Independent auditor's report
to the members of Xaar plc

Opinion

In our opinion:

- Xaar plc's Group financial statements and parent company financial statements (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 2021 and of the Group's profit for the year then ended;
- the Group financial statements have been properly prepared in accordance with UK adopted International Accounting Standards;
- 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.

We have audited the financial statements of Xaar plc (the 'parent company') and its subsidiaries (the 'Group') for the year ended 31 December 2021 which comprise:

Group	Parent company
Consolidated balance sheet as at 31 December 2021	Balance sheet as at 31 December 2021
Consolidated income statement for the year then ended	Statement of changes in equity for the year then ended
Consolidated statement of comprehensive income for the year then ended	Related notes 1 to 11 to the financial statements including a summary of significant accounting policies
Consolidated statement of changes in equity for the year then ended	
Consolidated statement of cash flows for the year then ended	
Related notes 1 to 39 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 UK adopted international accounting standards. 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 FRS 101 "Reduced Disclosure Framework" (United Kingdom Generally Accepted Accounting Practice).

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 believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of the Group and parent 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 public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

The non-audit services prohibited by the FRC's Ethical Standard were not provided to the Group or the parent company and we remain independent of the Group and the parent company in conducting the audit.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate. Our evaluation of the directors' assessment of the Group and parent company's ability to continue to adopt the going concern basis of accounting included:

- We understood the process undertaken by management to perform the going concern assessment, including the evaluation of the ongoing impact of COVID-19 on the Group and the Group's access to available sources of liquidity;
- We obtained management's going concern assessment, including the cash flow forecasts for the going concern period to 30 June 2023. The Group has modelled a base case uses the same board approved forecasts as used in the Group's impairment assessments (adjusted to exclude the contingent consideration expected to be received on the 3D disposal); a second scenario which factors in the consideration payable to acquire Megnajet Ltd and Technomation Ltd but not the forecast trading cash inflows; and a reverse stress test based on liquidity in order to determine how much additional downside in trading could be absorbed before the cash and cash equivalents run out. No debt facilities are in place, nor required in any of these scenarios.
- We evaluated the key assumptions underpinning the Group's forecasts. In particular, we compared the trading projections in management's two scenarios to the Group's performance including in respect of EPS ,the contracted order book, pipeline and margin performance since the onset of the COVID-19 pandemic;
- We considered the results of management's reverse stress test scenario and independently calculated what changes to key assumptions would result in the Group having insufficient cash and cash equivalents. We also considered mitigating actions such as reducing non-essential capital expenditure, assessing whether they were within management's control and whether they were supported by the actual mitigation achieved in response to COVID-19, to date. We considered whether the combination of changes to key assumptions that would lead to the Group's liquidity being eliminated within the period assessed were plausible;
- We tested the clerical accuracy of the models used to prepare the Group's going concern assessment; and
- We assessed the appropriateness of the Group's disclosures concerning the going concern basis of preparation.

We observed that the Group reported a profit after tax for the year ended 31 December 2021 of £14.2m (2020: £14.7m loss). This included a profit from continuing operations after tax of £1.7m (2020: £4.4m loss), reflecting the progress made in the printhead and product print segments, acquisition of FFEI Limited and no longer incurring development costs for the disposed 3D business unit. The discontinued result was due to the gain on disposal of the 3D business. At the Balance Sheet date, the Group was debt free and had cash and cash equivalents of £25.1m (2020: £20.1m). The reverse stress testing performed by management demonstrates revenue would need to reduce by more than 30% compared to the base case for the cash and cash equivalents to be fully consumed over the going concern period. This is considered remote given the nature and size of the order book and the trading experience of the printhead and EPS segments during COVID-19 conditions to date.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group and parent company's ability to continue as a going concern for the period to 30 June 2023.

In relation to the Group and parent company's reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's ability to continue as a going concern.

Overview of our audit approach

Audit scope	• We performed an audit of the complete financial information of 3 components and audit procedures on specific balances for a further 5 components. • The components where we performed full or specific audit procedures accounted for 100% of Revenue, 89% of Adjusted Profit Before Tax and 100% of Total assets.
Key audit matters	• Revenue recognition • Impairment of non-current assets (EPS) • Contingent consideration (3D) • Inventory provisioning (EPS) • Acquisition accounting (FFEI)
Materiality	• Overall Group materiality of £300k which represents 0.5% of revenue.

An overview of the scope of the parent company and Group audits

Tailoring the scope

Our assessment of audit risk, our evaluation of materiality and our allocation of performance materiality determine our audit scope for each company within the Group. Taken together, this enables us to form an opinion on the consolidated financial statements. We take into account size, risk profile, the organisation of the Group and effectiveness of Group-wide controls, changes in the business environment and other factors when assessing the level of work to be performed at each company.

In assessing the risk of material misstatement to the Group financial statements, and to ensure we had adequate quantitative coverage of significant accounts in the financial statements, of the 13 reporting components of the Group, we selected 8 entities within the UK and US, which represent the principal business units within the Group.

Of the 8 components selected, we performed an audit of the complete financial information of 3 components ("full scope components") which were selected based on their size or risk characteristics. For the remaining 5 components ("specific scope components"), we performed audit procedures on specific accounts within that component that we considered had the potential for the greatest impact on the significant accounts in the financial statements either because of the size of these accounts or their risk profile.

The reporting components where we performed audit procedures accounted for 100% (2020: 100%) of the Group's Revenue, 89% (2020: 100%) of the Group's Adjusted Profit Before Tax and 100% (2020: 100%) of the Group's Total assets. For the current year, the full scope components contributed 82% (2020: 93%) of the Group's Revenue, 73% (2020: 95% loss) of the Group's Adjusted Profit Before Tax and 78% (2020: 97%) of the Group's Total assets. The specific scope component contributed 18% (2020: 7%) of the Group's Revenue, 16% (2020: 5% loss) of the Group's Adjusted Profit Before Tax and 22% (2020: 3%) of the Group's Total assets. The audit scope of these components may not have included testing of all significant accounts of the component but will have contributed to the coverage of significant accounts tested for the Group.

The remaining five components were not revenue generating. For these components, we performed other procedures, including analytical review, testing of consolidation journals and intercompany eliminations and foreign currency translation recalculations to respond to any potential risks of material misstatement to the Group financial statements.

Changes from the prior year

As a result of the disposal of the 3D business in the year, we performed specific scope procedures over the result from discontinued operations from 1 January 2021 through to the date of disposal. Given the disposal, there were no Balance Sheet audit requirements as at 31 December 2021. In the prior year, this was a full scope component.

Following the acquisition of FFEI Limited during the year, this was included as a specific scope component.

Involvement with component teams

All audit work performed for the purposes of the audit was undertaken by the Group audit team.

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 which 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 our opinion thereon, and we do not provide a separate opinion on these matters.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Revenue recognition (£59.3 million – continuing operations, 2020: £48.0 million – continuing operations) Refer to the Audit Committee Report (page 78); Accounting policies (page 122); and Note 5 of the Consolidated Financial Statements (page 131) Given the difficult trading environment and investor focus on the Group's revenue, we consider there to be a risk in relation to the manipulation by central management of the amount of revenue recorded through manual journal entries. Management reward and incentive schemes are based on achieving profit targets which may also place pressure on management to manipulate revenue recognition. As part of the financial statement close process, certain manual adjustments are required to account for contracts with customers. There is risk that the manual adjustments are incorrectly recorded in the period. In the Product Print segment (EPS) and Digital Imaging (FFEI's) R&D revenue, judgement is required to determine whether revenue should be recognised over time or at a point in time. Where revenue is recognised over time, estimation is required to establish how much of the performance obligation has been satisfied and how much is recorded as a contract liability. A significant deficiency in the control environment was identified with respect to revenue recognition at EPS in the prior year, which represents an increased risk if not appropriately remediated.	We understood the Group's revenue recognition policies and how they are applied, including the relevant controls, and performed a walkthrough to validate our understanding. In respect of the main UK trading entity, which comprised 68% of the Group's revenue, we used data analytics to analyse the whole population of transactions from invoicing to cash journals, including adjustments to arrive at revenue recognised in the year. Where the journal postings did not follow our expectation, we investigated and assessed the integrity of these entries and tested a sample to assess their validity by agreeing the transactions back to source documentation. We performed tests of detail for a sample of revenue transactions to confirm the transactions had been appropriately recorded in the income statement in accordance with IFRS 15 and corroborated that control of the products had been transferred to the customer by: • analysing the contract and/or terms of the sale to determine that the Group had fulfilled the requirements of the contract; • confirming revenue could be reliably measured by reference to underlying documentation; and • confirming collectability of the revenue was reasonably assured by considering recent collection history and the ageing of receivables. We performed cut-off testing by tracing a sample of revenue items recorded either side of year-end to delivery note to determine whether revenue was recognised in the same period in which the performance obligations have been fulfilled. We selected a sample of post year-end credit notes to assess whether, where the credit note relates to the audit period, these credit notes were appropriately provided for in the financial statements. We tested journal entries posted to revenue accounts, applying parameters designed to identify entries that were not in accordance with our expectations. This included analysing and selecting journals for testing which appeared unusual in nature either due to size, preparer or being manually posted. To assess their validity, we verified the journals to validate originating documentation.	Revenue was recognised in accordance with the Group's accounting policies and we identified no evidence of management override in respect of inappropriate manual journals recorded in revenue. In respect of the revenue recognised over time we identified the IFRS 15 criteria were fulfilled for each item selected and the stage of completion was appropriately reflected within the accounting entries.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Revenue recognition (£59.3 million – continuing operations - of risk, 2020: £48.0 million – continuing operations) continued	We performed full and specific scope audit procedures over this risk area in 3 components which covered 100% of the revenue from continuing operations. **Revenue recognised over time** For a sample of items, we reviewed the respective sales contract to determine whether the contract met the criteria for being revenue recognised over time. Where any of these criteria are fulfilled, revenue should be recognised over time in accordance with IFRS 15. For these items, we evaluated judgements made by management regarding the expected costs to complete and the timing and recognition of variation orders, by obtaining and reviewing the variation order and comparing the cost assumptions to similar projects. We also verified a sample of actual costs incurred to date through to purchase invoice or timesheet records. To further assess the stage of completion at year end we also physically inspected a sample of work in progress projects and reviewed the impact of post year-end changes on labour hour and cost estimates. Where the criteria for over time recognition were not met we confirmed management has recognised revenue at a point in time, when the relevant performance obligation has been satisfied. We performed full scope audit procedures over this risk area in 2 locations which covered 100% of the risk amount.	

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Impairment of non-current assets – EPS (£7.6 million, 2020: £7.8 million) Refer to the Audit Committee Report (page 78); Accounting policies (page 125); and Note 15 of the Consolidated Financial Statements (page 141) IFRS requires impairment testing to be undertaken when there are indicators that an impairment may exist, and in the case of goodwill at least annually. Given the significant balances in respect of goodwill and recent trading losses, there is a risk that the Group's cash generating units ('CGUs') may not achieve the anticipated business performance to support their respective carrying values. In particular the Group has goodwill of £5.2 million in relation to EPS, which we have designated as a significant risk given the limited headroom in management's impairment testing model in prior year.	We examined management's impairment assessment methodology and model to understand the composition of management's future cash flow forecasts, and the process and related controls undertaken to prepare them. This included confirming the underlying cash flows were consistent with the Board approved budget and strategic plan, and did not include reorganisations and enhancements not committed at the balance sheet date. We also assessed the identified CGUs for appropriateness. We also re-performed the calculations in the model to test the mathematical integrity. We assessed the cash flow forecasting models, including consistency with the strategic plans for the Group and assessment of historical forecast accuracy and impact of COVID-19 to date and over the forecast period. We tested the key inputs to management's impairment models by: • analysing the historical accuracy of budgets to actual results to determine whether forecast cash flows are reliable based on past experience; • assessing the discount rate used by obtaining the underlying data used in the calculation and benchmarking it against an EY range derived from comparable organisations and market data, involving EY internal specialists to assist us with this assessment; and • comparing the forecast growth rates to the order backlog/pipeline using observable market data to validate the addressable market and challenging whether the forecast growth rates have been appropriately adjusted to reflect the changes in the Group's strategy. We calculated the degree to which the key inputs and assumptions would need to fluctuate before an impairment was triggered and considered the likelihood of this occurring. We performed our own sensitivities on the EPS forecasts and determined whether adequate headroom remained. We assessed whether there were any other indicators of impairment, which would give rise to the impairment of an individual asset. We audited the related disclosures with reference to the requirements of IAS 36 and confirmed their consistency with the audited impairment models.	We agree with management's conclusion that no impairment of goodwill is required in the current year. We have concluded that the methodology applied is reasonable, that the forecast period is appropriate and that management's models are mathematically accurate. The additional sensitivity disclosures in note 15 of the Group financial statements adequately reflect that a reasonably possible change in certain key assumptions could lead to a different conclusion in respect of the recoverability of goodwill.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Contingent consideration (3D) (£11.9 million, 2020: £nil) Refer to the Audit Committee Report (page 78); Accounting policies (page 127); and Note 11 of the Consolidated Financial Statements (page 135) Stratasys Solutions Limited acquired the remaining 55% equity stake held by Xaar 3D Holdings Limited in Xaar 3D on 6 October 2021. The consideration included £9.3m paid in cash and a further amount of up to $15.5m which is contingent on the achievement of certain milestones and a 3% earn-out consideration in respect of the future revenues of Xaar 3D. The Group recorded a financial asset of £10.9m on the date of the transaction (remeasured to £11.9m at 31 December 2021) in respect of the contingent earn-out consideration. Estimation of the fair value of this consideration is complex and relies on significant unobservable inputs. The Group engaged an external specialist to estimate the fair value of the contingent consideration. For this valuation, management's external specialist used a Monte Carlo Simulation model given the complex conditions associated with the contingent consideration.	We have used EY internal valuation specialists to review the methodology and reasonableness of key assumptions used within management's Monte Carlo Simulation. We have engaged a separate EY internal specialist to assess the discount rates assumed within the Monte Carlo Simulation, by obtaining the underlying data used in the calculation and benchmarking it against an EY range derived from comparable organisations and market data. We have assessed the consistency of the forecasts with the strategic plans for Xaar 3D and impact of COVID-19 through validating the forecast with Stratasys management. Given the contingent consideration is held at fair value, we have performed these procedures at both the date of disposal and at year end and recalculated the fair value movement recorded in the income statement. We have audited the related disclosures with reference to the requirements of IFRS and confirmed they are consistent with the specialist's valuation report.	The methodology used by management to establish the fair value of the contingent consideration is appropriate and the resulting valuation based upon key inputs is within our independently established range.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Inventory provisioning (EPS) (£2.0 million including provision of £0.9 million, 2020: £2.6 million including provision of £1.4 million) Refer to the Audit Committee Report (page 78); Accounting policies (page 126); and Note 20 of the Consolidated Financial Statements (page 145) In the prior year Annual Report and Accounts, management reported a significant deficiency in the control environment in relation to inventory management at the EPS business. During the period management took steps to remediate the significant deficiencies identified in the prior year. The steps taken are described on page 79 and included a full review of existing inventory provisions and provisioning methodology. As a result of these steps, a significant write-off of EPS inventory was recorded. As a result of our subsequent challenge this write off of £0.6m has been recorded as a prior year adjustment. Given the significance of these two matters, we have upgraded this to a significant risk in the current year (specific to the EPS segment), reflecting the overall risk that the provision recorded by management does not accurately reflect the level of exposure and that inventory is incorrectly valued.	We have obtained an understanding of the Group's policies on inventory provisions and how they are applied, including the relevant controls, and performed a walkthrough to validate our understanding. We have assessed the remediation of controls previously reported as deficient at EPS and found them to be appropriately remediated. We performed procedures on the standard costs calculations to assess whether only normal production variances have been capitalised in the year-end inventory balance and material abnormal inefficiencies have been appropriately expensed. We have checked that inventory was appropriately revalued to an estimate of actual cost. We have performed tests of clerical accuracy on management's inventory provision calculations. We have performed procedures to validate the appropriateness of any management judgements applied in calculating the inventory provision. For a sample of inventory lines, we have reviewed post year-end selling prices in comparison to the values assumed in the book values recorded. Where the book value exceeds realisable value, we have confirmed that management has recorded an appropriate provision. We have discussed the latest sales and marketing strategies including implications for the level of provision recorded. This included comparing forecast product usage to customer orders, considering historical usage, historical accuracy of provisioning and understanding management's future plans to utilise the inventory. We attended management's year-end wall to wall inventory count at EPS and also for each of the other key locations (Printhead and FFEI). This comprised 100% of all stocks of the Group. We have audited the related disclosures with reference to the requirements of IFRS.	Following the posting of the prior year restatement (see note 37), the provisions reflect the adjustment required to ensure that inventory balances reflect the lower of cost or NRV.

Risk	Our response to the risk	Key observations communicated to the Audit Committee
Acquisition accounting (FFEI) Refer to the Audit Committee Report (page 77); Accounting policies (page 122); and Note 36 of the Consolidated Financial Statements (page 161) FFEI Limited was acquired in July 2021 for £9.1m (£3.9 million cash consideration with the remaining £5.2m to be paid out as a deferred consideration over three years). Management have up to 12 months from the date of acquisition to finalise the acquisition accounting in accordance with IFRS 3 – Business Combinations. Our risk focus is around: • Classification and measurement of deferred consideration and conditions attached • Fair value estimation for acquired intangibles • Opening balance sheet testing • Transition from FRS 102 to IFRS • Resulting updates to tax balances	We have reviewed the sale and purchase agreement and due diligence report to determine the completeness of the identified acquired assets and liabilities. We have reviewed the journals posted to transition the opening balances from FRS 102 to IFRS. We have also performed a walkthrough of the significant processes to determine any further areas that require consideration in terms of IFRS transition adjustments that were not previously considered by management. We have reviewed management's accounting paper and reporting received from management's specialist in relation to the fair value of intangible assets and useful economic life assigned and engaged our EY internal valuation specialists to review the methodology and key assumptions. We have engaged our EY internal tax specialists to assess the tax methodology and rates applied by management when calculating the associated deferred tax adjustments arising from the acquisition accounting; and We have audited the disclosures within the annual report and accounts in relation to the business combination and resulting changes.	We concluded that the transaction was properly accounted for in accordance with IFRS 3, and the fair value adjustments and Purchase Price Allocation were appropriate. The relevant tax considerations have been recorded and disclosed appropriately in the financial statements.

In the prior year, our auditor's report included a key audit matter in relation to recoverability of receivables, consolidation of Xaar 3D and the EPS business. In the current year:

- Recoverability of receivables no longer represents a key audit matter following improvements in the ageing profile of receivables, resolution of legacy matters and reduced exposure of the customer base to the economic impact of COVID-19;
- Consolidation of Xaar 3D no longer represents a key audit matter given the business was disposed of during the year; and
- The EPS business no longer represents a key audit matter given the steps management have taken to remediate the previously reported significant deficiencies and the ongoing risk factors are incorporated within other Key Audit Matters, namely revenue recognition, impairment of non-current assets and inventory provisioning.

Our application of materiality

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion.

Materiality

The magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

We determined materiality for the Group to be £300k (2020: £240k), which is 0.5% (2020: 0.5%) of revenue. We believe that revenue provides us with the most appropriate basis given it is the main KPI for the Group, whilst the Group reports an adjusted loss before tax.

We determined materiality for the Parent Company to be £300k (2020: £240k), which we capped at the Group materiality.

During the course of our audit, we reassessed initial materiality and updated for the final result for the year.

Performance materiality

The application of materiality at the individual account or balance level. It is set at an amount to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

On the basis of our risk assessments, together with our assessment of the Group's overall control environment, our judgement was that performance materiality was 50% (2020: 50%) of our planning materiality, namely £150k (2020: £120k). We have maintained performance materiality at this percentage reflecting our observations of the Group's systems and processes, susceptibility of the financial statements to management override and historical audit findings.

Audit work at component locations for the purpose of obtaining audit coverage over significant financial statement accounts is undertaken based on a percentage of total performance materiality. The performance materiality set for each component is based on the relative scale and risk of the component to the Group as a whole and our assessment of the risk of misstatement at that component. In the current year, the range of performance materiality allocated to components was £30k to £112k (2020: £24k to £91k).

Reporting threshold

An amount below which identified misstatements are considered as being clearly trivial.

We agreed with the Audit Committee that we would report to them all uncorrected audit differences in excess of £15k (2020: £12k), which is set at 5% of planning materiality, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

We evaluate any uncorrected misstatements against both the quantitative measures of materiality discussed above and in light of other relevant qualitative considerations in forming our opinion.

Other information

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

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon.

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of 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 this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, the part of the directors' remuneration report to be audited has been properly prepared in accordance with the Companies Act 2006.

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

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements and those reports have been prepared in accordance with applicable legal requirements;
- the information about internal control and risk management systems in relation to financial reporting processes and about share capital structures, given in compliance with rules 7.2.5 and 7.2.6 in the Disclosure Rules and Transparency Rules sourcebook made by the Financial Conduct Authority (the FCA Rules), is consistent with the financial statements and has been prepared in accordance with applicable legal requirements; and
- information about the company's corporate governance statement and practices and about its administrative, management and supervisory bodies and their committees complies with rules 7.2.2, 7.2.3 and 7.2.7 of the FCA Rules.

Matters on which we are required to report by exception

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; or
- the information about internal control and risk management systems in relation to financial reporting processes and about share capital structures, given in compliance with rules 7.2.5 and 7.2.6 of the FCA Rules

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 and the part of the Directors' Remuneration Report to be audited 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; or
- a Corporate Governance Statement has not been prepared by the company

Corporate Governance Statement

We have reviewed the directors' statement in relation to going concern, longer-term viability and that part of the Corporate Governance Statement relating to the Group and company's compliance with the provisions of the UK Corporate Governance Code specified for our review by the Listing Rules.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the Corporate Governance Statement is materially consistent with the financial statements or our knowledge obtained during the audit:

- Directors' statement with regards to the appropriateness of adopting the going concern basis of accounting and any material uncertainties identified set out on page 67;
- Directors' explanation as to their assessment of the company's prospects, the period this assessment covers and why the period is appropriate set out on page 68;
- Directors' statement on whether they have a reasonable expectation that the Group will be able to continue in operation and meets its liabilities set out on page 68;
- Directors' statement on fair, balanced and understandable set out on page 76;
- Board's confirmation that it has carried out a robust assessment of the emerging and principal risks set out on page 45;
- The section of the annual report that describes the review of effectiveness of risk management and internal control systems set out on page 45; and
- The section describing the work of the audit committee set out on page 77.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 102, 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 and 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.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect irregularities, including fraud. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the company and management.

- We obtained an understanding of the legal and regulatory frameworks that are applicable to the Group and determined that the most significant are those that relate to the reporting framework (IFRS, FRS 101, the Companies Act 2006 and the UK Corporate Governance Code) and the relevant tax compliance regulations in the jurisdictions in which the Group operates. In addition, we concluded that there are certain significant laws and regulations which may have an effect on the determination of the amounts and disclosures in the financial statements being the Listing Rules of the UK Listing Authority, and those regulations relating to health and safety and employee matters.
- We understood how Xaar plc is complying with those frameworks by making enquiries of management, the Company Secretary, and those responsible for legal and compliance procedures. We corroborated our enquiries through our review of board minutes, papers provided to the Audit Committee, discussion with the Audit Committee and any correspondence received from regulatory bodies.
- We assessed the susceptibility of the Group's financial statements to material misstatement, including how fraud might occur by audit. We also considered performance targets and their influence on efforts made by management to manage earnings or influence the perceptions of analysts. We considered the programmes and controls that the Group has established to address risks identified, or that otherwise prevent, deter and detect fraud and how senior management monitors those programmes and controls. Where the risk was considered to be higher, we performed audit procedures to address each identified fraud risk including revenue recognition as discussed above. These procedures included testing manual journals and were designed to provide reasonable assurance that the financial statements were free from fraud or error.
- Based on this understanding we designed our audit procedures to identify non-compliance with such laws and regulations. Our procedures involved journal entry testing, with a focus on manual consolidation journals and journals indicating large or unusual transactions based on our understanding of the business; enquiries of the Company Secretary, head of legal, audit committee, management; and focussed testing, as referred to in the key audit matters section above. In addition, we completed procedures to conclude on the compliance of the disclosures in the Annual Report and Accounts with the requirements of the relevant accounting standards, UK legislation and the UK Corporate Governance Code.

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

Other matters we are required to address

- Following the recommendation from the audit committee we were appointed by the company on 16 June 2021 to audit the financial statements for the year ending 31 December 2021 and subsequent financial periods.
- The period of total uninterrupted engagement including previous renewals and reappointments is 3 years, covering the years ending 2019 to 2021.
- The audit opinion is consistent with the additional report to the audit committee.

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.

Adrian Bennett
Senior statutory auditor
for and on behalf of Ernst & Young LLP, Statutory Auditor
Cambridge

29 March 2022

Consolidated income statement
for the year ended 31 December 2021

	Notes	2021 £'000	2020 £'000
Revenue	5	**59,254**	47,984
Cost of sales		**(39,064)**	(34,974)
Gross profit		**20,190**	13,010
Research and development expenses		**(5,706)**	(4,535)
Research and development expenditure credit		**270**	142
Sales and marketing expenses		**(6,342)**	(5,970)
General and administrative expenses		**(10,070)**	(8,022)
Impairment reversals on financial assets		**388**	946
Restructuring and transaction expenses		**(1,404)**	(754)
Other operating income	7	**–**	819
Fair value gain on financial assets at FVPL	22	**987**	–
Gain on derivative financial liabilities	22	**2,919**	77
Operating profit/(loss)		**1,232**	(4,287)
Investment income	10	**4**	47
Finance costs		**(242)**	(82)
Profit/(loss) before tax		**994**	(4,322)
Income tax credit/(expense)	12	**(299)**	(52)
Profit/(loss) for the year from continuing operations		**695**	(4,374)
Profit/(loss) from discontinued operations after tax	11	**13,533**	(10,295)
Profit/(loss) for the year		**14,228**	(14,669)
Attributable to:			
Owners of the Company		**16,219**	(11,685)
Non-controlling interest	35	**(1,991)**	(2,984)
Profit/(loss) for the year		**14,228**	(14,669)
Earnings/(loss) per share – Total			
Basic	14	**20.9p**	(15.2p)
Diluted	14	**20.6p**	(15.2p)
Earnings/(loss) per share – Continuing operations			
Basic	14	**0.9p**	(5.7p)
Diluted	14	**0.9p**	(5.7p)

There were no dividends paid during the current and preceding year.

Consolidated statement of comprehensive income
for the year ended 31 December 2021

	Notes	2021 £'000	Restated 2020 £'000
Profit/(loss) for the year		**14,228**	(14,669)
Items that may be reclassified subsequently to profit or loss:			
Exchange differences on retranslation of net investment		**143**	262
Tax		**–**	(5)
Other comprehensive income for the year		**143**	257
Total comprehensive income/(loss) for the year		**14,371**	(14,412)
Total comprehensive loss attributable to:			
Owners of the Company		**16,366**	(11,444)
Non-controlling interests	35	**(1,995)**	(2,968)
		14,371	(14,412)

Consolidated statement of financial position
as at 31 December 2021

	Notes	2021 £'000	Restated 2020 £'000
Non-current assets			
Goodwill	15	**5,894**	5,152
Intangible assets	16	**4,043**	207
Property, plant and equipment	17	**16,226**	17,147
Right-of-use asset	18	**9,368**	2,078
Financial asset at fair value through profit or loss	22	**11,850**	–
Deferred tax asset	23	**–**	139
		47,381	24,723
Current assets			
Inventories	20	**18,839**	9,750
Trade and other receivables	21	**12,138**	9,640
Current tax asset	21	**531**	425
Treasury deposits	21	**–**	161
Cash and cash equivalents	21	**25,051**	17,956
Derivative financial instruments	22	**–**	160
Assets held for sale	17	**–**	43
		56,559	38,135
Disposal group assets held for sale	11	**–**	9,968
		56,559	48,103
Total assets		**103,940**	72,826
Current liabilities			
Trade and other payables	24	**(21,489)**	(9,940)
Provisions	25	**(264)**	(357)
Derivative financial instruments	22	**–**	(2,919)
Lease liabilities	18	**(1,231)**	(1,064)
		(22,984)	(14,280)
Liabilities associated with the disposal group	11	**–**	(1,589)
		(22,984)	(15,869)
Net current assets		**33,575**	32,234
Non-current liabilities			
Deferred tax liabilities	23	**(1)**	–
Lease liabilities	18	**(8,499)**	(1,515)
Provisions	25	**(300)**	–
Other financial liabilities	24	**(3,354)**	–
Total non-current liabilities		**(12,154)**	(1,515)
Total liabilities		**(35,138)**	(17,384)
Net assets		**68,802**	55,442
Equity			
Share capital	26	**7,844**	7,833
Share premium	27	**29,427**	29,328
Own shares	28	**(1,923)**	(1,957)
Translation reserve	29	**1,011**	864
Other reserves	30	**21,820**	21,167
Retained earnings	30	**10,623**	(5,564)
Equity attributable to owners of the Company		**68,802**	51,671
Non-controlling interest	35	**–**	3,771
Total equity		**68,802**	55,442

The financial statements of Xaar plc, registered number 3320972, were approved by the Board of Directors and authorised for issue on 29 March 2022. They were signed on its behalf by:

John Mills
Chief Executive Officer

Ian Tichias
Chief Financial Officer

Consolidated statement of changes in equity
as at 31 December 2021

	Notes	Share capital £'000	Share premium £'000	Own shares £'000	Translation reserves £'000	Other reserves £'000	Retained earnings £'000	Total £'000	Non-controlling interest £'000	Total equity £'000
Balance at 1 January 2020 (as reported)		7,833	29,328	(2,676)	594	20,921	7,598	63,598	6,739	70,337
Correction of error	37		–	–	24	-	(766)	(742)	-	(742)
Balance at 1 January 2020 (as restated)		7,833	29,328	(2,676)	618	20,921	6,832	62,856	6,739	69,595
Loss for the year		–	–	–	–	–	(11,685)	(11,685)	(2,984)	(14,669)
Tax on items taken directly to equity		–	–	–	–	–	(5)	(5)	–	(5)
Exchange differences on retranslation of net investment			–	–	224	–	–	224	16	240
Correction of error	37	–	–	–	22	–	4	26	–	26
Total comprehensive loss for the year as reported		–	–	–	246	–	(11,686)	(11,440)	(2,968)	(14,408)
Own shares sold in the period	28	–	–	719	–	–	–	719	–	719
Share option exercises		–	–	–	–	–	(710)	(710)	–	(710)
Credit to equity for equity-settled share-based payments	9	–	–	–	–	246	–	246	–	246
Balance at 31 December 2020 (as restated)		7,833	29,328	(1,957)	864	21,167	(5,564)	51,671	3,771	55,442
Profit for the year		–	–	–	–	–	16,219	16,219	(1,991)	14,228
Tax on items taken directly to equity		–	–	–	–	–	–	–	–	–
Exchange differences on retranslation of net investment		–	–	–	147	–	–	147	(4)	143
Total comprehensive income for the year		–	–	–	147	–	16,219	16,366	(1,995)	14,371
Own shares sold in the period	28	–	–	34	–	–	–	34	–	34
Share option exercises		11	99	–	–	–	(32)	78	–	78
Credit to equity for equity-settled share-based payments	9	–	–	–	–	653	–	653	–	653
Derecognition of non-controlling interest	35	–	–	–	–	–	–	–	(1,776)	(1,776)
Balance at 31 December 2021		**7,844**	**29,427**	**(1,923)**	**1,011**	**21,820**	**10,623**	**68,802**	**–**	**68,802**

The nature of retained earnings and other reserves in equity is described in note 30.

Consolidated cash flow statement
for the year ended 31 December 2021

	Notes	2021 £'000	2020 £'000
Net cash used in operating activities	31	**(2,054)**	(2,807)
Investing activities			
Investment income	10	**13**	64
Treasury deposits withdrawn	21	**161**	361
Purchase of derivative financial instrument		**–**	(130)
Purchases of property, plant and equipment		**(1,876)**	(1,098)
Proceeds on disposal of property, plant and equipment		**209**	167
Expenditure on software		**(38)**	–
Proceeds from disposal of investment in subsidiary	11	**9,272**	–
Cash attributable to subsidiary sold		**(96)**	–
Acquisition of subsidiary, net cash acquired	36	**168**	–
Net cash provided by/(used in) investing activities		**7,813**	(636)
Financing activities			
Proceeds from sale of ordinary share capital		**150**	–
Payment of lease liabilities and related interest		**(824)**	(1,224)
Net cash used in financing activities		**(674)**	(1,224)
Net increase / (decrease) in cash and cash equivalents		**5,085**	(4,667)
Effect of foreign exchange rate changes on cash balances		**(110)**	(57)
Cash and cash equivalents at beginning of year		**20,076**	24,800
Cash and cash equivalents at end of year		**25,051**	20,076
Cash and cash equivalents attributable to subsidiary sold	11	**–**	2,120
Cash and cash equivalents	21	**25,051**	17,956

Cash and cash equivalents (which are presented as a single class of asset on the face of the consolidated statement of financial position) comprise cash at bank and other short-term highly liquid investments with a maturity of three months or less. The carrying amount of these assets is approximately equal to their fair value.

Notes to the consolidated financial statements
for the year ended 31 December 2021

1. General information

Xaar plc ('the Group') is incorporated in England and Wales under the Companies Act 2006. The address of the registered office is given on the inside back cover. The nature of the Group's operations and its principal activity are set out in the Strategic Report on pages 4 to 57.

The Strategic Report can be found on pages 4 to 57

2. Key sources of estimation uncertainty and critical accounting judgements

The key assumptions concerning the future and other sources of estimation uncertainty at the date of the statement of financial position that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are as follows:

Accounting judgements – The Group applies judgement in how it applies its accounting policies, which do not involve estimation, which could materially affect the numbers disclosed in these financial statements. The key judgements, without estimation, that could have the most significant effect on the amounts recognised in these financial statements are as follows:

Capitalisation of development costs (accounting judgement) – note 16

As described in note 3, the Group capitalises development expenditure as an intangible asset where the criteria under IAS 38 'Intangible Assets' is met. This requires management to make judgement on when all of the criteria for capitalisation are met and when to cease capitalisation and start amortising the asset. There were no capitalised development costs for the current and prior year as there are no projects that have met the capitalisation criteria as the technical feasibility criteria is only typically achieved at the end of a project and given the capitalisation ceased on Xaar 3D in 2019 and its subsequent sale this year.

Discontinued operations (accounting judgement) – note 11

Following the Board decision in December 2020 to amend the terms of the call option in relation to Xaar 3D the Group considered the application of IFRS 5 'Non-current Assets Held for Sale and Discontinued Operations'. The 3D business meets the criteria of a discontinued operation per IFRS 5 given it has been previously been reported as a major line of business and the disposal was formally completed on 1 November 2021. The accounting judgement relating to the consolidation of Xaar 3D in the 2020 financial statements is no longer applicable in the 2021 financial statements following the disposal of Xaar 3D on 1 November 2021 in accordance with UK-adopted International Accounting Standards. The business was reported as held for sale at 31 December 2020.

Significant estimates – The preparation of financial statements in accordance with UK-adopted international accounting standards (IFRS) requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting year. Although these estimates are based on management's best knowledge of the amount, events or actions, actual results ultimately may differ from those estimates. The estimates and underlying assumptions are reviewed on an ongoing basis. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

The Directors consider the following to be the key estimates applicable to the financial statements, which have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the next financial year or in the longer term:

Climate-related risks (estimation uncertainty)

Climate change is a global challenge and an emerging risk to businesses, people and the environment across the world. We have a role to play in limiting global warming by improving our energy management, reducing our carbon emissions and by helping our customers do the same. Growing awareness of climate change and customer sustainability targets will provide impetus for business growth as we provide products, services and solutions that increase efficiency and reduce customers' energy use and carbon emissions. As a result, in our view climate change does not create any further key sources of estimation uncertainty. For further detail see the Risk management and Sustainability sections of the Strategic Report.

Contingent consideration (estimation uncertainty) – note 11, 22

In November 2021, Stratasys Solutions Limited acquired the remaining 55% of Xaar 3D Limited for an initial consideration of US$13.5 million or £9.9 million in cash and a milestone consideration and 3% earn-out consideration which are contingent on the achievement of certain milestones in respect of the future revenue stream of Xaar 3D and should be estimated using a statistical simulation model. This contingent consideration is measured at fair value using a Monte Carlo Simulation model. The Group considers this model to be appropriate, given the complex conditions associated with the milestone consideration and 3% earn-out consideration. The Monte Carlo Simulation model uses a number of inputs that require estimation and the key ones are the risk-adjusted discount rate and revenue volatility. Whilst the Group uses third party experts to provide these inputs and is dependent on receipt of data or financial information from the purchaser, the estimates remain uncertain.

Inventory provision (estimation uncertainty) – note 20

The Group's inventory provision at 31 December 2021 of £9,571,000 (2020: £24,621,000) includes £6,289,000 relating to discontinued operations (2020: £21,256,000) and £3,282,000 from continuing operations (2020: £3,365,000). The reduction in Group's inventory provision is mainly due to clear down of previously provided inventory amounting to £16,239,000. All assets, including inventory, that relate to the discontinued operations have been valued at the lower of the carrying amount and fair value less cost to sell. Provisions in relation to continuing operations have been made based on management's assessment of customer sell through, market conditions, current and potential competitors, and the ageing profile and quantity of the inventory on hand. Furthermore, management has assessed the likely time period to sell the inventory and the ability to decrease prices to drive sales.

2. Key sources of estimation uncertainty and critical accounting judgements continued

Credit provision for the allowance of doubtful debts (estimation uncertainty) – note 21

The Group's provision for doubtful debts of £144,000 (2020: £622,000) relates to management's assessment of the ageing profile of receivables and the risk of collecting unpaid overdue balances. In making the estimate, management has taken steps to assess the ongoing viability of the customers, the probability and timing of repayment, external factors which may affect the customers' ability to pay and historical data relating to settlement of aged debts.

Impairment of capitalised development costs (estimation uncertainty) – note 16

The Group determines whether capitalised development costs, and all other non-current assets, are impaired at least on an annual basis. This requires an estimation of the 'value-in-use' of the cash-generating units to which the capitalised development costs are allocated. Estimating a value-in-use amount requires management to make an estimate of the expected future cash flows from the cash-generating unit and also to choose a suitable discount rate in order to calculate the present value of those cash flows. The carrying amount of capitalised development costs at 31 December 2021 was £1,000 (2020: £76,000).

Impairment of goodwill (estimation uncertainty) – note 15

The Group tests goodwill annually for impairment or more frequently if there are indications that goodwill might be impaired. Having performed impairment testing, no impairment has been identified and therefore no impairment loss has been recognised in 2021 (2020: £nil). Management has performed sensitivity analysis on its reasonably worst case scenario for EPS and FFEI and it has been completed on each key assumption in isolation. With regard to EPS, reasonably possible change sensitivities are included in note 15.

Revenue recognition (estimation uncertainty) – note 5

Engineered Printing Solutions and FFEI recognise revenue on the stage of completion for some of the customer contract and performance obligations in the manufacture of bespoke machinery and equipment as well as some of the research and development services for delivery to the customer.

Each month an assessment is undertaken of the work in progress and stage of completion in both supply of individual components and labour hours allocated to the project against the expected project manufacture costs. The revenue determined is recognised upon the proportion and stage of completion of the performance obligations. This assessment enables an estimate to be undertaken for the expected profitability of the customer contract, costs incurred to date, and costs to complete, but is subject to a level of uncertainty until the work in progress is finalised and the completed machinery and services are available for final delivery and acceptance by the customer.

The transaction price allocated to partially satisfied and unsatisfied obligations at 31 December 2021 is set out in note 5.

3. Significant accounting policies

Basis of accounting

The Group financial statements have been prepared in accordance with UK adopted International Accounting Standards (IAS). The financial information has been prepared on the basis of all applicable IFRS, including all International Accounting Standards (IAS), Standing Interpretations Committee (SIC) interpretations and International Financial Reporting Interpretations Committee (IFRIC) interpretations issued by the International Accounting Standards Board (IASB) that are applicable to the financial period.

The financial statements have been prepared on the historical cost basis, except for the revaluation of financial instruments. The Group financial statements are presented in Sterling and all values are rounded to the nearest thousand pounds (£'000) except when otherwise indicated. The principal accounting policies adopted are set out below.

Basis of consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities controlled by the Company ('its subsidiaries') made up to 31 December each year. Control is achieved where the Company has the power to govern the financial and operating policies of an investee entity so as to obtain benefits from its activities. An investor controls another entity, an investee, if and only if the investor has all of the following: it has power over the investee, exposure or rights to variable returns from its involvement with the investee, and the ability to use its power over the investee to affect the amount of the investor's returns. To have power, an investor must have existing substantive rights that give it the current ability to direct the relevant activities. The investor reassesses whether it controls an entity if facts and circumstances indicate changes to one or more of the elements of control.

The results of subsidiaries acquired or disposed of during the year are included in the consolidated income statement from the date of acquisition or up to the date of disposal, as appropriate. Where necessary, adjustments are made to the financial statements of subsidiaries to bring the accounting policies used in line with those used by the Group.

All intra-group transactions, balances, income and expenses are eliminated on consolidation. Foreign exchange gains and losses arising on the retranslation of trading balances with subsidiaries with different functional currencies are reported in the income statement.

Non-controlling interests in subsidiaries are identified separately from the Group's equity therein. Those interests of non-controlling shareholders that are present ownership interests entitling their holders to a proportionate share of net assets upon liquidation may initially be measured at fair value or at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets. The choice of measurement is made on an acquisition-by-acquisition basis.

Profit or loss and each component of other comprehensive income are attributed to the owners of the Company and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

3. Significant accounting policies continued

Basis of consolidation continued

Changes in the Group's interests in subsidiaries that do not result in a loss of control are accounted for as equity transactions. The carrying amount of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognised directly in equity and attributed to the owners of the Company.

The loss of control of a subsidiary results in the recognition of a gain or loss on the sale of the interest sold and the derecognition of all assets, liabilities and any retained non-controlling interest.

Going concern

The Group's business activities, together with the factors likely to affect its future development, performance and position, are set out in the Strategic Report on pages 12 to 23. The Group reported a profit after tax for the year ended 31 December 2021 of £14.2 million, which includes a profit after tax of £13.5 million related to discontinued operations, being the costs relating to Thin Film and Xaar 3D (£4.4 million loss), as well as the gain on disposal (£17.9 million). Notes 21 and 22 include a description of the Group's objectives, policies and processes for managing its capital; its financial risk management objectives; details of its financial instruments and hedging activities; and its exposure to credit risk and liquidity risk. The Group's day-to-day working capital requirements are expected to be met through the current cash and cash equivalent resources (including treasury deposits) at the balance sheet date of 31 December 2021 of £25.1 million. The Group was debt free as at 31 December 2021.

To date the impact of COVID-19 on the Group's trading has been minimal, however we did experience some COVID-19 related supply constraints in 2021, for which actions have been taken to mitigate their impact and therefore the Board continues to be optimistic on the future trading environment.

The going concern review has been completed by considering the performance of the different businesses across the Group and each of their funding requirements before performing a number of stress tests. The base going concern case is consistent with the current Board approved forecasts and, to reflect judgement over timing of contingent consideration receipts, has been adjusted to exclude these in the going concern period. A second case which includes the consideration payable on the acquisition of Megnajet Ltd (as set out in note 38), however excludes the revenue compared to forecast across the entire Group required to prevent the business continuing as a going concern is more than 30% which is considered remote given the nature and size of the order book and the trading experience of the printhead and EPS segments during COVID-19 conditions to date.

Notwithstanding this, the Group has further options to mitigate a cash shortfall which have not been factored into the above forecasts, such as staffing reductions, further delaying/stopping capital and research and development expenditure and aligning performance related pay to actual results.

The Directors have a reasonable expectation that the Group has adequate resources to continue in operational existence for the period to 30 June 2023, taking account of reasonably possible changes in trading performance. For this reason, we continue to adopt the going concern basis in preparing the financial statements.

Adjusted financial measures

Adjusted financial measures relate to continuing operations and comprise adjusted profit / (loss) before tax, adjusted EBITDA, and adjusted basic and diluted earnings per share. These measures are alternative performance measures ('APMs') which are not defined or specified under the requirements of IFRS. These APMs adjust for recurring and non-recurring items which management consider are not reflective of the underlying performance of the Group. These APMs are used in evaluating management's performance and in determining management and executive remuneration. Items adjusted for include share-based payment charges, exchange differences on intra-group transactions, gain on derivative financial instruments, restructuring and transaction expenses, other operating income, the research and development expenditure credit, fair value gains on financial assets and amortisation of acquired intangible assets. See note 4 for further detail.

Recurring items are adjusted each year irrespective of materiality to ensure consistent treatment, and allow for variation transactions that can occur e.g. due to volatility in share prices in respect of share-based payment charges, or the significant impact of restructuring and transaction expenses. Non-recurring items are identified and adjusted for by virtue of their size or nature.

Share-based payment charges are excluded from the calculation of adjusted profit/(loss) before tax as these represent a non-cash accounting charge which represent long-term incentives designed for long-term employee retention. Share-based payment charges are not included in the analysis of segment performance used by the Chief Operating Decision Maker and their add-back is consistent with metrics used by a number of other companies in the technology sector, therefore this treatment remains appropriate.

Fair value gains and losses on financial assets at fair value through profit and loss are excluded from the calculation of adjusted profit/(loss) before tax as these represent a non-cash movement in accounting estimates related to divestment contingent consideration. The movements are driven by external factors and not influenced by the Group. Fair value gains and losses on financial assets at fair value through profit and loss bear no relation to the Group's underlying ongoing operational performance, and are not included in the analysis of segment performance used by the Chief Operating Decision Maker.

Amortisation of acquired intangibles is excluded from the calculation of adjusted profit/(loss) before tax as these charges are the result of acquisition accounting, and whilst revenue recognised in the income statement benefits from the underlying intangibles that have been acquired, the amortisation costs bear no relation to the Group's underlying ongoing operational performance. In addition, amortisation of acquired intangibles is not included in the analysis of segment performance used by the Chief Operating Decision Maker.

Net cash includes cash, cash equivalents and treasury deposits. Gross R&D investment represents the cost of research and development on continuing operations in the year. No amounts have been capitalised in the current year, as the criteria have not been achieved.

3. Significant accounting policies continued

Business combinations

The acquisition of subsidiaries is accounted for using the acquisition method.

Goodwill arising on acquisition is recognised as an asset and initially measured at cost, being the excess of the sum of consideration transferred, the amount of any non-controlling interests in the acquiree over the net of the acquisition-date fair values of the identifiable assets, liabilities and contingent liabilities recognised. If after reassessment, the Group's interest in the net fair value of the acquiree's identifiable assets, liabilities and contingent liabilities exceeds the cost of the business combination, the excess is recognised immediately in the income statement.

Goodwill

Goodwill arising on consolidation is initially recognised as an asset at cost and is subsequently measured at cost less any accumulated impairment losses. Goodwill which is recognised as an asset is reviewed for impairment at least annually. Any impairment is recognised immediately in the income statement and is not subsequently reversed.

For the purposes of impairment testing, goodwill is allocated to each of the Group's cash-generating units expected to benefit from the synergies of the combination. Cash-generating units to which goodwill has been allocated are tested for impairment annually, or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the cash-generating unit is less than the carrying amount of the unit, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then to the other assets of the unit pro rata on the basis of the carrying amount of each asset in the unit.

On disposal of the cash-generating unit, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

Goodwill arising on acquisitions before the date of transition to IFRS has been retained at the previous UK GAAP amounts subject to being tested for impairment at that date. Goodwill written off to reserves under UK GAAP prior to 1998 has not been reinstated and is not included in determining any subsequent profit or loss on disposal.

Revenue recognition

Overall policy

Revenue is measured based on the consideration to which the Group expects to be entitled in a contract with a customer and excludes amounts collected on behalf of third parties. The Group determines whether to recognise revenue, following a five-step process:

1. Identifying the contract with a customer;
2. Identifying the performance obligations;
3. Determining the transaction price;
4. Allocating the transaction price to the performance obligations; and
5. Recognising revenue when/as performance obligation(s) are satisfied.

Revenue streams

Revenue arises from a number of sources but mainly the manufacture and sale of printheads, engineered printing solutions and digital imaging devices ("product sales"). The Group also provides consulting and research and developments services ("commissions and services"), and licenses intellectual property to third parties as part of royalty based revenue ("licensee royalties"). Revenue is shown net of value-added tax, returns, rebates and discounts and after eliminating sales within the Group.

Identification of performance obligations

When the Group enters into an agreement with a customer, goods and services deliverable under the contract are identified as separate performance obligations ("obligations") to the extent that the customer can benefit from the goods or services on their own and that the separate goods and services are considered distinct from other goods and services in the agreement. Where individual goods and services do not meet the criteria to be identified as separate obligations they are aggregated with other goods and/or services in the agreement until a separate obligation is identified.

Typically each of the revenue streams listed above qualify as separate performance obligations, with consideration allocated accordingly. However, for certain of the Digital Imaging and Product Print Systems contracts, the performance obligations are not distinct, for example where the services are essential for the customer to be able to benefit from the product sale.

3. Significant accounting policies continued

Revenue recognition continued

Timing of revenue recognition

Revenue is recognised in accordance with IFRS 15 when control has been transferred to the customer. For product sales, revenue is recognised at a point in time, unless specific conditions have been satisfied allowing revenue to be recognised over a period of time as identified in the five-step process (above); this can arise in the Product Print Systems and Digital Imaging segments for example where the asset produced doesn't have an alternative use and the Group has an enforceable right to payment for performance completed to date. An input methodology (based on estimated labour hours or costs) is used as this depicts the performance conditions when recognising revenue over time. Where this is the case, the performance obligations are typically not distinct as set out above. Payments for revenue recognised over time are typically in instalments whereas point in time revenue is typically invoiced in arrears. Commissions and services revenue is recognised over time where the customer simultaneously receives and consumes the benefits of the Group's performance as the Group perform. Where this isn't the case, revenue is recognised at a point in time. Payments for this revenue stream are typically in arrears.

Royalties are recognised on an accruals basis, based on quarterly statements received from each licensee. The royalties arise from the licensee's use of their printheads and our related intellectual property installed in equipment developed by original equipment manufacturers ('OEMs').

Practical expedients

Use has been made of the practical expedient not to recognise a significant financing component where the period between transfer of the good or service and payment is one year or less.

Receivables

A receivable is recognised when the performance obligations are satisfied (e.g. upon shipment for product sales, upon delivery as services are rendered or upon completion of service) as this is the point in time that the consideration is unconditional because only the passage of time is required before the payment is due, there will be a reservation of title until payment has been received, but control has been transferred.

Contract asset/contract liability

A contract asset is recognised when revenue recognised in respect of a customer contract exceeds amounts received or receivable from the customer. This situation arises when the recognition of revenue over time to date is greater than amounts invoiced to the customer and invoicing is conditional on further performance. The carrying amount is reduced by allowances for expected credit losses under IFRS 9. When there is an unconditional entitlement, generally when invoices are raised, the contract asset values are reclassified to trade receivables.

Contract liabilities comprise the Group's obligation to transfer goods or services to a customer for which the Group has received payment from the customer in advance of revenue recognition. This situation arises when the customer is invoiced in advance and the revenue recognised over time is lower than the amounts invoiced to the customer.

Customer acquisition costs

Where sales commission is linked directly to an individual sale and is therefore an incremental cost of acquiring that contract, the commission is recognised as an asset on the balance sheet. Deferred customer acquisition costs are amortised over the period that the related goods or services transfer to the customer. Given the majority of revenue is recognised at a point in time, this doesn't give rise to material assets on the balance sheet.

Investment income

Investment income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable, which is the rate that discounts estimated future cash receipts through the expected life of the financial asset to that asset's net carrying amount.

Interest expense

Interest expense on lease liabilities is a component of finance costs which is required to be presented separately in the income statement.

Foreign currencies

The individual financial statements of each Group company are presented in the currency of the primary economic environment in which it operates (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each Group company are expressed in Sterling, which is the functional currency of the Company and the presentation currency for the consolidated financial statements.

Exchange differences arising on the settlement of monetary assets and liabilities, and on the retranslation of monetary assets and liabilities, are included in the income statement for the period.

In order to hedge its exposure to certain foreign exchange risks, the Group may enter into forward contracts (see page 147 for details of the Group's accounting policies in respect of such derivative financial instruments).

Further information can be found on page 147

3. Significant accounting policies continued

Foreign currencies continued

For the purposes of presenting consolidated financial statements, the assets and liabilities of the Group's foreign operations are translated at the exchange rates prevailing on the date of the statement of financial position. Income and expense items are translated at the average exchange rates for the period.

Exchange differences arising on the translation of the net investment in foreign operations are recognised in other comprehensive income and taken to the translation reserve.

When the Group's foreign operations are liquidated or disposed, exchange differences previously recognised through other comprehensive income and the translation reserve will be recycled and recognised through the income statement.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rate.

Government and EU grants

Government and EU grants are not recognised until there is reasonable assurance that the Group will comply with the conditions attached to them and that the grant will be received. Government and EU grants relating to research and development are treated as income over the periods necessary to match them with the related costs, or in the case of the Payment Protection Program (PPP) for COVID-19 support provided by the US Government, that it meets the criteria for the loan to be waived and recognised as grant income.

Operating profit/(loss)

Operating profit/(loss) is stated after charging restructuring costs but before investment income and finance costs.

Restructuring costs

Restructuring cost refers to the one-time expenses or infrequent expenses which are incurred by the Group in the process of reorganising its business operations with the motive of the overall improvement of the long-term profitability and working efficiency of the Group.

Retirement benefit costs

Payments to defined contribution retirement benefit schemes are charged as an expense as they fall due. Payments made to state managed retirement benefit schemes are dealt with as payments to defined contribution schemes where the Group's obligations under the schemes are equivalent to those arising in a defined contribution retirement benefit scheme.

Taxation

The tax expense represents the sum of the tax currently payable and deferred tax, including UK corporation tax and foreign tax.

The tax currently payable is based on taxable profit for the year. Taxable profit differs from net profit as reported in the income statement because it excludes items of income or expense that are taxable or deductible in other years and it further excludes items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the date of the statement of financial position.

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit and is accounted for using the statement of financial position liability method. Deferred tax liabilities are generally recognised for all taxable temporary differences and deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised. Such assets and liabilities are not recognised if the temporary difference arises from the initial recognition of goodwill (taxable temporary differences only) or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the tax profit nor the accounting profit.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the date of each statement of financial position and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax is charged or credited in the income statement, except when it relates to items charged or credited in other comprehensive income or directly in equity, in which case the deferred tax is also dealt with in other comprehensive income or directly in equity respectively.

To the extent that the Group receives a tax deduction relating to share-based payment transactions, a deferred tax asset is recognised at the appropriate tax rate on the difference in value between the market price of the underlying equity as at the date of the financial statements and the exercise price of the outstanding share options multiplied by the expired portion of the vesting period. As a result, the deferred tax impact of share options will not be derived directly from the expense reported in the consolidated income statement. Where the deductible difference exceeds the cumulative charge to the consolidated income statement the excess of the associated tax benefit is recorded directly to equity rather than in profit or loss.

Deferred tax assets and liabilities are measured on an undiscounted basis and are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when they relate to income taxes levied by the same taxation authority and the Group intends to settle its current tax assets and liabilities on a net basis.

3. Significant accounting policies continued

Property, plant and equipment

All property, plant and equipment is shown at original historical cost less accumulated depreciation and any recognised impairment loss.

Assets in the course of construction for production or administrative purposes are carried at cost, less any recognised impairment loss. Depreciation of these assets, on the same basis as other assets in the same class, commences when the assets are ready for their intended use.

Freehold land is not depreciated.

Depreciation is charged so as to write off the cost or valuation of assets, less their residual values, other than assets in the course of construction, over their estimated useful lives, using the straight-line method, on the following bases:

Leasehold property improvements	Shorter of the lease term and 20 years
Plant and machinery	Three to 20 years
Furniture, fittings and equipment	Three to 20 years
Buildings	Up to 40 years

The gain or loss arising on the disposal of an asset is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognised in income.

Spare parts are capitalised within property, plant and equipment where it is expected that future economic benefits will flow to the entity and the cost can be measured reliably. This typically relates to critical spares, which must be maintained for business continuity.

Internally generated intangible assets – research and development expenditure

Expenditure on research activities is recognised as an expense in the period in which it is incurred.

In accordance with IAS 38, an internally generated intangible asset arising from the Group's development is recognised only if all of the following conditions are met:

- an asset is created that can be identified (such as software and new processes);
- it is probable that the asset created will generate future economic benefits;
- the development cost of the asset can be measured reliably;
- the project is technically and commercially feasible;
- the Group intends to and has sufficient resources to complete the project; and
- the Group has the ability to use or sell the services and product developed.

Internally generated intangible assets are amortised on a straight-line basis over three to 20 years. Where no internally generated intangible asset can be recognised, development expenditure is recognised as an expense in the period in which it is incurred.

Other intangible assets

Costs incurred in maintaining the patent and trademark portfolio are written off to the income statement as incurred.

Acquired intangible assets as a result of business combination are capitalised and amortised on a straight-line basis over their estimated useful lives.

Payments in respect of software, and licence rights acquired are capitalised at cost and amortised on a straight-line basis over their estimated useful lives.

Licence	Shorter of the licence term and 20 years
Software	Three to 15 years
Patents	Six years
Customer relationships	Six years

Impairment of tangible and intangible assets excluding goodwill

At the date of each statement of financial position, the Group reviews the carrying amounts of its tangible and intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where the asset does not generate cash flows that are independent from other assets, the Group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

Recoverable amount is the higher of fair value less costs of disposal and value-in-use. In assessing value-in-use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset (or cash-generating unit) is estimated to be less than its carrying amount, the carrying amount of the asset (cash-generating unit) is reduced to its recoverable amount. An impairment loss is recognised as an expense immediately.

3. Significant accounting policies continued

Impairment of tangible and intangible assets excluding goodwill continued

Where an impairment loss is subsequently reversed, the carrying amount of the asset (or cash-generating unit) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset (or cash-generating unit) in prior years. A reversal of an impairment loss is recognised as income immediately.

Leases

The Group assesses whether a contract is or contains a lease, at inception of the contract. The Group recognises a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low-value assets. For these leases, the Group recognises the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted by using the rate implicit in the lease. If this rate cannot be readily determined, the Group uses its incremental borrowing rate. Generally an incremental borrowing rate approach is applied.

Lease payments included in the measurement of the lease liability comprise:

- fixed lease payments (including in substance fixed payments), less any lease incentives;
- variable lease payments that depend on an index or rate, initially measured using the index or rate at the commencement date;
- the amount expected to be payable by the lessee under residual value guarantees;
- the exercise price of purchase options, if the lessee is reasonably certain to exercise the options;
- payments of penalties for terminating the lease, if the lease term reflects the exercise of an option to terminate the lease.

The lease liability is presented as a separate line in the consolidated statement of financial position.

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made.

The Group re-measures the lease liability (and makes a corresponding adjustment to the related right-of-use asset) whenever:

- the lease term has changed or there is a change in the assessment of exercise of a purchase option, in which case the lease liability is re-measured by discounting the revised lease payments using a revised discount rate;
- the lease payments change due to changes in an index or rate or a change in expected payment under a guaranteed residual value, in which cases the lease liability is re-measured by discounting the revised lease payments using the initial discount rate (unless the lease payments change is due to a change in a floating interest rate, in which case a revised discount rate is used);
- a lease contract is modified and the lease modification is not accounted for as a separate lease, in which case the lease liability is re-measured by discounting the revised lease payments using an incremental borrowing rate at the effective date of the modification.

The Group did not make any such adjustments during the periods presented.

The right-of-use assets comprise the initial measurement of the corresponding lease liability, lease payments made at or before the commencement day and any initial direct costs. They are subsequently measured at cost less accumulated depreciation and impairment losses.

Whenever the Group incurs an obligation for costs to dismantle and remove a leased asset, restore the site on which it is located or restore the underlying asset to the condition required by the terms and conditions of the lease, a provision is recognised and measured under IAS 37.

The costs are included in the related right-of-use asset, unless those costs are incurred to produce inventories.

Right-of-use assets are depreciated over the shorter period of lease term and useful life of the underlying asset. If a lease transfers ownership of the underlying asset or the cost of the right-of-use asset reflects that the Group expects to exercise a purchase option, the related right-of use asset is depreciated over the useful life of the underlying asset. The depreciation starts at the commencement date of the lease. The Group does not have any leases that transfer ownership of the underlying asset. The Group does not have any leases with a purchase option where there is a reasonable expectation that the option will be exercised.

For short-term leases (lease term of 12 months or less) and leases of low-value assets (such as personal computers and office furniture), the Group has opted to recognise a lease expense on a straight-line basis as permitted by IFRS 16. This expense is presented within the consolidated income statement.

Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is calculated using the first in, first out ('FIFO') cost formula, by applying the standard cost methodology, with costs including direct materials, direct labour costs and an attributable proportion of manufacturing overheads based on normal levels of activity that have been incurred in bringing the inventories to their present location and condition. Net realisable value represents the estimated selling price less all estimated costs of completion and costs to be incurred in marketing, selling and distribution. Provision is made for obsolete, slow-moving or defective items where applicable.

3. Significant accounting policies continued

Financial instruments

Financial assets and financial liabilities are recognised in the Group's statement of financial position when the Group becomes a party to the contractual provisions of the instrument.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognised immediately in profit or loss.

Financial assets

All regular way purchases or sales of financial assets are recognised and derecognised on a trade date basis. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

All recognised financial assets are measured subsequently in their entirety at either amortised cost or fair value, depending on the classification of the financial assets.

In order for a financial asset to be classified and measured at amortised cost or fair value through OCI, it needs to give rise to cash flows that are 'solely payments of principal and interest' ('SPPI')' on the principal amount outstanding. This assessment is referred to as the SPPI test and is performed at an instrument level. Financial assets with cash flows that are not SPPI are classified and measured at fair value through profit or loss, irrespective of the business model.

Effective interest method

The effective interest method is a method of calculating the amortised cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the life of the debt instrument, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

Impairment of financial assets

The Group recognises an allowance for expected credit losses ('ECLs') for all debt instruments not held at fair value through profit or loss. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. The expected cash flows will include cash flows from the sale of collateral held or other credit enhancements that are integral to the contractual terms.

ECLs are recognised in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12 months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL). Trade receivables are recognised using a lifetime ECL approach.

For financial assets carried at amortised cost, the amount of the impairment is the difference between the asset's carrying amount and the present value of the estimated future cash flows, discounted at the financial asset's original effective interest rate.

Derecognition of financial assets

The Group derecognises a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another entity. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognise the financial asset and also recognises a collateralised borrowing for the proceeds received.

On derecognition of a financial asset, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognised in other comprehensive income and accumulated in equity is recognised in profit or loss.

Financial liabilities and equity

Debt and equity instruments are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangement.

Financial liabilities

All financial liabilities are measured subsequently at amortised cost using the effective interest method or at fair value through profit or loss (FVTPL).

However, financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies, and financial guarantee contracts issued by the Group, are measured in accordance with the specific accounting policies set out below:

Financial liabilities are classified at FVTPL when the financial liability is (i) contingent consideration of an acquirer in a business combination, (ii) held for trading or (iii) it is designated as at FVTPL.

3. Significant accounting policies continued

Financial liabilities continued

Financial liabilities at FVTPL are measured at fair value, with any gains or losses arising on changes in fair value recognised in profit or loss to the extent that they are not part of a designated hedging relationship. The net gain or loss recognised in profit or loss incorporates any interest paid on the financial liability and is included within 'other gains and losses' in profit or loss.

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the amortised cost of a financial liability.

Derecognition of financial liabilities

The Group derecognises financial liabilities when, and only when, the Group's obligations are discharged, cancelled or have expired. The difference between the carrying amount of the financial liability derecognised and the consideration paid and payable is recognised in profit and loss.

Derivative financial instruments

The Group's activities expose it primarily to the financial risks of changes in foreign currency exchange rates and interest rates and liquidity risk.

The Group uses derivative financial instruments (primarily foreign currency forward contracts) to hedge its risks associated with foreign currency fluctuations relating to certain firm commitments and forecast transactions.

Derivatives are recognised initially at fair value at the date a derivative contract is entered into and are subsequently remeasured to their fair value at each reporting date. The resulting gain or loss is recognised in profit or loss immediately unless the derivative is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

The written call option that Xaar 3D Holdings granted Stratasys to acquire its remaining 55% shareholding in Xaar 3D in 2019 was a financial liability measured subsequently at fair value at Level 3 fair value measurement. The valuation technique used was the Black-Scholes model. Further detail is included in note 22 – Financial instruments. This was derecognised following the disposal of Xaar 3D.

A derivative with a positive fair value is recognised as a financial asset whereas a derivative with a negative fair value is recognised as a financial liability. Derivatives are not offset in the financial statements unless the Group has both legal right and intention to offset.

A derivative is presented as a non-current asset or a non-current liability if the remaining maturity of the instrument is more than 12 months and it is not expected to be realised or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and demand deposits and other short-term highly liquid investments that are readily convertible to a known amount of cash with an original maturity of three months or less and are subject to an insignificant risk of changes in value.

Treasury deposits

Treasury deposits comprise demand deposits that are convertible to a known amount of cash with an original maturity of between three months and 12 months and are subject to an insignificant risk of changes in value.

Interest-bearing loans and borrowings

Interest-bearing loans and bank overdrafts are measured initially at fair value, net of direct issue costs. Finance charges, including premiums payable on settlement or redemption and direct issue costs, are accounted for on an accrual basis in the income statement using the effective interest rate 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.

Equity instruments

Equity instruments issued by the Company are recorded as the proceeds received, net of direct issue costs.

Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event and it is probable that the Group will be required to settle that obligation. Provisions are measured at the Directors' best estimate of the expenditure required to settle the obligation at the date of the statement of financial position and are discounted where the effect of the time value of money is material.

A restructuring provision is recognised when the Group has developed a detailed formal plan for the restructuring and has raised a valid expectation in those affected that it will carry out the restructuring by starting to implement the plan or announcing its main features to those affected by it, and the plan has reached a stage where the decision is unlikely to be reversed. The measurement of a restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity.

Provisions for the expected cost of warranty obligations under contracts with customers and local sale of goods legislation are recognised in the month of sale of the relevant products, at the Directors' best estimate of the expenditure required to settle the Group's obligation.

Provisions for leased property dilapidation are recognised at the commencement of the lease using the Group's best estimate to settle the obligation at the end of the lease term.

3. Significant accounting policies continued

Share-based payments

The Group issues equity-settled share-based payments to certain employees. These payments are measured at fair value (excluding the effect of non-market based vesting conditions) at the date of grant. The fair value determined at the grant date of the equity-settled share-based payments is expensed on a straight-line basis over the vesting period, based on the Group's estimate of the shares that will eventually vest based on the satisfaction of non-market based vesting and service conditions.

The fair value of options issued under the Group's Long-Term Incentive Plan is measured using a stochastic (Monte Carlo binomial) model for grants made with market based vesting conditions since 2007. The fair value of all other equity-settled share-based payments is measured using the Black-Scholes pricing model. The expected life used in these models has been adjusted, based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations.

SAYE share options granted to employees are treated as cancelled when employees cease to contribute to the scheme. This results in accelerated recognition of the expenses that would have arisen over the remainder of the original vesting period.

Own shares

Own shares are deducted from equity. No gain or loss is recognised in the income statement on the purchase, sale, issue or cancellation of the Group's own shares.

Non-current assets (or disposal groups) held for sale

Non-current assets (or disposal groups) are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. They are measured at the lower of their carrying amount and fair value less costs to sell, except for assets such as deferred tax assets, assets arising from employee benefits, financial assets and investment property that are carried at fair value and contractual rights under insurance contracts, which are specifically exempt from this requirement.

An impairment loss is recognised for any initial or subsequent write-down of the asset (or disposal group) to fair value less costs to sell. A gain is recognised for any subsequent increases in fair value less costs to sell of an asset (or disposal group), but not in excess of any cumulative impairment loss previously recognised. A gain or loss not previously recognised by the date of the sale of the non-current asset (or disposal group) is recognised at the date of derecognition.

Non-current assets (including those that are part of a disposal group) are not depreciated or amortised while they are classified as held for sale. Interest and other expenses attributable to the liabilities of a disposal group classified as held for sale continue to be recognised.

Non-current assets classified as held for sale and the assets of a disposal group classified as held for sale are presented separately from the other assets in the balance sheet. The liabilities of a disposal group classified as held for sale are presented separately from other liabilities in the balance sheet.

Discontinued operations

A discontinued operation is a component of the Group that has been disposed of and that represents a separate major line of business and is part of a single co-ordinated plan to dispose of such a line of business. The results of discontinued operations are presented separately in the income statement and are shown net of tax.

Where an operation is classified as discontinued, the post-tax results of that operation will be presented as a single line item on the face of the income statement and the cash flows from the discontinued operations will be split between continuing and discontinued operations on the face of the cash flow statement. Comparatives are restated to distinguish between continuing and discontinued operations.

New and amended standards and interpretations

The Group applied for the first-time certain standards and amendments, which are effective for annual periods beginning on or after 1 January 2021 (unless otherwise stated). The Group has not early adopted any other standard, interpretation or amendment that has been issued but is not yet effective.

Interest Rate Benchmark Reform – Phase 2: Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16

The amendments provide certain practical expedients including a practical expedient to require contractual changes, or changes to cash flows that are directly required by the reform, to be treated as changes to a floating interest rate, equivalent to a movement in a market rate of interest and certain reliefs relating to hedge accounting.

Xaar does not have floating rate borrowings or leases that reference IBOR and does not apply hedge accounting. Therefore, these amendments have no impact on the consolidated financial statements of the Group.

COVID-19-Related Rent Concessions beyond 30 June 2021 Amendments to IFRS 16

On 28 May 2020 the IASB issued COVID-19-Related Rent Concessions – amendment to IFRS 16 Leases (which was amended on 31 March 2021) to provide a practical expedient in accounting for any change in lease payments resulting from the COVID-19 related rent concessions received before 30 June 2021. Since the Group has not received COVID-19 related rent concessions, there is no impact from this.

4. Reconciliation of adjusted financial measures

	Note	2021 £'000	2020 £'000
Profit / (loss) before tax from continuing operations		**994**	(4,322)
Share-based payment charges	9	**758**	348
Exchange differences on intra-group transactions		**95**	347
Gain on derivative financial liabilities	22	**(2,919)**	(77)
Restructuring and transaction expenses		**1,404**	754
Research and development expenditure credit		**(270)**	(142)
Other operating income	7	**–**	(819)
Fair value gain on financial assets at fair value through profit or loss	11, 22	**(987)**	–
Amortisation of acquired intangible assets	16	**354**	–
Adjusted loss before tax from continuing operations		**(571)**	(3,911)
Interest income	10	**(4)**	(47)
Finance costs		**242**	82
Depreciation of property, plant and equipment	17	**3,318**	3,400
Amortisation of intangible assets (other than acquired intangibles)	16	**121**	82
Loss on asset disposal		**77**	99
Impairment of assets		**–**	391
Other immaterial movements in property, plant and equipment		**–**	(34)
Adjusted EBITDA from continuing operations		**3,183**	62

EBITDA is calculated as statutory operating profit before depreciation, amortisation and impairment of property, plant and equipment, intangible assets and goodwill. Adjusted EBITDA is calculated as EBITDA excluding other adjusting items as defined.

Adjusted financial measures are alternative performance measures, which adjust for recurring and non-recurring items that management consider are not reflective of the underlying performance of the Group. Recurring items are adjusted each year irrespective of materiality to ensure consistent treatment. Non-recurring items are identified and adjusted for by virtue of their size or nature. See note 3 for further detail.

Share-based payment charges include the IFRS 2 charge for the period of £653,000 (2020: £242,000) and the debit relating to National Insurance on the outstanding potential share option gains of £105,000 (2020: charge £106,000). These costs were included in the general and administrative expenses in the consolidated income statement and exclude the Xaar 3D charge of £440 (2020: £5,000).

Exchange differences relating to the operations in the United States represent exchange gains or losses recorded in the consolidated income statement as a result of intragroup transactions in the United States. These costs were included in general and administrative expenses in the consolidated income statement.

Gain on derivative financial instruments relates to gains made on call option contracts. The option was exercised in 2021. These amounts are included on the consolidated income statement under Gain on derivative financial liabilities.

Restructuring and transaction expenses of £1,404,000 (2020: £754,000) relate to costs incurred and provisions made in relation to acquisition transaction costs incurred of £961,000 and re-organisation costs. In the prior year, it is related predominantly to re-organisation costs and some transaction expenses. The calculated impact of the restructuring and transaction expenses at the corporation tax rate of 19% would be £52,000 based on the expenses included that would be treated as deductible (2020: £143,000). The cash paid related to restructuring and transaction expenses is £992,000 (2020: £518,000).

The research and development expenditure credit relates to the corporation tax relief receivable relating to qualifying research and development expenditure. This item is shown on the face of the consolidated income statement. Cash receipts of £219,000 were received during the year in relation to the FFEI RDEC and R&D claim which related to their financial year 1 April 2020 to 31 March 2021. The £1,460,000 received in 2020 was in relation to the 2018 and 2019 submitted RDEC claims.

Other operating income of £nil (2020: £819,000) relates to a forgivable $1 million loan between Engineered Print Solutions (EPS) and TD bank and is backed by the US Federal Government (Small Business Administration); further details are provided under note 7. The loan was taken out as part of the government backed scheme. The Company met the requirements of the waiver, and therefore the loan was waived, and has therefore been treated as a government grant under IAS 20. A cash receipt of the same amount was received.

The fair value gain on financial assets at fair value through profit and loss relates to the sale of Xaar 3D Limited. The net consideration includes contingent consideration that is valued and reported at fair value. The fair value movement is recognised in the income statement as fair value gain on financial assets at fair value through profit and loss. Further details are included in notes 11 and 22.

The amortisation of acquired intangible assets relates to the acquisition of FFEI Limited. These include software, patents and customer relationships and are being amortised over six years. These costs were included in general and administrative expenses in the consolidated income statement.

4. Reconciliation of adjusted financial measures continued

	Note	2021 Pence per share	2020 Pence per share
Basic earnings/(loss) per share from continuing operations	14	**0.9p**	(5.7p)
Share-based payment charges		**1.0p**	0.5p
Exchange differences on intra-group transactions		**0.1p**	0.5p
Gain on derivative financial liabilities		**(3.8p)**	(0.1p)
Restructuring and transaction expenses		**1.8p**	1.0p
Other operating income		**–**	(1.1p)
Fair value gain on financial assets at FVPL		**(1.3p)**	–
Amortisation of acquired intangible assets		**0.5p**	–
Tax effect of adjusting items		**(0.2p)**	(0.3p)
Adjusted basic and diluted loss per share from continuing operations	14	**(1.0)p**	(5.2p)

This reconciliation is provided to align with how the Board measures and monitors the business at an underlying level, and is a measure used in establishing remuneration.

5. Revenue

The Group derives its revenue from contracts with customers for the transfer of goods and services over time and at a point in time in the following major segments. This is consistent with the revenue information that is disclosed for each reportable segment under IFRS 8 Operating Segments in note 6.

Revenue from goods and services is recognised in accordance with IFRS 15 when control has been transferred to the customer. For sale of goods and services revenue is recognised at a point in time, unless specific conditions have been satisfied allowing revenue to be recognised over a period of time as identified in the five-step process (above), e.g. where the asset produced doesn't have an alternative use and the Group has an enforceable right to payment for performance completed to date. An input methodology (based on estimated labour hours or costs) is used as this depicts the performance conditions when recognising revenue over time.

2021 Continuing operations	**Product sales £'000**	**Commissions & services £'000**	**Licensee royalties £'000**	**Total £'000**
Printhead	**39,186**	**678**	**240**	**40,104**
Product Print Systems	**13,487**	**413**	**–**	**13,900**
Digital Imaging	**3,773**	**1,477**	**–**	**5,250**
	56,446	**2,568**	**240**	**59,254**

2020 Continuing operations	**Product sales £'000**	**Commissions & services £'000**	**Licensee royalties £'000**	**Total £'000**
Printhead	34,268	645	370	35,283
Product Print Systems	12,347	354	–	12,701
Digital Imaging	–	–	–	–
	46,615	999	370	47,984

Product Print Systems and Digital Imaging have contracts with customers where the performance obligations are partially unsatisfied at 31 December 2021. The transaction price allocated to partially satisfied and unsatisfied performance obligations at 31 December 2021 is as set out below. The transaction price allocated to partially satisfied performance obligations has been recognised in the year while the transaction price allocated to partially unsatisfied performance obligations has not been recognised.

Continuing operations	**2021 £'000**	2020 £'000
Transaction price allocated to partially satisfied performance obligations	**4,569**	950
Transaction price allocated to partially unsatisfied performance obligations	**6,060**	956
Total transaction price for partially completed contracts	**10,629**	1,906

Management expects that 100% of the transaction price allocated to the unsatisfied contracts as at 31 December 2021 totalling £6,060,000 will be recognised from 2022 to future periods (2020: £956,000 recognised in 2020).

6. Business and geographical segments

For management reporting purposes, the Group's operations are analysed according to the three operating segments of 'Printhead', 'Product Print Systems', and 'Digital Imaging'. These three operating segments are the basis on which the Group reports its primary segment information and on which decisions are made by the Group's Chief Executive Officer and Board of Directors, and resources allocated. Each business unit is run independently of the others and headed by a general manager. The Group's chief operating decision maker is the Chief Executive Officer. There is no aggregation of segments for disclosure purposes.

The Xaar 3D business which was classified as assets held for sale in the prior year has now divested on 1 November 2021. The result for the ten-month period is classified as discontinued operations and is presented separately in note 11.

Segment information for continuing operations is presented below:

Year ended 31 December 2021	Printhead £'000	Product Print Systems £'000	Digital Imaging £'000	Unallocated £'000	Consolidated £'000
Revenue					
Total segment revenue	**40,104**	**13,900**	**5,250**	**–**	**59,254**
Result					
Adjusted (loss) / gain from continuing operations before tax	**(526)**	**(766)**	**721**	**–**	**(571)**
Share-based payment charges	**–**	**–**	**–**	**(758)**	**(758)**
Exchange differences relating to intra-group transactions	**(95)**	**–**	**–**	**–**	**(95)**
Restructuring and transaction expenses	**(1,288)**	**(116)**	**–**	**–**	**(1,404)**
Gain on derivative financial liabilities	**2,919**	**–**	**–**	**–**	**2,919**
Research and development expenditure credit	**227**	**–**	**43**	**–**	**270**
Fair value gain on financial assets at FVPL	**987**	**–**	**-**	**–**	**987**
Amortisation of acquired intangible assets	**–**	**–**	**(354)**	**–**	**(354)**
Profit / (loss) before tax from continuing operations	**2,224**	**(882)**	**410**	**(758)**	**994**

Share-based payment charges include the IFRS 2 charge for the year and the charge relating to National Insurance on the outstanding potential share options, excluding the charge attributable to Xaar 3D as discontinued operations £440 (2020: £5,000).

Year ended 31 December 2020	Printhead £'000	Product Print Systems £'000	Unallocated £'000	Consolidated £'000
Revenue				
Total segment revenue	35,283	12,701	–	47,984
Result				
Adjusted loss from continuing operations before tax	(3,431)	(480)	–	(3,911)
Share-based payment charges	–	–	(348)	(348)
Exchange differences relating to intra-group transactions	(347)	–	–	(347)
Restructuring and transaction expenses	(754)	–	–	(754)
Gain on derivative financial liabilities	77	–	–	77
Research and development expenditure credit	142	–	–	142
Other operating income	–	819	–	819
Profit / (loss) before tax from continuing operations	(4,313)	339	(348)	(4,322)

Segment assets – Continuing operations

	2021 £'000	Restated 2020 £'000
Printhead	**73,247**	48,781
Product Print Systems	**16,793**	13,806
Digital Imaging	**13,900**	-
Total assets	**103,940**	62,587

Assets are allocated to the segment which has responsibility for their control.

No information is provided for segment liabilities as this measure is not provided to the chief operating decision maker.

6. Business and geographical segments continued

Other segment information – Continuing operations

Year ended 31 December 2021	Notes	Printhead £'000	Product Print Systems £'000	Digital Imaging £'000	Unallocated £'000	Consolidated £'000
Depreciation and amortisation	8	**3,844**	**290**	**530**	**–**	**4,664**
Impairment of PPE		**–**	**–**	**–**	**–**	**–**
Share-based payment charges	9	**–**	**–**	**–**	**758**	**758**
Capital expenditure	17	**2,153**	**160**	**127**	**–**	**2,440**

Year ended 31 December 2020	Notes	Printhead £'000	Product Print Systems £'000	Digital Imaging £'000	Unallocated £'000	Consolidated £'000
Depreciation and amortisation	8	4,302	367	–	–	4,669
Impairment of PPE		158	115	–	–	273
Share-based payment charges	9	–	–	–	348	348
Capital expenditure	17	957	574	–	–	1,531

Revenues from major products and services – Continuing operations

	2021 £'000	2020 £'000
Printhead	**40,104**	35,283
Product Print Systems	**13,900**	12,701
Digital Imaging	**5,250**	–
Consolidated revenue (excluding investment income)	**59,254**	47,984

Geographical information

The Group operates in three principal geographical areas: EMEA, the Americas and Asia. The Group's revenue from external customers and information about its segments (non-current assets excluding deferred tax assets and other financial assets) by geographical location are detailed below:

	Revenue from external customers Continuing operations	
	2021 £'000	2020 £'000
EMEA	**23,730**	18,113
Asia		
– China	**10,562**	7,936
– Japan	**575**	1,235
– Other	**828**	420
The Americas (including USA)	**23,559**	20,280
	59,254	47,984

Revenues are attributed to geographical areas on the basis of the customer's operating location.

	Non-current assets	
	2021 £'000	2020 £'000
EMEA	**27,784**	16,755
Asia	**90**	38
The Americas (including USA)	**7,657**	7,791
	35,531	24,584

Non-current assets, being Goodwill, Other intangible assets, Property, plant and equipment and Right-of-use assets are attributed to the location where they are situated.

Information about major customers

There are no customers whose revenue exceeds 10% of total revenues from continuing operations during the current and preceding year. No other single customer contributed 10% or more to the Group's revenue in either 2021 or 2020.

Revenue from the top five customers represents 28% of revenues (2020: 26%).

7. Government grants

The accounting policy in relation to the adopted and applicable treatment of government grants is disclosed in note 3, in accordance with IAS 20 Accounting for Government Grants and Disclosure of Government Assistance.

Xaar plc and its UK based subsidiaries have decided not to take part in any of the government support schemes arising from the COVID-19 crisis.

- No employees have been placed on furlough and no claims made via the Coronavirus Job Retention Scheme (CJRS)
- No submissions have been made for financial support via either the Coronavirus Business Interruption Loan Scheme (CBILS) or Bounce Back Loan Scheme (BBLS)
- The UK entities operate primarily under a VAT repayment position due to the significant level of export sales, so do not utilise the government scheme in deferring VAT payments
- No submission has been made for salary compensation, which could arise due to employees being retained that could otherwise have been released. No employees have left the business
- During the period it was part of the Xaar Group (up to 1 November 2021) Xaar 3D ApS, based in Denmark, operated in a repayment position for Danish VAT, and like the UK did not utilise the extension available for payments, and also did not take part in any government support measures in response to COVID-19.

A Xaar Group company based in the USA, Engineered Printing Solutions (EPS), took part in the US Government Loan scheme which provided a $1 million loan (£819k), which under certain provisions linked to maintaining employment and avoiding redundancy could be waived. The company met the requirements of the waiver, and therefore the loan was waived, and has therefore been treated as a government grant. The Group has presented this amount as exceptional income in 2020 in the consolidated income statement. Government support grants are recognised in the consolidated income statement on a systematic basis over the periods in which the related revenue or expense for which the grants are intended to compensate. Further details are provided under note 4.

8. Profit/(loss) for the year

Profit for continuing operations in the year has been arrived at after charging/(crediting):

	2021 £'000	2020 £'000
Research and development expenses (net of capitalised development costs)*	**5,706**	4,535
Grants towards research and development including the research and development expenditure credit	**(227)**	(142)
Depreciation of property, plant and equipment	**3,318**	3,400
Depreciation of right-of-use asset	**871**	1,107
Amortisation of capitalised development costs (included in research and development expenses)	**77**	82
Amortisation of other intangible assets (included in general and administrative expenses)	**398**	81
Loss on disposal of property, plant and equipment	**77**	99
Cost of inventories recognised as expense	**36,227**	31,467
Impairment reversals on financial assets	**388**	946
Total fees payable to the Company's auditor and its associates	**651**	402

* Total spend on research and development in 2021, before capitalised and amortised development costs included in note 16, was £5,706,000 (2020: £4,535,000).

Auditor's remuneration

	2021 £'000	2020 £'000
Fees payable to the Company's auditor for the audit of the Company's annual accounts	**20**	20
Fees payable to the Company's auditor and its associates for other services to the Group		
– The audit of the Company's subsidiaries	**473**	272
– Prior year overrun	**120**	70
Total audit fees	**613**	362
– Interim review	**38**	40
Total non-audit fees	**38**	40
Total fees payable for the continuing operations	**651**	402
Total audit fees payable for the discontinued operations	**38**	38
Total fees payable to the Company's auditors and its associates	**689**	440

The Audit Committee has considered the independence of the auditor in relation to non-audit services throughout the year. A description of the work of the Audit Committee is set out in the Corporate Governance statement on pages 77 to 80 and includes an explanation of how auditor's objectivity and independence is safeguarded when non-audit services are provided by the auditor.

9. Staff costs

The average monthly number of persons employed by the Group including Executive Directors was as follows:

	2021 Number	Restated 2020 Number
Research and development	**86**	75
Sales and marketing	**46**	47
Manufacturing and engineering	**222**	189
Administration	**53**	46
	407	357

2020 headcount has been restated to remove agency staff. Their aggregate remuneration comprised:

	Notes	2021 £'000	2020 £'000
Wages and salaries		**20,958**	18,784
Social security costs		**2,014**	1,752
Pension costs	33	**930**	740
Share-based payments		**758**	353
		24,660	21,629

Share-based payment charges comprise the IFRS 2 charge for the year of £653,000 (2020: £246,000) and a credit relating to National Insurance on the outstanding potential share option gains of £105,000 (2020: £107,000 charge), of which a charge of £440 (2020:£5,000) relates to discontinued operations in Xaar 3D.

10. Investment income

	Group £'000	3D £'000	2021 Total £'000	Group £'000	3D £'000	2020 Total £'000
Interest receivable on cash and bank balances, and treasury deposits	**4**	**–**	**4**	47	24	71

Group interest accrued receivable of £1,000 at year end (2020: £8,000). Cash interest received at year end was £13,000 (2020: £64,000).

11. Discontinued operations

The Thin Film business which was discontinued in 2019 incurred costs in 2020 and 2021 which mainly related to supplier liabilities and inventory for last time buy sales. All liabilities have now been settled and we maintain an amount of inventory that is fully provided and not likely to be sold. Of the total Group net assets, £nil (2020: £271,000) is related to Thin Film which is not included in net assets held for sale.

As detailed in the strategic and financial update, the Xaar 3D business completed its divestment on 1 November 2021. Xaar received net cash of £9,272,000 and as specified in an 'earn out' clause in the sale agreement, additional cash consideration of up to $15,456,000 will be receivable. At the time of sale, the fair value of the consideration was determined to be £10,863,000. It has been recognised as a financial asset at fair value through profit or loss. Further detail is disclosed further in note 22.

At year end, the fair value was re-estimated to be £11,850,000. The gain of £987,000 is presented in the income statement as fair value gain on financial assets at fair value through profit or loss. The results of Xaar 3D business for the period ended 1 November 2021 are included in the discontinued operations in the income statement. The results of Thin Film and 3D related activities for the year are shown below:

	Thin Film 2021 £'000	3D 2021 £'000	Total 2021 £'000	Thin Film 2020 £'000	3D 2020 £'000	Total 2020 £'000
Revenue	**384**	**2,918**	**3,302**	258	734	992
Expenses	**(623)**	**(7,075)**	**(7,698)**	(3,922)	(7,175)	(11,097)
Loss before income tax	**(239)**	**(4,157)**	**(4,396)**	(3,664)	(6,441)	(10,105)
Income tax credit	**–**	**30**	**30**	-	(190)	(190)
Net loss before gain on sale	**(239)**	**(4,127)**	**(4,366)**	(3,664)	(6,631)	(10,295)
Gain on sale of investment in subsidiary	**–**	**17,899**	**17,899**	-	-	-
Profit/(loss) after income tax from discontinued operations	**(239)**	**13,772**	**13,533**	(3,664)	(6,631)	(10,295)

The gain on sale of investment in subsidiary is not subject to income tax because it falls under the Substantial Shareholding Exemptions (SSE) Rule.

The £7,075,000 expenses in 3D are net of £297,000 that relates to service charge received from the Group undertaking which has to be eliminated in the Group's consolidated income statement.

11. Discontinued operations continued

	Thin Film 2021 £'000	3D 2021 £'000	Total 2021 £'000	Thin Film 2020 £'000	3D 2020 £'000	Total 2020 £'000
Attributable to:						
Owners of the Company	**(239)**	**15,763**	**15,524**	(3,664)	(3,647)	(7,311)
Non-controlling interest	**–**	**(1,991)**	**(1,991)**	–	(2,984)	(2,984)
	(239)	**13,772**	**13,533**	(3,664)	(6,631)	(10,295)

The major classes of assets and liabilities of 3D classified as held for sale as at 31 December 2020 and its carrying amounts as at the date of sale (1 November 2021) are as follows:

	1 November 2021 £'000	2020 £'000
Assets		
Property, plant and equipment	**1,207**	1,041
Intangible assets	**4,649**	4,649
Deferred tax asset	**164**	68
Right-of-use asset	**592**	440
Inventory	**870**	919
Debtors	**2,085**	737
Corporate income tax	**371**	(6)
Cash and cash equivalents	**96**	2,120
Assets held for sale	**10,034**	9,968
Liabilities		
Creditors	**(5,542)**	(1,115)
Corporate income tax	**–**	–
Provisions (Warranty & Restructuring)	**(31)**	(11)
IFRS 16 lease liability	**(525)**	(463)
Liabilities associated with the assets held for sale	**(6,098)**	(1,589)
Net assets associated with disposal group	**3,936**	8,379

The net cash flows incurred by Thin Film and 3D are as follows.

	Thin Film 2021 £'000	3D 2021 £'000	Total 2021 £'000	Thin Film 2020 £'000	3D 2020 £'000	Total 2020 £'000
Net cash inflow/(outflow) from operating activities	**103**	**(1,792)**	**(1,689)**	(5,058)	(6,213)	(11,271)
Net cash outflow from investing activities	**–**	**(122)**	**(122)**	(25)	(645)	(670)
Net cash outflow from financing activities	**–**	**(98)**	**(98)**	–	(160)	(160)
Net cash generated/(used) from discontinued operations	**103**	**(2,012)**	**(1,909)**	(5,083)	(7,018)	(12,101)

	2021 Pence per share	2020 Pence per share
Earnings (loss) per share		
Basic earnings / (loss) for the year from discontinued operations	**20.0p**	(9.5p)
Diluted earnings / (loss) for the year from discontinued operations	**19.7p**	(9.5p)

The sale of Xaar 3D business is summarised below. The total consideration received includes the initial cash consideration and contingent consideration less transaction costs that are directly attributable to the sale. The carrying amount of the net assets sold represents 55% of Xaar shareholding to 3D adjusted by an intracompany markup that relates to inventory.

11. Discontinued operations continued

	2021 £'000
Consideration received or receivable:	
Cash	**9,272**
Fair value of contingent consideration	**10,863**
Less: Transaction costs	**(246)**
Total disposal consideration	**19,889**
Carrying amount of net assets sold	**(1,990)**
Gain on sale of investment in subsidiary	**17,899**

The carrying amount of net assets sold includes an inventory mark up from the Group undertaking amounting to £172,000 which has to be eliminated in the Group consolidated balance sheet. Following the divestment of 3D, this elimination was reversed and adjusted to the gain on sale. A recycled foreign exchange difference of £3,000 was also included in the carrying amount as a result of translation.

12. Tax

Total tax calculation:

	Notes	2021 £'000	2020 £'000
Current tax – UK		**100**	158
Current tax – overseas		**14**	125
		115	283
Amounts under provided in previous years		**71**	41
Total current income tax charge		**186**	324
Deferred tax – origination and reversal		**45**	(18)
Adjustment in respect of prior years		**38**	(64)
Total deferred tax credit		**83**	(82)
Total tax (credit) / charge for the year		**269**	242

The rate of tax for the year, based on the UK standard rate of corporation tax, is 19% (2020: 19%). Taxation for other jurisdictions is calculated at the rates prevailing in the respective jurisdictions.

The Finance Act 2021, which was substantively enacted on 10 June 2021, amended the main rate of corporation tax to 25% from the financial year 2023. As deferred tax assets and liabilities are measured at the rates that are expected to apply in the periods of the reversal, deferred tax balances at 31 December 2021 have been calculated at the rate at which the relevant balance is expected to be recovered or settled.

The note to the cash flow statement (note 31) shows repayments of tax for £150,000 during the year (2020: £1,466,000).

The closing deferred tax liability at 31 December 2021 has been calculated at 19% and 25%, reflecting the tax rate at which the deferred tax liability is expected to be reversed in future periods. Details on deferred tax assets are disclosed in note 23.

12. Tax continued

The charge for the year can be reconciled to the profit per the income statement as follows:

	Notes	2021 £'000	2020 £'000
Profit / (Loss) before tax from continuing activities		**994**	(4,322)
Profit / (Loss) before tax from discontinued activities		**13,503**	(10,105)
Profit / (Loss) before income tax		**14,497**	(14,427)
Tax on ordinary activities at standard UK rate of 19% (2020: 19.00%)		**2,754**	(2,741)
Effect of:			
Expenses not deductible for tax purposes		**398**	883
(Non-taxable) income		**(4,192)**	(171)
Effect of different tax rates of subsidiaries operating overseas		**(135)**	(15)
Effect of change in UK corporation tax rate on deferred tax		**–**	7
Current year losses not recognised		**1,195**	2,303
Derecognition of previously recognised deferred tax balances		**141**	–
Prior year adjustments		**108**	(24)
Total tax expense / (credit) for the year		**269**	242
Income tax expense / (credit) reported in the statement of profit and loss		**299**	52
Income tax expense / (credit) attributable to discontinued operations	11	**(30)**	190
		269	242

The expenses not deductible for tax purposes mainly relate to depreciation on non-qualifying assets, restructuring costs and share-based payments.

The effective tax rate for the year is 1.9% (2020: -1.7%).

13. Dividends

No interim or final dividend was proposed or paid during the current and preceding year.

14. Earnings per share – basic and diluted

The calculation of basic and diluted earnings per share is based on the following data:

	2021 £'000	2020 £'000
Earnings		
Earnings for the purposes of basic earnings per share being net profit/(loss) attributable to equity holders of the parent	**16,219**	(11,685)
from continuing operations	**695**	(4,374)
from discontinued operations	**15,524**	(7,311)
Number of shares		
Weighted average number of ordinary shares for the purposes of basic earnings per share	**77,528,064**	77,103,593
Effect of dilutive potential ordinary shares:		
Share options	**1,261,215**	–
Weighted average number of ordinary shares for the purposes of diluted earnings per share	**78,789,279**	77,103,593

	2021 Pence per share	2020 Pence per share
Basic	**20.9p**	(15.2p)
Diluted	**20.6p**	(15.2p)
Continuing operations:		
Basic	**0.9p**	(5.7p)
Diluted	**0.9p**	(5.7p)
Discontinued operations:		
Basic	**20.0p**	(9.5p)
Diluted	**19.7p**	(9.5p)

Potential ordinary shares are treated as dilutive if their conversion to ordinary shares would decrease earnings per share or increase loss per share. Therefore in 2020, the diluted earnings per share is not impacted by the effect of dilutive potential ordinary shares, given the loss per share.

The weighted average number of ordinary shares for the purposes of basic earnings per share is calculated after the exclusion of ordinary shares in Xaar plc held by Xaar Trustee Ltd, the Xaar plc ESOP Trust and the matching shares held in trust for the Share Incentive Plan.

For 2021, there were share options granted over 107,490 shares that had not been included in the diluted earnings per share calculation because they were anti-dilutive at the period end (2020: 310,100 shares that would not have been included).

The performance conditions for LTIP awards over 1,510,685 shares (2020: 510,482 shares) have not been met in the current financial period, and therefore the dilutive effect of those shares has not been included in the diluted earnings per share calculation.

14. Earnings per share – basic and diluted continued

Adjusted earnings per share

This adjusted earnings per share information is considered to provide a fairer representation of the Group's trading performance year on year, as it removes items which, in the Board's opinion, do not reflect the underlying performance of the Group and is a measure used in establishing remuneration.

The calculation of adjusted EPS, excluding the items listed below, is based on the loss on continuing operations of:

	2021 £'000	2020 £'000
Earnings / (loss) on continuing operations for the purposes of basic earnings per share being Net profit / (loss) attributable to equity holders of the parent	**695**	(4,374)
Share-based payment charges	**758**	348
Exchange difference relating to intra-group transactions	**95**	347
Gain on derivative financial instruments	**(2,919)**	(77)
Restructuring and transaction expenses	**1,404**	754
Other operating income	**–**	(819)
Fair value gain on financial assets at FVPL	**(987)**	–
Amortisation of acquired intangible assets	**354**	–
Tax effect of adjusting items	**(179)**	(217)
Adjusted loss after tax – continuing operations	**(779)**	(4,038)

Tax effect of adjusting items is calculated at current corporation tax rate (19%) less any disallowed tax items.

The denominators used are the same as those detailed above for both basic and diluted earnings per share.

Adjusted earnings per share on continuing operations is earnings per share excluding the items adjusted for as detailed above:

	2021 Pence per share	2020 Pence per share
Adjusted basic	**(1.0p)**	(5.2p)
Adjusted diluted	**(1.0p)**	(5.2p)

15. Goodwill

The carrying amount of goodwill at 31 December 2021 was £6,882,000 (2020: £5,152,000).

Goodwill acquired in a business combination is allocated, at acquisition, to the cash-generating units (CGUs) that are expected to benefit from that business combination. Goodwill occurred from the acquisition of Engineered Print Solutions (EPS) in July 2016 and FFEI Limited in July 2021.

	2021 £'000	2020 £'000
Balance at the beginning of the year	**5,152**	5,333
Addition – acquisition of FFEI Limited	**689**	–
Foreign currency translation	**53**	(181)
Balance at the end of the year	**5,894**	5,152

As part of the reportable segments, goodwill amounting to £5,205,000 (2020: £5,152,000) is attributed to Product Print Systems (a single CGU) and £689,000 is attributed to FFEI (a single CGU).

The Group tests goodwill annually for impairment or more frequently if there are indications that goodwill might be impaired. Having performed impairment testing, no impairment has been identified and therefore no impairment loss has been recognised during the current and preceding year.

The recoverable amount of the CGU is determined from a value-in-use calculation. The key assumptions to which the value-in-use calculation is most sensitive are those regarding the expected change in sales, the gross margin percentage from those sales, and the discount rate used.

Engineered Print Solutions goodwill impairment review

A cash flow forecast was prepared for a period of five years based upon the strategic plan for the business and a terminal value determined using a 1.40% (2020: 2%) growth rate in Engineered Print Solutions, based on OECD growth rates.

To evaluate the risk of impairment, the Group adjusted its cash flows over the five-year period to reflect the current constraint on revenue due to the size of the manufacturing facility, and removed all investment costs associated with expansion. These adjusted cash flows have then been used in the value-in-use calculation. For impairment testing purposes, gross margin has been maintained in line with actual current results. The discount rate applied to the cash flow projections is 13.74% (2020: 11.65%) and reflects external third party advice on the discount rate associated with Engineered Print Solutions. The discount rate reflects the risk free rate, equity beta and local market premium as calculated at the year-end.

The recoverable amount calculated on the basis set out above exceeds the carrying value of the EPS CGU by £10.0 million (2020: £1.5 million). Sensitivity analysis has been completed on each key assumption (Revenue, Gross Margin % and Discount Rate) for the EPS business. The carrying amount of goodwill would exceed its recoverable amount, when compared to the adjusted cash flows, if:

- revenue growth were to decline 19% from the forecasted figures over the five-year period;
- gross margin on sales were to decline 4% over the five-year period.

FFEI Limited goodwill impairment review

FFEI Limited was acquired on 11 July 2021. Due to the fact that the time between acquisition and the year end date is less than six months and post acquisition performance to date at both the profit and cash flow level has exceeded the forecasts used for the PPA calculations, no impairment adjustment is required at 31 December 2021.

16. Other intangible assets

	Capitalised development costs £'000	Licences acquired £'000	Software £'000	Technology-based intangible asset £'000	Customer relationships £'000	Total £'000
Cost						
At 1 January 2020	43,737	709	3,453	–	–	47,899
Exchange movements	–	–	(6)	–	–	(6)
Assets held for sale	(5,050)	(177)	(10)	–	–	(5,237)
At 1 January 2021	**38,687**	**532**	**3,437**	**–**	**–**	**42,656**
Additions	–	–	124	–	-	124
Acquisitions	–	–	–	3,044	1,204	4,248
Transfer	–	–	(80)	–	–	(80)
Exchange movements	–	–	2	–	–	2
At 31 December 2021	**38,687**	**532**	**3,483**	**3,044**	**1,204**	**46,950**
Amortisation						
At 1 January 2020	38,571	554	3,231	–	–	42,356
Charge for the year	587	13	85	–	–	685
Exchange movements	–	–	(4)	–	–	(4)
Assets held for sale	(547)	(35)	(6)	–	–	(588)
At 1 January 2021	**38,611**	**532**	**3,306**	**–**	**–**	**42,449**
Charge for the year	77	–	44	254	100	475
Transfers	(1)	–	(16)	–	–	(17)
At 31 December 2021	**38,687**	**532**	**3,334**	**254**	**100**	**42,907**
Carrying amount:						
At 31 December 2021	**–**	**–**	**149**	**2,790**	**1,104**	**4,043**
At 31 December 2020	76	–	131	–	–	207

Internally generated product development costs relate to the Platform 2, Platform 3 and Platform 4 ranges of printheads and technology. All three platforms are now fully amortised.

In July 2021, Xaar acquired additional intangible assets in relation to the acquisition of FFEI Limited. These are technology-based patents and customer relationships totalling £4,248,000. Further details on the acquisition are in note 36.

Licences acquired are amortised over their estimated useful lives which is the shorter of the licence term and 20 years.

The amortisation period for software is three to 15 years and for other product development costs incurred on the Group's product development is three to 20 years.

The amortisation for technology-based patents and software and customer relationships is six years.

Amortisation is recorded in administrative expenses of the consolidated accounts.

As at 31 December 2021 the Group had not entered into any contractual commitments for the acquisition of intangible assets.

17. Property, plant and equipment

	Land and buildings £'000	Leasehold property £'000	Plant and machinery £'000	Furniture, fittings and equipment £'000	Assets in the course of construction £'000	Total £'000
Cost						
At 1 January 2020	1,684	14,045	68,161	3,634	108	87,632
Additions	–	199	1,654	382	16	2,251
Transfers	184	(171)	(737)	–	(69)	(793)
Exchange movements	(57)	(2)	12	(18)	(4)	(69)
Disposals	–	–	(492)	–	–	(492)
Assets held for sale	–	(551)	(1,766)	(6)	(2)	(2,325)
At 1 January 2021	1,811	13,520	66,832	3,992	49	86,204
Additions	31	693	976	457	283	2,440
Acquisitions	-	7	14	71	–	92
Transfer	65	(35)	1,144	(64)	(49)	1,061
Exchange movements	19	-	15	6	–	40
Disposals	–	(505)	(1,012)	(15)	–	(1,532)
At 31 December 2021	**1,926**	**13,680**	**67,969**	**4,447**	**283**	**88,305**
Depreciation						
At 1 January 2020	320	8,304	54,692	3,408	–	66,724
Charge for the year	48	569	3,506	101	–	4,224
Transfer	34	(21)	(702)	–	–	(689)
Exchange movements	(14)	(2)	(1)	(17)	–	(34)
Disposals	–	–	(275)	–	–	(275)
Impairment	–	–	391	–	–	391
Assets held for sale	–	(65)	(1,216)	(3)	–	(1,284)
At 1 January 2021	388	8,785	56,395	3,489	–	69,057
Charge for the year	24	584	2,516	188	6	3,318
Transfer	39	(54)	1,087	(90)	(6)	976
Exchange movements	4	–	2	5	–	11
Disposals	–	(353)	(915)	(15)	–	(1,283)
At 31 December 2021	**455**	**8,962**	**59,085**	**3,577**	**–**	**72,079**
Carrying amount						
At 31 December 2021	**1,471**	**4,718**	**8,884**	**870**	**283**	**16,226**
At 31 December 2020	1,423	4,735	10,437	503	49	17,147

The impairment during the year is £nil (2020: £391,000). The prior year impairment is related to the Printhead and EPS businesses with associated assets written down to nil.

In 2021 assets held in the Printhead business for sale were transferred back to property, plant and equipment due to additional productions requirements. These assets had a cost of £257,010 net book value (NBV) of £39,406.

Assets held for sale in 2020 relate to the 3D business unit that has been sold in the year.

As at 31 December 2021 the Group had entered into contractual commitments for the acquisition of property, plant and equipment amounting to £1,330,000 (2020: £218,000).

18. Leases

The Group has lease contracts for various items of buildings, equipment and vehicles used in its operations. The Group's obligations under its leases are secured by the lessor's title to the leased assets. Generally, the Group is restricted from assigning and subleasing the leased assets and some contracts require the Group to maintain certain financial ratios.

The Group also has certain leases of machinery with lease terms of 12 months or less and leases of office equipment with low value.

The Group applies the 'short-term lease' and 'lease of low-value assets' recognition exemptions for these leases.

Set out below are the carrying amounts of right-of-use assets recognised and the movements during the year:

	Buildings £'000	Equipment £'000	Vehicles £'000	Total £'000
Cost				
At 1 January 2020	11,978	119	16	12,113
Additions	183	–	–	183
Disposals	(172)	(36)	(16)	(224)
Assets held for sale	(885)	–	–	(885)
Exchange movements	18	1	–	19
At 31 December 2020	11,122	84	–	11,206
Additions	5,073	11	–	5,084
Acquisition	3,057	16	–	3,073
Disposals	(6,341)	(14)	–	(6,355)
Exchange movements	4	–	–	4
At 31 December 2021	**12,915**	**97**	**–**	**13,012**
Depreciation				
At 1 January 2020	8,483	56	13	8,552
Charge for the year	1,204	29	3	1,236
Disposals	(167)	(35)	(16)	(218)
Assets held for sale	(445)	–	–	(445)
Exchange movements	3	–	–	3
At 31 December 2020	9,078	50	–	9,128
Charge for the year	853	18	–	871
Disposals	(6,341)	(14)	–	(6,355)
Exchange movements	–	–	–	–
At 31 December 2021	**3,590**	**54**	**–**	**3,644**
Carrying amount				
At 31 December 2021	**9,325**	**43**	**–**	**9,368**
At 31 December 2020	2,044	34	–	2,078

Out of £5,084,000 additions during the year, £3,272,000 represent lease renewal of the Huntingdon main site.

Set out below are the carrying amounts of lease liabilities (included under current and non-current liabilities on the statement of financial position) and the movements during the period:

	2021 £'000	2020 £'000
At 1 January	**2,579**	3,971
Additions	**7,734**	183
Accretion of interest	**144**	98
Payments	**(726)**	(1,224)
Exchange movement	**(1)**	14
Lease liabilities associated with assets held for sale	**-**	(463)
At 31 December	**9,730**	2,579
Current	**1,231**	1,064
Non-current	**8,499**	1,515
	9,730	2,579

18. Leases continued

The table below summarises the maturity profile of the Group's lease liabilities based upon the contractual undiscounted payments as at 31 December 2021.

	2021 £'000	2020 £'000
On demand	–	–
Less than three months	196	222
Four to 12 months	759	645
One to five years	5,047	1,945
More than five years	4,538	–
	10,540	2,812

The following are the amounts recognised in profit or loss:

	2021 £'000	2020 £'000
Depreciation expense of right-of-use assets	871	1,235
Interest expense on lease liabilities	144	98
Expense relating to short-term leases (included in administrative expenses)	375	152
Total amount recognised in profit or loss	1,390	1,485

Interest expense on lease liabilities consists of £144,000 (2020: £82,000) reported under continuing operations and £9,000 (2020: £16,000) relating to Xaar 3D business reported under discontinued operations.

19. Subsidiaries

A list of the investments in subsidiaries, including the name, country of incorporation and proportion of ownership interest, is given in note 11 to the Company's separate financial statements.

20. Inventories

	2021 £'000	Restated 2020 £'000
Raw materials and consumables	5,619	6,356
Work in progress	8,605	1,687
Finished goods	4,615	1,707
	18,839	9,750

The cost of inventories recognised as an expense includes £1,189,000 (2020: £3,895,000) in respect of inventory write-downs.

Gross stock was £28,410,000 (2020: £34,371,000) with inventory provisions of £9,571,000 (2020: £24,621,000). The provision of £9,571,000 included £6,289,000 in relation to discontinued operations. Inventory for discontinued operations has been recognised at fair value. A significant proportion of this increase in inventory is attributable to the managed investment in our supply chain capability.

The finished goods in 2020 were restated due to the adjustment in EPS in the prior year. Refer to note 37 for further details.

There is no specific impact on the valuation of the Company's inventories arising from climate related matters. Estimates are based upon the most reliable evidence available at the time the estimates are made.

21. Other current assets

The fair value of all financial assets and financial liabilities approximates their carrying value. No amounts are expected to be settled in more than 12 months. Refer to note 37 for restatement of 2020.

Trade and other receivables	2021 £'000	Restated 2020 £'000
Amount receivable for the sale of goods	5,336	6,679
Allowance for doubtful debts	(144)	(622)
	5,192	6,057
Contract assets	3,296	1,542
Other debtors	2,211	1,218
Prepayments	1,439	822
	12,138	9,639
Current tax asset	531	425

21. Other financial assets continued

Trade receivables

The average credit period taken on sales of goods is 32 days (2020: 47 days). No interest is charged on the receivables for the period agreed in the Requirements Contract or, if not specified or applicable, the first 30 days from the date of the invoice. Thereafter, the Group reserves the right to charge interest at a daily rate of the greater of either 3% per annum above the base rate of the Bank of England from time to time, or the maximum rate of interest allowable under the Late Payment of Commercial Debts (Interest) Act 1998, on all sums outstanding until payment in full is received. Trade receivables over 120 days are provided for based on estimated irrecoverable amounts from the sale of goods, determined by reference to past default experience.

The maximum exposure to credit risk is the carrying amount of the financial assets as disclosed on page 150. Before accepting any new customer, the Group uses an external credit scoring system to assess the potential customer's credit quality and defines credit limits by customer. Credit limits are reviewed at least once per year. Of the trade receivables balance at the end of the year, seven customers each represented greater than 5% of the total receivables balance, totalling £2,100,000 (2020: £1,100,000). The total due from these customers represents 4% (2020: 2%) of the Group's revenue.

Included in the Group's trade receivables balance are debtors with a carrying amount of £1,444,000 (2020: £1,843,000) which are past due at the reporting date for which the Group has not provided as there has not been a significant change in credit quality and the amounts are still considered recoverable.

Ageing of past due but not impaired receivables:

	2021 £'000	2020 £'000
1–30 days overdue	**885**	1,168
30–60 days overdue	**150**	233
60–90 days overdue	**264**	85
90–120 days overdue	**81**	266
Over 120 days overdue	**64**	91
Total receivables	**1,444**	1,843

Movement in the allowance for doubtful debts:

	2021 £'000	2020 £'000
Balance at the beginning of the year	**622**	7,959
Impairment (reversal) / losses increased	**(388)**	(929)
Amounts written off as uncollectible	**(90)**	(6,408)
Balance at the end of the year	**144**	622

The Group always measures the loss allowance for trade receivables at an amount equal to lifetime ECL. The expected credit losses on trade receivables are estimated using a provision matrix by reference to past default experience of the debtor and an analysis of the debtor's current financial position, adjusted for factors that are specific to the debtors, general economic conditions of the industry in which the debtors operate and an assessment of both the current as well as the forecast direction of conditions at the reporting date. The Group has recognised a loss allowance of 1.0% for receivables aged 60 days or less, 5% for receivables aged between 61 and 90 days, 5% for 91 and 120 days. A loss allowance of 25% is applied for receivables aged over 120 days. The loss allowance calculation excludes receivables with a specific provision. Most of the debt over 120 days has been provided in full and relates to a small number of customers where none of the debt is expected to be recovered through normal trading. A provision is made against trade receivables until such time as the Group believes the amount to be irrecoverable (such as the bankruptcy of a customer or emerging market risks, which would render the receivable irrecoverable), after which the trade receivable balance is written off. Amounts written off in the prior year relate to distributor balances. There is no current enforcement activity on the remaining balance.

Ageing of impaired trade receivables:

	2021 £'000	2020 £'000
Current	**2**	19
1–30 days overdue	**2**	3
30–60 days overdue	**–**	–
60–90 days overdue	**–**	–
90–120 days overdue	**–**	–
Over 120 days overdue	**140**	600
Total	**144**	622

The Directors have considered the sensitivity of doubtful debts and a 1% increase on the ECL percentage would equate to an additional £51,000 allowance. The Directors consider that the carrying amount of trade and other receivables approximates their fair value.

21. Other financial assets continued

Treasury deposits

Treasury deposits comprise bank deposits with an original maturity of between three months and 12 months. The carrying amount of these assets approximates their fair value.

	2021 £'000	2020 £'000
Treasury deposits	–	161

Cash and cash equivalents

Cash and cash equivalents comprise cash held by the Group and short-term bank deposits with an original maturity of three months or less. The carrying amount of these assets approximates their fair value.

The analysis of cash and short-term bank deposits is as follows:

	2021 £'000	2020 £'000
Cash	25,051	17,956

The credit risk on liquid funds and derivative financial instruments is limited because the counterparties are banks with high credit ratings assigned by international credit-rating agencies.

22. Financial instruments

Fair value measurements

The following table combines information about:

- classes of financial instruments based on their nature and characteristics;
- the carrying amounts of financial instruments;
- fair values of financial instruments (except financial instruments when carrying amount approximates their fair value); and
- fair value hierarchy levels of financial assets and financial liabilities for which fair value was disclosed.

Fair value hierarchy Levels 1 to 3 are based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from 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); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

	Financial assets			Financial liabilities		
2021	FVTPL – designated £'000	FVTPL – mandatorily measured £'000	Amortised cost £'000	FVTPL – mandatorily measured £'000	Amortised cost £'000	Total £'000
Financial asset at fair value through profit or loss (note 11)	–	11,850	–	–	–	11,850
Trade and other receivables (note 21)	–	–	10,699	–	–	10,699
Treasury deposits (note 21)	–	–	–	–	–	-
Cash and bank balances (note 21)	–	–	25,051	–	–	25,051
Trade and other payables (note 24)	–	–	–	–	(21,489)	(21,489)
Other financial liabilities due after more than one year (note 24)	–	–	–	–	(3,354)	(3,354)
Derivative financial instrument	–	–	–	–	–	–

Additional disclosure for lease liabilities is reported in note 18.

	Financial assets			Financial liabilities		
2020 Restated	FVTPL – designated £'000	FVTPL – mandatorily measured £'000	Amortised cost £'000	FVTPL – mandatorily measured £'000	Amortised cost £'000	Total £'000
Trade and other receivables (note 21)	–	–	8,817	–	–	8,817
Treasury deposits (note 21)	–	–	161	–	–	161
Cash and bank balances (note 21)	–	–	17,956	–	–	17,956
Trade and other payables (note 24)	–	–	–	–	(9,940)	(9,940)
Derivative financial instrument	160	–	–	(2,919)	–	(2,759)

22. Financial instruments continued

Fair value of the Group's financial assets and financial liabilities that are measured at fair value on a recurring basis

Some of the Group's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Financial asset/ financial liabilities	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship and sensitivity of unobservable inputs to fair value
Derivative financial instrument (Level 3)	Black-Scholes model. The following variables were taken into consideration: current underlying price of the underlying share, options strike price, time until expiration (expressed as a percent of a year), implied volatility of the underlying share and LIBOR.	Underlying price of the share. Volatility of the underlying share.	Not applicable as the options have been exercised this year.
Financial asset at fair value through profit or loss (level 3)	Monte Carlo Simulation model. The following variables were taken into consideration: revenue projections, management forecast and discount rate. The milestone consideration and 3% earn-out consideration are calculated based on the terms of the proposed transaction and by reference to simulated revenue. This is then discounted back to the valuation date using a discount rate over a period commensurate with the year in which payments are payable.	Revenue volatility. Risk-adjusted discount rate.	10% increase/(decrease) in revenue volatility would result in £41,000 decrease and £3,000 increase in fair value respectively. 1% increase/(decrease) in discount rate would result in £6,000 decrease and £10,000 increase in fair value respectively.

There were no transfers between Level 1 and 2 during the current or prior year.

The financial liabilities measured using Level 3 fair value measurement represent written call options relating to a business combination. During the year, with a revised term of the call option, Stratasys exercised the call option and acquired the remaining 55% shareholding of Xaar. The value of the derivative financial liability has therefore been recognised in the income statement.

On 1 November 2021, the sale of Xaar 3D Limited to Stratasys was completed through a change to the terms of the call option without cost which was then exercised immediately. The fair value of the previous option immediately prior to exercise was nil. Xaar received net cash of £9,272,000 and contingent consideration of £10,863,000 with a fair value of £11,850,000 as at year-end. The contingent consideration is recognised as a financial asset at fair value through profit or loss. The only movement in the year represents the revaluation between 1 November to 31 December 2021. Additional disclosure information is provided in note 11 –Discontinued operations and note 35 – Non-controlling interest.

	Derivative financial instrument £'000	Financial asset at fair value through profit or loss £'000
Balance at 1 January 2021	(2,919)	–
Recognition of contingent consideration	–	10,863
Exercised of call option	2,919	–
Total gains or losses – in profit or loss	–	987
Balance at 31 December 2021	**–**	**11,850**

22. Financial instruments continued

Fair value of the Group's financial assets and financial liabilities that are measured at fair value on a recurring basis continued

The use of financial derivatives is governed by the Group's policies approved by the Board of Directors, which provide written principles on the use of financial derivatives consistent with the Group's risk management strategy. The Group does not use derivative financial instruments for speculative purposes.

Financial risk management objectives

The Group's policy is to manage the Group's financial risk, secure cost effective funding for the Group's operations and to minimise the adverse effects of fluctuations in the financial markets on the value of the Group's financial assets and liabilities, on reported profitability and on the cash flows of the Group.

The Group finances its activities with a combination of cash and treasury deposits. Other financial assets and liabilities, such as trade debtors and trade creditors, arise directly from the Group's operating activities.

Financial instruments give rise to foreign currency, interest rate, credit and liquidity risk. The Group's management of its exposure to credit risk is discussed in note 21.

The Group's exposure has been calculated with reference to these balances as at the year-end.

Interest rate risk

As the Group currently has no borrowings, its exposure to interest rate risk relates to the interest rate on its cash, cash equivalent and treasury deposit balances. The Group's interest rate risk arises mainly from its funds invested in short-term bank deposits. To mitigate these risks, limits have been set by the Board in relation to maturity period and maximum deposits with any one institution.

If interest rates had been 10% higher/reduced by 10% and all other variables were held constant, the Group's profit for the year ended 31 December 2021 would increase by £136,000 or decrease by £167,000 (2020: increase by £100,000 or decrease by £100,000). There would be no effect on equity reserves.

Foreign currency risk

The Group receives approximately 40% of its revenues in US Dollars and 7% of its revenue in Euros, which are partially naturally hedged by supplies in these currencies, but the remainder requires conversion into Sterling in order to fund the remaining costs of the UK operations. The Group has R&D operations in Sweden, and therefore incurs costs and holds cash balances in Swedish Krona.

The Group is mainly exposed to foreign currency risk resulting from transactions in US Dollars, Euros and Swedish Krona. The following table demonstrates the Group's sensitivity to a 10% increase and decrease in the Sterling exchange rate against the relevant foreign currencies on the Group's profit before tax and equity (due to changes in the fair value of monetary assets, liabilities and forward currency contracts). 10% represents management's assessment of the reasonably possible movement in exchange rates. The sensitivity analysis includes only outstanding foreign currency denominated monetary items and adjusts their translation at the period end for a 10% change in foreign currency rates. The sensitivity analysis includes inter-company balances within the Group where the denomination of the balance is in a currency other than the functional currency of the debtor or the creditor. A positive number below indicates an increase in profit or equity.

	Euro currency impact		US Dollar currency impact		Swedish Krona currency impact	
	2021 £'000	2020 £'000	**2021 £'000**	2020 £'000	**2021 £'000**	2020 £'000
Effect of a 10% increase in relevant exchange rate on:						
Profit or loss	**(96)**	(139)	**(50)**	(420)	**10**	(107)
Equity	**(96)**	(139)	**(528)**	(1,002)	**10**	(107)
Effect of a 10% decrease in relevant exchange rate on:						
Profit or loss	**117**	170	**61**	514	**(12)**	131
Equity	**117**	170	**645**	1,225	**(12)**	131

Capital risk management

The primary objective of the Group's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios in order to support its business, maximise shareholder value and provide flexibility for value enhancing investments. The Group manages its capital structure and makes adjustments to it in light of changes in economic conditions or as a result of corporate strategy. To maintain or adjust the capital structure, the Group may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. In addition, any potential value enhancing investments may be funded through additional debt instruments. No changes were made in the objectives, policies or processes during the current or prior year. No dividend is proposed for 2021.

Further information can be found on page 138 (note 13).

The Group monitors capital using a gearing ratio, which is determined as the proportion of debt to equity. Debt is defined as long- and short-term borrowings. Equity includes all capital and reserves of the Group attributable to the equity holders of the parent. The Group's policy for its existing business is to use debt where appropriate, whilst maintaining the gearing ratio at a level under 10%.

22. Financial instruments continued

Capital risk management continued

The gearing ratio (excluding IFRS 16 leases) at the year-end is as follows:

	2021 £'000	2020 £'000
Net debt	**–**	–
Total equity	**69,790**	56,158
Gearing ratio	**0%**	0%

The Group is not subject to externally imposed capital requirements.

Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Group. The Group has adopted a policy of only dealing with creditworthy counterparties and insuring the suppliers, as a means of mitigating the risk of financial loss from defaults.

Trade receivables consist of a large number of customers, spread across different industries and geographical areas. Ongoing credit evaluation is performed on the financial condition of accounts receivable.

The credit risk on liquid funds is limited because the counterparties are banks with high credit ratings assigned by international credit rating agencies. Additional credit insurance coverage is maintained where appropriate against agreed credit terms with customers.

Liquidity risk

The Group aims to mitigate liquidity risk by managing cash generation by its operations and applying cash collection targets throughout the Group. Investment is carefully controlled, with authorisation limits operating up to Group Board level and cash payback periods applied as part of the investment appraisal process. In this way the Group aims to maintain a good credit rating to facilitate fund raising.

In order to mitigate the Group's liquidity risks, the Group can choose to fund significant fixed asset purchases by finance leases repayable over a period of three to five years dependent on the individual asset being financed and interest-bearing loans.

In its funding strategy, the Group's objective is to maintain a balance between continuity of funding and flexibility through the use of overdrafts, bank loans, finance leases and hire purchase contracts. The Group manages liquidity risk by maintaining adequate reserves and banking facilities by continuously monitoring cash flows and matching the maturity profiles of financial assets and liabilities. Given the current level of cash availability there are currently no overdraft or bank loan facilities arranged with banks either drawn or undrawn.

Non-derivative financial liabilities of £21,489,000 (2020: £9,940,000) comprise trade creditors. The trade creditors are within current liabilities. The inherent liquidity risk of these financial liabilities is managed within the overall liquidity risk of the Group as described above. The maturity profile of lease liabilities is set out in note 18.

The Group's policy is to invest any excess cash used in managing liquidity in financial instruments exposed to insignificant risk of changes in market value, being placed on interest-bearing deposit with maturities no more than 12 months.

23. Deferred tax

The following are the major deferred tax liabilities and assets recognised by the Group and movements thereon during the current and prior reporting periods:

	Accelerated tax depreciation £'000	Share-based payment £'000	Intangible assets £'000	Tax losses £'000	Other temporary difference £'000	Total £'000
At 1 January 2020	705	(40)	–	(582)	(213)	(130)
(Credit)/charge to income	55	39	–	(139)	31	(14)
(Credit)/charge for discontinued operations	(68)	–	–	–	–	(68)
Foreign exchange movement	–	–	–	–	4	4
At 31 December 2020	**692**	**(1)**	**–**	**(721)**	**(178)**	**(208)**
(Credit)/charge to income	336	–	(64)	(309)	175	138
(Credit)/charge for discontinued operations	(58)	–	–	(38)	–	(96)
Acquisitions	–	–	989	(989)	–	–
Disposals	126	–	–	38	–	164
Foreign exchange movement	–	–	–	–	3	3
At 31 December 2021	**1,096**	**(1)**	**925**	**(2,019)**	**–**	**1**

Certain deferred tax assets and liabilities have been offset. The following is the analysis of the deferred tax balances (after offset) for financial reporting purposes:

23. Deferred tax continued

	2021 £'000	2020 £'000
Deferred tax liabilities	**1**	–
Deferred tax assets	**–**	208
Being: Deferred tax assets from continuing operations	**1**	130
Being: Deferred tax assets from discontinued operations	**–**	68

As at 31 December 2021, the Group had unused tax losses of £117,300,000 (2020: £75,900,000) available to offset against future profits. As at 31 December 2021 the Group has an unrecognised deferred tax asset in respect of these losses totalling £28,200,000 (2020: £14,500,000). These losses may be carried forward indefinitely. As at 31 December 2021, the Group has unused capital losses of £1,100,000 (2020: £1,100,000) available for offset against future gains.

The impact of climate change has been considered in the forecast and valuation of future taxable profits and no impacts were noted. No deferred tax asset is recognised by the Group.

No deferred tax asset has been recognised in respect of these capital losses as it is not considered probable that there will be future chargeable gains available. These losses may be carried forward indefinitely.

24. Trade and other payables

	2021 £'000	2020 £'000
Current liabilities		
Trade payables and accruals	**19,900**	9,940
Other financial liabilities	**1,589**	–
	21,489	9,940
Non-current liabilities		
Other financial liabilities	**3,354**	–

Trade payable and accruals principally comprise amounts outstanding for trade purchases and ongoing costs. The average credit taken for trade purchases is 28 days (2020: 18 days).

The increase in trade creditors balance is mainly due to improved credit terms with suppliers and increasing stock held across the Group of £1,734,000, increase in customer deposits in EPS (£2,389,000) and the addition of FFEI in the year (£3,654,000).

The other financial liabilities represent the deferred consideration in relation to the acquisition of FFEI Limited split between the current portion due in 2022 (£1,589,000) and non-current portion.

The Directors consider that the carrying amount of trade payables approximates to their fair value.

25. Provisions

	Warranty £'000	Restructuring £'000	Provision for dilapidation £'000	Total £'000
At 1 January 2020	247	2,700	–	2,947
Additional / (release) provision in the year	71	685	–	756
Utilisation of provision	(121)	(3,105)	–	(3,226)
Release of provision	(120)	–	–	(120)
At 1 January 2021	**77**	**280**	**–**	**357**
Additional / (release) provision in the year	253	11	250	514
Acquisition	–	–	50	50
Utilisation of provision	(18)	(280)	–	(298)
Release of provision	(59)	–	–	(59)
At 31 December 2021	**253**	**11**	**300**	**564**

The warranty and commercial agreements provision represents management's best estimate of the Group's liability related to claims against product warranties or commercial sales agreements. The timing of the utilisation of this provision is uncertain.

Additional restructuring provisions of £11,000 have been added primarily in relation to redundancy to be utilised in 2022; the utilisation of the £280,000 in 2021 was for the relocation of HQ to Waterbeach.

Non-current provisions relate to provisions for dilapidation which form part of right-of-use assets and are depreciated over the lease term. Further details on leases is in note 18.

26. Share capital

	2021 £'000	2020 £'000
Issued and fully paid: 78,446,230 (2020: 78,334,296) ordinary shares of 10.0p each	**7,844**	7,833

The movement during the year on the Company's issued and fully paid shares was as follows:

	2021 Number	2020 Number	2021 £'000	2020 £'000
Balance at 1 January	**78,334,296**	78,334,296	**7,833**	7,833
Exercise of share options	**111,934**	–	**11**	–
Balance at 31 December	**78,446,230**	78,334,296	**7,844**	7,833

The Company has one class of ordinary shares which carry no right to fixed income.

Scheme	Date of grant	Number of shares under option as at 31 December 2021	Number of shares under option as at 31 December 2020	Subscription price per share
Xaar plc 2004 Share Option Plan	01 June 11	**–**	40,000	250.0p
	01 May 12	**90,000**	90,000	226.5p
		90,000	130,000	
Xaar plc 2017 Share Save Scheme	01 November 17	**–**	7,010	344.0p
	01 November 18	**34,975**	116,596	142.0p
	01 December 19	**893,038**	937,505	34.0p
	02 November 20	**681,104**	702,032	102.0p
	04 November 21	**632,995**	–	129.0p
		2,242,112	1,763,143	
Xaar plc 2013 Share Incentive Plan	17 April 13	**4,332**	6,309	0.0p
	16 April 14	**4,749**	8,866	0.0p
	14 April 16	**6,766**	11,717	0.0p
	13 April 17	**3,952**	5,280	0.0p
		19,799	32,172	
Total share options outstanding at 31 December		**2,351,911**	1,925,315	

26. Share capital continued

Options granted under the Xaar plc 2004 Share Option Plan are ordinarily exercisable within three to ten years after the date of grant. The maximum value of approved options, under the Xaar plc 2004 Share Option Plan, which may be granted to individual employees is £30,000.

Options under the Xaar plc Share Save Scheme are ordinarily exercisable between 36 and 42 months after the date of grant.

Awards under the Xaar plc Share Incentive Plan are ordinarily exercisable between three and five years after the date of grant.

Long-Term Incentive Plan

Performance Share Awards outstanding under the Xaar plc 2007 Long-Term Incentive Plan are as follows:

Date of grant	**Number of shares under option as at 31 December 2021**	Number of shares under option as at 31 December 2020
3 May 11	**–**	4,533
1 May 12	**5,229**	7,297
2 April 15	**30,179**	35,933
28 September 15	**2,536**	3,069
7 December 15	**–**	9,354
1 April 16	**17,733**	34,645
11 May 16	**4,977**	4,977
27 June 16	**3,733**	3,733
6 September 16	**700**	700
1 December 16	**15,093**	15,093
	80,180	119,334

All awards under this scheme are exercisable within three to ten years after the date of grant.

Performance Share Awards have been made under the Xaar plc 2017 Long-Term Incentive Plan as follows:

Date of grant	**2021 Number of shares**	2020 Number of shares
16 May 17	**18,804**	30,472
03 April 18	**–**	126,735
2 April 2019	**104.292**	110,792
30 April 2019	**59,789**	59,789
4 October 2019	**180,328**	180,328
29 April 2020	**394,000**	404,000
4 June 2020	**535,000**	535,000
1 October 2020	**21,000**	21,000
14 October 2021	**986,272**	–
	2,299,485	1,468,116

All awards under this scheme are exercisable within three to ten years after the date of grant.

27. Share premium account

	2021 £'000	2020 £'000
Balance at 1 January	**29,328**	29,328
Premium arising on issue of equity shares	**99**	–
Balance at 31 December	**29,427**	29,328

28. Own shares

	2021 £'000	2020 £'000
Balance as at 1 January	**(1,957)**	(2,676)
Sold in the year	**34**	719
Balance at 31 December	**(1,923)**	(1,957)

Of this balance, £20,000 (2020: £20,000) represents 91,250 ordinary shares in Xaar plc held in trust by Xaar Trustee Ltd. Xaar Trustee Ltd was formed in 1995 to act as trustee to the Employee Benefit Trust established in 1995 to hold shares for the benefit of the employees of the Company and the Group. There has been no movement in the number of shares held in trust by Xaar Trustee Ltd during the year.

The remaining balance of £1,903,000 (2020: £1,937,000) represents the cost of 692,575 (2020: 705,083) shares in Xaar plc purchased in the market at market value and held by the Xaar plc ESOP trust to satisfy options granted under the Company's share option schemes.

The market value of own shares at 31 December 2021 was £1,427,000 (2020: £1,421,000).

29. Translation reserves

	2021 £'000	Restated 2020 £'000
Balance at 1 January	**864**	618
Exchange differences on retranslation of net investment	**147**	246
Balance at 31 December	**1,011**	864

Exchange differences relating to the translation of the net assets of the Group's foreign operations, which relate to subsidiaries only, from their functional currency into the parent's functional currency, being Sterling, are recognised directly in the translation reserve.

30. Retained earnings and other reserves

	Notes	Merger reserve £'000	Share-based payments £'000	Other reserves £'000	Total other reserves £'000	Retained earnings £'000	Total £'000
Balance at 1 January 2020 (as reported)		1,105	14,665	5,151	20,921	7,598	28,519
Prior year restatement	37	–	–	–	–	(766)	(766)
Balance at 1 January 2020 (as restated)		1,105	14,665	5,151	20,921	6,832	27,753
Net loss for the year		–	–	–	–	(11,685)	(11,685)
Tax on items directly to equity		–	–	–	–	(5)	(5)
Own shares sold in the period		–	–	–	–	(710)	(710)
Charge to equity for equity-settled share-based payments	32	–	246	–	246	–	246
Prior year restatement	37	–	–	–	–	4	4
Balance at 31 December 2020 (as restated)		1,105	14,911	5,151	21,167	(5,564)	15,603
Net profit for the year		–	–	–	–	16,219	16,219
Own shares sold in the period		–	–	–	–	–	–
Share options exercises		–	–	–	–	(32)	(32)
Charge to equity for equity-settled share-based payments	32	–	653	–	653	–	653
Balance at 31 December 2021		**1,105**	**15,564**	**5,151**	**21,820**	**10,623**	**32,443**

The merger reserve and other reserves are not distributable. The merger reserve represents the share premium account in Xaar Technology Limited.

The share-based payment reserve represents the cumulative charge made under IFRS 2 in relation to share options and LTIP awards. Other reserves represent the non-distributable portion of the dividend received in Xaar plc from Xaar Digital Limited.

31. Notes to the cash flow statement

	2021 £'000	2020 £'000
Profit/(loss) before tax from continuing operations	**994**	(4,322)
Profit/(loss) before tax from discontinued operations	**13,503**	(10,105)
Total Profit / (loss) before tax	**14,497**	(14,427)
Adjustments for:		
Share-based payments	**758**	353
Depreciation of property, plant and equipment	**3,318**	4,223
Depreciation of right-of-use assets	**871**	1,236
Amortisation of intangible assets	**475**	685
Impairment of assets	**–**	391
Research and development expenditure credit	**(582)**	(454)
Investment income	**(4)**	(72)
Interest expense	**252**	94
Foreign exchange gains/(loss)	**(23)**	523
Gain on remeasurement of derivative liability	**(2,919)**	(77)
Fair value gain on financial assets at fair value through profit or loss	**(987)**	–
Loss on disposal of property, plant and equipment	**77**	99
Profit on disposal of investment in subsidiary	**(17,899)**	–
Other gains and losses	**–**	202
Decrease in provisions	**(74)**	(2,572)
Operating cash flows before movements in working capital	**(2,240)**	(9,796)
(Increase)/decrease in inventories	**(7,964)**	4,849
Increase in receivables	**(1,525)**	(1,337)
Increase in payables	**9,525**	2,011
Cash used in operations	**(2,204)**	(4,273)
Income taxes received	**150**	1,466
Net cash used in operating activities	**(2,054)**	(2,807)

During the year non-cash investing activity pertains to purchase of property, plant and equipment by the Company on credit amounting to £472,000 (2020: £1,152,000).

Further information on cash flows from discontinued operations can be found in note 11.

32. Share-based payments

Equity-settled share option scheme

The Company's share option schemes are open to all employees of the Group. Options are exercisable at a price equal to the average quoted market price of the Company's shares on the date of grant. The standard vesting period is three years.

An option granted under the Xaar plc 2004 Share Option Plan from 2011 onwards will be exercisable over shares with a market value at the date of grant not exceeding a person's annual salary, if at the third anniversary of grant, Xaar plc has achieved positive adjusted profit before tax as shown in the consolidated income statement in the Company's Annual Report and Accounts for any of the three years ending during the vesting period. One third of the shares subject to the option granted rounded to the nearest whole share will vest based on the performance condition being met per year for each of the three years ending in the vesting period. If the adjusted profit before tax as shown in the consolidated income statement in Xaar plc's Annual Report and Accounts for any relevant year is restated before the option becomes exercisable, the restated figure shall, unless the Remuneration Committee determines otherwise, be applied in determining whether the above targets are met. In addition, options shall only become exercisable in respect of any shares if the Committee in its absolute discretion determines that the overall financial performance of Xaar plc over the performance period is satisfactory.

The Xaar 2007 and 2017 Share Save Schemes provide an opportunity to all UK employees to save a set monthly amount (up to £500) over three years towards the exercise of a discounted share option, which is granted at the start of the three years.

The Xaar Share Incentive Plan provides an opportunity for all UK employees to buy shares from their pre-tax remuneration up to the limit permitted by the relevant tax legislation (£1,500 per year for the awards made in 2013 and 2014, £1,800 per year for awards made from 2015) and additional shares are awarded for free on a matching basis; the Company currently operates the plan on the basis of a 1:1 match but may award matching shares up to the maximum ratio permitted by the relevant tax legislation (currently a 2:1 ratio).

Options and awards under the Xaar 2007 and 2017 Share Save Schemes and Xaar Share Incentive Plan are not subject to performance conditions.

If the options remain unexercised after a period of ten years from the date of grant, or 42 months in the case of the Share Save Scheme, or five years in the case of the Share Incentive Plan (being the contractual lives), the options expire. Save as permitted in the share option scheme rules, options ordinarily lapse on an employee leaving the Group.

Details of the share options outstanding during the year are as follows:

	2021		2020	
	Number of share options	**Weighted average exercise price (£)**	Number of share options	Weighted average exercise price (£)
Outstanding at beginning of year	**1,925,315**	**0.79**	1,603,864	0.72
Granted during the year	**632,995**	**1.29**	702,032	1.02
Lapsed during the year	**(104,614)**	**1.59**	(349,323)	0.94
Exercised during the year	**(101,785)**	**1.08**	(31,258)	0.22
Outstanding at the end of the year	**2,351,911**	**0.88**	1,925,315	0.79
Exercisable at the end of the year	**144,774**	**1.75**	162,172	1.87

The weighted average share price at the date of exercise for share options exercised during the period was £1.64 (2020: £1.10). The options outstanding at 31 December 2021 had a weighted average remaining contractual life of two years (2020: three and a half years). In 2021, options were granted on 4 November. The aggregate of the estimated fair values of the options granted on those dates is £561,000. In 2020, options were granted on 2 November. The aggregate of the estimated fair values of the options granted on those dates is £525,000.

32. Share-based payments continued

Equity-settled share option scheme continued

The inputs into the Black-Scholes model are as follows:

	2021	2020
Weighted average share price	**£1.61**	£1.28
Weighted average exercise price	**£1.29**	£1.02
Weighted average expected volatility	**73%**	74%
Expected life	**3.25 years**	3.5 years
Risk-free rate	**0.69%**	(0.05)%
Weighted average expected dividends	**0.00%**	0.00%

Expected volatility was determined by calculating the historical volatility of the Group's share price over periods ranging from the previous one to three years. The expected life used in the model has been adjusted, based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations.

Long-Term Incentive Plan

The Company's Long-Term Incentive Plan is open to all employees of the Group.

All LTIP share awards granted before 2015 are subject to the achievement of EPS performance conditions and the number of shares that vest will depend on the EPS growth of the Company for the three financial years of the Company commencing on 1 January of the year of grant, as follows:

(1) None of the awards will vest if the Company's EPS growth does not exceed growth in the Retail Prices Index ('RPI') by at least 4% compound p.a.

(2) 35% of the awards will vest if the Company's EPS growth exceeds growth in the RPI by at least 4% compound p.a.

(3) All of the awards will vest if the Company's EPS growth exceeds growth in the RPI by at least 10% compound p.a.

(4) Awards will vest on a straight-line basis for EPS growth in excess of growth in the RPI of between 4% and 10% compound p.a.

LTIP share awards granted in 2015 onwards are subject to the achievement of different performance conditions depending on the level of the employee. The number of shares that vest will depend on the three financial years of the Company commencing on 1 January of the year of grant, and are subject to one, two, three, four or five of the conditions as set out below:

(1) Absolute cumulative EPS performance over the period, whereby 25% of the awards will vest if the threshold target is achieved, below threshold 0% will vest and up to a maximum of 100% if the maximum EPS target or higher is achieved.

(2) For 2015 and 2016 grants, TSR relative to FTSE TechMARK All Share Index, whereby 25% of the awards will vest if the median rank in the comparator group is achieved, below median 0% will vest and up to a maximum of 100% if the upper quartile or higher is achieved. For 2017 and 2018 grants, TSR outperformance multiplier determined by comparison to the FTSE SmallCap Index, whereby a performance multiplier of between 116.7% (for upper quartile performance) and 150% or 200% (for upper decile performance) is applied to the base award relating to awards granted with EPS and revenue performance conditions.

(3) For 2015 and 2016 grants, achievement of positive adjusted profit before tax as shown in the consolidated income statement in the Company's Annual Report and Accounts for any of the three years ending during the vesting period. One third of the shares subject to the option granted, rounded to the nearest whole share, will vest based on the performance condition being met per year for each of the three years ending in the vesting period. If the adjusted profit before tax as shown in the consolidated income statement in Xaar plc's Annual Report and Accounts for any relevant year is restated before the option becomes exercisable, the restated figure shall, unless the Remuneration Committee determines otherwise, be applied in determining whether the above targets are met. In addition, options shall only become exercisable in respect of any shares if the Committee in its absolute discretion determines that the overall financial performance of Xaar plc over the performance period is satisfactory.

(4) From 2017, revenue growth over the period, whereby 25% of the awards will vest if the threshold target is achieved, below threshold 0% will vest and up to a maximum of 100% if the maximum revenue growth target or higher is achieved.

(5) From 2018, revenue from new products in the third year in the vesting period, whereby 25% of the awards will vest if the threshold target is achieved, below threshold 0% will vest and up to a maximum of 100% if the maximum revenue target or higher is achieved.

There are also a number of LTIP share awards granted that are subject to the achievement of different performance conditions for specific individuals, dependent on revenue or profit performance over a set performance period.

32. Share-based payments continued

Long-Term Incentive Plan continued

In addition, options shall only become exercisable in respect of any shares if the Committee in its absolute discretion determines that the overall financial performance of Xaar plc over the performance period is satisfactory. All awards that will vest will be calculated on a straight-line basis. All awards made under this scheme are exercisable within three to ten years after the date of grant. Save as permitted in the Long-Term Incentive Plan rules, awards lapse on an employee leaving the Group.

Key individuals have previously been invited to participate in a bonus matching scheme where matching LTIP share awards are granted when the employee invests their bonus in Xaar shares and retains ownership of these shares for the duration of the LTIP share award vesting period. The matching share award is a 1 for 1 match on the pre-tax value of the bonus used to acquire bonus investment shares. Matching LTIP share awards are subject to the same performance criteria as all other LTIP awards.

Details of Performance Share Awards outstanding during the year are as follows:

	2021	2020
Awards outstanding at start of year	**1,587,450**	1,135,011
Granted during the year	**986,272**	963,000
Lapsed during the year	**(161,535)**	(275,618)
Exercised during the year	**(32,522)**	(234,943)
Awards outstanding at end of year	**2,379,665**	1,587,450
Exercisable at end of year	**98,984**	149,806

The weighted average share price at the date of exercise for awards exercised during the period was £1.67 (2020: £0.58). The options outstanding at 31 December 2021 had a weighted average remaining contractual life of 8.67 years (2020: 9.5 years). In 2021, Performance Share Awards were made in October. The aggregate of the estimated fair values of grants made on that date is £1,457,000. In 2020, Performance Share Awards were made in April, June and October. The aggregate of the estimated fair values of grants made on those dates is £440,000.

The estimated fair values for grants with non-market based performance conditions were calculated using the Black-Scholes model. The inputs into the Black-Scholes model were as follows:

	2021	2020
Weighted average share price	**£1.77**	£0.48
Weighted average exercise price	**£nil**	£nil
Weighted average expected volatility	**81%**	74%
Weighted average expected life	**2.44 years**	3 years
Weighted average risk free rate	**0.67%**	(0.05)%
Weighted average expected dividends	**0.00%**	0.00%

The estimated fair values for grants with market based performance conditions were calculated using the Monte Carlo model. The inputs into the Monte Carlo model were as follows:

	2021	2020
Weighted average share price	**£1.37**	£0.44
Weighted average exercise price	**£nil**	£nil
Weighted average expected volatility	**90%**	72%
Weighted average expected life	**2.44 years**	3 years
Weighted average risk free rate	**0.55%**	0.04%
Weighted average expected dividends	**0.00%**	0.00%

Deferred Bonus Plan

Under the Group's Deferred Bonus Plan, executives receive 70% of the participant's bonus achieved in cash and 30% in the form of rights to deferred shares of Xaar plc. These awards are subject only to service conditions, i.e. the requirement for recipients of awards to remain in employment with the Company over the vesting period. The awards were granted on 14 October 2021. All of these awards have been granted in respect of the participant's bonus for the Company's financial year which ended on 31 December 2020 and will vest on the dealing day following the announcement by the Company of its annual results for 2022 (assumed 24 March 2023) or, if later, the date on which the Committee determines ("the normal vesting date").

The executives do not receive any dividends and are not entitled to vote in relation to the deferred shares during the vesting period. If an executive ceases to be employed by the Group within this period, the rights will be forfeited, except in limited circumstances that are approved by the Board on a case-by-case basis.

32. Share-based payments continued

The following table shows the deferred shares granted and outstanding at the beginning and end of the reporting period.

	2021	2020
Awards outstanding at start of year	–	–
Granted during the year	34,098	–
Lapsed during the year	–	–
Exercised during the year	–	–
Awards outstanding at end of year	34,098	–

The weighted average share price at the date of exercise for awards exercised during the period was £nil (2020: £nil). The options outstanding at 31 December 2021 had a weighted average remaining contractual life of one year and three months (2020: nil). In 2021, Deferred Bonus Plan awards were made in October. The aggregate of the estimated fair values of grants made on that date is £60,000.

The estimated fair values for grants with non-market based performance conditions were calculated using the Black-Scholes model. The inputs into the Black-Scholes model were as follows:

	2021	2020
Weighted average share price	£1.77	£0.48
Weighted average exercise price	£nil	£nil
Weighted average expected volatility	81%	–
Weighted average expected life	1.25 years	–
Weighted average risk free rate	0.67%	–
Weighted average expected dividends	–	–

The Group recognised total expenses of £653,000 and £246,000 related to all equity-settled share-based payment transactions in 2021 and 2020, respectively.

33. Retirement benefit schemes

Defined contribution schemes

The UK based employees of the Group's UK companies have the option to be members of a defined contribution pension scheme managed by a third party pension provider. For each employee who is a member of the scheme the Company will contribute a fixed percentage of each employee's salary to the scheme. The only obligation of the Group with respect to this scheme is to make the specified contributions.

The total cost charged to the income statement in respect of these schemes during 2021 was £930,000 (2020: £740,000). As at 31 December 2021 contributions of £102,000 (2020: £89,000) due in respect of the current reporting period had not been paid over to the schemes.

34. Related party transactions

Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

During the year, with a revised term of the call option, Stratasys exercised the call option and acquired the remaining 55% shareholding of Xaar. The revised term of the call option allows Xaar to receive $13,500,000 as initial consideration and with the 3% revised ean-out and the earn-out payments allow Xaar to receive up to $34,750,000 of the total consideration.

On 1 November 2021, the sale of Xaar 3D Limited to Stratasys was completed and Xaar received net cash of £9,272,000 and contingent consideration with a fair value of £10,863,000 as at year-end. The sale is disclosed further in note 11.

Additional disclosure on the transaction is included in note 22 – Financial instruments and note 35 – Non-controlling interest

During 2021 there were both product sales between Xaar and SSYS, and related party transactions associated with the "go-to-market" functions where SSYS employees have been seconded to Xaar 3D Limited and the costs recharged:

- Sales between Xaar and SSYS in 2021 £3,049,000 (2020: £636,078)
- Purchases between SSYS and Xaar £1,331 (2020: £2,620)
- Employees seconded to Xaar from SSYS £274,965 (2020: £219,201).

There were no other transactions during the year with related parties who are not members of the Group.

Remuneration of key management personnel

The actual remuneration of the Directors, who are the key management personnel of the Group, is disclosed in the Directors' Remuneration report. The contractual employee benefits are set out below in aggregate for each of the categories specified in IAS 24 'Related Party Disclosures'.

Further information about the remuneration of individual Directors is provided in the audited part of the Directors' Remuneration report on pages 92 to 96.

34. Related party transactions continued

Remuneration of key management personnel continued

	2021 £'000	2020 £'000
Short-term employee benefits	**924**	1,040
Post-employment benefits	**32**	29
Share-based payments	**168**	183
	1,124	1,252

35. Non-controlling interest

Summarised financial information in respect of the Group's subsidiary, Xaar 3D Limited, in which it has a material non-controlling interest is set out below. The summarised financial information below represents amounts before intra-group eliminations. During the year, with a revised term of the call option, Stratasys exercised the call option and acquired the remaining 55% shareholding of Xaar. The revised term of the call option allows Xaar to receive $13,500,000 as initial consideration with a 3% revised earn-out. The earn-out payments for a 15-year period allow Xaar to receive up to $34,750,000 of total consideration.

On 1 November 2021, the sale of Xaar 3D Limited to Stratasys was completed and Xaar received net cash of £9,272,000 and contingent consideration with a fair value of £10,863,000. The sale is disclosed further in note 11.

The carrying amount of Xaar 3D assets and liabilities, the income statement and the movement in cash flow as at and up to the date of sale (1 November 2021) are as follows.

Xaar 3D Limited

Statement of financial position	1 November 2021 £'000	2020 £'000
Current assets	**3,422**	3,770
Non-current assets	**6,612**	6,198
Current liabilities	**(5,817)**	(1,233)
Non-current liabilities	**(281)**	(356)
Equity attributable to owners of the Company	**3,936**	8,379
Non-controlling interests (2021: 45% / 2020: 45%)	**1,771**	3,771

Income statement and other comprehensive income	2021 £'000	2020 £'000
Revenue	**2,918**	734
Expenses	**(7,342)**	(7,366)
Loss for the year	**(4,424)**	(6,632)
Loss attributable to owners of the Company	**(2,433)**	(3,648)
Loss attributable to the non-controlling interests	**(1,991)**	(2,984)
Loss for the year	**(4,424)**	(6,632)
Total comprehensive loss attributable to owners of the Company	**(2,433)**	(3,648)
Total comprehensive loss attributable to the non-controlling interest	**(1,995)**	(2,968)
Total comprehensive loss for the year	**(4,428)**	(6,616)

Cash flow statement	2021 £'000	2020 £'000
Net cash outflow from operating activities	**(1,792)**	(6,213)
Net cash outflow from investing activities	**(122)**	(645)
Net cash outflow from financing activities	**(98)**	(160)
Net cash outflow	**(2,012)**	(7,018)

Non-controlling interest equity	2021 £'000	2020 £'000
Balance at 1 January	**3,771**	6,739
Share of other comprehensive expense for year	**(1,995)**	(2,968)
Derecognition of non-controlling interest	**(1,776)**	–
Balance at 31 December	**–**	3,771

36. Business combination

On 11 July 2021, Xaar acquired 100% of the issued share capital of FFEI Limited, a leading integrator and manufacturer of industrial digital inkjet systems and digital life science technology with many years of experience in managing technical integration and engineering projects.

Details of the net assets acquired, goodwill and purchase consideration are as follows:

Recognised amounts of identifiable assets acquired and liabilities assumed	Fair value £'000
Cash	**4,075**
Trade & other receivables	**2,301**
Corporate income tax	**291**
Inventories	**1,169**
Property, plant and equipment	**91**
Right-of-use assets	**3,074**
Intangible assets	**4,248**
Trade & other payables	**(4,130)**
Lease liabilities	**(2,996)**
Provision (non-current)	**(50)**
Total net identifiable assets	**8,073**
Goodwill	**689**
Total consideration	**8,762**

Satisfied by:	£'000
Cash	**3,907**
Deferred consideration	**4,855**
Total consideration transferred	**8,762**

Net cash outflow arising on acquisition	£'000
Cash consideration	**3,907**
Less: cash and cash equivalents acquired	**4,075**
Total net cash inflow arising on acquisition	**168**

The fair value of acquired trade receivables is £1,310,000. The gross contractual amount for trade receivables due is £1,388,000, with a loss allowance of £78,000 recognised on acquisition.

The goodwill of £689,000 arising from the acquisition represents those characteristics and valuable attributes of the acquired business that cannot be quantified and attributed to separately identifiable assets in accounting terms. This goodwill is underpinned by a number of elements, the most significant of which is the well established, skilled and experienced operations team which will allow Xaar to accelerate the Company's existing growth strategy and will enable Xaar to capture additional opportunities in vertically integrated solutions. None of the goodwill recognised is expected to be deductible for income tax purposes.

The fair value of the intangible assets attributed to the acquisition of the business relates to patents and software (£3,044,000) and customer relationships (£1,204,000). These have an estimated useful life of six years. The amortisation from the date of acquisition to 31 December 2021 is £354,000 which is included in the income statement under general and administrative expenses.

In addition to the cash consideration, deferred consideration shall be paid in three annual instalments. The undiscounted amount of all future payments that the Company is required to make under the deferred consideration arrangement is £5,200,000.

Acquisition related costs which are included in administrative expenses in the consolidated income statement for the period ended 31 December 2021 amounted to £618,000.

The acquired business contributed revenues of £5,250,000 and net profit of £410,000 to the Group for the period from 11 July 2021 to 31 December 2021. FFEI Limited had an accounting reference date of 31 March prior to acquisition, reporting on a 4 week/4 week/5 week basis in their ERP system, which has subsequently been aligned with the Xaar Group date of 31 December and month end reporting. FFEI Limited reported under FRS 102 up to 31 March 2021, transitioning to IFRS and reporting under FRS 101 from 1 April 2021. Due to the difficulties presented in performing an accurate calculation of the results as if the acquisition had occurred on 1 January, the Board has decided that it is impracticable to present the pro-forma revenue and profit.

37. Restatement of prior period

The financial statements include a prior period restatement in relation to non-cash inventory related adjustments identified at EPS in 2021, that relate prior to 2020. Inventory items with a total value of $827,000 (£627,000) were identified as being held on the balance sheet that had been previously disposed, scrapped or consumed prior to 1 January 2020. The errors occurred as a result of the internal control deficiencies identified in the EPS subsidiary, in respect of the adequacy of controls over inventory management, as disclosed in the 2020 Annual Report and Financial Statements. Additionally an amount owed to an EPS supplier of $153,000 (£116,000) was incorrectly classified as a vendor deposit on the balance sheet when the payment was made to them in 2020, which should have been recognised as an expense in 2016. The increase in the brought forward tax losses as a result of these adjustments has not been recognised as a deferred tax asset but has increased the level of unused tax losses (as also disclosed in note 23). There was no impact of the restatement on earnings per share. Actions have been taken in 2021 to remediate the deficiencies identified. Process changes have been made to prevent the reoccurrence of such errors.

The following tables summarise the impact of the prior period restatement on the financial statements of the Group for the periods ended 1 January and 31 December 2020:

Consolidated statement of financial position	1 Jan 2020 as reported £'000	EPS adjustment £'000	1 Jan 2020 restated £'000
Current assets			
Inventories	16,530	(627)	15,903
Total assets	**88,224**	**(627)**	**87,597**
Current liabilities			
Trade and other payables	(7,973)	(116)	(8,089)
Total liabilities	**(17,887)**	**(116)**	**(18,003)**
Net assets	**70,337**	**(742)**	**69,595**
Equity			
Translation reserve	594	24	618
Retained earnings	7,598	(766)	6,832
Total equity	**70,337**	**(742)**	**69,595**

Consolidated statement of comprehensive income	31 Dec 2020 as reported £'000	EPS adjustment £'000	31 Dec 2020 restated £'000
Loss for the year	**(14,669)**	**–**	**(14,669)**
Exchange differences on retranslation of net investment	240	22	262
Tax	(5)	–	(5)
Other comprehensive income for the year	235	22	257
Total comprehensive loss for the year	**(14,434)**	**22**	**(14,412)**
Attributable to:			
Owners of the Company	(11,466)	22	(11,444)
Non-controlling interests	(2,968)	–	(2,968)
	(14,434)	**22**	**(14,412)**

37. Restatement of prior period continued

Consolidated statement of financial position	31 Dec 2020 as reported £'000	EPS adjustment £'000	31 Dec 2020 restated £'000
Non-current assets			
Goodwill	5,152	–	5,152
Other intangible assets	207	–	207
Property, plant and equipment	17,147	–	17,147
Righ-of-use asset	2,078	–	2,078
Deferred tax asset	139	–	139
	24,723	**–**	**24,723**
Current assets			
Inventories	10,355	(605)	9,750
Trade and other receivables	9,751	(111)	9,640
Current tax asset	425	–	425
Treasury deposits	161	–	161
Cash and cash equivalents	17,956	–	17,956
Derivative financial instruments	160	–	160
Assets held for sale	43	–	43
	38,851	**(716)**	**38,135**
Disposal group assets held for sale	9,968	–	9,968
	48,819	**(716)**	**48,103**
Total assets	**73,542**	**(716)**	**72,826**
Current liabilities			
Trade and other payables	(9,940)	–	(9,940)
Provisions	(357)	–	(357)
Derivative financial instruments	(2,919)	–	(2,919)
Lease liabilities	(1,064)	–	(1,064)
	(14,280)	**–**	**(14,280)**
Liabilities associated with disposal group	(1,589)	–	(1,589)
	(15,869)	**–**	**(15,869)**
Net current assets	**32,950**	**(716)**	**32,234**
Non-current liabilities			
Lease liabilities	(1,515)	–	(1,515)
Total non-current liabilities	**(1,515)**	–	**(1,515)**
Total liabilities	**(17,384)**	**–**	**(17,384)**
Net assets	**56,158**	**(716)**	**55,442**
Equity			
Share capital	7,883	–	7,883
Share premium	29,328	–	29,328
Own shares	(1,957)	–	(1,957)
Translation reserve	818	46	864
Other reserve	21,167	–	21,167
Retained earnings	(4,802)	(762)	(5,564)
Equity attributable to owners of the Company	**52,387**	**(716)**	**51,671**
Non-controlling interests	3,771	–	3,771
Total equity	**56,158**	**(716)**	**55,442**

38. Non-adjusting post balance sheet event – Megnajet acquisition

On 2 March 2022, Xaar completed the acquisition of 100% of the share capital of Megnajet Ltd and Technomation Ltd.

The companies trade together under the name of Megnajet, and design and manufacture industrial ink management and supply systems for digital inkjet. The acquisitions will accelerate the Company's growth strategy by creating a more integrated inkjet solution whereby customers can access more of the printing ecosystem (such as ink supply systems and the electronics) from Xaar.

The initial combined cash consideration of £3,600,000 (£1,800,000 for each of Megnajet Ltd and Technomation Ltd) was paid on completion, with an additional combined £400,000 deferred consideration (£200,000 for each of Megnajet Ltd and Technomation Ltd) to be paid out in two years. The Board expects the acquired expertise and resource will contribute to the long-term profitable growth in Xaar's core printhead business. The acquisition accounting is not yet complete due to the timing of the transaction. Due to the short time since the acquisition of Megnajet Ltd and Technomation Ltd and date of the financial statements, and the work yet to be completed with regard to transitioning the entities to IFRS, this presents difficulties in performing an accurate calculation of the results as if the acquisition of Megnajet Ltd and Technomation Ltd had occurred on 1 January 2021. Therefore the Board has decided that it is impracticable to present the pro-forma revenue and profit.

39. Subsidiary audit exemption

The following companies are exempt from the requirements relating to the audit of individual accounts for the year ended 31 December 2021 by virtue of section 479A of the Companies Act 2006: XaarJet Limited (03375961), XaarJet (Overseas) Limited (04312431), Xaar Technology Limited (02469592), Xaar Digital Limited (03588121), Xaar Trustee Limited (03025096), Xaar 3D Holdings Limited (11425540), and FFEI Limited (03244452).

Company balance sheet
as at 31 December 2021

	Notes	2021 £'000	2020 £'000
Fixed assets			
Tangible fixed assets	3	**1,059**	39
Investments	4	**92,893**	82,055
		93,952	82,094
Current assets			
Debtors	5	**8,803**	5,572
Cash at bank and in hand		**9,979**	7,051
		18,782	12,623
Total assets		**112,734**	94,717
Creditors: amounts falling due within one year			
Trade and other payables	6	**(23,977)**	(9,280)
Lease liabilities	3	**(85)**	(16)
		(24,062)	(9,296)
Net current assets		**(5,280)**	3,327
Total assets less current liabilities		**88,672**	85,421
Creditors: amounts falling due after more than one year			
Lease liabilities	3	**(776)**	(19)
Other financial liabilities		**(3,354)**	-
		(4,130)	(19)
Provisions for liabilities	7	**(250)**	–
Net assets		**84,292**	85,402
Capital and reserves			
Called up share capital	9	**7,844**	7,833
Share premium account	9	**29,427**	29,328
Other reserves	9	**37,108**	36,723
Own shares	9	**(1,903)**	(1,937)
Share-based payment reserve	9	**3,780**	3,520
Profit and loss account		**8,036**	9,935
Equity shareholders' funds		**84,292**	85,402

Xaar plc reported a loss for the financial year ended 31 December 2021 of £1,867,000 (2020: profit of £6,663,000).

As permitted by section 408 of the Companies Act 2006, the Company has elected not to present its own profit and loss account for the year.

The financial statements of Xaar plc, registered number 3320972, were approved by the Board of Directors and authorised for issue on 29 March 2022. They were signed on its behalf by:

John Mills
Chief Executive Officer

Ian Tichias
Chief Financial Officer

Company statement of changes in equity
for the year ended 31 December 2021

	Notes	Called up share capital £'000	Share premium account £'000	Other reserves £'000	Own shares £'000	Share-based payments £'000	Profit and loss account £'000	Total £'000
At 1 January 2020		7,833	29,328	36,561	(2,656)	3,440	3,982	78,488
Profit for the financial year		–	–	–	–	–	6,663	6,663
Total comprehensive income for the period		–	–	–	–	–	6,663	6,663
Own shares sold in the period		–	–	–	719	–	–	719
Share option exercises		–	–	–	–	–	(710)	(710)
Capital contribution for share-based payments	4	–	–	162	–	–	–	162
Credit to equity for equity-settled share-based payments	10	–	–	–	–	80	–	80
At 31 December 2020		**7,833**	**29,328**	**36,723**	**(1,937)**	**3,520**	**9,935**	**85,402**
Loss for the financial year		–	–	–	–	–	(1,867)	(1,867)
Total comprehensive expense for the period		–	–	–	–	–	(1,867)	(1,867)
Own shares sold in the period		–	–	–	34	–	–	34
Share option exercises		11	99	–	–	–	(32)	78
Capital contribution for share-based payments	4	–	–	385	–	–	–	385
Credit to equity for equity-settled share-based payments	10	–	–	–	–	260	–	260
At 31 December 2021		**7,844**	**29,427**	**37,108**	**(1,903)**	**3,780**	**8,036**	**84,292**

The share premium account and other reserves are non-distributable.

Other reserves represent the profit from the sale of a subsidiary, the non-distributable portion of the dividend received in Xaar plc from Xaar Digital Limited and the capital contribution to investments relating to share-based payments.

The share-based payment reserve represents the cumulative charge made under IFRS 2 in relation to share options and LTIP awards.

Full details of share capital, share premium and own shares are given in notes 26, 27 and 28 to the consolidated financial statements.

Notes to the Company financial statements
for the year ended 31 December 2021

1. Significant accounting policies

Basis of accounting

The separate financial statements of the Company are presented as required by the Companies Act 2006 and in accordance with FRS 101 ('Financial Reporting Standard 101') 'Reduced Disclosure Framework' as issued by the Financial Reporting Council. The results of Xaar plc are included in the consolidated financial statements of Xaar plc.

As permitted by FRS 101, the Company has taken advantage of the disclosure exemptions available under that standard in relation to IFRSs issued but not effective, share-based payments, financial instruments, capital management, presentation of comparative information in respect of certain assets, presentation of a cash flow statement and certain related party transactions.

Where required, equivalent disclosures are given in the consolidated financial statements of Xaar plc.

The financial statements have been prepared under the historical cost convention.

The principal accounting policies adopted are the same as those set out in note 3 of the consolidated financial statements except as noted below. They have all been applied consistently throughout the year and the preceding year.

Share-based payments

The share-based payment reserve represents the cumulative charge made under IFRS 2 in relation to share options and LTIP awards. The costs related to employees contracted with other Group entities are recharged from Xaar plc to the related entity.

Going concern

The Company's business activities, together with the factors likely to affect its future development, performance and position, are set out in the Strategic Report on pages 12 to 15. Notes 21 and 22 to the consolidated financial statements include a description of the Company's objectives, policies and processes for managing its capital; its financial risk management objectives; details of its financial instruments and hedging activities; and its exposure to credit risk and liquidity risk.

After making enquiries, and having regard to the principal risks, the Directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. The Directors have assessed the Company's forecasts and cash flow projections for the period to 30 June 2023, which have undergone reverse stress tests by significantly reducing revenue across the period, and identified cost mitigations. For this reason, we continue to adopt the going concern basis in preparing the financial statements.

Please refer to Directors' report on page 67 for going concern and note 3 to the consolidated financial statements for more detail.

Investments

Fixed asset investments in subsidiaries are shown at cost less provision for impairment and include capital contributions arising from share-based payments. Each year, the Company carries out impairment tests of its investments which require estimates to be made of the value in use of its CGUs and groups of CGUs. The value in use calculations are dependent on estimates of future cash flows, long-term growth rates and appropriate discount rates to be applied to future cash flows.

For investments in subsidiaries acquired for consideration, including the issue of shares qualifying for merger relief, cost is measured by reference to the nominal value only of the shares issued. Any premium is ignored. As the merger relief arose from transactions before the introduction of FRS 101, the transaction has utilised grandfathering relief rather than recalculating and presenting under appropriate FRS 101 treatment.

Leases

The Company assesses whether a contract is or contains a lease, at inception of the contract. The Company recognises a right-of-use asset and a corresponding lease liability with respect to all lease arrangements in which it is the lessee, except for short-term leases (defined as leases with a lease term of 12 months or less) and leases of low-value assets. For these leases, the Company recognises the lease payments as an operating expense on a straight-line basis over the term of the lease unless another systematic basis is more representative of the time pattern in which economic benefits from the leased assets are consumed. Please refer to page 125, note 3 to the consolidated financial statements for more detail.

Dividends

Dividend income is recognised when an irrevocable right to receive payment has been established provided that it is probable that the economic benefits will flow to the Company and the amount of income can be measured reliably.

2. Profit/(loss) for the year

As permitted by section 408 of the Companies Act 2006, the Company has elected not to present its own profit and loss account for the year.

The average number of employees throughout 2021 was 31 (2020: 32). Staff costs amounted to £2,652,000 (Restated 2020: £2,328,000) including share-based payments. Information about the remuneration of Directors is provided in the audited part of the Directors' Remuneration report on page 83. For the remuneration of key management personnel of the Company see note 34 – Related party transactions of the consolidated financial statements.

The Directors' Remuneration report can be found on page 83

The audit fee for the audit of the Company's financial statements in 2021 was £20,000 (2020: £20,000).

The figures for the auditor's remuneration for the Company required by regulation 5(1)(b) of the Companies (Disclosure of Auditor Remuneration and Liability Limitation Agreements) Regulations 2008 are not presented as the consolidated financial statements comply with this regulation on a consolidated basis.

3. Tangible fixed assets

	Right-of-use asset – building £'000
Cost	
At 1 January 2021	44
Additions	1,166
Transfer to subsidiary	(44)
At 31 December 2021	1,166
Depreciation	
At 1 January 2021	(5)
Charge for the year	(107)
Transfer to subsidiary	5
At 31 December 2021	(107)
Carrying amount	
At 31 December 2021	1,059
At 31 December 2020	39

Set out below are the carrying amounts of lease liabilities (included under interest-bearing loans and borrowings) and the movements during the period:

	2021 £'000	2020 £'000
At 1 January	**35**	–
Additions	**896**	45
Accretion of interest	**17**	–
Payments	**(51)**	(9)
Exchange movement	**–**	(1)
Transfer to subsidiary	**(35)**	–
At 31 December	**862**	(35)
Current	**85**	16
Non-current	**776**	19
	861	35

The table below summarises the maturity profile of the Group's financial liabilities based upon the contractual undiscounted payments for the year.

	2021 £'000	2020 £'000
On demand	**–**	–
Less than three months	**26**	–
Four to 12 months	**77**	17
One to five years	**384**	19
More than five years	**460**	–
	947	36

The following are the amounts recognised in profit or loss:

	2021 £'000	2020 £'000
Depreciation expense of right-of-use assets	**107**	6
Interest expense on lease liabilities	**17**	–
Total amount recognised in profit or loss	**124**	6

4. Investments

	2021 £'000	2020 £'000
Subsidiary undertakings held at cost		
At beginning of the year	**82,055**	32,893
Additions in the year	**10,453**	49,000
Capital contributions arising from share-based payments	**385**	162
At end of the year	**92,893**	82,055

The Directors believe that the carrying value of the investments is supported by their underlying net assets.

5. Debtors

	2021 £'000	2020 £'000
Amounts receivable within one year		
Amounts owed by Group undertakings	**8,638**	5,572
Trade debtors	**90**	–
Other debtors	**75**	–
	8,803	5,572

Amounts owed by Group undertakings are trading balances and interest is not charged and is payable on demand.

6. Creditors

	2021 £'000	2020 £'000
Amounts falling due within one year		
Amounts owed to Group undertakings	**21,811**	9,124
Other payables and accruals	**577**	156
Other financial liabilities	**1,589**	–
	23,977	9,280

Amounts falling due after one year	2021 £'000	2020 £'000
Other financial liabilities	**3,354**	–

Amounts owed to Group undertakings are trading balances under normal commercial terms and interest is not charged and is payable on demand.

The other financial liabilities represent the deferred consideration in relation to the acquisition of FFEI Limited split between the current due in 2022 (£1,589,000) and non-current portion. Further details are in note 36 to the consolidated financial statements.

7. Provisions

	2021 £'000	2020 £'000
Current		
At 1 January	–	119
Additional provision in the year	44	–
Utilisation of provision	(44)	(119)
At 31 December	–	–
Non-current		
Provision for dilapidation	250	–
	250	–

Current provision movements relate to restructuring costs arising in Xaar plc. Non-current provisions relate to provision for dilapidation of Xaar Waterbeach office which form part of right-of-use assets and are depreciated over the lease term.

8. Dividends

There were no dividends declared or paid during the current and preceding year.

9. Share capital and share premium account

Full details of movements in share capital, share premium account, other reserves, own shares and the share option payment reserve are given in notes 26, 27, 28 and 30 to the consolidated financial statements.

10. Share-based payments

Equity-settled share option scheme

The Company's share option schemes are open to all employees of the Company. Options are exercisable at a price equal to the average quoted market price of the Company's shares on the date of grant. The vesting period is three years. The vesting criteria of these options are disclosed in note 32 to the consolidated financial statements. If the options remain unexercised after a period of ten years from the date of grant, 42 months in the case of the Share Save Scheme, or five years in the case of the Share Incentive Plan, the options expire. Save as permitted in the share option scheme rules, options lapse on an employee leaving the Company.

The weighted average share price at the date of exercise for share options exercised during the period was £1.67 (2020: £0.53). The options outstanding at 31 December 2021 had a weighted average remaining contractual life of two and a half years (2020: two and a half years), and a range of exercise prices between 0 pence and 227 pence (2020: 0 pence and 344 pence).

The performance conditions relating to the above share options and the exercise prices of options outstanding at the year-end are given in note 32 to the consolidated financial statements.

Long-Term Incentive Plan

The Company's Long-Term Incentive Plan is open to all employees of the Company. Vesting of Performance Share Awards made under this scheme is conditional upon the achievement of performance conditions. Full details of the performance conditions are shown in note 32 of the consolidated financial statements. All awards made under this scheme are exercisable within three to ten years after the date of grant. Save as permitted in the Long-Term Incentive Plan rules, awards lapse on an employee leaving the Company.

The weighted average share price at the date of exercise for awards exercised during the period was £1.67 (2020: £0.45). The awards outstanding at 31 December 2021 had a weighted average remaining contractual life of nine years (2020: nine years). All awards have a £nil exercise price.

Groups Deferred Bonus Plan

Under the Group's Deferred Bonus Plan, executives receive 70% of the participant's bonus achieved in cash and 30% in the form of rights to deferred shares of Xaar plc. These awards are subject only to service conditions, i.e. the requirement for recipients of awards to remain in employment with the Company over the vesting period. The awards are granted on 14 October 2021. All of these awards have been granted in respect of the participant's bonus for the Company's financial year which ended on 31 December 2020 and will vest on the dealing day following the announcement by the Company of its annual results for 2022 (assumed 24 March 2023) or, if later, the date on which the Committee determines ("the normal vesting date").

The weighted average share price at the date of exercise for awards exercised during the period was £nil (2020: £nil). The options outstanding at 31 December 2021 had a weighted average remaining contractual life of one year and three months (2020: nil). In 2021, Deferred Bonus Plan awards were made in October. The aggregate of the estimated fair values of grants made on that date is £60,000.

11. Subsidiary undertakings

The following entities are the subsidiary undertakings of the Company:

Name	Country of incorporation	Address of registered office	Principal activity	Issued and fully paid up share capital	Proportion of ordinary share capital held by the Company
Xaar Technology Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Research and development	4,445,322 ordinary £1 shares	100%
XaarJet Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Manufacturing, research and development and sales and marketing	2 ordinary £1 shares	100%
XaarJet (Overseas) Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Sales and marketing	1 ordinary £1 share	100%
Xaar Trustee Limited[1]	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Trustee	2 ordinary £1 shares	100%
Xaar Digital Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Treasury	100 ordinary £1 shares	100%
Xaar 3D Holdings Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Holding company	1,100 ordinary shares of £0.01 each	100%
Xaar US Holdings Inc.	USA	1209 Orange Street, Wilmington, New Castle County, Delaware, USA	Holding company	10,000 shares of common stock $1 each	100%
Engineered Printing Solutions[2]	USA	201 Tennis Way, East Dorset, VT 05253, USA	Manufacturing, sales and marketing	200 shares of common stock $1 each	100%
Xaar Americas Inc.[2]	USA	1000 Post and Paddock, Suite 405, Grand Prairie, TX 75050, USA	Sales and marketing	10,000 shares of common stock US$1 each	100%
Xaar Inkjet Technology (Shenzhen) Company Limited	China	Room 409, Floor 4, Building 13, Fuhai Industrial Zone, Fuzhou Avenue, Shenzhen, China	Sales and marketing	30 ordinary shares of £10,000 each	100%
FFEI Limited	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Manufacturing, sales and marketing	100,000 ordinary £1 shares	100%
Megnajet Ltd[3]	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Manufacturing, sales and marketing	1 ordinary £1 share	100%
Technomation Ltd[3]	England & Wales	Cambridge Research Park, Waterbeach, Cambridge, CB25 9PE	Research and development	100 ordinary £1 shares	100%

1 Xaar Trustee Limited shares are held by Xaar Technology Limited.
2 Xaar Americas Inc and Engineering Printing Solutions shares are held by Xaar US Holdings Inc.
3 Megnajet Ltd and Technomation Ltd were acquired by Xaar plc on 2 March 2022. See note 38 to the consolidated financial statements for more detail.

Five year record

	2021 Continuing operations £'000	2020 Continuing operations £'000	2019[1] £'000	2018 £'000	2017 £'000
Summarised consolidated results					
Results					
Revenue	**59,254**	47,984	49,379	60,468	100,142
Gross profit	**20,190**	13,010	12,290	29,496	47,045
Adjusted (loss)/profit before tax (note 4)	**(571)**	(3,911)	(7,952)	4,523	18,012
Adjusted profit/(loss) after tax (note 14)	**209**	(4,038)	(11,632)	6,930	16,413
Adjusted diluted earnings per share (note 14)	**(1.0p)**	(5.2p)	(15.1p)	10.0p	20.7p
Statutory profit before tax	**994**	(4,322)	(10,937)	280	12,290
Statutory earnings per share	**0.9p**	(5.7p)	(18.7p)	3.6p	14.3p
Dividends pence per share	**–**	–	–	1.0p	10.2p
Assets employed					
Net cash[2]	**25,051**	18,117	25,322	27,946	44,697

1 In the transition to IFRS 15 & 16, the Group used the modified approach and the impact on prior years was adjusted through retained earnings. Comparatives were not restated.
2 Net cash is made up of cash and cash equivalents, treasury deposits less borrowings and assets held for sale.

Notice of the Annual General Meeting

Notice is hereby given that the twenty-fifth Annual General Meeting ('AGM') of Xaar plc (the 'Company') will be held at Xaar plc, 1 Hurricane Close, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XX on Wednesday 25 May 2022 at 9:30am for the following purposes:

Ordinary business

To consider and, if thought fit, pass the following Resolutions which will be proposed as Ordinary Resolutions:

1. THAT the Company's annual financial statements for the financial year ended 31 December 2021, together with the Directors' report and auditor's report on those financial statements, be received and adopted.
2. THAT Ernst & Young LLP be re-appointed as the Company's auditors to hold office from the conclusion of this meeting until the conclusion of the next general meeting of the Company at which financial statements are laid.
3. THAT the Directors be authorised to determine the remuneration of the auditors.
4. THAT Dr Robert Mills be re-elected as a Director of the Company.
5. THAT Andrew Herbert be re-elected as a Director of the Company.
6. THAT Christopher Morgan be re-elected as a Director of the Company.
7. THAT Ian Tichias be re-elected as a Director of the Company.
8. THAT Alison Littley be re-elected as a Director of the Company.
9. THAT the Directors' Remuneration report (excluding the Directors' Remuneration Policy which is set out on pages 86 to 89 of the Annual Report) for the year ended 31 December 2021 be approved.

Special business

To consider and, if thought fit, pass the following Resolutions which will be proposed in the case of Resolution 10 as an Ordinary Resolution and in the case of Resolutions 11 to 13 as Special Resolutions:

10. THAT, in substitution for all existing authorities including the authority conferred on the Directors of the Company by Article 4(b) of the Company's Articles of Association, pursuant to and in accordance with section 551 of the Companies Act 2006 ('Act') the Directors of the Company be hereby generally and unconditionally authorised to exercise all powers of the Company to allot equity securities (within the meaning of section 560 of the Act), or grant rights to subscribe for, or convert any security into, shares in the Company ('Rights'):

    (i) up to an aggregate nominal value of £2,614,874 (being the nominal value of approximately one third of the issued share capital of the Company); and

    (ii) up to an aggregate nominal value of £5,229,749 (being the nominal value of approximately two thirds of the issued share capital of the Company) (such amount to be reduced by the nominal amount of any equity securities allotted or Rights granted under paragraph (i)) in connection with an offer by way of a rights issue (as defined in the Listing Rules issued by the Financial Conduct Authority pursuant to Part VI of the Financial Services and Markets Act 2000) or other pre-emptive offer to:

        (a) the holders of ordinary shares of 10 pence each in the capital of the Company ('ordinary shares') in proportion (as nearly as may be practicable) to the respective numbers of ordinary shares held by them; and

        (b) holders of other equity securities, as required by the rights of those securities or, subject to such rights, as the Directors otherwise consider necessary, and so that, in each case, the Directors of the Company may impose any limits or restrictions and make any arrangements which they consider necessary or appropriate to deal with treasury shares, fractional entitlements, record dates, legal, regulatory or practical problems in, or under the laws of, any territory or the requirements of any regulatory body or stock exchange or any other matter.

    The authority conferred by this resolution will expire on the earlier of the next Annual General Meeting of the Company held after the date on which this resolution becomes unconditional and the date 15 months after the passing of this Resolution, save that the Company may at any time before such expiry make any offer(s) or enter into any agreement(s) which would or might require shares to be allotted or Rights to be granted after such expiry and the Directors may allot shares or grant Rights in pursuance of any such offer(s) or agreement(s) as if the authority conferred hereby had not expired. This Resolution revokes and replaces all unexercised authorities previously granted to the Directors to allot shares or grant Rights but without prejudice to any allotment of shares or grant of Rights already made, offered or agreed to be made pursuant to such authorities.

11. THAT, subject to the passing of Resolution 10, the Directors of the Company be authorised to allot equity securities (as defined in section 560 of the Act) for cash under the authority conferred by that Resolution and/or to sell ordinary shares held by the Company as treasury shares as if section 561 of the Act did not apply to any such allotment or sale, provided that such authority shall be limited to:

    (a) the allotment of equity securities in connection with an offer of equity securities (but, in the case of the authority granted under paragraph (ii) of Resolution 10, by way of a rights issue only):

        (i) to the holders of ordinary shares in proportion (as nearly as may be practicable) to their respective holdings; and

        (ii) to holders of other equity securities as required by the rights of those securities or as the Directors otherwise consider necessary, but subject to such exclusions or other arrangements as the Directors of the Company may deem necessary or expedient in relation to treasury shares, fractional entitlements, record dates, legal or practical problems in or under the laws of any territory or the requirements of any regulatory body or stock exchange; and

Special business continued

(b) the allotment of equity securities or sale of treasury shares (otherwise than pursuant to paragraph (i) of this Resolution) to any person up to an aggregate nominal amount of £392,231.

The authority granted by this Resolution will expire at the conclusion of the Company's next Annual General Meeting after the passing of this Resolution or, if earlier, at the close of business on the date 15 months after the passing of this Resolution, save that the Company may, before such expiry make offers or agreements which would or might require equity securities to be allotted (or treasury shares to be sold) after the authority expires and the Directors of the Company may allot equity securities (or sell treasury shares) in pursuance of any such offer or agreement as if the authority had not expired.

12. THAT, subject to the passing of Resolution 10, the Directors of the Company be authorised in addition to any authority granted under Resolution 11 to allot equity securities (as defined in section 560 of the Act) for cash under the authority conferred by Resolution 10 and/or to sell ordinary shares held by the Company as treasury shares as if section 561 of the CA 2006 did not apply to any such allotment or sale, provided that such authority shall be:

(a) limited to the allotment of equity securities or sale of treasury shares up to an aggregate nominal amount of £392,231; and

(b) used only for the purpose of financing (or refinancing, if the authority is to be used within six months after the original transaction) a transaction which the Directors of the Company determine to be an acquisition or other capital investment of a kind contemplated by the Statement of Principles on Disapplying Pre-Emption Rights most recently published by the Pre-Emption Group prior to the date of this notice.

The authority granted by this Resolution will expire at the conclusion of the Company's next Annual General Meeting after this Resolution is passed or, if earlier, at the close of business on the date 15 months after the passing of this Resolution, save that the Company may, before such expiry make offers or agreements which would or might require equity securities to be allotted (or treasury shares to be sold) after the authority expires and the Directors of the Company may allot equity securities (or sell treasury shares) in pursuance of any such offer or agreement as if the authority had not expired.

13. That the Company be generally and unconditionally authorised for the purposes of section 701 of the Act to make one or more market purchases (within the meaning of section 693(4) of the Act) of ordinary shares provided that:

(a) the maximum aggregate number of ordinary shares authorised to be purchased is 11,688,488 (representing 14.9% of the issued ordinary share capital);

(b) the minimum price (excluding expenses) which may be paid for an ordinary share is the par value of the shares;

(c) the maximum price (excluding expenses) which may be paid for an ordinary share is an amount equal to the higher of (i) 105% of the average of the middle market quotations for an ordinary share as derived from the London Stock Exchange Daily Official List for the five business days immediately preceding the day on which that ordinary share is purchased, and (ii) the higher of the price of the last independent trade and the highest current independent bid on the trading venue where the purchase is carried out;

(d) this authority shall expire at the conclusion of the next Annual General Meeting of the Company, or, if earlier, at the close of business on the date which is 15 months after the passing of this Resolution unless renewed, revoked or varied before that time; and

(e) the Company may make a contract to purchase ordinary shares under this authority before the expiry of the authority which will or may be executed wholly or partly after the expiry of the authority, and may make a purchase of ordinary shares in pursuance of any such contract.

By order of the Board

Camila Cottage
Company Secretary

29 March 2022

Notes

1. A member entitled at the meeting may appoint one or more proxies to exercise all or any of the member's rights, to speak at the meeting. A proxy need not be a member of the Company. If a member appoints more than one proxy, each proxy must be appointed to exercise the rights attached to a different share or shares held by the member. If a member wishes to appoint one or more proxies they may do so at www.signalshares.com. If not already registered you will need your Investor Code to do so, this can be found on your share certificate. If you need help with voting online, or require a paper proxy form, please contact our registrar, Link Group by email at enquiries@linkgroup.co.uk , or you may call Link on 0371 664 0391. Calls are charged at the standard geographic rate and will vary by provider. Calls outside the United Kingdom will be charged at the applicable international rate. We are open between 09:00 – 17:30, Monday to Friday excluding public holidays in England and Wales.
2. To be effective, the proxy vote must be submitted at www.signalshares.com so as to have been received by the Company's registrars not less than 48 hours (excluding weekends and public holidays) before the time appointed for the meeting or any adjournment of it. Any power of attorney or other authority under which the proxy is submitted must be returned to the Company's registrars, Link Group, PXS 1, Central Square, 29 Wellington Street, Leeds LS1 4DL. If a paper form of proxy is requested from the registrar, it should be completed and returned to Link Group, PXS 1, Central Square, 29 Wellington Street, Leeds LS1 4DL to be received not less than 48 hours before the time of the meeting.
3. Any person to whom this notice is sent who is a person nominated under section 146 of the Companies Act 2006 to enjoy information rights (a 'Nominated Person') may, under an agreement between him/her and the shareholder by whom he/she was nominated, have a right to be appointed (or to have someone else appointed) as a proxy for the Annual General Meeting. If a Nominated Person has no such proxy appointment right or does not wish to exercise it, he/she may, under any such agreement, have a right to give instructions to the shareholder as to the exercise of voting rights.
4. The statement of the rights of shareholders in relation to the appointment of proxies in paragraphs 1 and 2 above does not apply to Nominated Persons. The rights described in these paragraphs can only be exercised by shareholders of the Company.
5. In accordance with Regulation 41 of the Uncertified Securities Regulations 2001, the Company specifies that only those members entered on the register of members of the Company as at close of business on 23 May 2022 (or in the event the meeting is adjourned, on the register of members 48 hours before the time of any adjourned meeting) shall be entitled to vote at the meeting in respect of the number of shares registered in their name at that time. Changes to entries on the register of members after close of business on 23 May 2022 (or in the event the meeting is adjourned, on the register of members less than 48 hours before the time of any adjourned meeting) shall be disregarded in determining the rights of any person to vote at the meeting.
6. Copies of Directors' service agreements, the terms of appointment of Non-Executive Directors, and the register of Directors' interests kept by the Company under section 808 of the Companies Act 2006 will be available 15 minutes prior to the commencement of the meeting and will remain open and accessible during the continuance of the meeting to any person attending the meeting.
7. Biographical details of all Directors offering themselves for re-appointment are set out on pages 60 and 61 of the Annual Report and Accounts.
8. Shareholders should note that it is possible that, pursuant to requests made by shareholders of the Company under section 527 of the Companies Act 2006, the Company may be required to publish on a website a statement setting out any matter relating to: (i) the audit of the Company's accounts (including the auditor's report and the conduct of the audit) that are to be laid before the Annual General Meeting; or (ii) any circumstance connected with an auditor of the Company ceasing to hold office since the previous meeting at which annual accounts and reports were laid in accordance with section 437 of the Companies Act 2006. The Company may not require the shareholders requesting any such website publication to pay its expenses in complying with sections 527 or 528 of the Companies Act 2006. Where the Company is required to place a statement on a website under section 527 of the Companies Act 2006, it must forward the statement to the Company's auditor not later than the time when it makes the statement available on the website. The business which may be dealt with at the Annual General Meeting includes any statement that the Company has been required under section 527 of the Companies Act 2006 to publish on a website.

Notes continued

9. In order to facilitate voting by corporate representatives at the meeting, arrangements will be put in place at the meeting so that: (i) if a corporate shareholder has appointed the Chairman of the meeting as its corporate representative to vote on a poll in accordance with the directions of all of the other corporate representatives for that shareholder at the meeting, then on a poll those corporate representatives will give voting directions to the Chairman and the Chairman will vote (or withhold a vote) as corporate representative in accordance with those directions; and (ii) if more than one corporate representative for the same corporate shareholder has not appointed the Chairman of the meeting as its corporate representative, a designated corporate representative will be nominated, from those corporate representatives, who will vote on a poll and the other corporate representatives will give voting directions to that designated corporate representative. Corporate shareholders are referred to in the guidance issued by the Institute of Chartered Secretaries and Administrators on proxies and corporate representatives (www.icsa.org.uk) for further details of this procedure. The guidance includes a sample form of appointment letter if the Chairman is being appointed as described in (i) above.

10. CREST members who wish to appoint a proxy or proxies through the CREST electronic proxy appointment service may do so by using the procedures described in the CREST Manual. CREST Personal Members or other CREST sponsored members, and those CREST members who have appointed a service provider(s), should refer to their CREST sponsor or voting service provider(s), who will be able to take the appropriate action on their behalf.

11. In order for a proxy appointment or instruction made using the CREST service to be valid, the appropriate CREST message (a 'CREST Proxy Instruction') must be properly authenticated in accordance with CRESTCo's specifications, and must contain the information required for such instruction, as described in the CREST Manual. The message, regardless of whether it constitutes the appointment of a proxy or is an amendment to the instruction given to a previously appointed proxy must, in order to be valid, be transmitted so as to be received by the issuer's agent (ID RA10) by 9:30am on 23 May 2022. For this purpose, the time of receipt will be taken to be the time (as determined by the timestamp applied to the message by the CREST Application Host) from which the issuer's agent is able to retrieve the message by enquiry to CREST in the manner prescribed by CREST. After this time any change of instructions to proxies appointed through CREST should be communicated to the appointee through other means.

12. CREST members and, where applicable, their CREST sponsors, or voting service providers should note that CRESTCo does not make available special procedures in CREST for any particular message. Normal system timings and limitations will, therefore, apply in relation to the input of CREST Proxy Instructions. It is the responsibility of the CREST member concerned to take (or, if the CREST member is a CREST personal member, or sponsored member, or has appointed a voting service provider, to procure that his CREST sponsor or voting service provider(s) take(s)) such action as shall be necessary to ensure that a message is transmitted by means of the CREST system by any particular time. In this connection, CREST members and, where applicable, their CREST sponsors or voting system providers are referred, in particular, to those sections of the CREST Manual concerning practical limitations of the CREST system and timings.

13. The Company may treat as invalid a CREST Proxy Instruction in the circumstances set out in Regulation 35(5)(a) of the Uncertificated Securities Regulations 2001 (as amended).

14. As at 7am on 29 March 2022, the Company's issued share capital comprised 78,446,230 ordinary shares of 10 pence each. Each ordinary share carries the right to one vote at a general meeting of the Company, except for the shares held in trust for the Xaar Share Incentive Plan totalling 54,067 ordinary shares and, therefore, the total number of voting rights in the Company as at 7am on 29 March 2022 is 78,392,163.

15. Any member has the right to ask questions. The Company must answer any such question relating to the business being dealt with at the meeting but no such answer need be given if: (a) to do so would interfere unduly with the preparation for the meeting or involve the disclosure of confidential information; (b) the answer has already been given on a website in the form of an answer to a question; or (c) it is undesirable in the interests of the Company or the good order of the meeting that the question be answered.

16. You may vote your shares electronically at www.signalshares.com. On the home page, search "Xaar plc" and then log in or register, using your Investor Code. To vote, click on the "Vote Online Now" button.

17. A copy of this Notice, and other information required by section 311A of the Companies Act 2006, can be found at www.xaar.com.

Link Group, the Company's registrar, has launched a shareholder app: LinkVote+.

It's free to download and use and gives shareholders the ability to access their records at any time and attend virtual AGMs.

The app also allows users to submit a proxy appointment quickly and easily online rather than through the post.

The app is available to download on the Apple App Store and Google Play.

LINK VOTE+

Company information and advisors

Registered office
3950 Cambridge Research Park
Waterbeach
Cambridge CB25 9PE

Registered number
3320972

Company Secretary
Camila Cottage

Brokers
Investec
30 Gresham Street
London, EC2V 7QP

Registered auditor
Ernst & Young LLP
Cambridge Business Park
Cowley Rd
Cambridge CB4 0WZ

Solicitors
Mills & Reeve LLP
Botanic House
100 Hills Road
Cambridge CB2 1PH

Principal Bankers
HSBC Bank plc
63-64 St Andrews Street
Cambridge CB2 3BZ

Registrars
Link Group
10th Floor
Central Square
29 Wellington Street
Leeds LS1 4DL

Unsolicited mail:
The Company is obliged by law to make its share register publicly available should a request be received. As a consequence, shareholders may receive unsolicited mail from organisations that use it as a mailing list. Shareholders wishing to limit the amount of such mail should either write to Mailing Preference Service, DMA House, 70 Margaret Street, London W1W 8SS, register online at www.mpsonline.org.uk or call the Mailing Preference Service ('MPS') on +44 (0)845 703 4599. MPS is an independent organisation which offers a free service to the public.

Warning to shareholders – boiler room scams
Each year in the UK, £1.2bn is lost to investment fraud, with the average victim losing around £20,000. What is more, it is estimated that only 10% of the people that become victims of investment fraud actually report it.

Investment scams are becoming ever more sophisticated – designed to look like genuine investments, they are increasingly difficult to spot. They are targeted at those most at risk, typically people in retirement who are actively seeking an investment opportunity.

Protect yourself

1. **Reject cold calls**
   If you have been cold called with an offer to buy or sell shares, it is likely to be a high-risk investment or scam. You should treat the call with extreme caution. The safest thing to do is hang up.

   If you are offered unsolicited investment advice, discounted shares, a premium price for shares you own, or free company or research reports, you should get the name of the person and organisation contacting you and take these steps before handing over any money.

2. **Check the firm on the Financial Services Register at www.fca.org.uk/register**
   The Financial Services Register is a public record of all the firms and individuals in the financial services industry that are regulated by the FCA. Use the details on the Financial Services Register to contact the firm.

3. **Get impartial advice**
   Think about getting impartial financial advice before you hand over any money. Seek advice from someone unconnected to the firm that has approached you.

REMEMBER, if it sounds too good to be true, it probably is!

If you use an unauthorised firm to buy or sell shares or other investments, you will not have access to the Financial Ombudsman Service or Financial Services Compensation Scheme if things go wrong.

Report a scam
If you suspect you have been approached by fraudsters please tell the FCA using the share fraud reporting form at www.fca.org.uk/scams, where you can find out more about investment scams.

You can also call the FCA Consumer Helpline on +44 (0)800 111 6768.

If you have lost money to investment fraud, you should report it to Action Fraud on +44 (0)300 123 2040 or online at www.actionfraud.police.uk.

Find out more at www.fca.org.uk/scamsmart

FSC www.fsc.org MIX Paper from responsible sources FSC® C022913

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