	54
31 December 2019	54	54
Net book value – 31 December 2019	**275**	**275**
Net book value – 31 December 2018	—	—

5. Investments in subsidiaries

	2019 £000	2018 £000
Cost		
1 January	**40,611**	40,611
Additions	**—**	—
31 December	**40,611**	40,611

The Company's subsidiaries at 31 December 2019, all of which are incorporated and domiciled in the United Kingdom (except as stated), are as follows:

Company	Principal activity	Class of shares	% held
Fire Testing Technology Limited	Design and assembly of fire testing instruments	Ordinary £1	100%
PE.fiberoptics Limited	Design and assembly of fibre-optic testing instruments	"A" Ordinary 1p	100% of "A" class, being 74.5% of total equity
UHV Design Limited	Design and manufacture of instruments used to manipulate objects in ultra-high vacuum chambers	Ordinary £1	100%
Aitchee Engineering Limited	Manufacture of engineering parts and finished products	Ordinary £1	100%
Quorum Technologies Limited	Design, manufacture and distribution of instruments that prepare samples for examination in electron microscopes	Ordinary £1	100%
Moorfield Nanotechnology Limited*	Design, manufacture and distribution of instruments that prepare samples for examination in electron microscopes	Ordinary £1	100%
Sircal Instruments (U.K.) Limited	Design, manufacture and distribution of rare gas purifiers for use in metals analysis	Ordinary £1	100%
Deben UK Limited*	Design and manufacture of devices to enable observation of objects under a microscope	Ordinary £1	75.5%
Oxford Cryosystems Limited*	The design, manufacture and marketing of products for crystallography and other markets	Ordinary £1	75.5%
Global Digital Systems Limited	Design and manufacture of instruments used to test the physical properties of soil and rocks	"A" and "B" Ordinary £1	100%
Scientifica Limited*	Design and manufacture of instruments used in electrophysiology to enable or improve the observation of objects under a microscope	Ordinary £1	100%
Scientifica LLC (USA)*	Sale of instruments used in electrophysiology to enable or improve the observation of objects under a microscope		100%
Bordeaux Acquisition Limited	Holding company	Ordinary £1	75.5%
Crystallon Limited*	Holding company	Ordinary £1	75.5%
Armfield Limited	Design and supply of research and training equipment	Ordinary £1	100%
Armfield Technical Education Company Limited*	Dormant	Ordinary £1	100%
Armfield Inc. (USA)*	Supply of research and training equipment	Common Shares	100%
CoolLED Limited	Design and manufacture of illumination systems for fluorescence microscopy	Ordinary £1	100%
Dia-Stron Limited	Design and manufacture of systems to test the mechanical properties of fibres	Ordinary £1	100%
Dia-Stron Inc. (USA)*	Sale of systems to test the mechanical properties of fibres	Common Shares	100%
EWB Solutions Limited	Design and manufacture of edge-welded bellows	Ordinary £1	100%
Judges Capital Limited	Holding company	Ordinary £1	100%
EM Technologies Limited*	Dormant	Ordinary £1	100%
FTT Scientific Limited*	Dormant	Ordinary £100	100%
GDS Instruments Limited*	Dormant	Ordinary £1	100%
Polaron Instruments Limited*	Dormant	Ordinary £1	100%
Stanton Redcroft Limited*	Dormant	Ordinary £1	100%

* Indirectly held.

The head office for each of the UK subsidiaries is 52c Borough High Street, London SE1 1XN.

6. Debtors

	2019 £000	2018 £000
Amounts owed by Group companies	**19,768**	19,536
Prepayments and accrued income	**709**	541
Deferred tax asset (note 10)	**1,364**	283
	21,841	20,360

Included in amounts owed by Group companies are:

- the sum of £16,218,000 (2018: £15,703,000) which is repayable on demand at any time after 30 June 2020 provided that all liabilities to third parties falling due on or before that date have been met. This loan is unsecured and bears interest at the rate of 5% per annum;
- the sum of £nil (2018: £1,000,000) was repaid during the year. This loan was unsecured and bore interest at the rate of 5% per annum; and
- the sum of £1,351,000 (2018: £1,601,000) which is to be repaid by 2026. This loan is unsecured and bears interest at the rate of 5% per annum.

Except as stated, all amounts are recoverable in less than one year. In accordance with IFRS 9, expected credit losses for amounts due from subsidiaries has been determined at inception. There has been no significant increase in credit risk associated with the amounts due since initial recognition. The intercompany balance is expected to be recovered from the operating cashflows of the underlying subsidiary entities.

7. Creditors: amounts falling due within one year

	2019 £000	2018 £000
Bank overdraft	**2,663**	—
Current portion of bank loans	**2,005**	2,000
Trade and other payables	**334**	122
Amounts owed to Group companies	**—**	503
Corporation tax	**243**	199
Social security and other taxes	**261**	156
Other creditors	**266**	311
Accruals and deferred income	**757**	545
	6,529	3,836

8. Creditors: amounts falling due after more than one year

	2019 £000	2018 £000
Bank loans	**9,684**	9,396

The bank loan is secured on the assets of the Group. The loan is repayable in quarterly instalments over the period ending 31 March 2023 and bears interest at 1.6% to 2.75% above LIBOR-related rates, depending upon gearing. Refer to note 21 of the consolidated financial statements for further details.

The repayment profile of borrowings is as follows:

	Bank loans £000
Repayable in less than one year	2,277
Repayable in years one to five	10,118
	12,395
Less: interest included above	(706)
	11,689

The Company enters into derivative financial instruments in order to manage its interest rate and foreign currency exposure. The principal derivatives used include interest rate swaps and foreign currency forward contracts and options. The fair value of these financial instruments is a liability of £20,000 (2018: £105,000), offset by a fair value liability of £26,000 (2018: asset of £21,000) on interest rate swaps. These transactions have been recognised in these accounts and are held within other creditors.

The parent company guarantees bank loans advanced to its 75.5% owned subsidiary, Bordeaux Acquisition Limited, amounting in aggregate at 31 December 2019 to £2,572,000 (2018: £3,440,000).

9. Right-of-use lease liabilities

The movement in the right-of-use lease liability over the year was as follows:

	2019 £000
At 1 January 2019	—
Recognition of right-of-use lease liabilities on adoption of IFRS 16	**332**
Interest payable	**23**
Repayments of lease liabilities	**(74)**
At 31 December 2019	**281**

Lease liabilities mature as follows:

	2019 £000	2018 £000
Minimum right-of-use lease liabilities falling due:		
Within one year – land and property: gross	63	—
Within one year – land and property: finance charges	(9)	—
Within one year – land and property: net	**54**	—
Between one and five years – land and property: gross	241	—
Between one and five years – land and property: finance charges	(14)	—
Between one and five years – land and property: net	**227**	—
	281	—

10. Deferred tax asset

	2019 £000
1 January	**283**
Credit to the Statement of Comprehensive Income	**54**
Credited to equity	**1,027**
31 December	**1,364**

Deferred tax is recorded at a rate of 17% and relates to accelerated capital allowances and share options.

11. Share capital and share-based payments

Details relating to the parent company's share capital are set out in notes 24 and 25 to the consolidated financial statements.

12. Related party transactions

The Company is exempt under the terms of FRS 101.8 from disclosing transactions with its wholly owned subsidiaries.

Funds were advanced by the Company in 2011 to its 75.5% owned subsidiary, Bordeaux Acquisition Limited, to facilitate the purchase during that year of the entire issued share capital of Deben UK Limited. The amount of £395,000 was outstanding at 31 December 2019 (2018: £395,000). There are no interest or repayment terms to these advances.

Dividends paid in the year to Directors who hold shares amounted to £2,320,000 in aggregate (2018: £325,000).

13. Directors and employees

	2019 £000	2018 £000
Staff costs (including Directors)		
Wages and salaries	**1,100**	1,176
Social security costs	**140**	146
Other pension costs	**14**	19
	1,254	1,341
Total Directors' emoluments		
Emoluments	**808**	766
Defined contribution pension scheme contributions	**8**	16
	816	782
Emoluments of the highest paid Director		
Emoluments	**243**	236

During the year, one Director participated in a defined contribution pension scheme (2018: one).

	2019 Number	2018 Number
Average number of persons employed		
Directors	**7**	7
Administrative staff	**3**	4
Total	**10**	11

Company information

Directors
The Hon. Alexander Robert Hambro (Non-Executive Chairman)
David Elie Cicurel (Chief Executive)
Bradley Leonard Ormsby (Group Finance Director)
Mark Stephen Lavelle (Chief Operating Officer)
Ralph Leslie Cohen (Non-Executive Director)
Ralph Julian Elman (Non-Executive Director)
Charles John Arthur Holroyd (Non-Executive Director)

Company Secretary
Glynn Carl Reece

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