Registration number: 00251977

Vesuvius Holdings Limited

Annual Report and Financial Statements

for the Year Ended 31 December 2019

Vesuvius Holdings Limited

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Vesuvius Holdings Limited

Company Information

Directors

P André

G Young

HJ Knowles

A Tomczak

E Gingell

G Godin

EG Drysdale

Company secretary

J Smith

Registration number

00251977

Registered office

165 Fleet Street
London
EC4A 2AE

Incorporated

A Private Limited Company incorporated in England & Wales

Independent Auditors

PricewaterhouseCoopers LLP
1 Embankment Place
London
WC2N 6RH

Vesuvius Holdings Limited

Strategic Report for the Year Ended 31 December 2019

The Directors present their Strategic Report for the year ended 31 December 2019.

Fair review of the business and future developments

Vesuvius Holdings Limited (the "Company") is a holding company for investments in group undertakings, and its investing activities during the year are detailed under the investments note (note 11).

In April 2020, Vesuvius also took steps to boost its liquidity, through borrowing £200m from the Bank of England's Covid Corporate Financing Facility ("CCFF") programme and raising c.£115m (US$140m) from the US private placement ("USPP") market.

The USPP fundraising raised an equivalent amount to an existing US$140m USPP which was due to be paid in December 2020 but was repaid in August 2020.

The Directors do not envisage any change to the business of the Company in the foreseeable future.

The loss before tax for the year to 31 December 2019 is £4.9m (2018: loss £30.0m) and the net assets are £1,847.1m (2018: £1,898.8m).

Given the straightforward nature of the Company's business, the Directors are of the opinion that analysis using KPIs is not necessary for an understanding of the development, performance or position of the business.

Section 172 duties and business relationships with suppliers, customers and other stakeholders

Under Section 172 of the Companies Act 2006 ("Section 172"), the Directors have a duty to promote the success of the Company over the long term for the benefit of its shareholders, having regard to:

(a) the likely consequences of any decision in the long term,

(b) the interests of the company's employees,

(c) the need to foster the company's business relationships with suppliers, customers and others,

(d) the impact of the company's operations on the community and the environment,

(e) the desirability of the company maintaining a reputation for high standards of business conduct, and

(f) the need to act fairly as between members of the company.

The activity of the Company is mainly that of a significant holding and administrative company for its parent, Vesuvius plc. The interests of the Company and its parent are closely aligned and, as a listed company and parent of a Group of international companies (the "Group"), Vesuvius plc has ultimate responsibility for setting strategic and policy issues and is responsible for the Group's long-term success. In the consolidated 2019 Annual Report and Financial Statements of Vesuvius plc, the board of Vesuvius plc summarises the key actions taken throughout the Group in 2019 to engage with its stakeholders, including its employees, suppliers and customers, and describes the impact of the Group's operations on the community and the environment in accordance with the requirements of Section 172.

In performance of their duties throughout the year the Directors took decisions to promote the success of the Company over the long term for the benefit of shareholders, had regard to their duties under Section 172 and remained cognisant of the need to act fairly between members of the Company and consider the potential impact on all stakeholders of the decisions it made. The interests of its employees were supported by the Group's inaugural employee engagement exercise, which canvassed the opinions of employees and precipitated a series of follow-up actions aimed at supporting employees and implementing change where appropriate. With regard to the Company's need to foster business relationships with suppliers, the Company continued to agree payment terms with its suppliers and sought to pay in accordance with those terms. As an office based Company the impact of the Company's operations on the environment is limited, but the Company recycled materials during the year and continues to support the Group's environmental initiatives. The Company also continued to focus on the desirability of maintaining a reputation for high standards of business conduct with all its stakeholders, with all employees required to comply with the Group's Code of Conduct which states that Vesuvius must maintain an unquestioned reputation for integrity.

Employee engagement

Vesuvius adopts an open and honest approach to employee communications. The Company provides regular updates to employees, including direct email updates on the financial performance of the Group, the industrial environment in which it

operates and other significant operational developments. The Company's employees have access to the Vesuvius intranet which distributes Group news and events along with an employee 'app' for information dissemination. The HR department is the primary point of contact for employees on employment and workplace matters, operating with an open-door policy and advising employees of any local legal, tax, pension or other employment changes. Senior management, supported and facilitated by the HR department, encourage open dialogue. Vesuvius operates a European Works Council (EWC) that contains representatives elected from the UK workforce. European management and the EWC meet formally once a year. At this meeting, management provides an update on the performance of the business, with a focus on the developments likely to impact European employees. Other meetings are held during the year and the Chief HR Officer of Vesuvius joins part of these meetings. All members of the Group Executive Committee participate in Vesuvius plc's incentive arrangements and receive awards of Performance Shares through the Vesuvius Share Plan, which vest in accordance with measures and targets set against EPS and TSR. For certain senior managers, awards are made under the Vesuvius Medium Term Plan (MTP). These managers participate in the MTP at varying percentage levels, and awards are made in shares and based on the same measures and targets as the Annual Incentive Plan.

Principal risks and uncertainties

The management of the business and the execution of the Company's strategy are subject to a number of risks. The key business risks and uncertainties affecting the Company are considered to relate to the following:

Financial counterparty risk and liquidity risk

The treasury activities of the ultimate parent company, Vesuvius plc, are monitored and coordinated by a central treasury department on behalf of the whole Vesuvius group. Financial counterparty risk is the risk of potential failure by counterparties holding cash deposits on behalf of group companies. Liquidity risk is risk of the Company having difficulties meeting its financial obligations. The Company manages this risk by ensuring that it maintains sufficient levels of committed borrowing facilities and cash and cash equivalents to ensure that it can meet its operational cash flow requirements and any maturing financial liabilities as they fall due. For banks and financial institutions, Company policy is that only independently rated entities with a minimum rating of 'A-' are accepted as counterparties. In addition, the Company has policies and procedures in place to assess the creditworthiness of the customers with which it does business.

Recoverability of intercompany receivables

Where amounts are due from group companies with net liabilities, an assessment of their recoverability is performed to ensure that they will be able to meet their obligations as they fall due.

Other principal risks and uncertainties are integrated with the principal risks of Vesuvius plc and its subsidiary and joint venture companies ('the Group') and are not managed separately.

Covid-19

In addition to the principal risks and uncertainties disclosed in the 2019 Annual Report and Financial Statements of Vesuvius plc and those noted above specific to this entity, the Group has considered the risks on the Group's liquidity and viability in connection with the Coronavirus pandemic (COVID-19), including those that may be relevant to the Company. The Group enters this uncertain period in a robust financial position, with a strong balance sheet and liquidity position as well as covenant headroom and is acting to conserve cash so that the Group remains well positioned for long term success. Although the full extent of the potential impact on our business, operations and the global economy as a whole is not yet clear, Group management continue to respond to the COVID-19 pandemic as effectively as possible. The COVID-19 pandemic has not materially impacted the Company's financial position or its performance at the date of these financial statements.

Approved by the Board on 2 September 2020 and signed on its behalf by:

Geoffroy Godin
Geoffroy Godin (Sep 2, 2020 13:25 GMT+2)

G Godin
Director

Vesuvius Holdings Limited

Directors' Report for the Year Ended 31 December 2019

The Directors present their report and the audited financial statements for the year ended 31 December 2019.

Certain disclosures required under the Companies Act 2006 to be included within the Directors' Report have been presented within the Strategic Report to avoid duplication.

Directors of the company
The Directors who were in office during the year and up to the date of signing the financial statements were as follows:

P Andre

G Young

HJ Knowles

A Tomczak

IJ Lawson (resigned 31 October 2019)

E Gingell (appointed 15 November 2019)

G Godin (appointed 15 November 2019)

EG Drysdale

Dividends
An interim dividend for the year ended 31 December 2019 of £37.2m was paid in May 2019 to the parent company, Vesuvius plc. A second interim dividend for the year ended 31 December 2019 of £16.7m was paid in September 2019 to the parent company, Vesuvius plc

Political and charitable donations
The Company made no political or charitable donations or incurred any political expenditure during the year (2018: Nil).

Employee engagement
Director's assessment of employee engagement is presented within the strategic report.

Directors' indemnity provisions
The parent company of Vesuvius Holdings Limited maintains directors' indemnity cover for all Directors.

Disclosure of information to the auditors
Each Director has taken steps that they ought to have taken as a Director in order to make themselves aware of any relevant audit information and to establish that the Company's auditors are aware of that information. The Directors confirm that so far as they are aware there is no relevant audit information of which the Company's auditors are unaware.

Independent auditors
The auditors, PricewaterhouseCoopers LLP, are deemed to be reappointed under section 485 of the Companies Act 2006.

Going Concern
At 31 December 2019 the Company had net assets of £1,847.2m (2018: £1,898.8m). At 31 December 2019 the Company had net current liabilities of £155.2m (2018: net current assets of £23.5m). The Directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. The going concern position of the Company is linked to that of the wider Group. The liquidity of the Company, defined as undrawn committed debt facilities plus cash on balance sheet, was £541m at 31 July 2020. The estimated liquidity of the Company as at 31 August 2020, following the repayment of the US$140m USPP is £433m.

The Company is the main holding company for the Vesuvius plc group and has the ability to direct the dividend policy and in effect increase the cash that is available to it. Each year dividends are paid up to subsidiaries of the Company by operating and holding companies within the Group and as such, cash is available to be distributed to the Company by these subsidiaries if required.

In April 2020, the Group also took steps to boost its liquidity, through borrowing £200m from the Bank of England's Covid Corporate Financing Facility ("CCFF") programme and raising c.£115m (US$140m) from the US private placement ("USPP") market. The USPP fundraising raised an equivalent amount to an existing US$140m USPP which was due to be paid in December 2020 but was repaid in August 2020. This allowed the Group to have a liquidity of £710m as at 31 July 2020 and an estimated liquidity of £602m as at 31 August 2020 following the repayment of the US$140m USPP.

Directors' Report for the Year Ended 31 December 2019 (continued)

The Directors of the Company are satisfied that there are no material events or uncertainties that they are aware of which will impact the ability of the Company to continue as a going concern. Accordingly, the financial statements have been prepared on a going concern basis. Further details are provided in note 2 of the financial statements.

Post Balance sheet events

The outbreak of COVID-19 accelerated during the first half of 2020. As this event arose after the Company's year end it is treated as a non-adjusting event for accounting purposes. The Company is a holding investment company and therefore there have been no major operational impacts from COVID-19. The Directors have considered the impact of COVID-19 on performance of the Company's investments and liquidity, as well as in assessing and concluding on the Company's going concern.

In addition, as explained above, in April 2020, Vesuvius also took steps to boost its liquidity.

There are no other material events after the reporting period to disclose.

Approved by the Board on 2 September 2020 and signed on its behalf by:

Geoffroy Godin

Geoffroy Godin (Sep 2, 2020 13:25 GMT+2)

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G Godin
Director

Vesuvius Holdings Limited

Statement of Directors' Responsibilities

The Directors are responsible for preparing the Annual Report and Financial Statements in accordance with applicable law and regulation.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have prepared the financial statements in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law). Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Company and of the profit or loss of the Company for that period. In preparing these financial statements, the Directors are required to:

- select suitable accounting policies and then apply them consistently;
- state whether applicable United Kingdom Accounting Standards, comprising FRS 101, have been followed, subject to any material departures disclosed and explained in the financial statements;
- make judgements and accounting estimates that are reasonable and prudent; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies Act 2006.

The Directors are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Vesuvius Holdings Limited

Independent auditors' report to the members of Vesuvius Holdings Limited

Report on the audit of the financial statements

Opinion

In our opinion, Vesuvius Holdings Limited's financial statements:

- give a true and fair view of the state of the Company's affairs as at 31 December 2019 and of its loss for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report and Financial Statements (the "Annual Report"), which comprise: the Balance Sheet as at 31 December 2019; the Profit and Loss Account, the Statement of Comprehensive Income, the Statement of Changes in Equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' 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 remained independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Conclusions relating to going concern

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

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

However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Company's ability to continue as a going concern.

Reporting on other information

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

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, ISAs (UK) require us also to report certain opinions and matters as described below.

Independent auditors' report to the members of Vesuvius Holdings Limited (continued)

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2019 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

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

Responsibilities for the financial statements and the audit

Responsibilities of the Directors for the financial statements

As explained more fully in the Statement of Directors' Responsibilities set out on page 6, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

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

Auditors' responsibilities for the audit of the financial statements

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

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

Use of this report

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

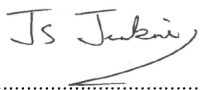
Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

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

We have no exceptions to report arising from this responsibility.



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Julian Jenkins (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP,
Chartered Accountants and Statutory Auditors
London
2 September 2020

Vesuvius Holdings Limited

Profit and Loss Account for the Year Ended 31 December 2019

	Note	2019 £ 000	2018 £ 000
Administrative expenses		(15,961)	(14,022)
GMP equalisation charge		-	(4,500)
Operating loss	3	**(15,961)**	**(18,522)**
Amounts from shares in group undertakings	4	9,173	9,284
Other interest receivable and similar income	5	39,769	12,956
Interest payable and similar expenses	6	(37,894)	(33,721)
		11,048	**(11,481)**
Loss before tax		(4,913)	(30,003)
Tax on loss	10	96	(201)
Loss for the year		(4,817)	(30,204)

The notes on pages 13 to 39 form an integral part of these financial statements.

The above results were derived from continuing operations.

Vesuvius Holdings Limited

Statement of Comprehensive Income for the Year Ended 31 December 2019

	Note	2019 £ 000	2018 £ 000
Loss for the year		(4,817)	(30,204)
Items that will not be reclassified subsequently to profit or loss			
Remeasurements of post employment benefit obligations (net)	16	7,018	598
Items that may be reclassified subsequently to profit or loss			
Tax adjustment in relation to prior year	10	-	364
Total comprehensive (expense)/income for the year		2,201	(29,242)

The notes on pages 13 to 39 form an integral part of these financial statements.

Vesuvius Holdings Limited

(Registration number: 00251977)
Balance Sheet as at 31 December 2019

	Note	2019 £ 000	2018 £ 000
Fixed assets			
Property, plant and equipment		808	559
Investments in subsidiaries	11	1,437,563	1,437,563
Debtors	12	1,973,600	1,860,251
		3,411,971	3,298,373
Current assets			
Debtors	12	1,668	4,419
Income tax asset		3,293	3,293
Cash at bank and in hand		6,479	39,551
		11,440	47,263
Creditors: Amounts falling due within one year			
Trade and other payables	19	(8,806)	(8,630)
Bank loans and overdrafts	15	(157,819)	(15,089)
Provisions for liabilities	17	(25)	-
Creditors: Amounts falling due within one year		(166,650)	(23,719)
Net current (liabilities)/assets		**(155,210)**	**23,544**
Trade and other payables	19	(1,211,368)	(1,042,030)
Bank loans and overdrafts	15	(280,145)	(453,254)
Deferred tax liabilities	10	(16,777)	(14,791)
Creditors: Amounts falling due after more than one year		(1,508,290)	(1,510,075)
Net pension asset	16	98,687	87,002
Net assets		**1,847,158**	**1,898,844**
Capital and reserves			
Called up share capital	13	10	10
Share premium account	13	105	105
Other reserves	14	643,594	643,594
Profit and loss account		1,203,449	1,255,135
Total Shareholders' funds		**1,847,158**	**1,898,844**

The notes on pages 13 to 39 form an integral part of these financial statements.

The financial statements on pages 9 to 39 were approved by the Board of Directors on 2 September 2020 and signed on their behalf by:

Geoffroy Godin
Geoffroy Godin (Sep 7, 2020 13:25 GMT+2)

G Godin

Director

Vesuvius Holdings Limited

Statement of Changes in Equity for the Year Ended 31 December 2019

	Share capital £ 000	Share premium £ 000	Other reserves £ 000	Retained earnings £ 000	Total £ 000
At 1 January 2019	10	105	643,594	1,255,135	1,898,844
Loss for the year	-	-	-	(4,817)	(4,817)
Other comprehensive income	-	-	-	7,018	7,018
Total comprehensive income	**-**	**-**	**-**	**2,201**	**2,201**
Dividends paid	-	-	-	(53,887)	(53,887)
At 31 December 2019	**10**	**105**	**643,594**	**1,203,449**	**1,847,158**

	Share capital £ 000	Share premium £ 000	Other reserves £ 000	Retained earnings £ 000	Total £ 000
At 1 January 2018	10	105	643,594	1,548,377	2,192,086
Loss for the year	-	-	-	(30,204)	(30,204)
Other comprehensive income	-	-	-	962	962
Total comprehensive expense	**-**	**-**	**-**	**(29,242)**	**(29,242)**
Dividends paid	-	-	-	(264,000)	(264,000)
At 31 December 2018	**10**	**105**	**643,594**	**1,255,135**	**1,898,844**

The notes on pages 13 to 39 form an integral part of these financial statements.

1 General information

Vesuvius Holdings Limited (the 'Company') is a holding company. The Company is a private company limited by shares and is incorporated and domiciled in England & Wales.

The address of its registered office is:
165 Fleet Street
London
EC4A 2AE

2 Accounting policies

Basis of preparation

The financial statements of the Company have been prepared in accordance with Financial Reporting Standard 101, 'Reduced Disclosure Framework' (FRS 101) and the Companies Act 2006 as applicable to companies using FRS 101. The financial statements have been prepared under the historical cost convention apart from financial assets and liabilities (including derivative instruments) which are carried at fair value through the profit or loss.

The Company proposes to continue to adopt the reduced disclosure framework of FRS 101 in its next financial statements.

The Company has split out the amounts owed by/to Group undertakings into current and non-current, to be in line with the expected repayment time frame.

The Company's parent undertaking, Vesuvius plc includes the Company in its consolidated financial statements. Therefore the Company is exempt, by virtue of section 400 of the Companies Act 2006, from the requirement to prepare consolidated financial statements. The consolidated financial statements of Vesuvius plc are prepared in accordance with International Financial Reporting Standards as adopted by the European Union and are available to the public and may be obtained from 165 Fleet Street, London EC4A 2AE.

Summary of significant accounting policies and key accounting estimates

The principal accounting policies applied in the preparation of these financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

Summary of disclosure exemptions

In these financial statements, the Company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- A cash flow statement and related notes (IAS 1 para 10(d) and IAS 7)
- comparative period reconciliation for investments; (IAS 1 Para 38)
- Disclosures in respect of related party transactions with wholly owned members of the Vesuvius plc Group (IAS 24 para 17)
- Disclosures in respect of capital management (IAS 1 para 134-136)
- Disclosures in respect of fair value measurements (IFRS 13 para 91-99)
- Disclosures in respect of leases (IFRS 16 para 52, 89-91, 93)
- The effects of new but not yet effective IFRSs (IAS 8 para 30-31)

As the consolidated financial statements of the ultimate parent undertaking, Vesuvius plc, include the equivalent disclosures, the Company has also taken the exemptions under FRS 101 available in respect of the following disclosures:

- IFRS 2 (para 45(b) and 46-52) Share Based Payment in respect of Group settled share based payments;
- Certain disclosures required by IFRS 13 (para 91-99) Fair Value Measurement and the disclosures required by IFRS 7 Financial Instrument Disclosures.

2 Accounting policies (continued)

Going concern

At 31 December 2019 the Company had net assets of £1,847.2m (2018: £1,898.8m). At 31 December 2019 the Company had net current liabilities of £155.2m (2018: net current assets of £23.5m). US$140m of an existing US private placement ("US PP facility) was due for settlement in December 2020 and was repaid in August 2020. The Directors have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future. The going concern position of the Company is linked to that of the wider Group. The liquidity of the Company, defined as undrawn committed debt facilities plus cash on balance sheet, was £541m at 31 July 2020. The estimated liquidity of the Company as at 31 August 2020, following the repayment of the US$140m USPP is £433m.

The Company is the main holding company for the Vesuvius plc group and has the ability to direct the dividend policy and in effect increase the cash that is available to it. Each year dividends are paid up to subsidiaries of the Company by operating and holding companies within the group and as such, cash is available to be distributed to the Company by these subsidiaries if required.

The Covid-19 pandemic has had a significant impact on business activity in all of Vesuvius' end markets. As a result, the group has undertaken significant cost reduction and cash preservation initiatives.

In April 2020, the Group also took steps to boost its liquidity, through borrowing £200m from the Bank of England's Covid Corporate Financing Facility ("CCFF") programme and raising c.£115m (US$140m) from the US private placement ("USPP") market. The £200m borrowed from the Bank of England matures in March 2021, with an option to extend it for up to a further 12 months. The funds were drawn down as a liquidity buffer in case of an extreme and prolonged downturn. The USPP fundraising raised an equivalent amount to an existing US$140m USPP which was due to be paid in December 2020 but was repaid in August 2020. This allowed the Group to have a liquidity of £710m as at 31 July 2020 and an estimated liquidity of £602m as at 31 August 2020 following the repayment of the US$140m USPP. The Group's debt facilities have two financial covenants: the ratios of net debt to EBITDA (maximum three times limit) and EBITDA to interest (minimum four times limit). The net debt to EBITDA covenant will change to a maximum of three and one-quarter times, after repayment of the US$140m USPP. Net debt calculations for bank covenant purposes exclude the impact of changes from IFRS 16 and will, consequently, be lower.

The directors of the Group have prepared cash flow scenarios for the Group for a period at least 12 months from the date of signing these financial statements. These forecasts reflect an assessment of current and future end market conditions and their impact on the Group's future trading performance. The analysis undertaken includes a severe but plausible downside scenario which assumes no improvement in sales from the current level of activity during the entire forecast period. This downside scenario assumes a continuation of weak markets in 2020 in line with Q2 and a further 5% decline in sales in 2021 due to a weaker first quarter relative to Q1 2020. Even in this downside scenario, the forecasts show that the Group has significant headroom in terms of both available committed liquidity and required compliance with financial covenants.

The Directors of the Company are satisfied that there are no material events or uncertainties that they are aware of which will impact the ability of the Company to continue as a going concern. Accordingly, the financial statements have been prepared on a going concern basis.

Changes in accounting policy

Initial adoption of IFRS 16 Financial Instruments

The Group has adopted IFRS 16 Leases from 1 January 2019 and, in accordance with the simplified approach, has not restated comparatives on transition. The reclassifications and adjustments arising from the new lease accounting rules are therefore recognised in the opening balance sheet on 1 January 2019.

The Group has recognised lease liabilities in relation to leases which had previously been classified as operating leases and taken the practical expedient provided for leases of low-value assets and short-term leases (shorter than twelve months). For leases that had been classified as operating leases in accordance with IAS 17 the lease liability was recognised at the present value of the remaining lease payments, discounted using the interest rate implicit in the lease if that rate could be readily determined. If that rate could not be readily determined the lessee's incremental borrowing rate was used, calculated as the local government bond rate plus an interest rate spread. The company applied an incremental borrowing rate of 1.65%.

The right of use asset was measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognised in the balance sheet as at 31 December 2018. The change in the accounting policy resulted in a recognised right of use asset and corresponding lease liability of £0.6m

Other changes in accounting policy

There are no other amendments to accounting standards, or IFRIC interpretations that are effective for the year ended 31 December 2019 that have had a material impact on the company's financial statements.

2 Accounting policies (continued)

Foreign currency transactions and balances

The financial statements are presented in 'Pounds Sterling (£)', which is also the Company's functional currency. Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or valuation where items are remeasured. Foreign exchange gains and losses resulting from the settlement of such transactions, and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies, are recognised in the Profit and Loss Account under 'Other interest receivable and similar income' and 'interest payable and similar expenses' respectively.

Tax

Tax expense represents the sum of current tax and deferred tax. Current and deferred tax are recognised in the Profit and Loss Account except to the extent that they relate to items charged or credited in the Statement of Comprehensive Income or Statement of Changes in Equity, in which case the associated tax is also recognised in those statements. In arriving at its current tax charge, the Company also makes careful assessment of the likely impact of tax law changes.

The current income tax charge is calculated on the basis of tax rates and laws that have been enacted or substantively enacted by the reporting date in the countries where the Company operates and generates taxable income.

Deferred tax is recognised 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 balance sheet 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 or from the initial recognition (other than in a business combination) of other assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit. Deferred tax is calculated at the tax rates that are expected to apply in the period when the liability is settled or the asset is realised, based on tax rates and laws that have been enacted, or substantively enacted, by the balance sheet date.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and interests in joint ventures, except where the Company 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 each balance sheet date 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 assets and liabilities 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 Company intends to settle its current tax assets and liabilities on a net basis.

Leases

The Group has adopted IFRS 16 Leases from 1 January 2019 and, in accordance with the simplified approach, has not restated comparatives on transition. The reclassifications and adjustments arising from the new lease accounting rules are therefore recognised in the opening balance sheet on 1 January 2019.

Lease liabilities are recognised at the present value of the remaining lease payments, discounted using the interest rate implicit in the lease if that rate could be readily determined. If that rate cannot be readily determined the lessee's incremental borrowing rate was used, calculated as the local government bond rate plus an interest rate spread. In cases where there was an option to terminate or extend a lease, the duration of the lease assumed for this purpose reflected the Group's existing intentions regarding such options. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable
- variable lease payments that are based on an index or a rate
- amounts expected to be payable by the lessee under residual value guarantees
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Leases of low-value assets and short-term leases (shorter than 12 months) are classified as operating leases and neither the asset nor the corresponding liability to the lessor is recognised in the Balance Sheet. Rentals payable under operating leases are charged to the Group Income Statement on a straight-line basis over the term of the lease. Benefits received and receivable as an incentive to enter an operating lease are also spread on a straight-line basis over the lease term.

Investments
Shares in subsidiaries and loans to subsidiaries are stated at cost less any impairment in value.

2 Accounting policies (continued)

Impairment of Investment in Subsidiaries
The Company carries out an annual investment impairment test, the recoverable amount of the investment is checked against its carrying value and any impairment triggers identified.

Cash and cash equivalents
Cash and cash equivalents comprise cash on hand and call deposits, and other short-term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value.

Trade and other payables
Trade and other payables are initially recognised at fair value and subsequently measured at amortised costs, using the effective interest method.

Bank Loans and overdrafts
Loans and borrowings are initially recognised at fair value net of directly attributable transaction costs. After initial recognition they are measured at amortised cost, using the effective interest method. Borrowings are classified as current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

Derivative financial instruments
The Company has not applied hedge accounting. Derivatives are measured at fair value through profit and loss. The fair value of forward foreign currency contracts is calculated using market prices at the balance sheet date.

Dividend Income
Dividend income is recognised when the right to receive payment is established.

Management charges
Management charges are invoiced to other Vesuvius group companies where costs incurred by the Company are for the benefit for other group companies. Invoices are issued and settled quarterly.

Provisions for liabilities
Provisions are recognised when the Company has a present obligation (legal or constructive) as a result of a past event, it is probable that the Group will be required to settle that obligation and a reliable estimate can be made of the amount of the obligation.

Provisions are measured at the Directors' best estimate of the expenditure required to settle the obligation at the reporting date and are discounted to present value where the effect is material.

Impairment of non-financial assets
The Directors regularly review the performance of the business and the external business environment to determine whether there is any indication that the Company's tangible and intangible assets have suffered an impairment loss. If such indication exists, the higher of the value in use and the fair value less costs to sell of the asset is estimated and compared with the carrying value in order to determine the extent, if any, of the impairment loss. For the purpose of impairment testing, the recoverable amount of an asset is the higher of (i) its fair value less costs to sell and (ii) its value in use.

Issued share capital
Equity instruments issued by the Company are recorded at the proceeds received, net of direct issue costs.

Dividends
Dividend distribution to the company's shareholders is recognised as a liability in the company's financial statements in the period in which the dividends are paid.

Defined contribution pension obligation
The amount charged to the income statement represents the contributions payable to each plan for the year. Differences between the contributions payable in the year and contributions actually paid are shown as either accruals or prepayments in the balance sheet.

2 Accounting policies (continued)

Defined benefit pension obligation

The net surplus recognised in the balance sheet for the Company's defined benefit plan is the present value of the defined benefit obligation at the balance sheet date, less the fair value of the plan assets. The defined benefit obligation is calculated by independent actuaries using the projected unit credit method and by discounting the estimated future cash flows using interest rates on high-quality corporate bonds that have terms to maturity approximating the terms of the related pension liability. Any asset recognised in respect of a surplus arising from this calculation is limited to the asset ceiling, where this is the present value of any economic benefits available in the form of refunds or reductions in future contributions in respect of the plans.

The expense for the Company's defined benefit plans is recognised in the Profit and Loss Account. Actuarial gains and losses arising on the assets and liabilities of the plan are reported within the Statement of Comprehensive Income; and gains and losses arising on settlements and curtailments are recognised in the Profit and Loss Account in the same line as the item that gave rise to the settlement or curtailment or, if material, separately reported as a component of operating profit.

The Company is the sponsoring employer of a group wide defined benefit pension plan. As there is no contractual agreement or stated group policy for charging the net defined benefit cost of the plan to participating entities, the net defined benefit cost of the pension plan is recognised fully by the sponsoring employer, which is the Company.

The Company's financial statements include the costs and obligations associated with the provision of pension and other postretirement benefits to current and former employees. It is the Directors' responsibility to set the assumptions used in determining the key elements of the costs of meeting such future obligations. These assumptions are set after consultation with the actuaries and include those used to determine regular service costs and the financing elements related to the plans' assets and liabilities. Whilst the Directors believe that the assumptions used are appropriate, a change in the assumptions could affect the profit and financial position. The pension obligations are most sensitive to a change in the discount rate and therefore could materially change in the next financial year if the discount rate changes significantly. Sensitivity disclosures are included in Note 16.

Share based payments

The Company's immediate parent company, Vesuvius plc, operates equity-settled share based payment arrangements for employees of the Group. The Company bears the expense attributable to those awards made to its employees. Equity-settled share based payments are measured at fair value at the date of grant. The fair value determined at the grant date takes account of the effect of market-based conditions, such as the Total Shareholder Return target upon which vesting for some of the awards is conditional, and is expensed on a straight-line basis over the vesting period with a corresponding increase in equity. The cumulative expense recognised is adjusted for the best estimate of the shares that will eventually vest and for the effect of other non market-based vesting conditions, such as growth in headline earnings per share, which are not included in the fair value determined at the date of grant. For grants with market-based conditions attaching to them, fair value is measured using a form of stochastic option pricing model. For all other grants, fair value is measured using the Black-Scholes model.

Financial assets

The Company holds all financial assets at amortised cost with the exception of derivative financial instruments which are held at fair value through the profit or loss. These are set out in Note 18.

Impairment of financial assets

The Company applies the IFRS 9 simplified approach to measuring expected credit losses which uses a 12-month expected loss allowance for all debtor balances. While cash and cash equivalents are also subject to the impairment requirements of IFRS 9, the identified impairment loss was also immaterial.

Critical Accounting Judgement and Estimates

Determining the carrying amount of some assets and liabilities requires the estimation of the effect of uncertain future events. The major sources of estimation uncertainty that have a significant risk of resulting in a material adjustment to the carrying amounts of assets or liabilities are noted below.

2 Accounting policies (continued)

Impairment and valuation of investments
The Company assesses its investments in subsidiaries and other companies for impairment shortly before the Company's year-end or whenever events or changes in circumstances indicate that the recoverable amount of the investment could be less than the carrying amount of the investment. If this is the case, the investment is considered to be impaired and is written down to its recoverable amount. Judgement is required in the determination of the recoverable amount as the Company evaluates various factors related to the operational and financial position of the relevant investee business, appropriate discounting and long-term growth rates.

Determining whether investments are impaired requires an estimation of the value-in-use. The value-in-use calculation requires estimation of future cash flows expected to arise, the selection of suitable discount rates and the estimation of long-term growth rates. As determining such assumptions is inherently uncertain and subject to future factors, there is the potential these may differ in subsequent periods and therefore materially change the conclusions reached. In light of this, consideration is made each year as to whether sensitivity disclosures are required for reasonably possible changes to assumptions. The annual investment impairment test is described in Note 11 below.

Impairment and classification of intercompany balances
Intercompany balances are reviewed for impairment if events or changes in circumstances indicate that the carrying amount may not be recoverable. The Company applies the IFRS 9 simplified approach to measuring expected credit losses which uses a 12-month expected loss allowance for amounts due from other group companies.

3 Operating loss

Arrived at after charging

	2019 £ 000	2018 £ 000
Employee benefits expense	6,778	6,282
GMP equalisation charge (Note 16)	-	4,500
Depreciation expense	372	80
Operating lease expense - property	-	325
Operating lease expense - other	3	7

Details of auditors' remuneration is set out in Note 9.

4 Amounts receivable from shares in group undertakings

	2019 £ 000	2018 £ 000
Intra-group management charges	8,350	7,496
Intra-group dividends received	823	1,788
	9,173	9,284

5 Other interest receivable and similar income

	2019 £ 000	2018 £ 000
Interest income on bank deposits	716	742
Interest income from loans to Group undertakings	32,140	9,976
Net interest on pension asset	2,482	2,234
Other finance income	4,431	4
	39,769	12,956

6 Interest payable and similar expenses

	2019 £ 000	2018 £ 000
Interest on bank overdrafts and borrowings	13,184	13,980
Interest expense on loans from Group undertakings	23,333	16,679
Other finance costs	1,377	3,062
	37,894	33,721

7 Staff costs

The aggregate payroll costs (including Directors' remuneration) were as follows:

	2019 £ 000	2018 £ 000
Wages and salaries	4,712	4,635
Social security costs	643	527
Other short-term employee benefits	341	(185)
Pension costs, defined contribution scheme	348	322
Pension costs, defined benefit scheme	748	616
Share-based payment charge	587	367
	7,379	6,282

The monthly average number of persons employed by the company (including Directors) during the year, analysed by category was as follows:

	2019 No.	2018 No.
Administration and support	35	32

8 Directors' remuneration

The Directors' remuneration for the year was as follows:

	2019 £ 000	2018 £ 000
Remuneration	1,435	1,233
Contributions paid to money purchase schemes	45	20
	1,480	1,253

The Directors in office at the end of the year received no remuneration in respect of their appointments as Directors. Remuneration disclosed relates to that received in relation to the ordinary course of employment as employees of Vesuvius Holdings Limited. The remuneration of Directors employed by Vesuvius plc (including that of the highest paid Director) is disclosed in the 2019 Annual Report and Financial Statements of Vesuvius plc. No recharge is made to the Company in respect of remuneration borne by another group company.

During the year the number of Directors who were receiving benefits and share incentives was as follows:

	2019 No.	2018 No.
Received or were entitled to receive shares under long term incentive schemes	5	8
Exercised options during the year	1	2
Accruing benefits under money purchase pension scheme	3	3

8 Directors' remuneration (continued)

In respect of the highest paid director:

	2019 £ 000	2018 £ 000
Remuneration	1,113	1,417
Company contributions to money purchase pension schemes	150	12
	1,263	1,429

Share options exercised by the highest paid director is presented in the Directors Remuneration Report in the Vesuvius plc 2019 Annual Report and Financial Statements.

During the year the highest paid director received or was entitled to receive, from a Group company, shares under a long term incentive scheme. This director also received or was entitled to receive a pension allowance which could be used to participate in Vesuvius' pension arrangements, be invested in their own pension arrangements or be taken as a cash supplement.

9 Auditors' remuneration

Amounts receivable by the Company's auditors and their associates in respect of services to the Company, other than the audit of the Company's financial statements, have not been disclosed as the information is required instead to be disclosed on a consolidated basis in the consolidated financial statements of the Company's parent, Vesuvius plc. An allocated audit fee was borne by the ultimate parent undertaking, Vesuvius plc, on behalf of the Company of £7,334 (2018: £7,120).

10 Income tax

Tax charged in the income statement

	2019 £ 000	2018 £ 000
Current taxation		
UK corporation tax	96	201

The tax on profit before tax for the year is higher than the standard rate of corporation tax in the UK (2018: higher than the standard rate of corporation tax in the UK) of 19% (2018: 19%).

The differences are reconciled below:

	2019 £ 000	2018 £ 000
Loss before tax	(4,913)	(30,003)
Loss multiplied by corporation tax at standard rate	(933)	(5,701)
Increase from effect of revenues exempt from taxation	(628)	(1,316)
Increase from effect of expenses not deductible in determining taxable profit	2,984	1,199
Losses not claimed from Group	(1,423)	5,818
Increase arising from overseas tax suffered	96	201
Total tax charge	96	201

Following the 2020 Budget announcement, the rate of corporation tax has been held at 19% for financial years 2020 and 2021, despite a previously enacted reduction to the rate of corporation tax to 17% (previously effective 1 April 2020).

10 Income tax (continued)

Accordingly, profits earned in future periods will be taxed at 19% rather than 17% and any deferred tax assets or liabilities will be revalued reflecting the latest enacted rate. Had the rate change been substantively enacted at 31 December 2019, the impact of this would be to increase the deferred tax liability from £16.8m to £18.7m an increase of £1.9m.

The increase in the deferred tax liability of £1.9m would have been reflected in the Statement of Comprehensive Income.

Deferred tax

Deferred tax assets and liabilities

	Liability
2019	**£ 000**
Pension benefit obligations	(16,777)

	Liability
2018	**£ 000**
Pension benefit obligations	(14,791)

Deferred tax movement during the year:

	At 1 January 2019 £ 000	Recognised in other comprehensive income £ 000	At 31 December 2019 £ 000
Pension benefit obligations	(14,791)	(1,986)	(16,777)

Deferred tax movement during the prior year:

	At 1 January 2018 £ 000	Recognised in other comprehensive income £ 000	At 31 December 2018 £ 000
Pension benefit obligations	(15,059)	268	(14,791)

There are £93,792 of deductible temporary differences (2018: £43,473) and £43,503,742 of unused tax losses (2018: £43,503,742) for which no deferred tax asset is recognised in the statement of financial position.

If the tax rate change to 19% for financial years 2020 and 2021 been substantively been enacted at 31 December 2019, the unrecognised deferred tax assets would have increased as follows; £104,826 deductible temporary differences and £48,621,830 unused tax losses.

11 Investments

Subsidiaries	**£ 000**
Cost or valuation	
At 1 January 2019	1,477,288
At 31 December 2019	1,477,288
Provision	
At 1 January 2019	39,725
At 31 December 2019	39,725
Carrying amount	
At 31 December 2019	1,437,563
At 31 December 2018	1,437,563

The Group carried out its annual investment impairment test as at 31 October 2019. The recoverable amount of the investment significantly exceeded its carrying value, therefore no impairment charges have been recognised. The recoverable amount of the investment was also checked against its carrying value as at 31 December 2019 and no impairment triggers were identified.

The cash flow predictions are based on financial budgets and strategic plans approved by the Board. These assume a level of revenue and profits which are based on both past performance and expectations for future market development and take into account the cyclicality of the business in which the Group operates. Cash flows beyond the period of the strategic plans are extrapolated in perpetuity using a long term growth rate of 2.5% (2018: 2.5%). The key assumptions and methodology in determining the value in use of the Group are disclosed in Note 17.3 to the Vesuvius plc 2019 Annual Report and Financial Statements. The sensitivity of the forecasts to a reasonably possible change in certain assumptions which might require an impairment in 2020 was considered. A reduction in the Group's trading profit of 20% over the next 3 years would not result in an impairment.

The directors of the Group have also assessed whether, in view of the increased forecast uncertainty that exists at the present time, certain modelled downside scenarios (which assume a continuation of weak markets in 2020 in line with Q2 and a further 5% decline in sales in 2021 due to a weaker first quarter relative to Q1 2020 would reduce the forecast headroom that currently exists for investment valuation. As a result of this assessment, the directors have concluded that although such scenarios are considered severe and unlikely, there are plausible scenarios where future impairments of the carrying value of investments would arise.

The subsidiaries, joint ventures and associates of Vesuvius Holdings Limited and the countries in which they are incorporated are set out below. At 31 December 2019, the ordinary share capital of those marked with * was directly owned by Vesuvius Holdings Limited and the ordinary share capital of the remaining companies was owned by a subsidiary of the Company. As with Vesuvius Holdings Limited, all of the companies listed below have a 31 December year-end.

11 Investments (continued)

Name of subsidiary	Country	Registered office
Advent Process Engineering Inc.	Canada	333 Prince Charles Drive, Welland, Ontario, L3B 5P4, Canada
BMI Refractory Services Inc.	US (Pennsylvania)	600 N, 2nd Street, Suite 401 Harrisburg, PA 17101-1071, United States
Brazil 1 Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
CCPI Inc.	US (Delaware)	Suite 201, 910 Foulk Road, Wilmington, New Castle, Delaware, 19803, United States
Cookson Dominicana, SRL	Dominican Republic	Km 7 1/2, Autopista San Isidro, Edificio Modelo A, Zona Franca San Isidro, Santo Domingo Oeste, Dominican Republic
Cookson Investments (Jersey) Ltd*	Jersey	IFC 5, St Helier, JE1 1ST, Jersey
East Moon Investment (HK Holding) Company Limited	Hong Kong	Unit 01, 82/F, International Commerce Centre, 1 Austin Road West, Kowloon, Hong Kong
Flo-Con Holding, Inc.	US (Delaware)	CT Corporation, 1209 Orange Street, The Corporation Trust Company, Wilmington, Delaware, 19801, United States
Foseco (FS) Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Foseco (GB) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco (Jersey) Limited	Jersey	44 Esplanade, St Helier, JE4 9WG, Jersey
Foseco (MRL) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco (RUL) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco (UK) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Canada Limited	Canada	181 Bay Street, Suite 1800, Toronto, Ontario, M5J 2T9, Canada
Foseco Española SA	Spain	5, Barrio Elizalde, Izurza, Bizkaia, 48213, Spain
Foseco Foundry (China) Limited	China	Room 819, Shekou Zhaoshang Building, Nanshan District, Shenzhen, Guangdong, 518067, China
Foseco Fundición Holding (Española), S.L.	Spain	5, Barrio Elizalde, Izurza, Bizkaia, 48213, Spain
Foseco Holding (Europe) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Holding (South Africa) (Pty) Limited	South Africa	12, Bosworth Street, Alrode, Alberton, 1449, South Africa
Foseco Holding BV	Netherlands	165 Fleet Street, London, EC4A 2AE, England (Branch registration in England)
Foseco Holding International Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Holding Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Industrial e Comercial Ltda.	Brazil	Km 15, Rodovia Raposo Tavares, Butanta Cep, Sao Paulo, 05577-100, Brazil
Foseco International Holding (Thailand) Limited	Thailand	170/69, 22nd Floor Ocean Tower 1, Ratchadapisek Road, Klongtoey, Bangkok, 10110, Thailand
Foseco International Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Foseco Japan Ltd.	Japan	9th Floor, Orix Kobe Sannomiya Building, 6-1-10, Goko dori, Chuo-ku, Kobe Hyogo, 651-0087, Japan

11 Investments (continued)

Name of subsidiary	Country	Registered office
Foseco Korea Limited	Korea	74 Jeongju-ro, Wonmi-gu, Bucheon-si, Gyeonggi-do, 14523, South Korea
Foseco Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Metallurgical Inc.	US (Delaware)	CT Corporation, 1209 Orange Street, The Corporation Trust Company, Wilmington, Delaware, 19801, United States
Foseco Nederland BV	Netherlands	Binnenhavenstraat 20, 7553 GJ Hengelo (OV), Netherlands
Foseco Overseas Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Pension Fund Trustee Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Philippines Inc	Philippines	Unit 401, 4th Floor 8 Antonio Centre, Prime St. Madrigal Business Park 2, Ayala Alabang Muntinlupa City, 1770 Philippines
Foseco Portugal Produtos Para Fundiçâo Lda.	Portugal	Rua Manuel Pinto de Azevedo, No 626 4100-320 Porto, Portugal
Foseco Pty Limited	Australia	40-46 Gloucester Boulevarde, Port Kembla, NSW, 2505, Australia
Foseco SAS	France	Le Newton C, 7 Mail Barthélémy Thimonnier, 77185 Lognes, France
Foseco Steel (Holdings) China Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Steel (UK) Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Foseco Technology Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Foseco Transnational Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
HGAC Participações Limitada	Brazil	Street Duque de Caxias, 563 Room 2, Centro, Barueri, SP, 06401-010, Brazil
J. H. France Refractories Company	US (Delaware)	CT Corporation, 1209 Orange Street, The Corporation Trust Company, Wilmington, Delaware, 19801, United States
John G. Stein & Company Limited *	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Mainsail Insurance Company Limited*	Bermuda	Canon's Court, 22 Victoria Street, Hamilton, HM 12, Bermuda
Mascinco Empreendimentos e Participações Ltda.	Brazil	Avenida Brasil, 49550 - parte, Distrito Industrial de Palmares - Campo, Grande - Cep: 23065-480, Rio de Janeiro, RJ, Brazil
Mastercodi Industrial Ltda	Brazil	Rodovio Raposo Tavares, KM15, Butantã, São Paulo, Brazil
Mercajoya, S.A.	Spain	Capitán Haya, 56 - 1ºH, 28020 Madrid, Spain
Metal Way Equipamentos Metalurgicos Ltda	Brazil	Estrada Santa Isabel, 7655 KM37, Bairro Do Una, Itaquaquecetuba, São Paulo - SP, CEP: 08580 000, Brazil
Minerals Separation Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
New Foseco (UK) Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Process Metrix, LLC	US (California)	6622 Owens Drive, Pleasanton, California, 94588, United States

11 Investments (continued)

Name of subsidiary	Country	Registered office
PT Foseco Indonesia	Indonesia	Jl. Rawa Gelam 2/5, Kawasan Industri Pulogadung, Jakarta, 13930, Indonesia
PT Foseco Trading Indonesia	Indonesia	Jl. Rawa Gelam 2/5, Kawasan Industri Pulogadung, Jakarta, 13930, Indonesia
Realisations 789, LLC	US (Delaware)	CT Corporation, 1209 Orange Street, The Corporation Trust Company, Wilmington, Delaware, 19801, United States
S G Blair & Company Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
SERT-Metal SAS	France	3, Avenue de l'Europe, Parc, Les Pivolles, Decines-Charpieu, 69150, France
SIDERMES Inc.	Canada	175, Calixa-Lavallée Verchères, Québec J0L2R0, Canada
SIDERMES Do Brasil Sensores Termicos Ltda.	Brazil	Estrada Municipal PDD 436, S/N, Prédio "C", Bairro da Boa Vista, Municipio de Piedade, Estado de São Paulo, Brazil
SIDERMES Latinoamericana CA	Venezuela	Zona Industrial, San Vicente Av., Anton Phillips Grupo Industrial, San Vicente Local 4, Maracay, Venezuela
SIDERMES S.A.	Argentina	Urquiza 919 Piso 2 Rosario Santa Fe, CP 2000, Argentina
SIR Feuerfestprodukte GmbH	Germany	Siegener Strasse 152, Kreuztal, D-57223, Germany
Soled SAS	France	Centre d'Activités Economiques Zone Industrielle de Franchepré, 54240 Joeuf, France
Tamworth UK Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Unicorn Industries Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Veservice Ltda	Brazil	Av Brasil, 49550, Distrito Industrial de Palmares, Campo Grande, Rio de Janeiro, 23065-480, Brazil
Vesuvius (Thailand) Co., Ltd	Thailand	170/69, 22nd Floor Ocean Tower 1, Ratchadapisek Road, Klongtoey, Bangkok, 10110, Thailand
Vesuvius (V.E.A.R.) S.A.	Argentina	Street Urquiza, 919,Floor 2, Rosario, Provincia de Santa Fé, Argentina
Vesuvius Advanced Ceramics (China) Co., Ltd	China	221 Xing Ming Street, China-Singapore Suzhou Ind Park, Suzhou, Jiangsu Province, 215021, China
Vesuvius America, Inc.	US (Delaware)	1209 Orange Street, Wilmington, Delaware, 19801, United States
Vesuvius Australia (Holding) Pty Limited	Australia	40-46 Gloucester Boulevarde, Port Kembla, NSW, 2505, Australia
Vesuvius Australia Pty Limited	Australia	40-46 Gloucester Boulevarde, Port Kembla, NSW, 2505, Australia
Vesuvius Belgium N.V.*	Belgium	Zandvoordestraat 366, Oostende, B-8400, Belgium
Vesuvius Canada Inc.	Canada	181 Bay Street, Suite 1800, Toronto, Ontario, M5J 2T9, Canada
Vesuvius Ceramics Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England

11 Investments (continued)

Name of subsidiary	Country	Registered office
Vesuvius China Holdings Co. Limited	Hong Kong	Unit 01, 82/F International Commerce Centre, 1 Austin Road West, Kowloon, Hong Kong
Vesuvius China Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Colombia SAS	Colombia	Street 90, number 13 A - 31, floor 6, Bogota, Colombia
Vesuvius Corporation S.A.*	Switzerland	Via Nassa, 17, Lugano, CH 6900, Switzerland
Vesuvius CSD Sp.z.o.o.	Poland	ul. Jasnogórska 11,Kraków, 31-358, Poland
Vesuvius Emirates FZE	United Arab Emirates	Warehouse No: 1J-09/3, P O Box 49261, Hamriyah Free Zone, Sharjah, United Arab Emirates
Vesuvius Europe SA	Belgium	17 Rue de Douvrain, Ghlin, 7011, Belgium
Vesuvius Financial 1 Limited*	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Finland OY	Finland	Pajamäentie 8D7, 00360 Helsinki, Finland
Vesuvius Foundry Products (Suzhou) Co., Ltd.	China	12 Wei Wen Road, China-Singapore Suzhou Ind Park, Suzhou, Jiangsu Province, 215122, China
Vesuvius Foundry Technologies (Jiangsu) Co. Ltd	China	2, Changchun Road, Economic Development Area, Changshu, Jiangsu, 215537, China
Vesuvius France S.A.	France	Rue Paul Deudon 68, Boite Postale 19, Feignies, F-59750, France
Vesuvius GmbH	Germany	Gelsenkirchener Strasse 10, Borken, D-46325, Germany
Vesuvius Group Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Group SA	Belgium	17 Rue de Douvrain, Ghlin, 7011, Belgium
Vesuvius Holding Deutschland GmbH	Germany	Gelsenkirchener Strasse 10, Borken, D-46325, Germany
Vesuvius Holding France S.A.S	France	68 Rue Paul Deudon, BP 19, Feignies 59750, France
Vesuvius Holding Italia Sarl	Italy	Piazza Borgo Pila 40, Genoa, 16129, Italy
Vesuvius Iberica Refractarios, S.A.	Spain	Capitán Haya, 56 - 1ºH, 28020 Madrid, Spain
Vesuvius International Corporation	US (Delaware)	CT Corporation, 1209 Orange Street, The Corporation Trust Company, Wilmington, Delaware, 19801, United States
Vesuvius Investments Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Istanbul Refrakter Sanayi ve Ticaret A.S.	Turkey	Gebze OSB2 Mh. 1700., Sok No:1704/1, Cayirova, Kocaeli, 41420, Turkey
Vesuvius Italia SPA	Italy	Piazza Borgo Pila 40, Genoa, 16129, Italy
Vesuvius Japan Inc.	Japan	Daini-Naruse Akihabara Bldg. 3F, 27-10, 1-chome, Taito, Taito-ku, Tokyo, 110-0016, Japan
Vesuvius K.S.R. Limited*	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Vesuvius Life Plan Trustee Limited*	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius LLC	Russia	10, Ul. Kooperativnaya, Zhukovsky, Moscow, 140180, Russia
Vesuvius Malaysia Sdn Bhd	Malaysia	Unit 30-01, Level 30 Tower A. Vertical Business Suite Avenue 3. Bangsar South. No 8 Jalan Krinchi, Kuala Lumpur Wilayah Persekutuan, 59200, Malaysia

11 Investments (continued)

Name of subsidiary	Country	Registered office
Vesuvius Management Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Management Services Limited*	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Mexico S.A. de C.V.	Mexico	Av. Ruiz Cortinez, Num. 140, Colonia Jardines de San Rafael, Guadalupe, Nuevo León, CP 67119, Mexico
Vesuvius Mid-East Limited	Egypt	56, rd 15, Apt 103, Maadi, Cairo, Egypt
Vesuvius Minerals Limited*	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Moravia, s.r.o	Czech Republic	Konska c.p. 740, Trinec, 739 61, Czech Republic
Vesuvius NC, LLC.	US (Delaware)	Suite 201, 910 Foulk Road, Wilmington, New Castle, Delaware, 19803, United States
Vesuvius New Zealand Limited	New Zealand	Bell Gully, Level 22, Vera Centre, 48 Shortland Street, , Auckland, 1010, New Zealand
Vesuvius Overseas Investments Limited*	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Overseas Limited *	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Pension Plans Trustees Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Peru SAC	Peru	Jiron Saenz Pena 185, Magdalena del Mar, Lima, Peru
Vesuvius Pigments (Holdings) Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Vesuvius Poland Sp. z.o.o	Poland	Ul Tyniecka 12, Skawina, 32-050, Poland
Vesuvius-Premier Refractories (Holdings) Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Vesuvius Ras Al Khaimah FZ-LLC	United Arab Emirates	Street No. F14, RAK Investment Authority Free Zone, Al Hamra, Ras Al Khaimah, PO Box 86408, United Arab Emirates
Vesuvius Refractarios de Chile SA	Chile	Street San Martin 870, Room 308, Tower B, Concepcion, Chile
Vesuvius Refractories SRL	Romania	Galati, Marea Unire avenue 107, Galati county, 800329, Romania
Vesuvius Refratarios Ltda	Brazil	Av Brasil, 49550, Distrito Industrial de Palmares, Campo Grande, Rio de Janeiro, 23065-480, Brazil
Vesuvius Refractory India Private Limited	India	Room No. 9, 3rd Floor, 7 Ganesh Chandra Avenue, Kolkata, WB 700013, India
Vesuvius Scandinavia AB	Sweden	4, Forradsgatan, Amal, S-662 34, Sweden
Vesuvius Sensors & Probes Europe S.p.A.	Italy	10 Via Mantova, Muggio, Monza e Brianza, 20835, Italy
Vesuvius Solar Crucible (Suzhou) Co., Ltd	China	58, KuaChun Road, Kua Tang, China-Singapore Suzou Ind Park, Suzhou, Jiangsu Province, 215122, China
Vesuvius South Africa (Pty) Ltd	South Africa	Pebble Lane, Private Bag X2, Olifantsfontein, Gauteng Province, 1665, South Africa
Vesuvius Sp.z.o.o	Poland	ul. Jasnogórska 11, Kraków, 31-358, Poland
Vesuvius SSC Sp.z.o.o	Poland	ul. Jasnogórska 11, Kraków, 31-358, Poland
Vesuvius UK Limited	England & Wales	1 Midland Way, Central Park, Barlborough Links, Derbyshire, S43 4XA, England
Vesuvius Ukraine LLC	Ukraine	27, Udarnykiv Street, City of Dnipropetrovsk, 49000, Ukraine

11 Investments (continued)

Name of subsidiary	Country	Registered office
Vesuvius USA Corporation	US (Illinois)	CT Corporation, 208 South LaSalle Street, Chicago, Cook County, Illinois, IL 60604, United States
Vesuvius VA Limited	England	165 Fleet Street, London, England, EC4A 2AE
Vesuvius Vietnam Limited	Vietnam	VP26, 26th Floor, Song Da-Ha Dong Building, No. 110 Tran Phu, Mo Lao Ward, Ho Dong District, Ha Noi City, Vietnam
Vesuvius Zyalons Holdings Limited*	Scotland	Brown Street, Newmilns, Ayrshire, KA16 9AG, Scotland
Vesuvius Zyarock Ceramics (Suzhou) Co., Ltd	China	58, KuaChun Road, Kua Tang, China-Singapore Suzou Ind Park, Suzhou, Jiangsu Province, 215122, China
VSV Advanced Ceramics (Anshan) Co., Ltd	China	Xiaotaizi Village, Ningyuan Town, Qianshan District, Anshan, Liaoning Province, 114011, China
Vesv Distribution Private Limited	India	R tech Park, 13th Floor Western Express Highway, Goregaon (East), Mumbai, Mumbai City, MH400063, India
Wilkes-Lucas Limited	England & Wales	165 Fleet Street, London, EC4A 2AE, England
Yingkou Bayuquan Refractories Co., Ltd	China	Cui Tun Village, Hai Dong Office, Bayuquan District, Liaoning Province, YingKou, 115007, China

Non-wholly owned subsidiaries

Details of the associates as at 31 December 2019 are as follows:

Name of non-wholly owned subsidiary	Proportion of ownership interest and voting rights held 2019	2018	Country of incorporation and principal place of business
Foseco (Thailand) Limited	74%	74%	170/69, 22nd Floor Ocean Tower 1, Ratchadapisek Road, Klongtoey, Bangkok, 10110, Thailand Thailand
Foseco Golden Gate Company Limited	51%	51%	6 Kung Yeh 2nd Road, Ping Tung Dist, Ping Tung, 90049, Taiwan Taiwan
Foseco India Limited	74.98%	74.98%	922/923 Gat, Sanaswadi, Taluka, Shirur, Pune, 412208, India India
Newshelf 480 Proprietary Limited*	45%	45%	44 Main Street, Johannesburg, 2001, South Africa South Africa

Name of non-wholly owned subsidiary	Proportion of ownership interest and voting rights held 2019	2018	Country of incorporation and principal place of business
Vesuvius Ceska Republika, a.s.	60%	60%	Průmyslová 726, Konská, Třinec, 739 61, Czech Republic Czech Republic
Vesuvius India Limited	55.57%	55.57%	P-104 Taratala Road, Kolkata, 700 088, India India
Wuhan Wugang-Vesuvius Advanced CCR Co., Ltd.	50%	50%	Gongnong Village Qingshan District, Wuhan, Hubei Province, 430082, China China
Wuhan Wugang-Vesuvius Advanced Ceramics Co., Ltd.	50%	50%	Gongnong Village Qingshan District, Wuhan, Hubei Province, 430082, China China
Sapotech Oy	14.9%	14.9%	Paavo Havaksen tie 5D, 90570 Oulu, Finland Finland

In June 2019 Vesuvius completed the sale of its 50% interest in Angang Vesuvius Refractory Company, Ltd.

12 Debtors

	2019 £ 000	2018 £ 000
Non-current trade and other receivables		
Amounts due from other group companies	1,973,600	1,860,251

Interest on loans to other companies within the Vesuvius Group are interest free for dormant companies, Libor + 2% for UK companies and Libor + 2.5% for none UK companies. Repayment dates across all loans are variable and includes loans repayable on demand, but can be renewed as required.

	2019 £ 000	2018 £ 000
Current trade and other receivables		
Receivables from other group companies	166	3,002
Prepayments and other receivables	1,502	1,417
	1,668	4,419

13 Called up share capital

Allotted, called up and fully paid shares

	2019		2018	
	No. 000	**£ 000**	**No. 000**	**£ 000**
Ordinary share capital of £0.00004 each	278,468	10.00	278,468	10.00

The issued and fully paid share capital of the Company was 278,468,201 shares of £0.000035913 each at 31 December 2019 and 31 December 2018. The Company had one deferred share of £1.00 in issue at 31 December 2019 and 31 December 2018. All shareholders enjoy the same rights in relation to these shares, including rights in relation to voting at General Meetings of the Company, distribution of dividends and repayment of capital.

The share premium of £0.1m (2018: £0.1m) arose as a result of the demerger of the Cookson Group plc in 2012, where certain executives were entitled to exercise share awards granted by the Company, and exchange their shares in the Company for shares in Vesuvius plc.

14 Other reserves

Other reserves at the year end of £643.6m (2018: £643.6m) consist of £73.0m (2018: £73.0m) relating to dividends in specie on distribution of investments from subsidiaries and £570.6m (2018: £570.6m) relating to unrealised gains on the sale of demerged subsidiaries, where the consideration was left outstanding as a related party receivable, and will remain within non-distributable reserves until such time as qualifying consideration is received.

15 Bank loans and overdrafts

	2019 £ 000	2018 £ 000
Non-current Bank loans and overdrafts		
Bank borrowings	280,915	454,426
Capitalised arrangement fees	(770)	(1,172)
	280,145	453,254

	2019 £ 000	2018 £ 000
Current bank loans and borrowings		
Bank borrowings	154,588	-
Bank overdrafts	3,390	15,647
Finance Lease liability	242	-
Capitalised arrangement fees	(401)	(558)
	157,819	15,089

As at 31 December 2019, the Company had committed borrowing facilities of £609.7m (2018: £573.7m), of which £174.2m (2018: £119.2m) were undrawn. These undrawn facilities were due to expire in June 2022. The Company's borrowing requirements are met by USPP, a multi-currency committed syndicated bank facility of £300.0m (2018: £300.0m) and a bilateral bank facility of £49.0m (2018: Nil) which is fully collateralised against £54.0m of the Group's cash balance in China. The USPP facility was fully drawn as at 31 December 2019 and amounted to £260.7m ($200.0m and €130.0m), of which $140.0m is repayable in December 2020,€15.0m in 2021, $30.0m in 2023, €15.0m in 2025, €50.0m in 2027, $30.0m in 2028 and €50.0m in 2029. The £49.0m collateralised bank facility matures in May 2021.

In April 2020, the Company issued USPP Notes equivalent to an amount of an existing US$140m USPP, which was due to be paid in December 2020 but was repaid in August 2020.

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15 Bank Loans and overdrafts (continued)

The loans and bank overdrafts are repayable as follows:

	2019 £ 000	2018 £ 000
On demand or within one year	158,221	15,647
In the second year	12,681	109,744
In the third year	125,754	13,486
In the fourth year	22,626	180,774
In the fifth year	0	23,517
After five years	119,854	126,905
Capitalised arrangement fees	(1,172)	(1,730)
	437,964	468,343

Capitalised arrangement fees shown in the table above, which have been recognised as a reduction in borrowings in the financial statements, amounted to £1.2m as at 31 December 2019 (2018: £1.7m), of which £0.9m (2018: £1.0m) related to the USPP and £0.3m (2018: £0.7m) related to the syndicated bank facility.

The capitalised arrangement fees following the refinancing in April 2020 stood at £0.9m as at 30 June 2020.

16 Pension and other schemes

Defined contribution pension scheme

The company operates a defined contribution pension scheme. The pension cost charge for the year represents contributions payable by the company to the scheme and amounted to £347,777 (2018: £321,371).

Defined benefit pension schemes

Vesuvius Pension Plan

The Company also operates a defined benefit plan and accounts for it in accordance with IAS 19. The plan is closed to new members and to future benefit accrual and was established under a trust deed. It is subject to the Pensions Act 2004 and guidance issued by the UK Pensions Regulator.

The benefits of the UK plan are based upon the final pensionable salaries of plan members. The assets of these plans are held separately from the Company in trustee-administered funds. The trustees are required to act in the best interests of the plan's beneficiaries. The principal risks faced by these plans comprise: (i) the risk that the value of the plan assets is not sufficient to meet all plan liabilities as they fall due; (ii) the risk that plan beneficiaries live longer than envisaged, causing liabilities to exceed the available plan assets; and (iii) the risk that the market-based factors used to value plan liabilities change materially adversely to increase plan liabilities over the value of available plan assets.

There is a 'long-term scheme-specific funding standard' in Part 3 of the Pensions Act 2004. In terms of Part 3, the UK plan is subject to a requirement ('the statutory funding objective') that it must have sufficient and appropriate assets to cover its technical provisions. Such technical provisions are determined as part of the triennial valuation. Under the rules of the UK Plan, the Trustees, after consultation with the company, have the power to set the funding contributions taking into account the results of the triennial valuation, and the Pension Act 2004 legislation. Notwithstanding the latest funding valuation surplus, the Company agreed to fund the administration cost relating to the management of the UK Plan.

Contributions payable to the pension scheme at the end of the year are £Nil (2018: £Nil). The expected contributions to the UK Plan for the next reporting period are £700,000.

A full actuarial valuation of the UK Plan is carried out every three years by an independent actuary for the UK Plan Trustee in line with the requirements of the Pensions Act 2004, and the last full valuation was carried out as at 31 December 2018. At that date, the market value of plan assets was £605.1m and this represented a funding level of 110% of the accrued plan benefits at the time of £552.0m. Calculated on a 'buy-out' basis (using an estimation of the cost of buying out the UK Plan benefits with an insurance company), the liabilities at that date were £626.7m, representing a funding level of 95%.

16 Pension and other schemes (continued)

As at 31 December 2019, of the UK Plan's total assets, 48.2% (2018: 48.6%) were represented by the annuity insurance contracts covering the UK Plan's pension liabilities; 7.6% (2018: 9.1%) were allocated to equities; 39.4% (2018: 39.2%) to fixed income securities; 0.4% (2018: 0.4%) to cash; and 4.4% (2018: 2.7%) to other assets. The fixed income asset class of the UK Plan includes a liability-driven investment portfolio of financial derivative contracts which reduces the risk that the UK Plan's assets would fall materially, relative to the value of its economic liabilities. Of the UK Plan's fixed income securities, £150.3m have a quoted market price in an active market.

Reconciliation of scheme assets and liabilities to assets and liabilities recognised

The amounts recognised in the statement of financial position are as follows:

	2019 £ 000	2018 £ 000
Fair value of scheme assets	581,543	543,815
Present value of scheme liabilities	(482,856)	(456,813)
Defined benefit pension scheme surplus	98,687	87,002

Scheme assets

Changes in the fair value of scheme assets are as follows:

	2019 £ 000	2018 £ 000
Fair value at start of year	543,815	580,303
Interest income	15,071	14,135
Return on plan assets, excluding amounts included in interest income/(expense)	55,364	(22,998)
Employer contributions	748	758
Benefits paid	(32,756)	(27,767)
Administrative expenses paid	(700)	(616)
Fair value at end of year	581,543	543,815

Analysis of assets

The major categories of scheme assets are as follows:

	2019 £ 000	2018 £ 000
Equities	44,187	36,473
Bonds	229,346	309,926
Insurance contracts	280,274	276,084
Other assets	27,736	(42,180)
	581,543	580,303

All equity securities and bonds have quoted prices in active markets.

16 Pension and other schemes (continued)

Scheme liabilities

Changes in the present value of scheme liabilities are as follows:

	Defined benefit pension plans £ 000	Other post-retirement benefits £ 000	Total £ 000
Present value at 1 January 2019	455,919	894	456,813
Past service cost	48	-	48
Actuarial gains and losses arising from changes in demographic assumptions	(5,640)	(4)	(5,644)
Actuarial gains and losses arising from changes in financial assumptions	49,355	40	49,395
Actuarial gains and losses arising from experience adjustments	2,573	36	2,609
Interest cost	12,565	24	12,589
Benefits paid	(32,756)	0	(32,756)
Benefits paid directly by employer	(116)	(81)	(198)
Present value at 31 December 2019	481,948	909	482,856

	Defined benefit pension plans £ 000	Other post-retirement benefits £ 000	Total £ 000
Present value at 1 January 2018	490,749	975	491,724
Past service cost	4,500	-	4,500
Actuarial gains and losses arising from changes in demographic assumptions	(3,212)	(8)	(3,220)
Actuarial gains and losses arising from changes in financial assumptions	(22,139)	(23)	(22,162)
Actuarial gains and losses arising from experience adjustments	2,026	28	2,054
Interest cost	11,875	2	11,877
Benefits paid	(27,767)	-	(27,767)
Benefits paid directly by employer	(113)	(80)	(193)
Present value at 31 December 2018	455,919	894	456,813

	2019 £ 000	2018 £ 000
Analysed as:		
Present value of scheme liabilities arising from unfunded schemes	2,796	2,670
Present value of scheme liabilities arising from wholly or partly funded schemes	480,060	454,143
	482,856	456,813

16 Pension and other schemes (continued)

Principal actuarial assumptions

The significant actuarial assumptions used to determine the present value of the defined benefit obligation at the statement of financial position date are as follows:

	2019 %	2018 %
Discount rate	1.95	2.85
Future pension increases	2.90	3.15
Inflation - RPI	3.00	3.25
Inflation - CPI	1.90	2.15

Post retirement mortality assumptions

	2019 Years	2018 Years
Current UK pensioners at retirement age - male	87.0	86.20
Current UK pensioners at retirement age - female	89.2	88.80
Future UK pensioners at retirement age - male	87.3	87.60
Future UK pensioners at retirement age - female	90.1	90.40

Amounts recognised in the profit and loss account

	2019 £ 000	2018 £ 000
Amounts recognised in operating loss		
Administrative expenses paid	700	616
GMP equalisation charge	-	4,500
Past service costs	48	-
Recognised in arriving at operating loss	748	5,116
Amounts recognised in Other interest receivable and similar income		
Net interest	(2,482)	(2,258)
Total recognised in the profit and loss account	(1,734)	2,858

Amounts taken to the Statement of Comprehensive Income

	2019 £ 000	2018 £ 000
Actuarial gains and losses arising from changes in demographic assumptions	5,644	3,220
Actuarial gains and losses arising from changes in financial assumptions	(49,395)	22,162
Actuarial gains and losses arising from experience adjustments	(2,609)	(2,054)
Return on plan assets, excluding amounts included in interest income/(expense)	55,364	(22,998)
Amounts recognised in the Statement of Comprehensive Income	9,004	330

16 Pension and other schemes (continued)

Sensitivity analysis

A sensitivity analysis for the principal assumptions used to measure scheme liabilities is set out below:

	2019		2018	
Adjustment to discount rate	**+ 0.1% £ 000**	**- 0.1% £ 000**	**+ 0.1% £ 000**	**- 0.1% £ 000**
Increase / (decrease) in present value of obligation	(7,800)	7,800	(7,100)	7,100
Increase / (decrease) in fair value of plan assets	(3,400)	3,400	(3,000)	3,000

	2019		2018	
Adjustment to rate of inflation	**+ 0.1% £ 000**	**- 0.1% £ 000**	**+ 0.1% £ 000**	**- 0.1% £ 000**
Increase / (decrease) in present value of obligation	(5,800)	5,800	(4,800)	4,800
Increase / (decrease) in fair value of plan assets	(2,600)	2,600	(2,000)	2,000

	2019		2018	
Adjustment to mortality age rating assumption	**+ 1 Year £ 000**	**- 1 Year £ 000**	**+ 1 Year £ 000**	**- 1 Year £ 000**
Increase / (decrease) in present value of obligation	(24,500)	24,500	(19,600)	19,600
Increase / (decrease) in fair value of plan assets	(17,700)	17,700	(13,900)	13,900

The main assumptions used in calculating the costs and obligations of the Group's defined benefit pension plans, as detailed below, are set by the Directors after consultation with independent professionally qualified actuaries and include those used to determine regular service costs and the financing elements related to the plans' assets and liabilities. It is the Directors' responsibility to set the assumptions used in determining the key elements of the costs of meeting such future obligations. Whilst the Directors believe that the assumptions used are appropriate, a change in the assumptions used could affect the Group's profit and financial position.

For the UK Plan, the assumptions used have been derived from the Self-Administered Pension Schemes ('SAPS') All table, with future longevity improvements in line with the 'core' mortality improvement tables published in 2018 by the Continuous Mortality Investigation ('CMI'), with a long-term rate of improvement of 1.25% p. a. The discount rate used to determine the liabilities of the UK Plan for IAS 19 accounting purposes is required to be determined by reference to market yields on high-quality corporate bonds. The UK discount rate in the above table is based on analysis using the expected future cashflows of the Vesuvius Pension Plan and the AON Hewitt AA yield curve. The assumptions for UK price inflation are set by reference to the difference between yields on longer-term conventional government bonds and index-linked bonds, except for CPI, for which no appropriate bonds exist, which is assumed to be 1.1 points lower (2018: 1.1 points lower) than RPI-based inflation.

The UK Plan Trustee has entered into a pension insurance buy-in agreement with the Pension Insurance Corporation ('PIC'), whereby the UK Plan Trustee has paid insurance premiums to PIC to insure a significant portion of the UK Plan's liabilities. Under this arrangement, the value of the PIC insurance contract matches the value of the liabilities because the inflation, interest rate, investment and longevity risk for Vesuvius in respect of these liabilities are eliminated. As at 31 December 2019, the IAS 19 valuation of the PIC insurance contract value associated with the bought-in liabilities was £280.3m (2018: £264.1m). The buy-in agreement ensures that the UK pension plan obligations in respect of all its retired members and their approved dependents are insured. The policy and the associated valuation are updated annually to reflect retirements and mortality. In the current year, the agreement based on specific membership data covers 58.4% (2018: 58.1%) of UK pension plan obligations, removing substantially all financial risks associated with this tranche of the liability.

The average duration of the obligations to which the liabilities of the Company's principal pension plans relate is 17 years.

16 Pension and other schemes (continued)

Risks to which the defined benefit pension plans expose the Company

The principal risks faced by these plans comprise: (i) the risk that the value of the plan assets is not sufficient to meet all plan liabilities as they fall due; (ii) the risk that plan beneficiaries live longer than envisaged, causing liabilities to exceed the available plan assets; and (iii) the risk that the market-based factors used to value plan liabilities and assets change materially adversely to increase plan liabilities over the value of available plan assets. Further details are given below:

Asset volatility

> the liabilities are calculated using a discount rate set with reference to corporate bond yields; if assets underperform against this yield, this will create a deficit. To reduce this risk, the pension plans are largely invested in government and corporate bonds.

Counterparty risk

> There are a number of other risks of running the UK Pension Fund including counterparty risks from using derivatives. These are mitigated by using a diversified range of counterparties of high standing and ensuring positions are collateralised as required.

Changes in bond yields

> a decrease in corporate bond yields will increase the scheme liabilities, although this will be partially offset by an increase in the value of the schemes' bond holdings.

Inflation risk

> much of the UK scheme's benefit obligations are linked to inflation and higher inflation will lead to higher liabilities (although, in most cases, caps on the level of inflationary increases are in place to protect against extreme inflation). The UK scheme also holds index-linked government bonds to provide protection against this risk.

Life expectancy

> the majority of the plans' obligations are to provide benefits for the life of the member and in some cases their spouse on death of the member, so increases in life expectancy will result in an increase in the liabilities.

> in July 2012 Vesuvius entered into an agreement with the Pension Insurance Corporation (PIC) to insure pensions in payment for the pensioners in the UK main Plan. These annuities are owned by the UK Pension Plan. Further annuity purchases have taken place at regular intervals since then and the plan now holds annuity contracts to cover the majority of pensions in payment thereby removing substantially all risks in respect of these pensions.

17 Provisions for liabilities

	Other provisions £ 000
At 1 January 2019	0
Increase in existing provisions	273
Provisions utilised	(248)
At 31 December 2019	25

Restructuring provisions relate to consultancy costs for the centralisation of shared services in Europe. Provisions held at 31 December 2019 are expected to be utilised within one year.

18 Financial assets and financial liabilities

The Company holds the following financial assets at amortised cost:

	2019 £ 000	2018 £ 000
Amounts due from other group companies - non current (Note 12)	1,973,600	1,860,251
Amounts due from other group companies - current (Note 12)	166	3,002
Cash at bank and in hand	6,479	39,551
Other receivables - current (Note 12)	331	693
	1,980,576	1,903,497

18 Financial assets and financial liabilities (continued)

The Company holds the following financial liabilities at amortised cost:

	2019 £ 000	2018 £ 000
Non-current bank loans and overdrafts (Note 15)	280,145	453,254
Current bank loans and overdrafts (Note 15)	157,819	15,089
Amounts due to other group companies - non current (Note 19)	1,224,281	1,042,030
Amounts due to other group companies - current (Note 19)	3,313	2,611
Accrued expenses and other payables - current (Note 19)	4,813	5,562
	1,670,371	1,518,546

The Company holds derivative financial instruments which are accounted for at fair value through the profit or loss. The fair values of the Company's derivative financial instruments as at 31 December 2019 comprise of a liability of £0.7m recognised within "other payables" (Note 23).

The Company's exposure to various risks associated with the above is discussed in Note 20.

19 Trade and other payables

	2019 £ 000	2018 £ 000
Non-current trade and other payables		
Amounts due to other group companies	1,211,368	1,042,030

Interest on loans from other companies within the Vesuvius Group are interest free from dormant companies, Libor + 2% from UK companies and Libor + 1.05% from non-UK companies. Repayment dates across all loans are variable and includes loans repayable on demand, but can be renewed as required.

	2019 £ 000	2018 £ 000
Current trade and other payables		
Accrued expenses and other payables	5,120	5,614
Amounts due to other group companies	3,313	2,611
Other taxes and social security	373	405
	8,806	8,630

20 Financial risk review

The Company's exposure to financial risk is managed as part of the Group. Full details about the Group's exposure to financial risks and how these risks could affect the Group's future financial performance are given in Note 25 to the 2019 Annual Report and Financial Statements.

Foreign currency risk

The Company Income Statement is exposed to currency risk on monetary items that are denominated in currencies other than sterling.

The Group arranges a rolling short dated Euro/Sterling foreign exchange swap in respect of €100m of its Private Placement fixed rate financial liabilities (2018: €100m).

Credit risk

Credit risk arises from cash and cash equivalents, favourable derivative financial instruments and deposits with banks and financial instruments, as well as credit exposures to outstanding receivables.

Risk management

Credit risk is managed on a Group basis. For banks and financial institutions, Group policy is such that only independently rated parties with a minimum rating of ‘A’ are accepted.

20 Financial risk review (continued)

Impairment of financial assets

The Company subjects receivables from other group companies to the expected credit loss model. While cash and cash equivalents are also subject to the impairment requirements of IFRS 9, the identified impairment loss was immaterial.

Receivables from other group companies are subject to IFRS 9's expected credit loss model. Impairment provision has been determined using a 12-month expected credit loss model and the identified impairment loss was immaterial. Receivables from other group companies are considered to have low credit risk. Management consider 'low credit risk' to be when they have a low risk of default and the issuer has strong capacity to meet its contractual cash flow obligations in the near term.

Liquidity risk

Liquidity risk is the risk that the Company might have difficulties in meeting its financial obligations. This risk is integrated with the principal risks of Vesuvius plc and its subsidiary and joint venture companies ('the Group') and are not managed separately. Details of how the Group manages this risk is set out in Note 25 'Financial Risk Management' in the 2019 Annual Report and Financial Statements of Vesuvius plc.

Interest rate risk

The Company's interest rate risk principally arises in relation to its borrowings. Where borrowings are held at floating rates of interest, fluctuations in interest rates expose the Company variability in the cash flows associated with its interest payments, and where borrowings are held at fixed rates of interest, fluctuations in interest rates expose the Company to changes in the fair value of its borrowings. This risk is integrated with the principal risks of the Group and it is the Group's policy to maintain a mix of fixed and floating rate borrowings, within certain parameters agreed from time to time by the Board, in order to optimise interest cost and reduce volatility in reported earnings.

21 Dividends

An interim dividend for the year ended 31 December 2019 of £37.2m was paid in May 2019 to the parent company, Vesuvius plc. A second interim dividend for the year ended 31 December 2019 of £16.7m was paid in September 2019 to the parent company, Vesuvius plc.

22 Contingent liabilities

Where the Company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its Group, the Company considers these to be insurance arrangements and accounts for them as such. In this respect, the Company treats the guarantee contract as a contingent liability until such time as it becomes probable that the Company will be required to make a payment under the guarantee. Guarantees provided by the Company as at 31 December 2019 in respect of the liabilities of its subsidiary companies amounts to £1.1m (2018: £2.9m), which includes guarantees under property leases of operations disposed of amounting to £0.3m (2018: £0.7m).

Vesuvius Holdings Limited's subsidiaries have extensive international operations and are subject to various legal and regulatory regimes, including those covering taxation and environmental matters. Several of the Company's subsidiaries are parties to legal proceedings, certain of which are insured claims arising in the ordinary course of the operations of the company involved, and are we aware of a number of issues which are, or may be, the subject of dispute with tax authorities. While the outcome of the litigation can never be predicted with certainty, having regard to legal advice received and the insurance arrangements of the Company about its subsidiaries, the Directors believe that none of these matters will, either individually or in the aggregate, have a materially adverse effect on the Company's financial condition or results of operations.

23 Financial instruments

Derivative financial instruments

The Company uses derivative financial instruments (‘derivatives’), in the form of forward foreign currency contracts to manage the effects of its exposure to foreign exchange risk. Derivatives are only used for economic hedging purposes and not as speculative investments. However, where derivatives do not meet the hedge accounting criteria, they are classified as ‘held for trading’ for accounting purposes and are accounted for at fair value through profit or loss. They are presented as current assets or liabilities to the extent they are expected to be settled within 12 months after the end of the reporting period. During the year, the Company has not applied hedge accounting.

23 Financial instruments (continued)

The fair value of Derivatives outstanding at the year-end has been booked through the Income Statement in 2019. All of the fair values reported below are classified under IFRS 13 as Level 2 measurements which have been calculated using quoted prices from active markets, where similar contracts are traded and the quotes reflect actual transactions in similar instruments. All of the derivative assets and liabilities reported below will mature within a year of the balance sheet date.
The fair values of the Company's derivative financial instruments as at 31 December 2019 comprise of a liability of £0.7m (2018: £0.5m) recognised within 'accrued expenses and other payables'.

24 Related party transactions

As the Company is a wholly owned subsidiary of Vesuvius plc, the Company has taken advantage of the exemption contained in FRS 101 and has therefore not disclosed transactions or balances with entities which form part of the Vesuvius plc group.

25 Parent and ultimate parent undertaking

The company's immediate parent and ultimate parent is Vesuvius plc.

The most senior parent entity producing publicly available financial statements is Vesuvius plc. These financial statements are available upon request from the Company Secretary, Vesuvius plc, 165 Fleet Street, London EC4A 2AE.

26 Post balance sheet events

The outbreak of COVID-19 accelerated during the first quarter of 2020. This event was classified as a non-adjusting event for accounting purposes and has not impacted the measurement of amounts in these financial statements as at 31 December 2019. Further information of the company's consideration of this is set out in the Directors' Report.

In April 2020, the Company issued USPP Notes equivalent to an amount of an existing US$140m USPP, which was due to be paid in December 2020 but was repaid in August 2020. In addition, Vesuvius plc borrowed £200m under the Bank of England's Covid Corporate Financing Facility ("CCFF") programme. The funds have been applied as a short-term part repayment of Vesuvius plc's outstanding intercompany loan with the Company.

There are no other material events after the reporting period to disclose.