

# Davidson's Mill, Mugiemooss Road, Aberdeen, AB21 9NQ

Archaeological evaluation and standing building survey



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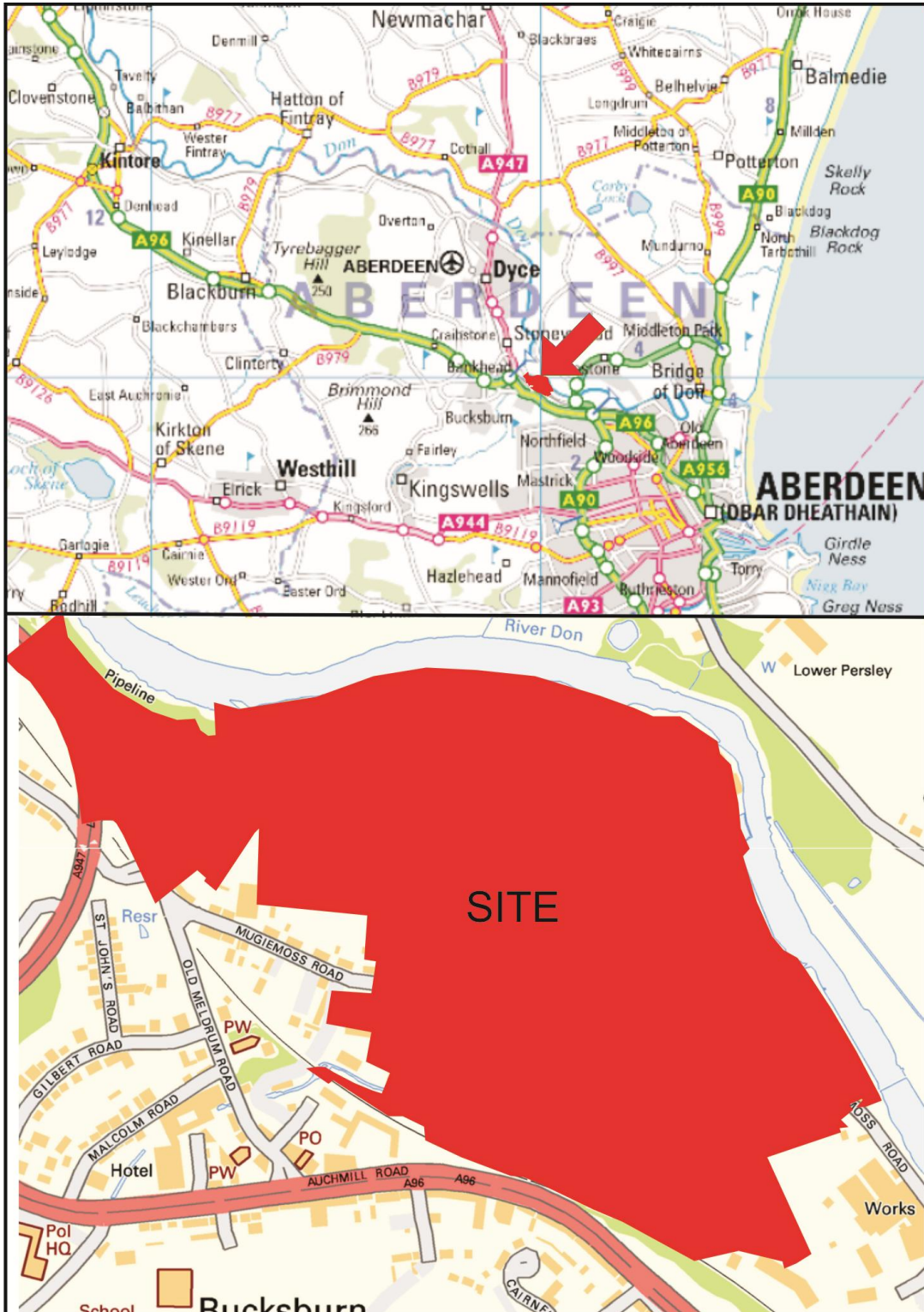
## SUMMARY

A 7% archaeological evaluation was carried out in Phase 1 Areas K, L, O, P, Q AND R which produced no significant archaeological remains and it is recommended that no further archaeological work is required in these areas.

Two trenches in the south end of Area D produced evidence that the area had been increased in height by at least 1.5m using ash and rubble presumably from the early mill workings. It is therefore possible that structural remains will survive in this area and further trenches should be excavated when the companies leasing buildings have vacated them or in association with the demolition work.

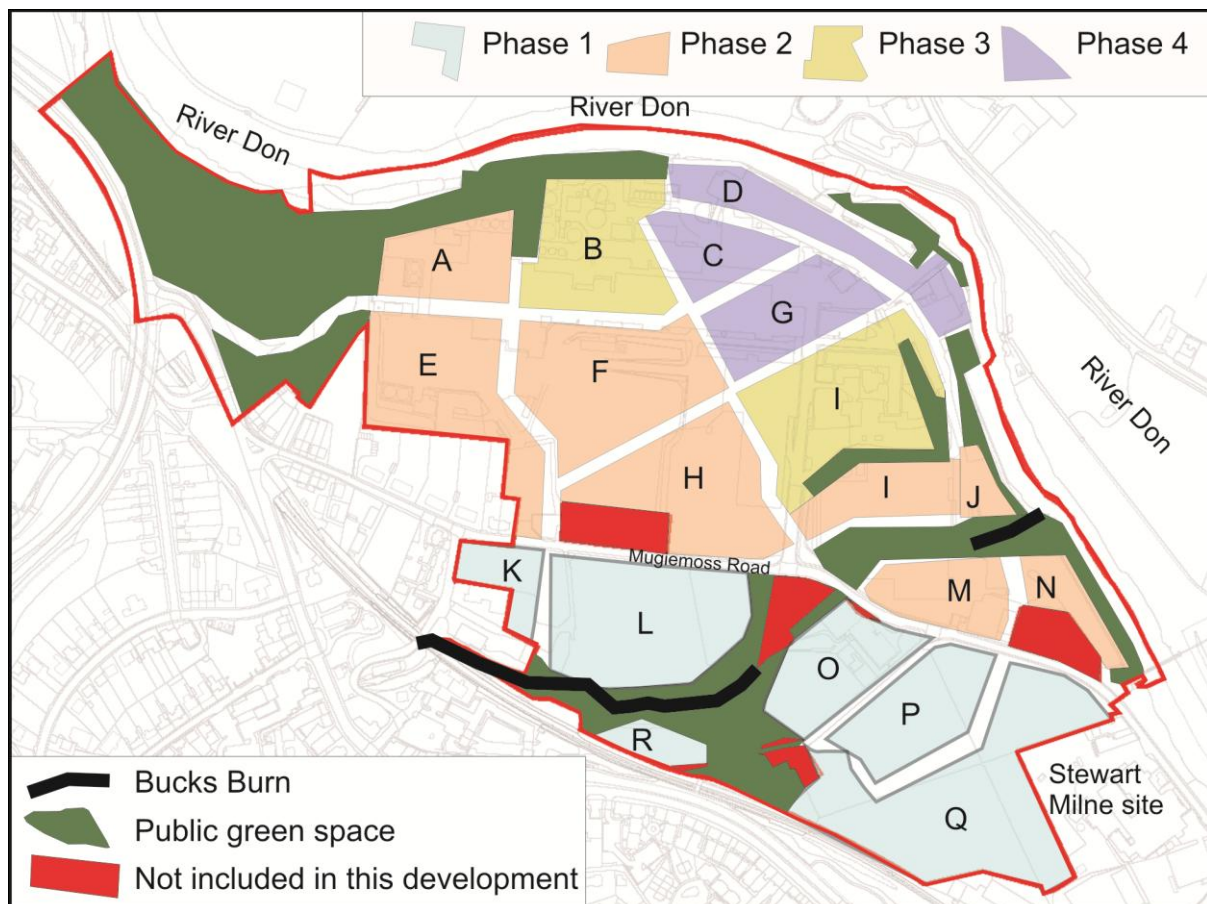
# 1 INTRODUCTION

1.1 This report details archaeological work at the former Davidson's (or Mugiemoos) Mills, Mugiemoos Road, Aberdeen, AB21 9NQ. The work was commissioned by Graeme Reay, Stewart Milne Homes North Scotland for Stewart Milne Group Limited and Manse (Aberdeen) Limited.



Illus 1 Location plan (Contains Ordnance Survey data © Crown copyright 2012).

- 1.2 The application area is to be developed in four phases (Illus 2) but this report is for the complete development area. The site is 35.8 hectares including upstanding buildings, hardstanding, open fields and land to be retained as green spaces.
- 1.3 The site is bounded on the north and north-east by the river Don, on the south-east by a current Stewart Milne development, on the south by the Aberdeen-Inverness railway line and at the west and south-west by Station Road and houses and gardens of 93-113 Mugiemoos Road.
- 1.4 The site lies at NJ 90071 10048 (centre) is in the parish of Newhills and lies at 10-45m OD.
- 1.5 The Aberdeen City Council planning application (P110786) is to create a sustainable mixed use community, which could provide approximately 900 residences, business and community facilities, with associated infrastructure including footpath and cycle links to the River Don as well as a new spine road with access from the A947. It was passed in principal on 29 September 2011 with standard archaeology condition (condition 14). There are no listed buildings on site and the mill chimney (Illus 4) is to be retained as a landmark feature. The site has been identified as a key 'brownfield' regeneration opportunity since 2004.



Illus 2 Plan of development showing phases (copyright OPEN Optimised Environments)

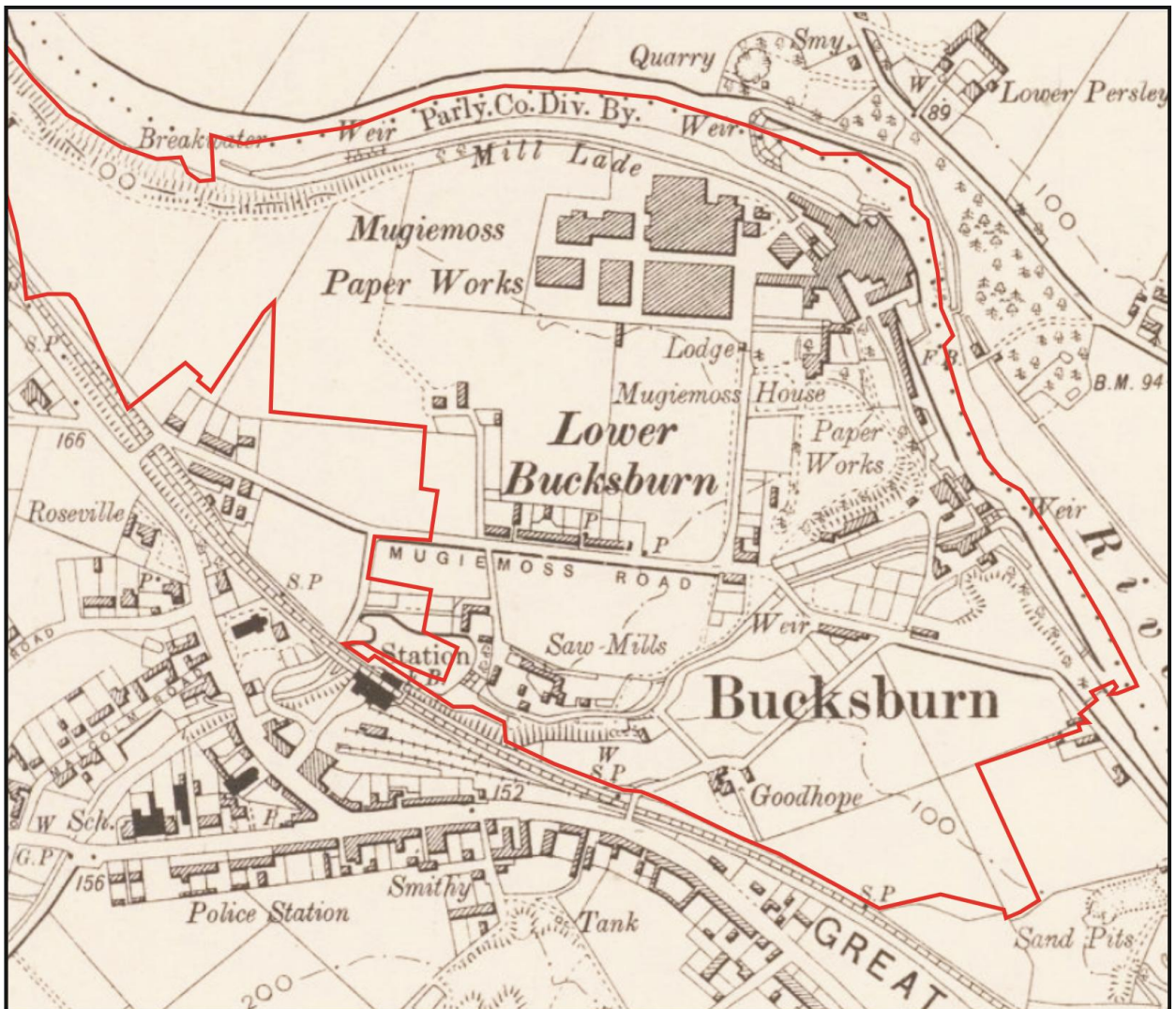
1.4 The fields on the south side of Mugiemooss Road and the east of Goodhope Road have all been under plough (Illus 3). Goodhope Cottage is to be demolished and will be recorded. West of the Bucks Burn is an area that has been scarped and is hardstanding. In the south-west corner of the proposed development is an area of rough ground which was partly occupied by a Saw Mill on the First Edition Ordnance Survey (Illus 4).



Illus 3 Aerial photograph proposed development site with site outline (red) (copyright Google)

## 2 ARCHAEOLOGICAL BACKGROUND

- 2.1 A number of prehistoric flints have been found around the area of the river Don but none within the immediate environs of the current site.
- 2.2 A cist (NJ91SW 7) was found at Persley Quarry in 1868 containing an imperfect adult male skeleton and an urn, an arrowhead and a flint knife (Reid 1912; Shepherd 1986, 30, 36). They are now in the collections of Aberdeen University (ABDUA 14246, 19700, 14834).
- 2.3 An extremely worn fragment of a Middle Bronze Age bronze flanged axehead (NJ91SW 189) was found in 2004 while metal detecting. It was claimed as Treasure Trove (TT 2/04) and allocated to Aberdeen Art Gallery & Museum (Cowie 2004, 10).



Illus 4 Site outline (in red) on First Edition Ordnance Survey (1867; copyright National Libraries of Scotland)

2.4 Parson James Gordon's map of 1661 shows 'Sklaty' and 'Achmull' are all evident and identify the area. Roy's map depicts only open ploughed land.

2.5 The main historic site to be affected by this development is Davidson's Mill (NJ91SW 79). The following information comes from JN Bartlett 'Davidsons of Mugiemoos published in 1997. The Davidson family came from the Tarland area of Aberdeenshire, where they farmed and factored and had interests in wood mills. In the second half of the 18<sup>th</sup> century, John Davidson and his family moved to the 'Buxburn' area. John was a dyer to trade and one of his four sons, Charles, was trained as a millwright at Grandholm Waulk Mill (opposite Stoneywood) and was very proficient in understanding mechanical engineering. His friend Charles Smith, was the nephew of the founder of Stoneywood Mill, Alexander Smith, and on his death in 1796, the Stoneywood Mill was inherited by his grandson by marriage, Alexander Pirie. Charles Smith withdrew to found another paper mill nearby. His partner was Charles Davidson, the founder of the firm which bore his name. The partnership with Charles Smith lasted only a few years and by 1811 he had returned to Grandholm Mill.

Charles Davidson set up in business on his own account in 1811 by leasing land at Mugiemoos for a period of 57 years for £18 per annum. (The lease was subsequently extended several times). The mills erected at Mugiemoos full woollen cloth, beat flax and ground fermented tobacco leaf into snuff. Papermaking came later, probably beginning in 1821, and this quickly overtook the other activities. By 1833, the lease at Mugiemoos described Charles Davidson simply as a papermaker.

Charles worked hard and built the company up, and in 1830, he took his two sons, William and George into partnership. Charles died in 1843. Around 1850 George sold his share to pursue other business interests, and William in due course, brought in his five sons, Charles, George, Alexander, John and David. In June 1853 a large scale fire destroyed a 3-storey building used for the production of pulp. Apart from the cost of £3,000, production was disrupted severely and it was several months before the Mugiemoos Works were again running at anything like full capacity.

Though trading was difficult the business was expanded with more production capacity, and in 1857 a London warehouse was opened. It was around this time that young George's inventive genius brought a new line of interest to the business. He developed and patented an idea for making block bottom paper bags. This development was seen as a tremendous step forward in the packaging field of those days and by 1875 Davidson's were the largest makers of paper bags in the world. Such was the success that the product was in such demand that no sales persons were necessary. Also in that year the firm was converted into a limited liability company, and further warehouses were opened in Liverpool, Newcastle, Glasgow, Edinburgh and Aberdeen.

At the end of the 19<sup>th</sup> century a big change was happening in the manufacture of paper. Wood pulp was being produced and was rapidly taking over from paper made from rags. This superior quality paper was becoming the norm and No.2 machine was installed to meet demand and it was followed in 1908 with PM3 to make machine glazed papers. The M.G. cylinder on this machine was the first large cylinder cast by Bertrams of Sciennes, Edinburgh and it is believed that it was never quite perfect, and was the subject of much debate between the two companies until it was finally replaced in 1956.

Of Williams's five sons in the family, Charles died in 1870, with no family, and as mentioned George died in 1875. John and David managed the Aberdeen operations, while Alexander



continued the business in London until he died in 1920. John died in 1897. . At the outbreak of the First World War it was David in Aberdeen and Alexander in London who headed up the business. They were assisted by John's son Charles who continued with the business line in London until he died in 1943, Alexander's son William based in Aberdeen, and David's son, Tom in Aberdeen. At this time Tom was heavily involved in the Territorial Army, and he was called up immediately on the outbreak of war. David died in 1915, so it was William that was left on his own in Aberdeen through the remaining war years until 'Colonel Tom' returned in 1919. (It was this William who wrote the 1899 diary that was found and summarised in the Aberdeen Leopard Magazine in 2001, and has been subject of fascinating discussions about the lifestyle at that time). Mugiemoos was drained of its young men during the war years and sadly far too many of them did not return. A commemorative Roll of Honour of those who served in this campaign can still be seen on the wall outside the personnel office at the mill.

The post war years were particularly difficult with raw materials in very short supply and prices liable to huge swings, usually downward as the 1920's slump bit very hard. The Legal Net Weight Act came into force and this forced the weight of paper bags down. PM3 was able to cope with the changes but PM2 had to be rebuilt with a second-hand M.G. cylinder added to cope with the lightweight products. Many paper mills in the UK closed down but the Davidson Mill fought on, sometimes with only one machine of the three running. Costs were paired to the bone and many parts were left uninsured to save insurance premiums. A fire would have been the last straw, so a smoking ban was strictly enforced (the current one was not the first one then!). It is believed that anyone caught smoking would pay 2s 6d to the Red Cross on the first offence and instant dismissal on the second offence!

Alexander died in 1920 and William retired a few years later, leaving Colonel Tom to carry on in Aberdeen, and Charles took over the London end of the business, which was by this time quite substantial. It was Tom's dedication, understanding and compassion that brought the mill through the 1920's and 1930's. His personality was such that he knew every employee and took it hard when he was forced to close down parts of the mill and lay people off. In the 1930s the No.1 machine was closed, having run for around 100 years, and unfortunately the Cedar Felt product died along with it. However, a new paper development was brought on line in the 1930's in the name of Ibeco Paper, which was a strong Kraft-based wrapping paper, waterproofed through the introduction of a bitumen emulsion into the beater. This product was very special and was extremely successful for many years until the closure of No.2 machine late in the 1970's. It was used as an underlay for the concrete on the original East Lancashire road and the Wembley Ice Rink, before being widely used as black out material during the Second World War.

No.4 machine dry end was completely rebuilt in 1951 – this can be seen on a series of photographs on the website. A third tier of dryers was added to get more drying capacity, from 75 to 104 cylinders, but it has been said that the effect was not as good as expected due to the long draw between top and bottom cylinders where the sheet could cool down, and of course there were no modern drying fabrics installed. It can clearly be seen from the sequence of photographs that the progress between pouring concrete and laying down cylinders was rapid, reflecting in the level of business at the time to keep shut time to a minimum – no change there then. It also highlights the problem that was uncovered almost three decades later when the machine was to be rebuilt again, in that the dryer section foundations were sinking slowly towards the river - but more of that later.

No.4 coal fired boiler was installed in 1953, and a new Water Treatment Plant – the Paterson Plant - was installed in the mid 1950's, while between 1959 and 1962 the Wet End of PM4 was replaced with 8 new vats, a new press section and a new drying hood. At the start of the 1960's there was a growing requirement for uncoated waste based carton board, with a

bleached white liner layer, and at the same time the volume requirement for plasterboard liner was steadily rising in UK, France and Belgium. Plans to meet these growing requirements resulted in the installation of a state of the art Inverform machine – PM5. The mill finally closed in 2005. Information from [www.mugiemoss.co.uk](http://www.mugiemoss.co.uk) a website set up at the closure of the mill.



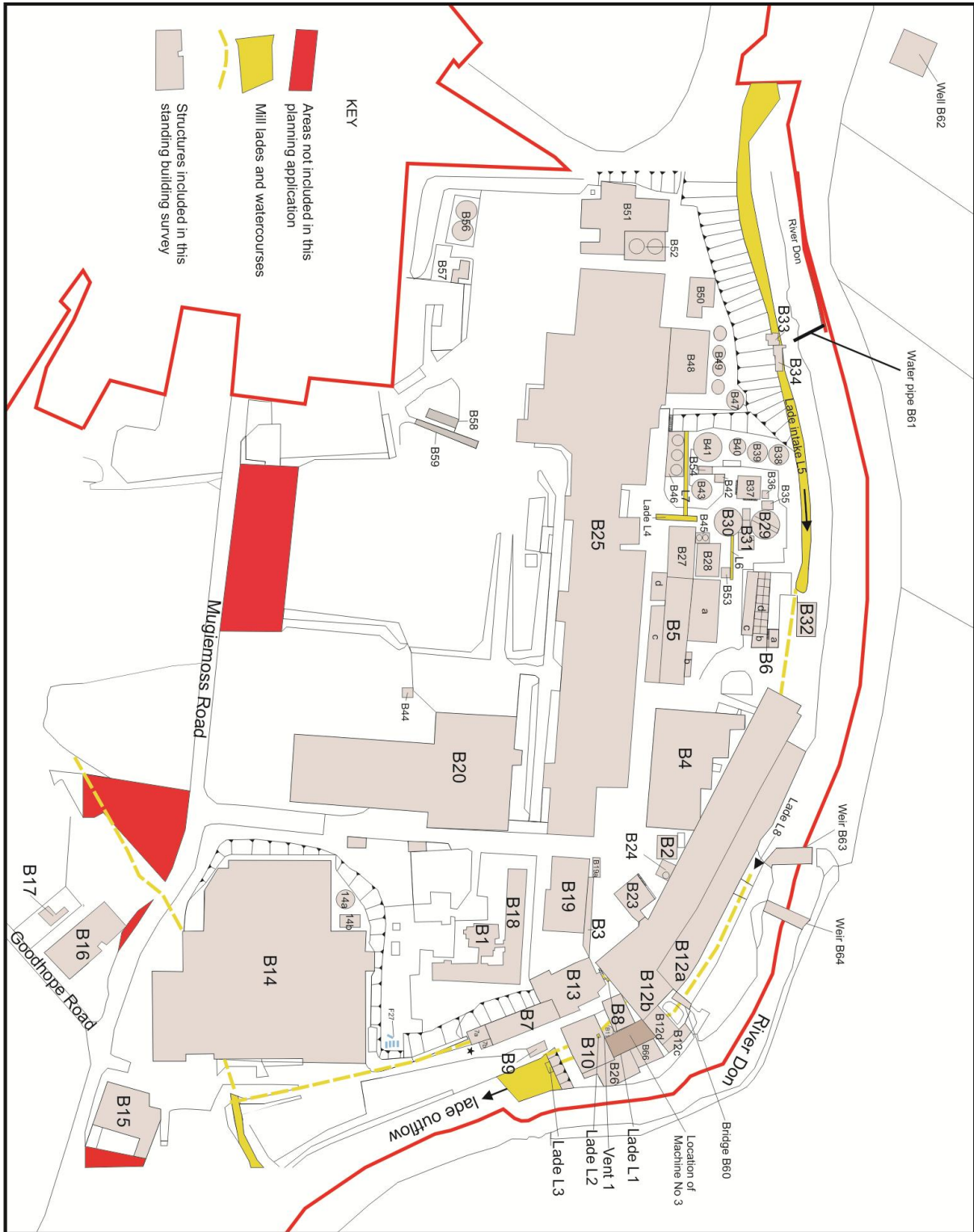
Illus 5 The mill from the north bank of the river Don; facing SW

2.5 The Aberdeenshire Canal probably ran along the route now occupied by the railway line. It is unlikely to be affected by the proposed development. The 4.5 canal milestone (NJ80NE 43.1) is located at 15 Mugiemoss Road and this will also be unaffected by the development.

2.6 Searches at National Register of Archives for Scotland, Aberdeen University Special Collections, Glasgow University Business Archives and Aberdeen and Aberdeenshire Archive Service failed to uncover documents or maps pre-dating 1852. There are uncatalogued archives of Davidson and Garden Solicitors (NRAS51/9) which include papers of the Davidson's Paper Mill; these remain uncatalogued but it would appear that there are none pre-dating the mid 19th century.

### 3 STANDING BUILDING SURVEY

A Level 3 standing building survey was carried out on all the standing buildings within the current development site. A summary of the older buildings follows and a summary of all buildings are found in Appendix 2 and full details in archive.



Illus 6 Plan showing all structures covered by this survey

## **BUILDING 1**

Building 1 is Mugiemooss House a single-bay late 19th-century house (Illus 7-8). It is harled with granite facings and has extensions to the west and north which have been sympathetically added in the 20th century. Building 8, 1970s offices join to the north and east of the house by glass corridors. In the late 20th century this building was refitted and was used as the reception and offices for the mill. The ceilings were lowered and most features removed or covered.

The area to the north and west of the house was fully wooded in 1953. There was a lodge to the west of the house but it was demolished to make way for Building 20 in the late 20th century.

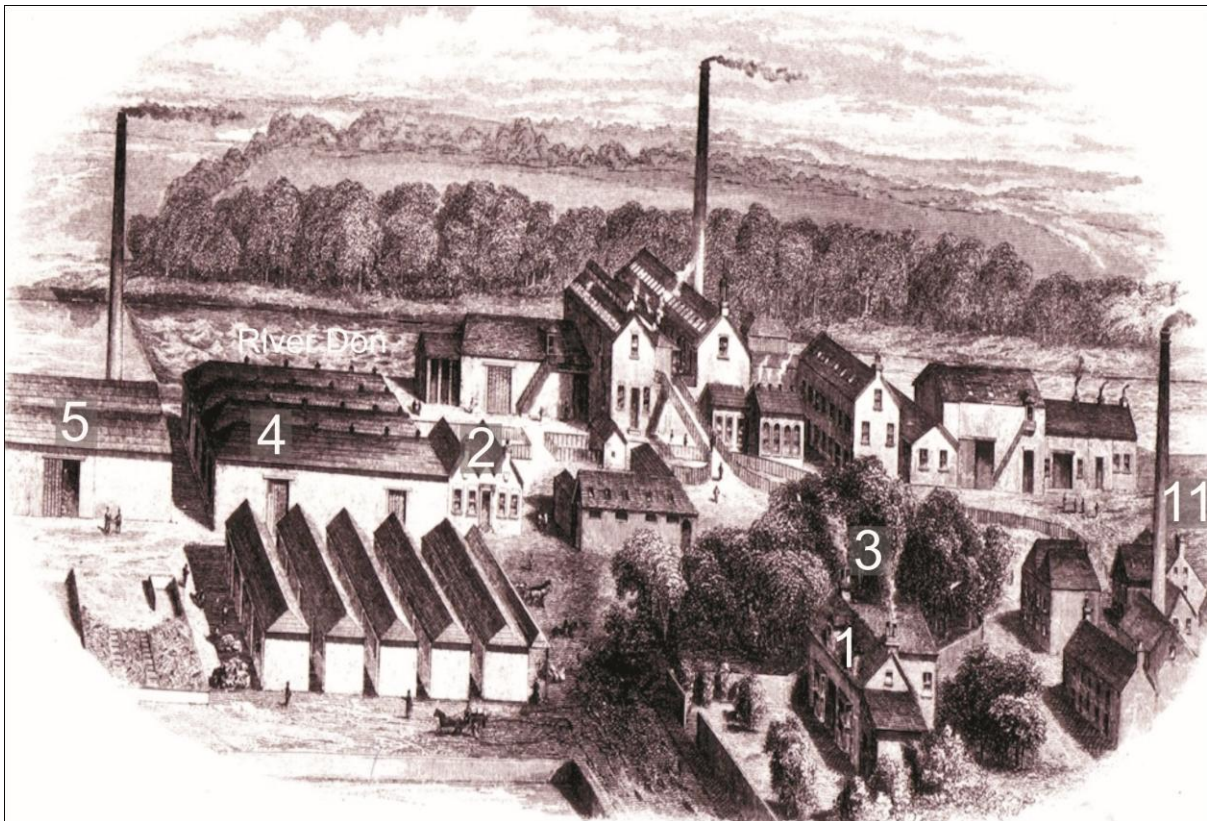


Illus 7 Building 1: Left: south front facade; right: west facing facade



Illus 8 Building 1: Ground floor room with south-facing bay window; converted to offices in mid 20th century.



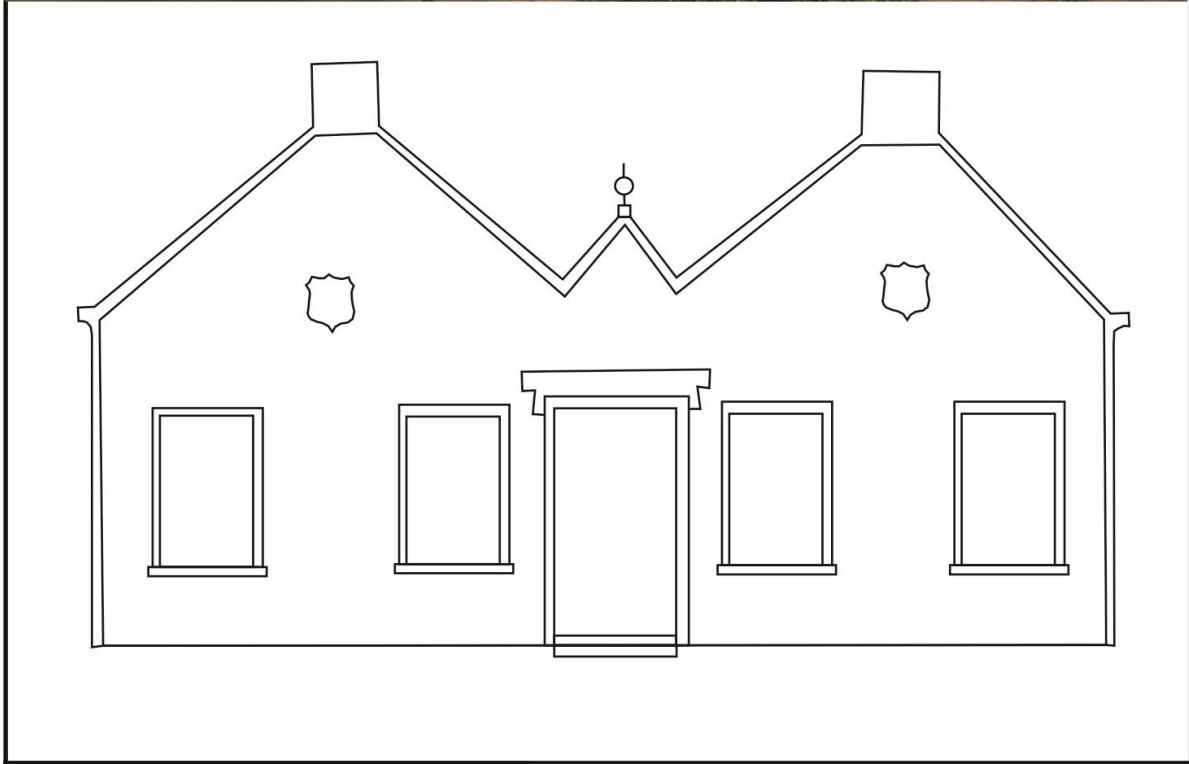




Illus 9 1886 illustration of the mill from the south with numbers relating to building numbers in this standing building survey

### **BUILDING 2**

Building 2 (Illus 10-12) is a stone harled building and probably dates to the 19th century. It is 14.3 x 11.8m in size not including modern extensions to the north for the addition of a kitchen area. It has two shield-shaped granite plaques on the south facade but there appears to be no date or detail on these plaques.

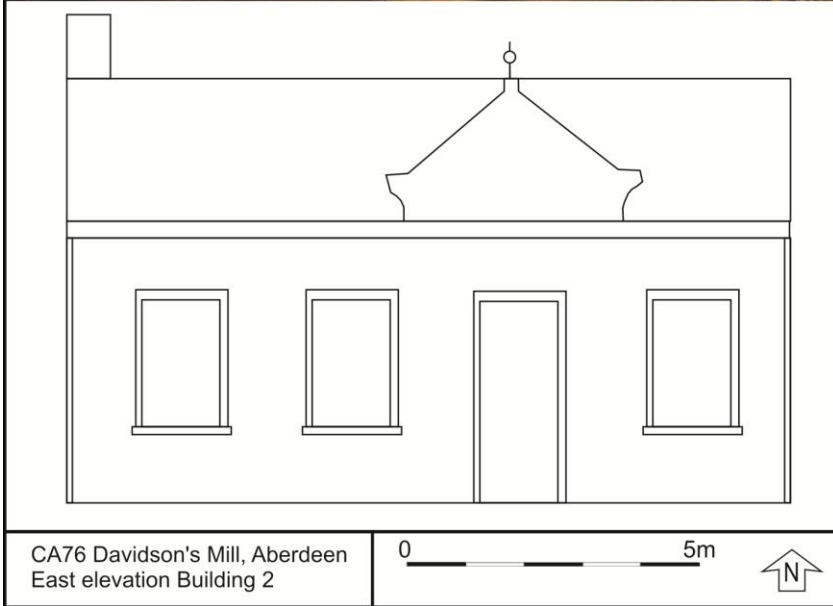
This building has been used as a canteen since the middle of the 20th century and was fully refitted with kitchen area (in the extension to the north), seating and serving hatch. It is likely, due to its location and architecture, that this building had been the main office for the mill prior to that.



<p>CA76 Davidson's Mill, Aberdeen South elevation Building 2</p>	<p>0  5m</p>	<p> N</p>
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Illus 10 Building 2: south elevation



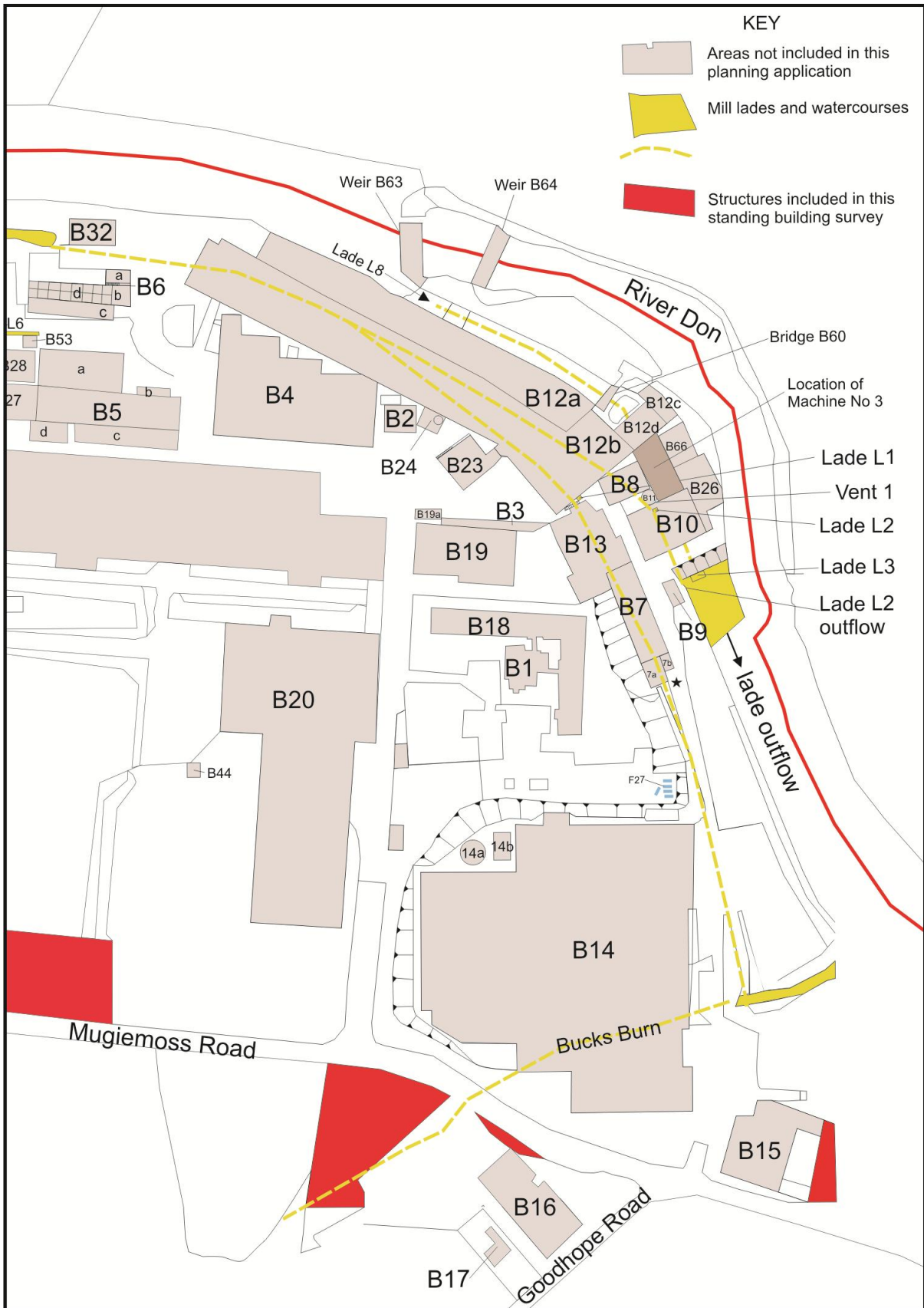


Illus 11 Building 2: east elevation



Illus 12 Building 2: interior fitted as a canteen





Illus 13 Plan of of standing building survey (east half of mill)

### **BUILDING 3**

Structure 3 is the remains of a retaining wall (Illus 14). It survives to 49m in length and has been cut through to provide brick and latterly concrete foundations for Building B19 and the overground pipework running along the north side of B19.

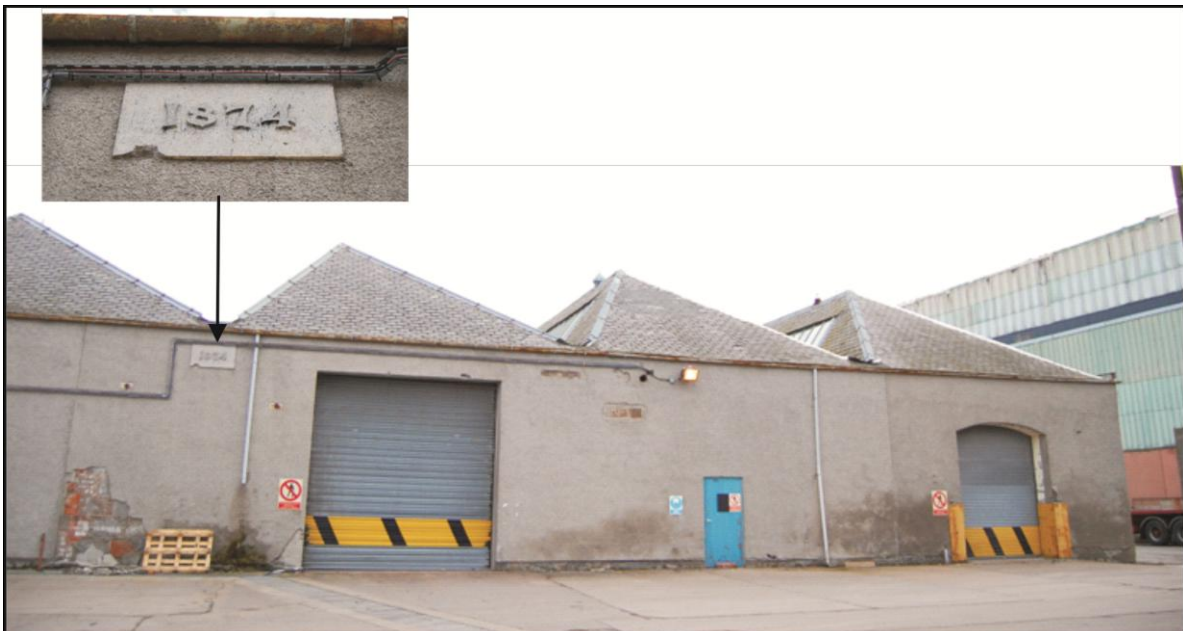


Illus 14 Building 3 (foreground left) with B19 and overground pipework (background; right detail of B3 facing south

### **BUILDING 4**

The older part of Building 4 is 72.4m long and 31m wide (Illus 15-16); it has more recent extensions on the north side. It is a harled stone building and the older section consists of four conjoined rectangular buildings each with a hip roof. The roof is supported internally with cast iron pillars. There is a date stone for 1874 on the west facade.

This building was used latterly as a finishing room where paper made at the mill was brought to be transformed into specialist papers such as crepe and had a paper bag plant at the east end.



Illus 15 Building 4: West facade showing date stone (inset)



Illus 16 Interior of Building 4 facing east showing cast iron support pillars

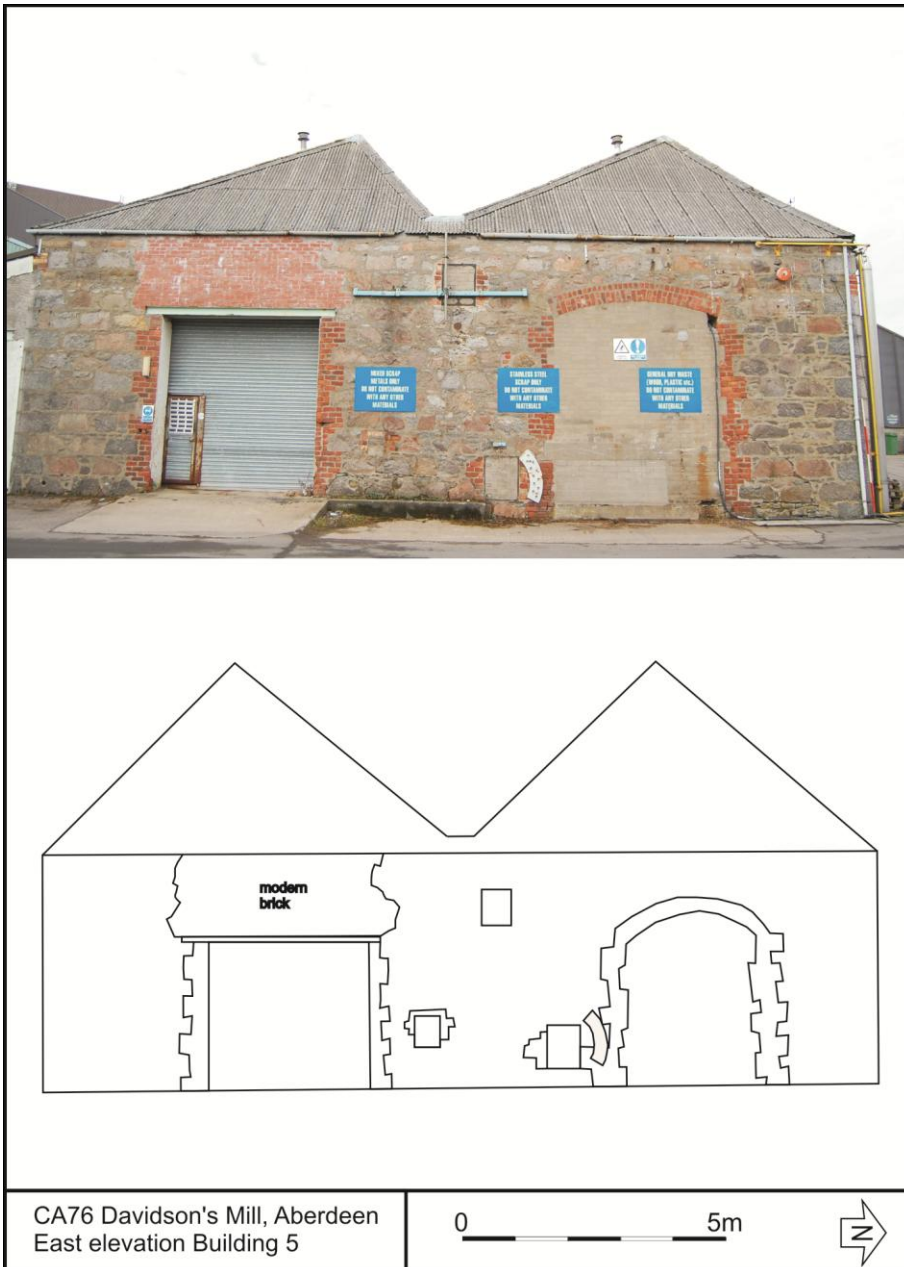
### **BUILDING 5**

The older part of Building 5 is 57m long and 16.05m wide (Illus 17-18); it has more recent extensions on the south, north and west sides. The east facade appears to be original and features the remains of two arched brick doors (Illus 14); an original brick door also survives in the south wall (illus 17). The roof is a double hip.

The building was used latterly by the plant engineers. On the 1953 aerial photograph (Illus 33) a chimney is located in the area now occupied by Building 5a; it was for an incinerator plant.



Illus 17 Building 5: original brick door on south wall showing modern extension (background)



Illus 18 Building 5: east facade showing original brick doorways; the doorway on the left has been altered and a metal door inserted.



Illus 19 Building 5: North wall showing extension 5b.

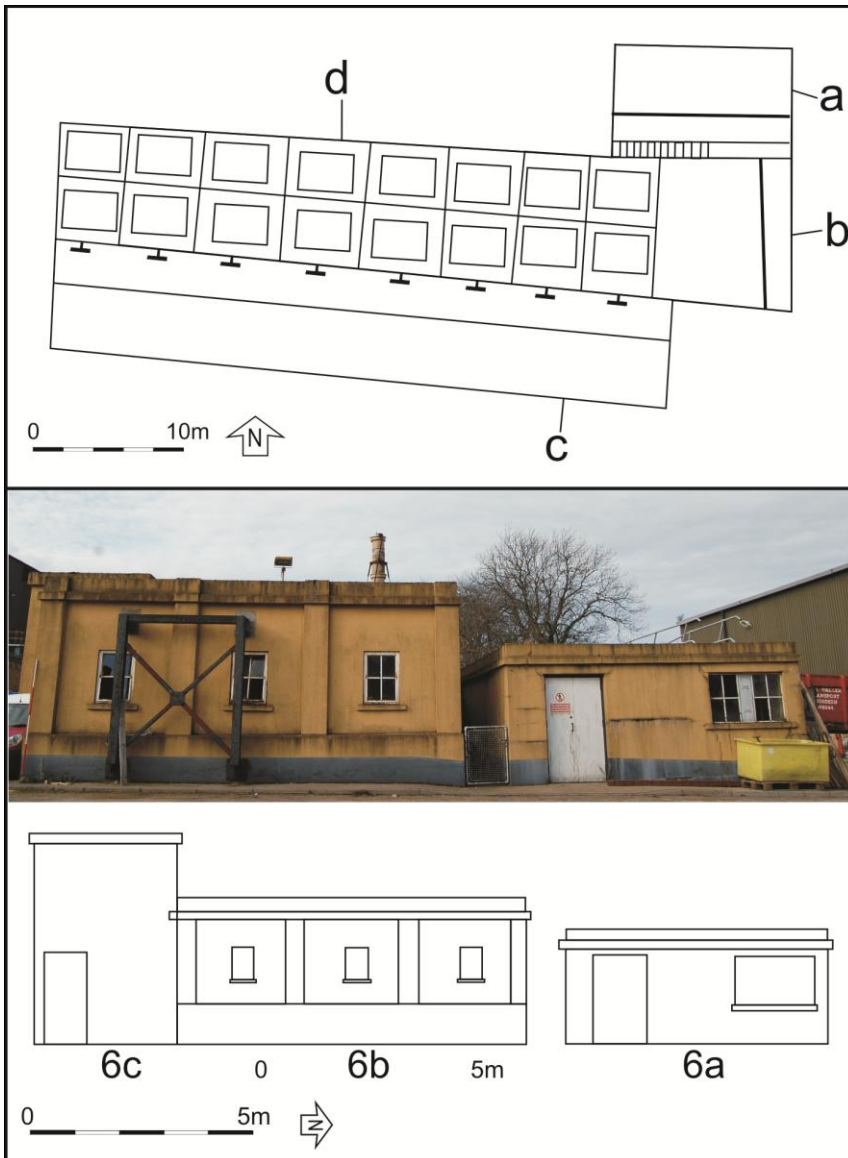
## **BUILDING 6**

Building 6 was a water purification and pumping plant known at the mill as the Paterson Plant (Illus 20-24). Building 6a is a pumping plant, 6b is a deep pumping plant taking water directly from the Don for use in the mill. Building 6c is the inspection area and 6d is two groups of 8 concrete tanks which would have been filled with sand. Contaminated water was filtered through sand removing impurities and then the clean water was pumped back into the river Don. The sand was changed every year during closure of the mill at Trades Fortnight (the middle two weeks of July) and the sand was removed, cleaned and put back into the tanks (pers comm Nick Flippance<sup>1</sup>, Manse (Aberdeen) Ltd who worked at the paper mill for 25 years; reminiscences were). Building 6 is constructed of concrete blocks for the walls and internal structures and poured reinforced concrete roof. It was probably built in the 1930s or 1940s. It has iron window frames in the east facade which is the location of the control rooms. The frontage is divided into two rooms 6a at the south and 6b at the north; 6a is 8m wide, 6b is 6m wide and there is a set of steps between these buildings to access the reservoir area. At the west of the building is the reservoir and pipes take water to the west including to the Effluent Plant. The area around this building was fully wooded in 1953 (Illus 33).

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<sup>1</sup> Manse (Aberdeen) Ltd who worked at the paper mill for 25 years; reminiscences were recorded with him and colleague Harry Frampton.





Illus 20 Building 6: Plan (top), photograph and elevation of east facade (bottom)



Illus 21 Building 6a pumping plant with mechanisms still *in situ*



Illus 22 Building 6a: roof showing plank marks from shuttering and reinforcing bars rusting and appearing through the concrete



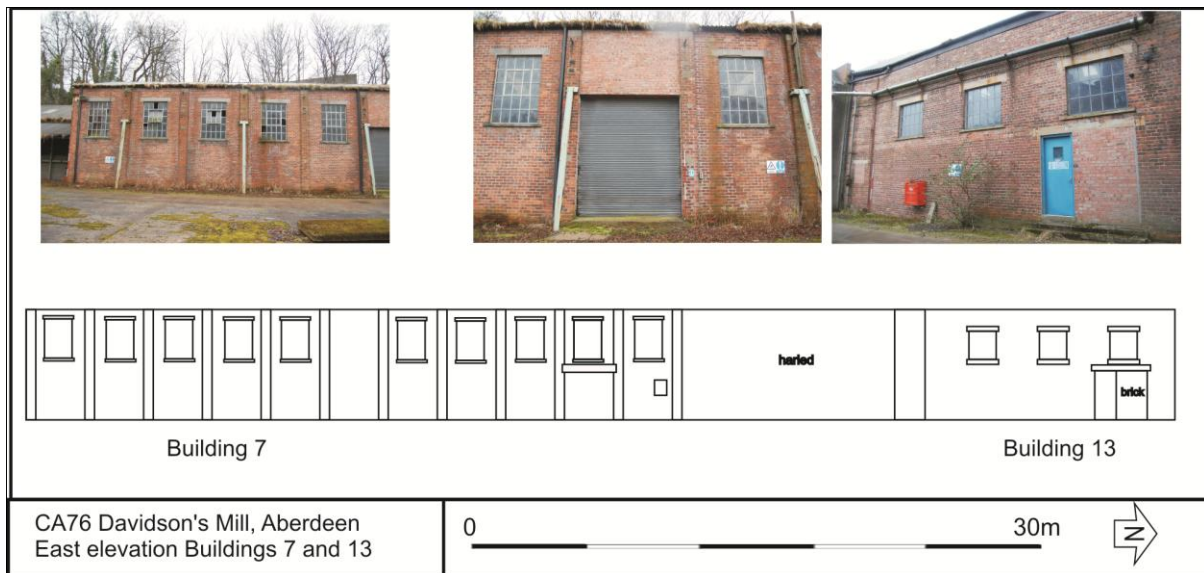
Illus 23 Building 6d: concrete tanks



Illus 24 B6 tanks during operation of mill (copyright mugiemoss.co.uk)

### BUILDING 7

Building 7 is adjacent to the river Don (Level 1) at the east of the complex. It is brick built and probably one of the early mill buildings. It is 45.6m long and 4.05m wide. It has modern extensions at the south end (7a and 7b). At the north end there is a harled section of the building which then joins onto Building 13 (Appendix 2). B7 is the dispatch area for products of Machine No 3 (B13). Trench 24 was located SE of this building.



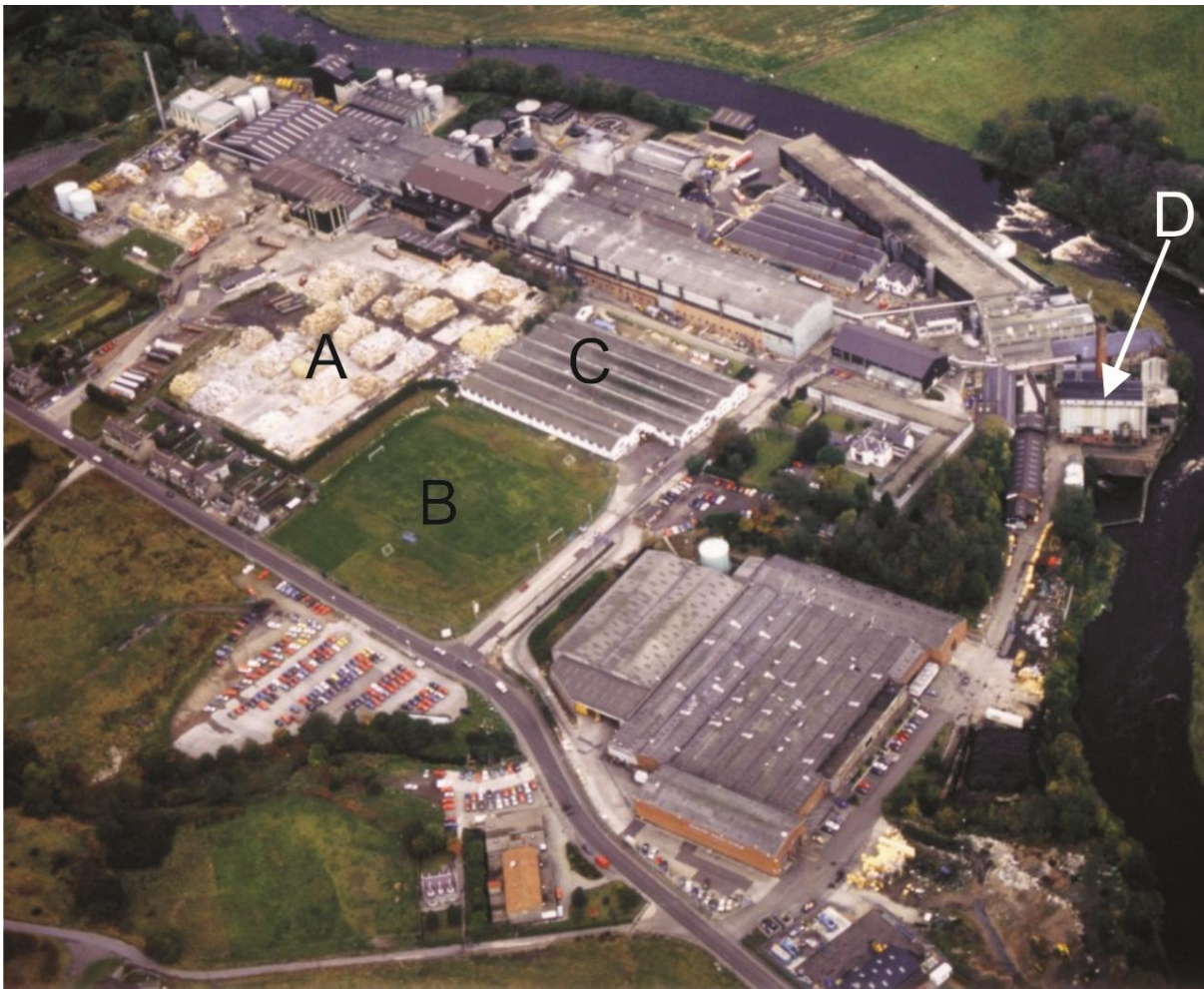
Illus 25 Building 7: east elevation

### BUILDING 10

Boiler House for machine No 2 and attached to chimney B11 by vent (Illus 26-30). Only the north and east walls of Building 10 survive; the building was 31.9 x 20.7m in size and had brick walls and a concrete floor. A cast iron-lined vent links this building with Chimney B11 suggesting B10 was furnaces. This building was still extant in 1972 (Illus 34) and has a full cellar under the south half where ashes dropped on to a conveyor and were loaded into trucks for disposal.



Illus 26 Chimney (B11) with B10 (foreground); facing NNW



Illus 27 Aerial photograph c 1989 showing A piles of recycled paper ready to be reworked into new paper and cardboard B football pitches C Lander Cartons buildings D Boiler House (B10) (copyright mugiemoss.co.uk)

## BUILDING 11

Chimney B11 (Illus 28-30) is brick built, 5.6m in diameter and has a brick-lined cast iron door on the west side labelled 'E GREEN/FUEL ECONOMISER WORKS/WAKEFIELD'. In 1845 E Green & Sons patented 'Green's Economiser' (Illus 29) which was a device for recycling heat from boilers that previously went to waste ([twixtaireandcalder.org.uk](http://twixtaireandcalder.org.uk)). This chimney is being retained as part of the current development.

The open area between B11 and B26 house Machine No 2 prior to going out of use c 1975 and demolition. The chimney has been reduced in height and banded in the recent past for health and safety reasons.



Illus 28 Chimney B11 from west



Illus 29 B11 door on west side including detail of cast iron door.



Illus 30 Vent between Boiler House B10 and chimney B11

### **BUILDING 16**

Mugiemoss Sports Club, 48 x 11m in size constructed of concrete in the mid to late 20th century.



Illus 31 Building 16 from NE

### **BUILDING 17**

Building 17 is Ellangowan Cottage, a granite cottage with a single bay at the front, SE facade. The cottage is not on the 1901 although the plot exists at that time. The cottage was originally occupied by the Steward of the Social Club and was latterly a guest house for visitors to the mill.



Illus 32 Building B17 (left) front SE facade; (right) rear NW face



Illus 33 1953 aerial photograph (copyright mugiemoss.co.uk)



Illus 34 1972 aerial photograph (copyright mugiemoss.co.uk)

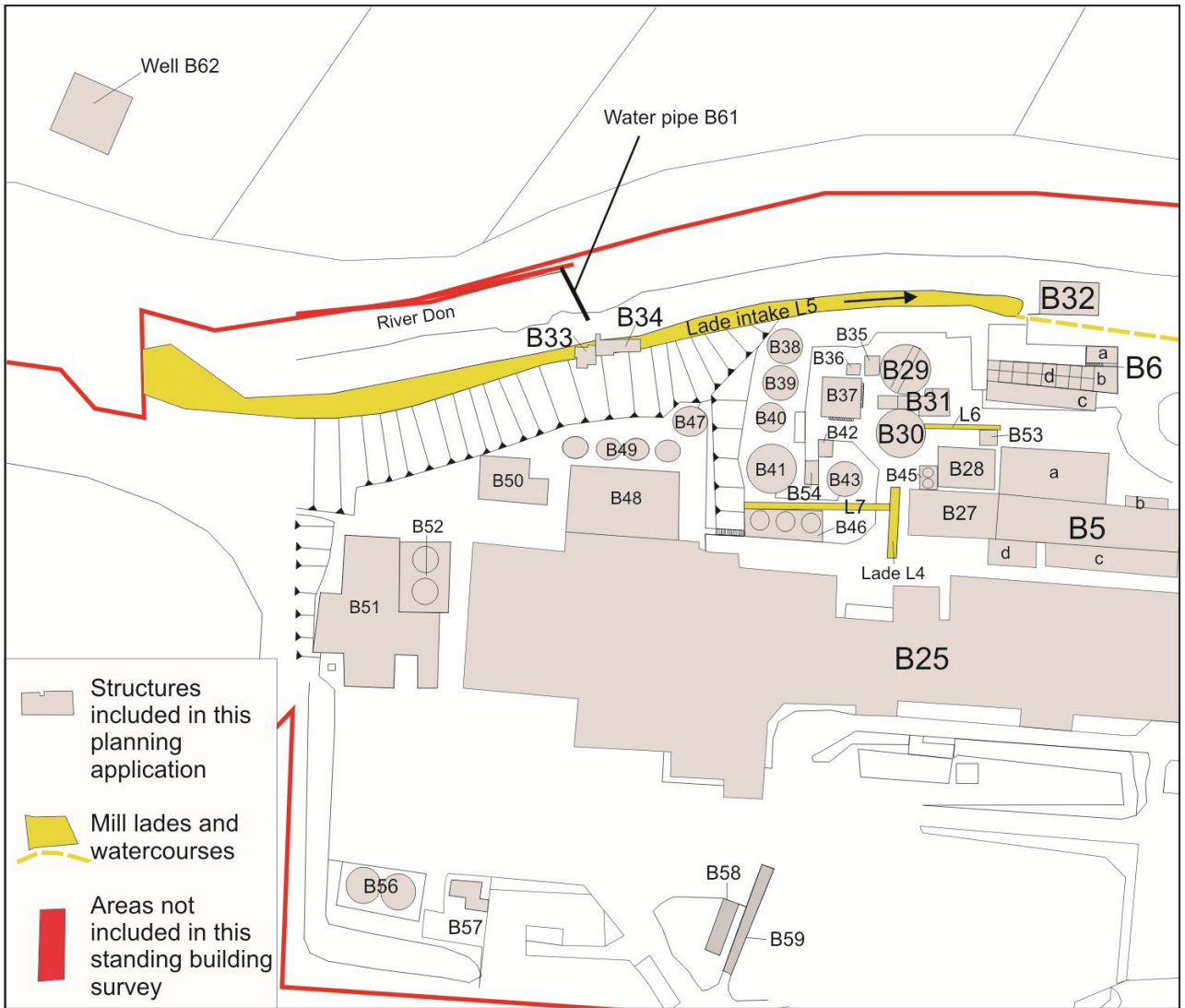
### **BUILDING 26**

Building 26 is a brick and stone building on the bank of the Don. A 1953 aerial photograph (Illus 33) shows chimney in the vicinity of the building but there is now no trace of this structure. The building was latterly the dispatch area for Machine No 2. Trench 23 was located adjacent to this building.



Illus 35 Building 26





Illus 36 Detail of Standing building Survey (west half of mill)

## LADES

### Lade 1

Lade 1 is seen under a hatch on the SE side of B12; it is the west branch of the lade.



Illus 37 Lade 1

**Lade 2**

Section of Lade seen under floor of Building 10.

**Lade 3**

Lade 3 is the main outflow of the east lade which is now under B12 and re-enters the river Don. The lade structure is 23m wide and originally of stone with concrete additions.



Illus 38 Lade 3 (centre) showing 23m wide lade feeding water back into the river Don and Lade L2 outflow (centre at base of stone embankment)

**Lade 4**

Culvert taking dirty water to the Effluent Plant from Machine Number 5 (B25).

**Lade 5**

Intake at NW of site.



Illus 39 Lade 5 inflow at NW of site

**Lade 6**

Culvert taking water to Effluent Plant.

**Lade 7**

Culvert taking water to Effluent Plant.



Illus 40 Culvert (L7) facing west

**Lade 8**

Intake along the north side of B12, under B12D, B11, B10 and exiting Lade 3.

**GUARD DOG GRAVES (F27)**

Five stone piles two with crosses *in situ* are the graves of guard dogs employed during the life of the mill.



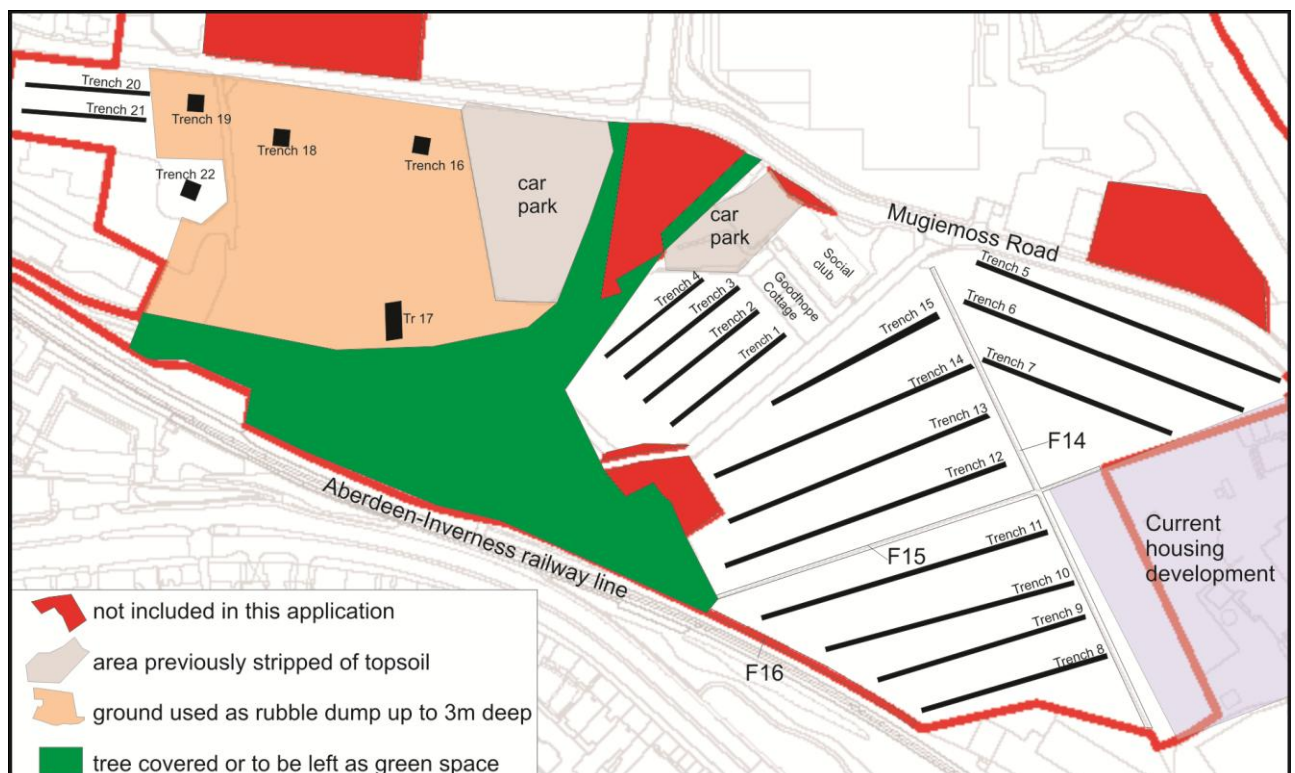
Illus 41 Dog burials

## 4 FIELD EVALUATION

24 trenches were excavated, 22 in the Phase 1 areas K, L, O, P and Q with a tracked machine with 2m ditching bucket. The weather was damp, wet and snowy but mainly bright with good visibility.

### Trenches 1-22

Four trenches (Tr 1-4) in Area O south of Goodhope Cottage revealed waterlogged subsoil with associated stone drains (F1-F5 Appendix 4). All the other fields were well-drained with sand and gravel subsoil. Trenches 5-15 were located in the three fields south and SE of Goodhope Road; the ground was mostly well-drained and a small number of drains were identified; deep plough marks had scored into the natural subsoil and these were associated with late 19th and 20th-century pottery.



Illus 42 Plan showing trenches 1-22 (Phase 1 areas K, L, O, P and Q)

Trench 17 was located in the area of a saw mill seen on the First Edition Ordnance Survey map; this area had been a yard in the mid 20th century (pers comm Nick Flippance) and the topsoil and been scraped from the site and then up to 1.4m of demolition material dumped on the site in the 1990s. It is therefore unlikely that any features would survive in this area.



Illus 43 Trench 13

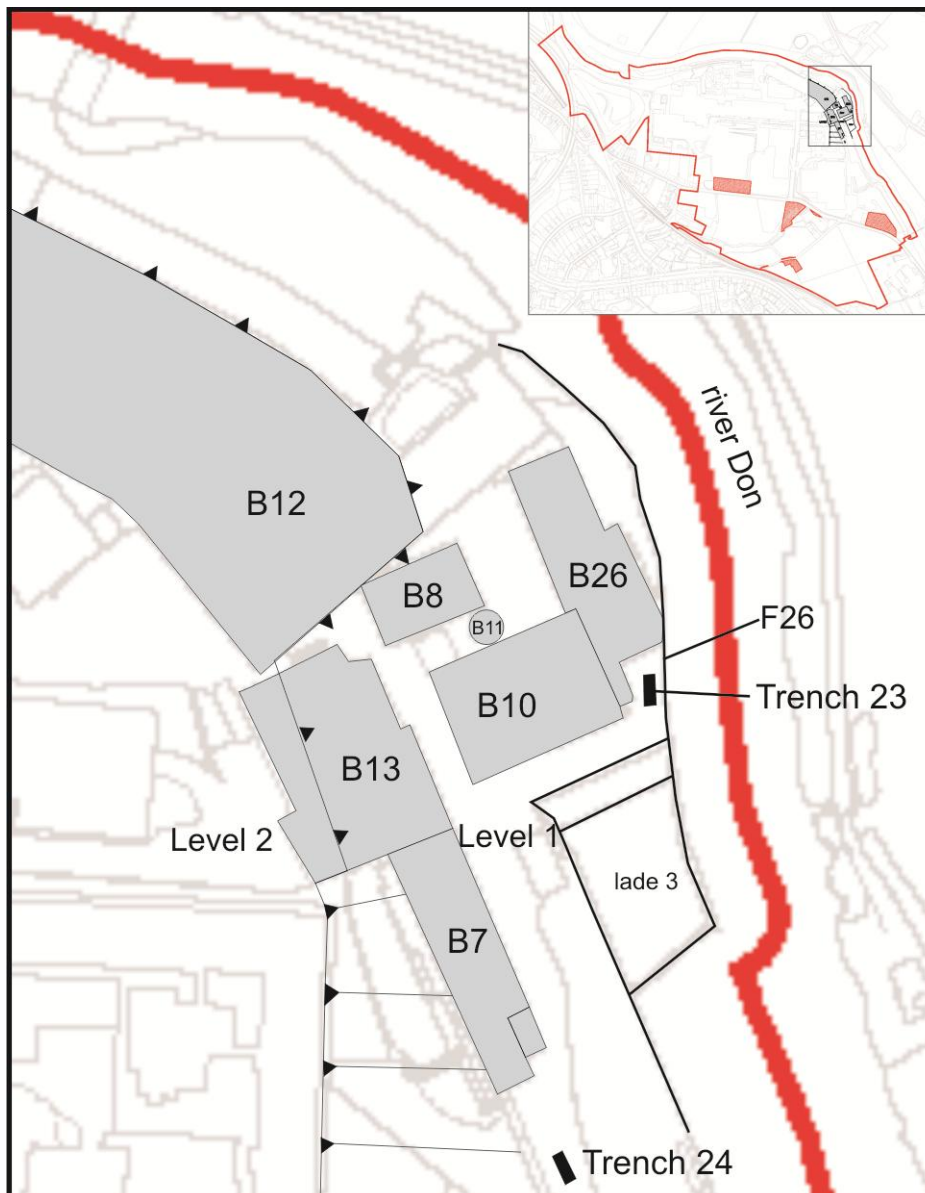


Illus 44 Trench 14 F20/F21 modern deep plough marks associated with 20th-century pottery sherds

The SE end of Trenches 8-11 were excavated close to the stone boundary (F16) between the site and the railway line but no evidence of the Aberdeenshire Canal was evident. It is assumed that the railway followed the line of the canal in this location and had therefore destroyed any evidence of the canal.

### Trenches 23-24

Two trenches were excavated within the old mill buildings at the south end of Area D (Illus 45). The area is riddled with services including sewer, water, electricity and many of the surfaces are reinforced concrete. Trench 23 was located in an area adjacent to the embankment wall F26 and east of Building 26 in an area where there were no services and the concrete appeared less likely to be reinforced.



Illus 45 Plan showing location of Trenches 23 and 24 on level adjacent to the river Don (with location within mill inset)



Illus 46 Trench 23: Brick surface F24 (left) and brick detail (Dykehead/Bonnybridge)



Illus 47 Trench 23: Stone cobble (cassie) surface F25

Under concrete and brick rubble was a surface constructed of bricks which included ones marked 'Dykehead/Bonnybridge' (Illus 46). This brickworks was in operation between c1925 and 1950 (Douglas and Oglethorpe 1993, 62). Under this a stone cobble or cassie surface (Illus 47) was well-laid. No dating evidence for this layer was recovered but it is likely to be 19th-century in date. Under this was an ash layer 1.1m deep. It is likely that this layer of dumped ash had come from the earliest mill workings and had been deposited there to raise the level of the ground to above the high water table.





Illus 48 Trench 23: section through surfaces F23 and F24 and ash layer 7 dumped to raise level of area above high water level

Trench 24 was located SE of Building 7 in an area where there were no observed or CAT detected services. The concrete was reinforced but of an age where metal fatigue had weakened it. Below the concrete, layers of upfill (9-11) included fragments of brick, ash and redeposited natural subsoil up to 1.3m deep but no specific dating evidence. It is likely that this layer of dumped material had come from the earliest mill workings and had been deposited there to raise the level of the ground to above the high water table.



Illus 49 Trench 24: section through layers of dumped material to raise level of area above high water level



## 5 CONCLUSIONS AND RECOMMENDATIONS

Phase 1 Areas K, L, O, P, Q AND R produced no significant archaeological remains and it is recommended that no further archaeological work is required in these areas.

Two trenches in the south end of Area D produced evidence that the area had been increased in height by at least 1.5m using ash and rubble presumably from the early mill workings. It is therefore possible that structural remains will survive in this area and further trenches should be excavated when the companies leasing buildings have vacated them or in association with the demolition work. Further work will be required in this area after demolition and before further construction.

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## APPENDIX 1 PHOTOGRAPHS STANDING BUILDING SURVEY

Photo no	Description	Facing
<b>LEVEL 1</b>		
DSC_0030-35	Building 7 extension south end	NW
DSC_0036-41	Building 7 south end	NW
DSC_0042-47	Building 7 south end east facade	SW
DSC_0048-52	Building 7 south end east facade	SW
DSC_0053-58	Building 7 east facade	SW
DSC_0059-63	Building 7 east facade	S
DSC_0064-68	Building 7 east facade	SSE
DSC_0069-73	Building 7 east facade	SE
DSC_0074-78	Building 7 east facade	SE
DSC_0079-84	Building 9	S
DSC_0085-90	Building 7 east facade	SE
DSC_0091-95	Building 7 east facade	SE
DSC_0096-100	Building 7 east facade	SE
DSC_0101-105	Building 7 east facade, north end	SE
DSC_0106-111	Building 7 NE corner	SSE
DSC_0112-116	Building 7 (left) Building 12 (centre), Building 8 (right)	NW
DSC_0117-122	Building 7 north end	SE
DSC_0123	Building 7 north end	
DSC_0124-128	N end Building 7	S
DSC_0129-134	N end Building 7 (left), Building 12 (right) steps in between up to Level 2	WSW
DSC_0135-140	N end Building 7 with wheel valves and stairs to Level 2	S
DSC_0141-145	Building 12 SE face	NE
DSC_0146-150	Lade under Building 12 (L1)	NE
DSC_0152	Lade under Building 12 (L1)	W
DSC_0153	Lade under Building 12 (L1)	NW
DSC_0154	Lade under Building 12 (L1)	N
DSC_0155	Lade under Building 12 (L1)	NW
DSC_0156-161	Building 8 with chimney B11 in background	NE
DSC_0162-166	Building 8	NE
DSC_0167-170	Building 8 main door	NE
DSC_0171-176	Building 8	NE
DSC_0177	Building 8 door detail	NE
DSC_0178-0182	Passage to Chimney B11	NE
DSC_0183-188	Chimney B11	NE
DSC_0189-204	Chimney B11 door detail	NE
DSC_0205-206	Chimney B11	NE
DSC_0207-208	Chimney B11 iron door detail	NE
DSC_0209-213	Building B8 from B11 (right)	NW
DSC_0216-220	Building B10 exterior detail, B11 (left)	SE
DSC_0221-225	Building B10 exterior detail, B11 (left)	S

DSC_0227-231	Building B26 (right) B11 (left)	NE
DSC_0234-238	Chimney B11 door detail	NE
DSC_0239-240	Lade (L3) outtake to river Don	SSE
DSC_0241	Lade (L3) outtake to river Don	SE
DSC_0242	Lade (L3) outtake to river Don	SE
DSC_0243-248	Building B7	W
DSC_0249-260	Building B10 north wall with Chimney 11 in background	NNW
DSC_0261-266	Building B10 north wall with Chimney 11 in background	NNW
DSC_0275-287	Building B10 north wall with Chimney 11 in background	NNW
DSC_0288-293	Building B10 north wall with Chimney 11 in background	NNW
DSC_0295-296	Building B10 north wall chimney vent detail (Vent 1)	NNW
DSC_0297-314	Building B10 east wall	ENE
DSC_0315-320	Building B10 north wall with Chimney 11 in background	NNW
DSC_0321	Lade L1	SE
DSC_0322-352	Building B26	NNW
DSC_0353-363	Don and adjacent lade wall	various
DSC_0364-369	Building B26 (right) B10 (left)	NNW
DSC_0370-375	Building B10 north wall with Chimney 11 in background	NW
DSC_0376-379	Steps between B13 (left) and B12 (right)	W
DSC_0380-385	Building B12 (left), B13 (right) chimney B11 (background)	ENE
DSC_0386-391	Building B8 (left), B13 (right)	ENE
DSC_0392-397	Building B12 (left), B8 (right)	E
DSC_0398-402	Building B12 (left), B13 (right)	E
DSC_0403-405	Building B12 (left) with pipework	E
DSC_0406-410	Lade L1	E
DSC_0411-417	Building B13 N end with pipework	E
DSC_0420	B12 pipework	ENE
DSC_0421-426	Lade L3	E
DSC_0427-431	Lade L3	NE
DSC_0432-457	Views from north bank of river Don	S/SE/S W
DSC_0458-473	Lade L3	N/NE
DSC_0474-479	Lade L3. chimney B11 (left), B26 (right)	NNE
DSC_0480-485	Mill from in east of Building B14	N
DSC_0486-498	B14	W/SW/ NW
DSC_0499-518	Bucks Burn east of Building B14	SW/S/S E
DSC_0519-523	Bucks Burn east of Building B14	S
DSC_0600-0604	B14 from B16	N
DSC_0605-0620	B15/B14 from B16	



DSC\_0030



DSC\_0036



DSC\_0046



DSC\_0049



DSC\_0057



DSC\_0060



DSC\_0062



DSC\_0064



DSC\_0073



DSC\_0074



DSC\_0084



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DSC\_0155



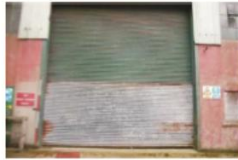
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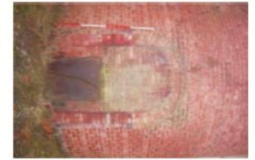
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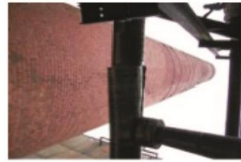
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DSC\_0503



DSC\_0504



DSC\_0517



DSC\_0523



DSC\_0600



DSC\_0610



DSC\_0620

LEVEL 2		
DSC_001-0004	Building B1 with B18 (left)	NE
DSC_005-0012	B21	SW
DSC_0013-0018	car park south of B1	E
DSC_0019-0024	B22	SE
DSC_0025-0029	Cylinder B14a	E
DSC_0030-0035	B14a (left) B14 (right)	ESE
DSC_0036-0040	B22	NW
DSC_0041-0047	Entrance gates	S

DSC_0048-0052	B21	NE
DSC_0053	B21	N
DSC_0054-0056	B20	N
DSC_0057-0061	B18 north face	WSW
DSC_0062-0066	B19 east face	W
DSC_0067-0071	B19 (left) B13 (right)	N
DSC_0072-0076	B13 with chimney B11 (background)	E
DSC_0077-0081	B13 (left) B18 (right)	SE
DSC_0082-0090	Pipes on north side B19	W
DSC_0091-0095	Roof B13	ENE
DSC_0096-0101	B19 (left) B13 (centre) chimney B11	E
DSC_0102	B19 south face	N
DSC_0103	B19 south face	NW
DSC_0104-107	Pipes on south face B12	NE
DSC_0108-119	B12 (left) B8 (centre) B13 (right)	NE
DSC_0120-136	B13	SE
DSC_0137-141	B12 SE end (chemical store)	NE
DSC_0142-146	B12	NE
DSC_0147-151	B23 south face	NW
DSC_0152-156	B12 (right) B23 (left)	N
DSC_0157	B12 'Access No 4 machine'	N
DSC_0158-159	B12 south wall	NE
DSC_0160-175	B3 revetment wall with B19 background	
DSC_0176-180	Building 19A	S
DSC_0181-186	B3 revetment wall with B19 background	SE
DSC_0187-192	B23 'Civil Workshop' SW face	NE
DSC_0193-198	B23 (left) B12 (centre) B19 (right)	E
DSC_0199	B25 NE corner 'Access to No 5 Machine'	SW
DSC_0200	B25 (left) B4 (right)	W
DSC_0201	B2	N
DSC_0202-203	B23	SE
DSC_0204-218	B2 south face	N
DSC_0219-223	B2 west face	N
DSC_0224-229	B2 north face with extension	SSE
DSC_0230-235	B2 (centre) B12 (left) B4 (right)	SSE
DSC_0236-241	East end B4	W
DSC_0242-246	B2 east face	W
DSC_0247-251	B24 foundation	NE
DSC_0252-256	B23 NW face	SE
DSC_0257-261	B1 N face showing extension (right)	SE
DSC_0262-267	B1 N face extension	S
DSC_0268-273	B1 N face	SE
DSC_0274-281	B1 (right) B18 N wing (left) link building	SE
DSC_0282-291	B1 W facade	E
DSC_0292-304	B1 south facade	N

DSC_0305-308	B1 west facade	E
DSC_0309-318	B2 south facade with B12 in background	N
DSC_0319-322	B2 east facade	W
DSC_0323-335	B2 west facade	SE
DSC_0336-340	B4 with B2 (right)	W
DSC_0341-345	B4 with B2 (right)	NW
DSC_0346-350	B2 (left) B23 (right) with B12 in background)	NE
DSC_0351-355	B4 south face	N
DSC_0356-361	B25 east end north face	S
DSC_0362-366	B25 north face	ESE
DSC_0367-373	B4 south face	ENE
DSC_0374-374	B11 chimney from B23	E
DSC_0375-380	B11	E
DSC_0381-383	B11 with B10 in foreground	NE
DSC_0384-385	B9 interior through plastic sheet door	SE
DSC_0386	B11 with B10 in foreground	NE
DSC_0387-389	Lade L3	SE
DSC_0390	B11 with B10 in foreground	N
DSC_0391-396	B25 north wall	ESE
DSC_0397-402	B4 north wall (right)	ENE
DSC_0403-407	B4 SW corner	NE
DSC_0408-413	B4 west face	NE
DSC_0414-422	B4 west face south end	E
DSC_0423-428	B4 wst face date stone detail	E
DSC_0429-439	B4 west face north end	E
DSC_0440-444	B12 south wall west end	NE
DSC_0451-456	B12 south wall west end	N
DSC_0457-462	B4 west face north end	E
DSC_0463-473	B5 north wall showing extension B5b (right)	
DSC_0474-499	B5 east face	W
DSC_0502-506	B5 east face showing extension B5c (left)	NW
DSC_0507-512	B5c (right) B25 (left)	W
DSC_0515-537	B5d (left) B25 (right)	E
DSC_0539	B5c (right) B25 (left)	W
DSC_0540	SW corner B4	NE
DSC_0541	N face B5 with extension B5b (centre)	S
DSC_0542	B5a (right)	SW
DSC_0543-548	B12 NW end	NE
DSC_0578	Lade L5 with Don in background	N
DSC_0579-586	Lade L5 with Don in background	NW
DSC_0621-625	B1 west face	E
DSC_0626-630	B18 north wing B1 (right)	N
DSC_0631-636	Garden SW of Building B1	SW
DSC_0637-641	B1 garden	S
DSC_0642-648	B1	NNE

DSC_0649-655	B1	N
DSC_0656-660	B1 (left) B18 east wing (right)	E
DSC_0661-672	B1 (left) B18 east wing (right)	NE
DSC_0673-684	B18 east wing	NW
DSC_0685-690	Garden SE of Building B18	SE
DSC_0691-695	Looking down on Building 7A from B18	E
DSC_0696-702	Looking down on Building 7A from B18	E
DSC_0703	Looking down on Building B7 from B18	ENE
DSC_0704	Looking down on Building B13 (right) from B18	N
DSC_0705	Looking down on Building B7 from B18	ENE
DSC_0706	Looking down on Building B13 (left) from B18	NE
DSC_0707	Looking down on Building B7 from B18	ENE
DSC_0708	Looking down on Building B13 from B18	NE
DSC_0709	Building B13 cut into slope down to Level 1 from B18	NNE
DSC_0710	Building B13 cut into slope down to Level 1 from B18	N
DSC_0711	B18 (left) B19 (right)	W
DSC_0712	Looking down on Building B7 from B18	SE
DSC_0713	B18 (right)	S
DSC_0714-716	Graves of guard dogs (5) covered with stones	SE



DSC\_0001



DSC\_0012



DSC\_0013



DSC\_0024



DSC\_0025



DSC\_0035



DSC\_0036



DSC\_0046



DSC\_0047



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DSC\_0708



DSC\_0709



DSC\_0710



DSC\_0711



DSC\_0712



DSC\_0713



DSC\_0715



DSC\_0716

Photo no	Description	Facing
Ellangowan		
DSC_0524-0529	Building 16	SW
DSC_0530-0535	Building 16	SE
DSC_0536-0541	Building 16	NE
DSC_0542-0547	Building 16	SE
DSC_0548-0553	Building 17	SE
DSC_0554-0559	Building 17	SE
DSC_0560-0565	Building 17	E
DSC_0566-0571	Building 17	NE
DSC_0572-0577	Building 17	NW
DSC_0578-0587	Building 17	NW
DSC_0588-0594	Building 17 north garden wall	N
DSC_0595-0599	Building 16	WSW
DSC_0611-0615	Building 16	SW



DSC\_0524



DSC\_0534



DSC\_0535



DSC\_0536



DSC\_0547



DSC\_0548



DSC\_0559



DSC\_0560



DSC\_0571



DSC\_0572



DSC\_0582



DSC\_0583



DSC\_0594



DSC\_0595



DSC\_0615

Photo no	Description	Facing
<b>Building 6</b>		
DSC_0449	B6a (left) and B6b (right) from W end B12	W
DSC_0450	B6a (left) and B6b (right) from W end B12	W
DSC_0549-553	B6a (left) and B6b (right) from W end B12	W
DSC_0554-558	B6a east facade	W
DSC_0559-560	B6a interior through window	W
DSC_0561-565	B6b east facade	W
DSC_0566-572	B6b interior through window	W
DSC_0573-577	B6b N wall (left)	ESE
DSC_0590-595	B6b NW corner	SE
DSC_0596-601	B6 west end	E
DSC_0602-611	B6 SW corner	NE
DSC_0612-617	B6 West wall detail	E
DSC_0618-627	B6 south wall	NE
DSC_0629-631	B6 (left) B12 (top)	NE
DSC_0634-640	B6 south wall	WNW
DSC_0643-646	B6a	N
DSC_0647-650	B6 with B32 (background)	NNW
DSC_0652-657	B5a extension	SSW
DSC_0658-663	B5a (left) B6 (right)	W
DSC_0664-665	B6 (left) B12 (right)	N
DSC_0666-670	B5 with B5b (centre)	S
DSC_0671-675	B5 with B5b (left)	S
DSC_0676-681	B5b	S
DSC_0683-686	B6	NW
DSC_0687-690	B6	NNW



DSC\_0449



DSC\_0450



DSC\_0549



DSC\_0554



DSC\_0559



DSC\_0560



DSC\_0561



DSC\_0569



DSC\_0570



DSC\_0571



DSC\_0572



DSC\_0573



DSC\_0595



DSC\_0596



DSC\_0606



DSC\_0607



DSC\_0615



DSC\_0621



DSC\_0624



DSC\_0631



DSC\_0634



DSC\_0646



DSC\_0647



DSC\_0657



DSC\_0658



DSC\_0665



DSC\_0666



DSC\_0675



DSC\_0676



DSC\_0686



DSC\_0687

Photo no	Description	Facing
Level 3		
DSC_0206-210	B48	W
DSC_0223-226	B25 adjacent to B46	SE
DSC_0227-231	B47	N
DSC_0243-248	B49 from east	W
DSC_0249-253	B47	N
DSC_0254-258	Edge of level 3 looking east onto Level 2	E
DSC_0259-268	B48 with B50 (right)	SW

DSC_0269-278	B33 and B34 (no access to these buildings)	N
DSC_0279-284	B50	SW
DSC_0285-289	B49 from west	E
DSC_0290-295	B48	SE
DSC_0296-300	B48	SE
DSC_0301-312	B48	E
DSC_0313-318	B48 with B50 (left)	NE
DSC_0319-323	B25 west end (left) B50 (right)	W
DSC_0324-328	B50	SE
DSC_0329-334	B25 NW corner	SE
DSC_0335-344	B51 east wall	SW
DSC_0345-349	B52	W



DSC\_0210



DSC\_0222



DSC\_0231



DSC\_0243



DSC\_0253



DSC\_0254



DSC\_0261



DSC\_0278



DSC\_0279



DSC\_0288



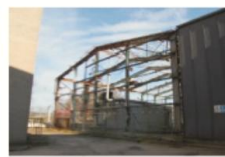
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DSC\_0296



DSC\_0308



DSC\_0318



DSC\_0319



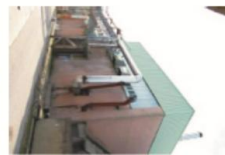
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DSC\_0329



DSC\_0339



DSC\_0340



DSC\_0349

Photo no	Description	Facing
<b>Effluent plant - Level 2</b>		
DSC_0001-0005	B6 (right) B45 (left)	W
DSC_0006-0012	B53 tanks	W
DSC_0013-0017	L6 water channel between B6 and B30	W
DSC_0018-0022	B45 (left), B27 (background)	S
DSC_0023-0027	B31	W
DSC_0028-0032	B31	NW
DSC_0033-0037	B29 tank with B37 in background)	WSW
DSC_0038-0042	B29 tank with B37 in left background)	SW
DSC_0043-0047	B54 (left) B42 aluminium container (centre) B37 (right)	W
DSC_0048-0052	B37 (left) tank B30 (right)with B56 (grey metal)	NE

DSC_0053-0057	B37	N
DSC_0058-0067	B39, B38 (background)	NNW
DSC_0068-0072	B40 (base only) with B39 (background)	N
DSC_0073-0077	B39 (foreground) B38 (background)	N
DSC_0078-0084	B41	S
DSC_0085-0090	B41 (left), steps and pipe up to level 3 (right)	
DSC_0091-0096	B37 (left) B42, B43, B41 (right)	E
DSC_0097-0106	B41 detail	SW
DSC_0107-0112	B41	SW
DSC_0113-0123	B54 (left) B41 (right)	S
DSC_0124-0129	B43 base only with B25 (background)	SE
DSC_0130-0134	B42 with B37 (background)	N
DSC_0135-0139	B30 from B43 with B44 (right) and B55 (right centre)	NE
DSC_0140-0145	B25 from B43	SSE
DSC_0146-0150	B25 from B43	S
DSC_0151-0155	L7 (foreground), B43, B54, B41 (behind), B42, B37 (right) from junction L4/L7	W
DSC_0156-0161	B41 (left) B54 (right)	NW
DSC_0162-0166	B54 (left) B43 (right foreground)	N
DSC_0167-0171	B43	NE
DSC_0172-0177	B43 (left), B44, B5m Lade L7 (right foreground)	E
DSC_0178-0183	B25 (left) lade L7 (centre) B41 (right)	W
DSC_0190-0194	B46 east end	N
DSC_0195-0200	B46 west end	N
DSC_0201-0205	B46 (left) B25 (right)	E
DSC_0211-0215	B41	E
DSC_0216-0236	B41	E
DSC_0237-0242	B41 (left) B54 (right)	ESE
DSC_0693-0697	B53 tanks	NE
DSC_0698-0702	Tank B45	E
DSC_0703-0708	Tank B45	E
DSC_0709-0714	B45 (left) B44	S
DSC_0715-0720	B29	S
DSC_0721-0726	B29 with B37 (background)	SW
DSC_0727-0731	B35 (left) B37 (right)	SSE
DSC_0732-0736	B37	S
DSC_0737-0742	B37 (left) B39, B38 (right)	SW
DSC_0743-0747	B38	W
DSC_0748-0752	B39	W
DSC_0753-0757	B39 (left) B38 (right)	NW
DSC_0758-0762	B40 base only with B41 (left)	W
DSC_0763-0767	B41, B37 (left), B44 (centre background)	NE



DSC\_0001



DSC\_0012



DSC\_0013



DSC\_0022



DSC\_0023



DSC\_0028



DSC\_0037



DSC\_0038



DSC\_0047



DSC\_0048



DSC\_0057



DSC\_0058



DSC\_0067



DSC\_0068



DSC\_0077



DSC\_0078



DSC\_0090



DSC\_0091



DSC\_0101



DSC\_0102



DSC\_0112



DSC\_0113



DSC\_0123



DSC\_0124



DSC\_0134



DSC\_0135



DSC\_0145



DSC\_0146



DSC\_0155



DSC\_0156



DSC\_0166



DSC\_0167



DSC\_0172



DSC\_0181



DSC\_0189



DSC\_0190



DSC\_0200



DSC\_0201



DSC\_0236



DSC\_0237



DSC\_0697 (2)



DSC\_0698 (2)



DSC\_0708 (2)



DSC\_0709 (2)



DSC\_0720



DSC\_0721



DSC\_0731



DSC\_0732



DSC\_0742



DSC\_0743



DSC\_0752



DSC\_0753



DSC\_0761



DSC\_0767

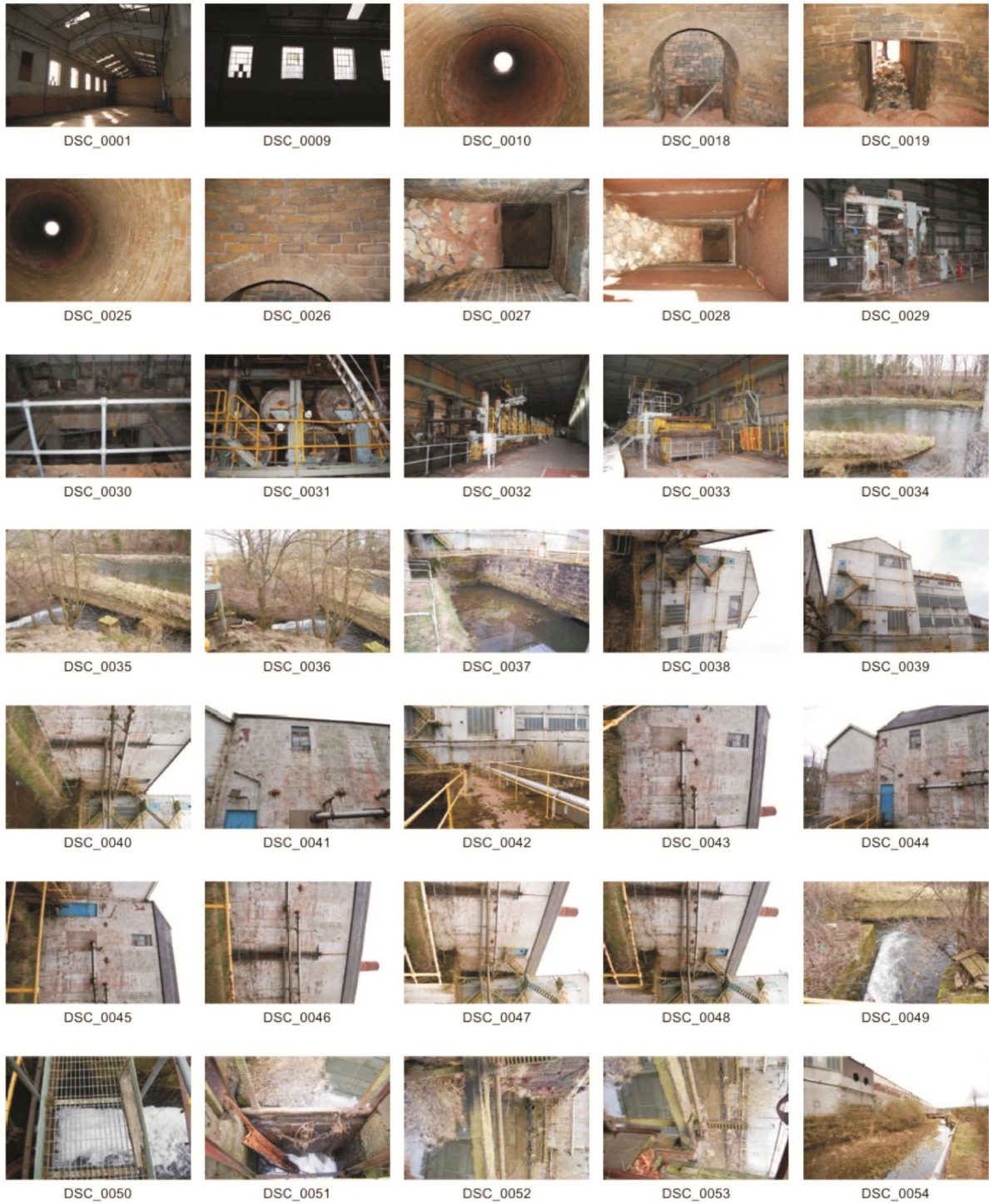
<b>Interiors</b>		
DSC_0001-0003	Building B13	S
DSC_0009	Building B13 windows east wall	E
DSC_0010-0012	B11	
DSC_0013-0018	B11 door from inside	W
DSC_0019-0021	B11 vent to boiler house	E
DSC_0022-0025	B11	
DSC_0026	Brick above entrance door	
DSC_0027-0028	Vent	W
DSC_0029-0033	Machine No 4 B12	
DSC_0034-37	Lade 8	NNE, N, NNW, SE
DSC_0038-39	B12B with 1D (extreme left)	WSW
DSC_0040	B12b (right) 12D (left)	S
DSC_0041	B12B SW	
DSC_0042	Bridge B60 over lade with 12B (background)	SW
DSC_0043-0048	Building B12D NW face	SE, ESE, S
DSC_0049	Lade L8 adjacent to Bridge B60	NE
DSC_0050	Lade under walkway	NW
DSC_0051	Sluice gate at SW end B60	SW
DSC_0051-0052	Lade L8 with 12A (background); B60 (left)	SW

DSC_0054	Lade L8 with B12A (left)	WNW
DSC_0055-0056	Building 12D NW face	SE
DSC_0057-0058	B12B with B12D (left)	SW
DSC_0059-0060	B12D with B11 (background) with bridge B60 foreground	SE
DSC_0061-0063	B12A N wall	SW
DSC_0064-0066	B12D with B11 (background) with bridge B60 foreground	SE
DSC_0067-0068	B12D with B11 with bridge B60 (centre)	SE
DSC_0069	Weir B63 with B12A (left)	WNW
DSC_0070	Weir B64	NNE
DSC_0071-0072	B12A (right) B12D (centre)	
DSC_0073	B12A (left) Bridge B65 (foreground) weir B63 (right)	NW
DSC_0074	Weir B63	N
DSC_0075-0076	B12A	SE
DSC_0077-0078	B61	WNW
DSC_0079-0082	B61 showing area of well on N bank of Don (background left)	NW
DSC_0083-0084	B33	S
DSC_0085-0087	Lade L5 intake with river Don (right).	W
DSC_0088-0090	B61	NE, N
DSC_0092-0095	B25 ground floor north side near west end	E
DSC_0350	B1 hallway showing lowered ceiling, 19th-century lath and coving behind	E
DSC_0351	B1 ground floor front room with bay window; main reception for Mill	S
DSC_0352	B1 ground floor front room with bay window; main reception for Mill	S
DSC_0353	B1 hallway showing lowered ceiling, 19th-century lath and coving behind	S
DSC_0354	B1 hallway showing lowered ceiling, 19th-century lath and coving behind	S
DSC_0355	B1 first floor hallway showing window detail and original banister	N
DSC_0356	B1 first floor hallway showing window detail and original banister	N
DSC_0357	B2 canteen serving area	N
DSC_0358	B2 canteen serving area	N
DSC_0359	B2 canteen seating area	NW
DSC_0360	B2 canteen kitchen	NW
DSC_0361	B2 canteen kitchen	W
DSC_0362-364	B4 finishing workshop; original metal roof trusses	E
DSC_0365-367	B4 finishing workshop	NE
DSC_0368	B4 finishing workshop	E
DSC_0369	B4 finishing workshop machinery	NE
DSC_0370	B4 finishing workshop; north section of building with cast iron pillars which was truncated when B12 built in 1980s	N



DSC_0371	B4 basement at lower level in north	N
DSC_0372	B4 basement at lower level	E
DSC_0373	B4 basement at lower level	NE
DSC_0374	B4 basement at lower level	W
DSC_0375	B4 basement at lower level	S
DSC_0376	B5 original building	W
DSC_0377	B5 original building	W
DSC_0378	Original brick door prior to extension	S
DSC_0379	Original brick door prior to extension	S
DSC_0380	B5 original building	E
DSC_0381	B5 original building	E
DSC_0382	B5 lifting gear	E
DSC_0383	B5 lifting gear	E
DSC_0384-387	B6a pumping mechanism	NW
DSC_0388	B6a concrete block walls, metal window frames and poured reinforced concrete roof	N
DSC_0389	B6a concrete reinforced roof	N
DSC_0390	B6a roof	NW
DSC_0391	B6a cast iron pipes	N
DSC_0392	B6a cast iron pipes	W
DSC_0393	B6a	W
DSC_0394	B6b deep pumping station	SW
DSC_0395	B6b deep pumping station	N
DSC_0396	B6b deep pumping station	N
DSC_0397	B6b deep pumping station	N
DSC_0398	B6b deep pumping station roof	NE
DSC_0399	B6b deep pumping station roof	NE
DSC_0400	B6b fittings on west wall	W
DSC_0401	B6b fittings on west wall	NW
DSC_0402	B6b fittings on west wall	W
DSC_0403	B6b fittings on west wall	W
DSC_0404	B6b fittings on west wall	W
DSC_0405	B6b fittings on west wall	W
DSC_0406	B6b fittings on west wall	W
DSC_0407	B6c inspection area with valves for each tank (right)	W
DSC_0408	B6c inspection area with valves for each tank (right)	WNW
DSC_0409	B6c inspection area with valves for each tank (right)	WNW
DSC_0410	B6d concrete tanks	N
DSC_0411	B6d concrete tanks	NE
DSC_0412	B6d concrete tanks	NW
DSC_0413	B6d concrete tanks	N
DSC_0414	B6d concrete tanks	N
DSC_0415	B6c inspection area with valves for each tank (left))	E
DSC_0416	B6c inspection area with valves for each tank (left))	E
DSC_0417	B6c valves on north wall	N

DSC_0418	B6c valves on north wall	N
DSC_0419	B6c	E
DSC_0420	B6c exterior	W
DSC_0420-0426	B20 north wall	W
DSC_0427-0432	B25 south wall	W
DSC_0433-0438	Link between B25 (left) and B20 (right)	E
DSC_0439-0443	B20 west face	E
DSC_0444-0449	B25 (right)	W
DSC_0450-0454	B25	N
DSC_0455-0459	B25 west end south side	NW
DSC_0460-0464	West end B25 (right)	WNW
DSC_0465-0469	B25	NE
DSC_0470-0475	B25 SW corner	NW
DSC_0476-0481	Tanks 56 (right background) with B57 (left)	S
DSC_0482-0486	Weighbridge building B58	S
DSC_0487-0491	Weighbridge building B58 (right) weighbridge B59 (right)	SE
DSC_0492-0496	Weighbridge building B58 (right) weighbridge B59 (right)	SE
DSC_0497-0502	B58 (left) with B51 (background right)	WNW
DSC_0503-0507	B25 (right) B51 (left background)	NW
DSC_0508-0512	Concrete loading/parking area facing SE from B59	SE
DSC_0513-0517	Link between B25 (left) and B20 (right)	E
DSC_0518-0522	B1 and garden	E
DSC_0523-0522	B1 and garden	E
DSC_0523-0527	B1 and garden with remains of garden wall north of B21	E
DSC_0715-0718	B13	S
DSC_0720-0724	Chute in NW corner	W







DSC\_0354



DSC\_0355



DSC\_0358



DSC\_0359



DSC\_0360



DSC\_0361



DSC\_0362



DSC\_0364



DSC\_0365



DSC\_0366



DSC\_0368



DSC\_0369



DSC\_0370



DSC\_0371



DSC\_0372



DSC\_0373



DSC\_0374



DSC\_0375



DSC\_0376



DSC\_0377



DSC\_0378



DSC\_0379



DSC\_0380



DSC\_0381



DSC\_0382



DSC\_0383



DSC\_0384



DSC\_0385



DSC\_0386



DSC\_0387



DSC\_0388



DSC\_0389



DSC\_0390



DSC\_0391



DSC\_0392



DSC\_0393



DSC\_0394



DSC\_0395



DSC\_0396



DSC\_0397



DSC\_0398



DSC\_0399



DSC\_0400



DSC\_0401



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DSC\_0403



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DSC\_0419



DSC\_0420



DSC\_0421



DSC\_0432



DSC\_0438



DSC\_0439



DSC\_0449



DSC\_0450



DSC\_0459



## APPENDIX 2 LIST OF BUILDINGS

Building no	Description
1	Mugiemoss House a single-bay late 19th-century house. It is harled with granite facings and has extensions to the west and north which have been sympathetically added in the 20th century. Building 8, 1970s offices join to the north and east of the house by glass corridors. In the late 20th century this building was refitted and was used as the reception and offices for the mill. The ceilings were lowered and most features removed or covered.
2	Stone harled building and probably dates to the 19th century. It is 14.3 x 11.8m in size not including modern extensions to the north for the addition of a kitchen area. It has two shield-shaped granite plaques on the south facade but there appears to be no date or detail on these plaques. This building has been used as a canteen since the middle of the 20th century and was fully refitted with kitchen area (in the extension to the north), seating and serving hatch. It is likely, due to its location and architecture, that this building had been the main office for the mill prior to that.
3	Structure 3 is the remains of a retaining wall. It survives to 49m in length and has been cut through to provide brick and latterly concrete foundations for Building B19 and the overground pipework running along the north side of B19.
4	The older part of Building 4 is 72.4m long and 31m wide; it has more recent extensions on the north side. It is a harled stone building and the older section consists of four conjoined rectangular buildings each with a hip roof. The roof is supported internally with cast iron pillars. There is a date stone for 1874 on the west facade.

5	The older part of Building 5 is 57m long and 16.05m wide; it has more recent extensions on the south, north and west sides. The east facade appears to be original and features the remains of two arched brick doors; an original brick door also survives in the south wall (illus 16). The roof is a double hip.
6	Building 6 was a water purification and pumping plant known at the mill as the Paterson Plant. Building 6a is a pumping plant, 6b is a deep pumping plant taking water directly from the Don for use in the mill. Building 6c is the inspection area and 6d is two groups of 8 concrete tanks which would have been filled with sand. Contaminated water was filtered through sand removing impurities and then the clean water was pumped back into the river Don. The sand was changed every year during closure of the mill at Trades Fortnight (the middle two weeks of July) and the sand was removed, cleaned and put back into the tanks (pers comm Nick Flippance).
7	Building 7 is adjacent to the river Don (Level 1) at the east of the complex. It is brick built and probably one of the early mill buildings. It is 45.6m long and 4.05m wide. It has modern extensions at the south end (7a and 7b). At the north end there is a harled section of the building which then joins onto Building 13 (see below). B7 is the dispatch area for products of Machine No 3 (B13).
8	Building 8 is a modern concrete brick building between chimney B11 and B12. It was the turbine building; the turbines were powered by Lade L2 which ran under the building and powered Machine No 2. Full details in archive.
9	Building 9 is a modern concrete brick building used as a wash bay. Full details in archive.
10	Boiler House for machine No 2 and attached to chimney B11 by vent. Only the north and east walls of Building 10 survive; the building was 31.9 x 20.7m in size and had brick walls and a concrete floor. A cast iron-lined vent links this building with Chimney B11 suggesting B10 was furnaces. This building was still extant in 1972.
11	Chimney B11 is brick built, 5.6m in diameter and has a brick-lined cast iron door on the west side labelled 'E GREEN/FUEL ECONOMISER WORKS/WAKEFIELD'. In 1845 E Green & Sons patented 'Green's Economiser' which was a device for recycling heat from boilers that previously went to waste (twixtaireandcalder.org.uk). This chimney is being retained as part of the current development.
12	Building 12D was originally built in the 18th or 19th century and 12c added to it later. Building 12a (Machine No 4) was constructed c 1935 and it was extended in c 1980 (12b). Building 12D formed part of the structure seen on the First Edition Ordnance Survey; the current building has been constructed over the main lades (see L1, L2, L3).
13	Building 13 is a brick-fronted stone building and joins onto the north end of Building 7. It is built into the steep slope between Levels 1 and 2 of the mill. It house Machine No 3.
14	Modern building housing Abertay in the 1960s. Full details in archive.
15	Compound of small building and service yard; pumping plant. Full details in archive.
16	Mugiemoss Sports Club, 48 x 11m in size. Concrete, mid to late 20th



	century.
17	Ellangowan Cottage, a granite cottage with a single bay at the front, SE facade. The cottage is not on the 1901 although the plot exists at that time. The cottage was originally occupied by the Steward of the Social Club and was latterly a guest house for visitors to the mill.
18	1970s office extension on the north and east sides of Mugiemoos House (B1) joined to the house (at the time in use as Mill Offices) by glass corridors. This area was fully wooded in 1953 (Illus 32). Full details in archive.
19	Constructed between early 1950s and late 1960s. Full details in archive.
20	Modern building built in 2000. Full details in archive.
21	Concrete electricity substation built into the SW corner of Mugiemoos House garden utilising part of the 19th-century garden wall.
22	Modern building constructed in late 20th century as guard house. Full details in archive.
23	Mid 20th-century 'civil workshop'. This building was occupied by joiners, road repairers and prior to that was a Preparation Plant for No 4 Machine. Full details in archive.
24	Base of demolished building with base of metal tank; silo for feed starch. This building has been removed to the Ukraine. Full details in archive.
25	This building housed Machine Number 5 and dates originally from the 1960s. It is a modern building built since the mid 20th century; on the 1953 aerial photograph the area is covered with 5 metal Nissen huts surrounded by piles of paper. Most of the contents of this building has been removed to the Ukraine. Full details in archive.
26	Building 26 is a brick and stone building on the bank of the Don. 1953 aerial photograph shows chimney in the vicinity of the building but there is now no trace of this structure. The building was latterly the dispatch area for Machine No 2.
27	Modern building extension to west end Building 5. Full details in archive.
28	Modern building extension to NW end of Building 5. Full details in archive.
29	Effluent plant; settling tank. Concrete tank 9m diameter. Full details in archive
30	Effluent plant; reception tank. Concrete tank 8m diameter. Full details in archive
31	Effluent plant. Concrete tank. Full details in archive
32	Metal building; Sheeting Shed. Originally built to provide health and safety conditions for putting covers on lorries as several accidents had occurred when men fell from the top of a lorry putting on covers. Full details in archive
33	Building over Lade L5; modern concrete brick; mid 20th century. Pumping house associated with B61. Full details in archive
34	Lade L5. Section fenced off adjacent to B33. Full details in archive
35	Effluent plant. Small metal building. Full details in archive.
36	Effluent plant. Small metal building. Full details in archive.

37	Effluent plant. Metal building attached by stairs and walkway to effluent tanks. Full details in archive.
38	Effluent plant. Metal tank 6m in diameter; biological tanks for reoxygenation of water prior to return to river Don. Full details in archive.
39	Effluent plant. Metal tank 6m in diameter; biological tanks for reoxygenation of water prior to return to river Don. Full details in archive.
40	Effluent plant. Metal tank base only, 6m in diameter; biological tanks for reoxygenation of water prior to return to river Don. Full details in archive.
41	Effluent plant. Metal tank 8.4m in diameter; biological tanks for reoxygenation of water prior to return to river Don. Full details in archive.
42	Effluent plant. Tall aluminium tank. Full details in archive
43	Effluent plant. Metal tank base only, 6m in diameter. Full details in archive
44	Base for gas tank. Mid 20th century.
45	Effluent plant. Small compound with two tanks. Full details in archive.
46	Effluent plant. Compound with three circular tank bases, each 3m diameter (similar to B49). Tanks relocated to Ukraine. Full details in archive.
47	Effluent plant. Underground circular tank 6.5m diameter. Full details in archive.
48	Effluent plant. Metal framed building which was either incomplete or has lost its walling. Attached to the west end of the N side of B25. Full details in archive.
49	Effluent plant. Compound with four circular tank bases, each 3m diameter (similar to B46). Tanks relocated to Ukraine. Full details in archive.
50	Effluent plant. Tall metal building. Full details in archive.
51	Building at extreme west of site; modern boiler house fed by B56 and B57. Full details in archive.
52	Two tanks adjacent to B51 at extreme west of site. Full details in archive.
53	Effluent plant. Concrete tank. Full details in archive.
54	Effluent plant. Concrete brick building incorporating First Aid and external emergency shower. Full details in archive.
55	Effluent plant. Small metal building. Full details in archive.
56	Two tanks adjacent to the electricity sub station in the SW of the site used for storing heavy oil as a backup fuel source supplying boiler house B51 for Machine No 5.
57	Building 57 is the electricity substation at the SW of the site supplying boiler house B51 for Machine No 5.
58	Buildings 58 and 59 are the weighbridge and weighbridge reception building. The building dates to the 1980s.
59	Buildings 58 and 59 are the weighbridge and weighbridge reception building. The building dates to the 1980s.
60	Bridge over Lade 8 north of Building 12D; probably one of the earliest areas of the mill, this lade may date to the founding of the mill in the late 18th century.
61	Water supply over the Don from well B62; water was pumped through this pipe across the river Don to the Effluent Plant.

62	Well, the original water source for the Effluent Plant.
63	Concrete weir over Lade L8
64	Concrete weir over Lade L8
65	Bridge over Lade L8
66	Turbine House
<b>Lades</b>	
L1	Lade 1 is seen under a hatch on the SE side of B12; it is the west branch of the lade.
L2	Section of Lade seen under floor of Building 10.
L3	Lade 3 is the main outflow of the east lade which is now under B12 and re-enters the river Don. The lade structure is 23m wide and originally of stone with concrete additions.
L4	Culvert taking dirty water to the Effluent Plant from Machine Number 5 (B25).
L5	Intake at NW of site.
L6	Culvert taking water to Effluent Plant.
L7	Culvert taking water to Effluent Plant.
L8	Intake along the north side of B12, under B12D, B11, B10 and exiting Lade 3.

### APPENDIX 3 PHOTOGRAPHS - FIELD EVALUATION

Photo no	Description	Facing
DSC_0001-05	Trench 6, Trench 5	NE
DSC_0006-10	Trench 6, Trench 5	NE
DSC_0011-15	F14 (left) with Trench 6 (right)	NW
DSC_0016-20	Tr 5, Tr 6, Tr 7	SE
DSC_0021-25	Tr 5, Tr 6, Tr 7	NE
DSC_0026-31	F16 (left) Tr 8 SW end	NW
DSC_0032-36	Trench 8	NE
DSC_0037-50	Trench 9	NE
DSC_0228-37	Trench 13	SW
DSC_0238-47	Trench 12 with stone dump F13	SW
DSC_0248-50	Tr 12 (right), Tr 11, 10, 9 (left)	SSE
DSC_0251	12 (left) Tr 13 (right)	SW
DSC_0252-61	Tr 14	SW
DSC_0262-71	Tr 15	SW
DSC_0272-77	Tr 15 (right) Tr 14 (left)	SW
DSC_0278-80	Goodhope Cottage from Tr 15	N
DSC_0284-88	Tr 14	NE
DSC_0289-93	Tr 1-4 with Goodhope Cottage (right)	N
DSC_0296-300	Tr 20	NW
DSC_0301-05	Tr 21	NW
DSC_0306-10	Tr 21 (left) Tr 20 (right)	NNW
DSC_0311-15	Tr 21 (left) Tr 20 (right)	N
DSC_0316-20	Tr22 location	SW
DSC_0536-44	Tr 1	SW
DSC_0545-549	Tr 1 F1, F2	SW
DSC_0550-568	Tr 1 (right), Tr 2 (left) with Goodhope Cottage (background)	NE
DSC_0569-574	Tr 1 (right) Tr 2, Tr 3	NW
DSC_0575-589	Tr 2	NE
DSC_0590-594	Tr 3	NE
DSC_0595-599	Tr 4	SW
DSC_0600-604	Tr 4	SW
DSC_0605-610	Tr 3	NE
DSC_0611-616	Tr 2	SW
DSC_0617	Tr 2, Tr 3	NW
DSC_0618	Tr 1 (left) Tr 2	SW
DSC_0619	Tr 4, Tr 3, Tr 2	SE
DSC_0620-629	Tr 5 buried service	SE
DSC_0630-639	Tr 4, Tr 3, Tr 2, Tr1 from railway bridge	NE
DSC_0640-650	Tr 6	NE
DSC_0651-655	Tr 6	NW
DSC_0656-661	Tr 7 SE end	NW
DSC_0667-671	Tr 6 F9	SW
DSC_0656-661	Tr 7 F10	NW

DSC_0672-676	Tr 7	SE
DSCF1175	Tr 1	SW
DSCF1176	Tr 1	SW
DSCF1177	Tr 1	SW
DSCF1178	Tr 1	NE
DSCF1179	Tr 1 with Goodhope Cottage	NE
DSCF1180	Tr 1 F1/F2	NE
DSCF1181	Tr 1	E
DSCF1182	Tr 1. Tr 2	S
DSCF1183	Tr 2	SW
DSCF1184	Tr 2	SW
DSCF1185	Tr 3, Tr 2, Tr 1	ESE
DSCF1186	Tr 3	NE
DSCF1187	Tr 3	NE
DSCF1188	Tr 3	SW
DSCF1189	TR 3	SW
DSCF1190-92	Tr 3	SW
DSCF1193	Tr 3, Tr 2, Tr 1	E
DSCF1194	Tr 3, Tr 2, Tr 1	S
DSCF1195-96	Tr 4	NE
DSCF1197	Tr 5 (buried service trench)	SE
DSCF1198	Tr 5 (buried service trench)	SE
DSCF1199	Tr 5 (buried service trench)	NW
DSCF1200	Tr 5 F6	NW
DSCF1201	Tr 5 F6	NW
DSCF1202	Tr 5 F6	NW
DSCF1203	Tr 5 F6	NW
DSCF1204	Tr 5 F6	NW
DSCF1205	Tr 5	NW
DSCF1206	Tr 5 Ceramic drain F18	SE
DSCF1207	F7	NW
DSCF1208	Tr 5	NW
DSCF1209	Tr 6	SE
DSCF1210	Tr 6	SE
DSCF1211	Tr 6	SE
DSCF1212	Tr 6	SE
DSCF1213	Tr 6	NW
DSCF1214	Tr 6	SE
DSCF1215	Tr 6	NW
DSCF1216	Tr 6	NW
DSCF1217	Tr 6	NW
DSCF1218	Tr 6 F9	NW
DSCF1219	Tr 6	NW
DSCF1220	Tr 6	NW
DSCF1221	Tr 6	NW

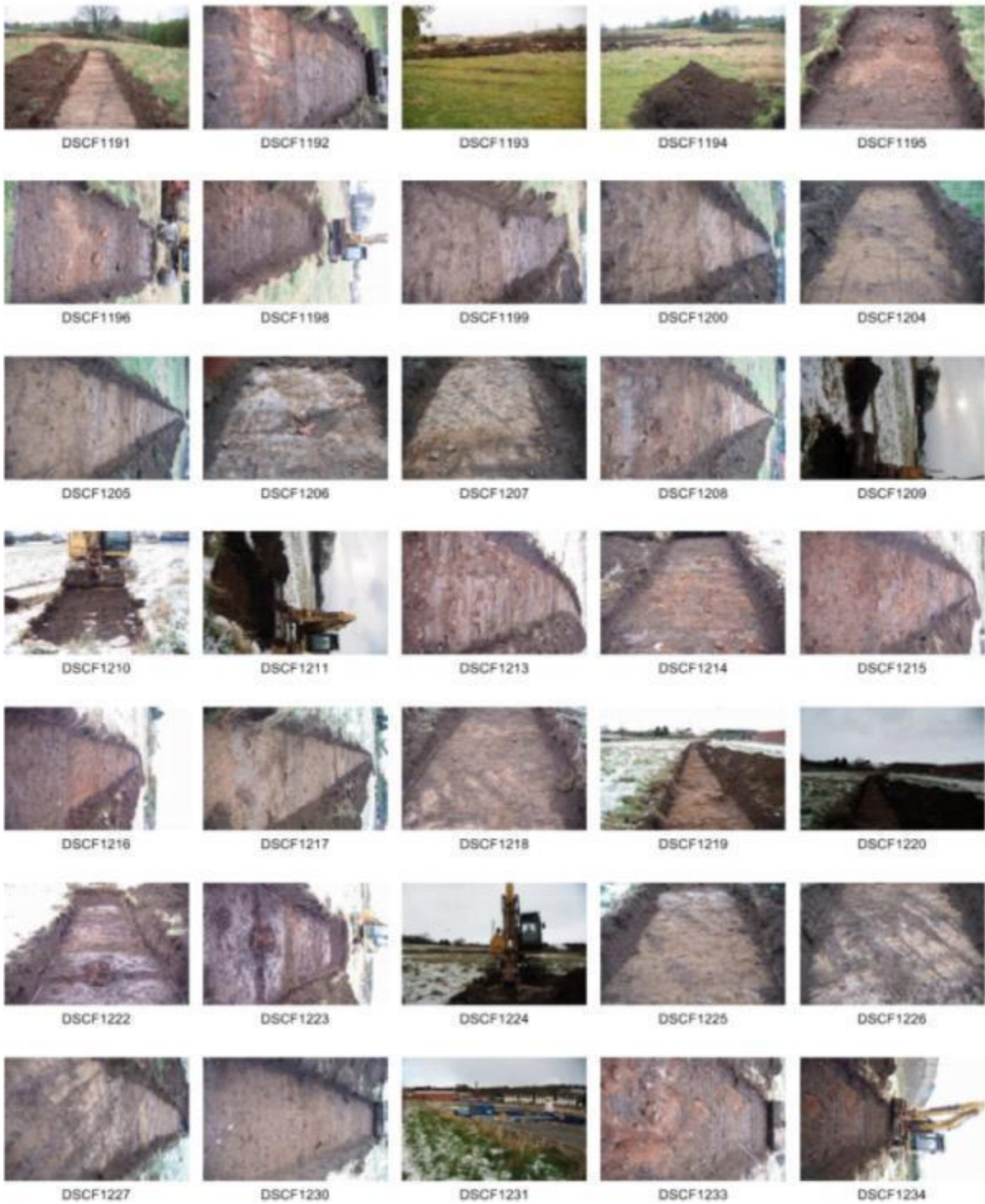
DSCF1222	Tr 6	SE
DSCF1223	Tr 6	SE
DSCF1224	Tr 7	NW
DSCF1225	Tr 7 F10	NW
DSCF1226	Tr 7 F10	NW
DSCF1227	Tr 7 F10	NW
DSCF1230	Tr 7	NW
DSCF1231	Tr 5-7 from Tr 8	N
DSCF1233	Tr 8	SW
DSCF1234	Tr 8	SW
DSCF1235	Tr 8	NE
DSCF1236	Tr 8	NE
DSCF1237	Tr 8	NE
DSCF1238	Tr 8	SW
DSCF1239	Tr 8	NE
DSCF1240	Tr 8	NE
DSCF1241	Tr 8	NE
DSCF1242	Tr 8	NE
DSCF1243	Tr 5-7 from Tr 8	NNE
DSCF1244	Tr 5-7 from Tr 8	NNE
DSCF1245	Tr 9	NE
DSCF1246	Tr 8 from SW end Tr 9	E
DSCF1247	Tr 9	NE
DSCF1248	Tr 9	NE
DSCF1249-52	Tr 9	SW
DSCF1253-56	Tr 10	NE
DSCF1257	NE end Tr 10 infilled overnight	NE
DSCF1258	Tr 10	NE
DSCF1259	Tr 10	NE
DSCF1260	F16 (right)	SE
DSCF1261-2	Tr 11	NE
DSCF1263-4	Tr 11	SW
DSCF1266-7	Tr 11	SW
DSCF1268-9	Tr 11 (with Tr5-7 background)	N
DSCF1270	Tr 11	SW
DSCF1271	Tr 11	SW
DSCF1272	Tr 13 stone dump F13	SW
DSCF1273	Tr 13	NE
DSCF1274	Tr 13	NE
DSCF1275	Tr 13	SW
DSCF1276	Tr 13	SW
DSCF1277-88	Tr 13	NE
DSCF1289	Tr 12 with drystone dyke F15	SE
DSCF1290	Tr 12 with drystone dyke F15	NE
DSCF1291	Tr 5-7	NE

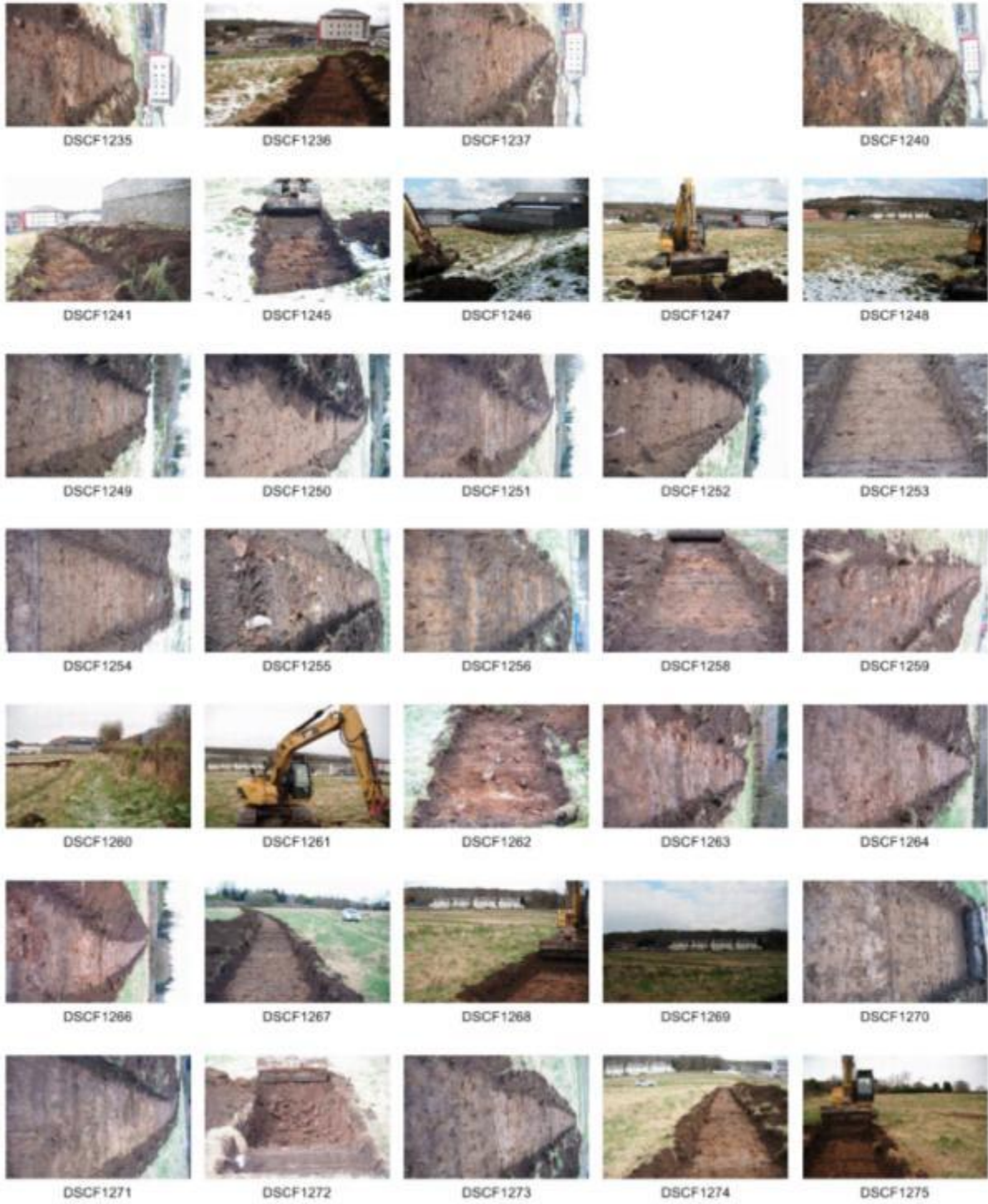
DSCF1292	Tr 13	NE
DSCF1293	Tr 13	SW
DSCF1294	TR 13, TR 12	S
DSCF1295	TR 13, TR 12	SE
DSCF1296	Tr 12 with drystone dyke F15 (right) and F14 (left)	ENE
DSCF1297	Tr 13	NE
DSCF1298	Tr 13	NE
DSCF1299	Tr 13	NE
DSCF1300	Tr 14	SW
DSCF1303-09	Tr 14 F20/F21 modern deep plough marks associated with 20th-century pottery sherds	SW
DSCF1310	Goodhope Cottage	N
DSCF1311	F21 Tr 14	SW
DSCF1312-3	Tr 13, Tr 12 showing railway line in background	S
DSCF1314-15	Tr 13	NE
DSCF1316-17	Tr 1-4 with Goodhope Cottage (right)	N
DSCF1323	Tr 15	SW
DSCF1324	Goodhope Cottage	N
DSCF1325	Tr 15	SW
DSCF1326	Tr 16	S
DSCF1327-30	Tr 16	SW
DSCF1331-32	Tr 16	SE
DSCF1333	Tr 16	NE
DSCF1334-35	Tr 17	NE
DSCF1336-37	Tr 17	N
DSCF1338	Tr 17	NW
DSCF1339	Tr 17	NE
DSCF1340-42	TR 18	SW
DSCF1343-45	TR 18	SE
DSCF1346-47	Tr 19	SW
DSCF1348-49	Tr 19	W
DSCF1350-51	Tr 19 location	ESE
DSCF1352	Tr 20	NW
DSCF1353	Tr 20	NW
DSCF1354	Tr 20	ESE
DSCF1355-57	Tr 21	SE
DSCF1358	Tr 22	SW
DSCF1359	Tr 22	NW

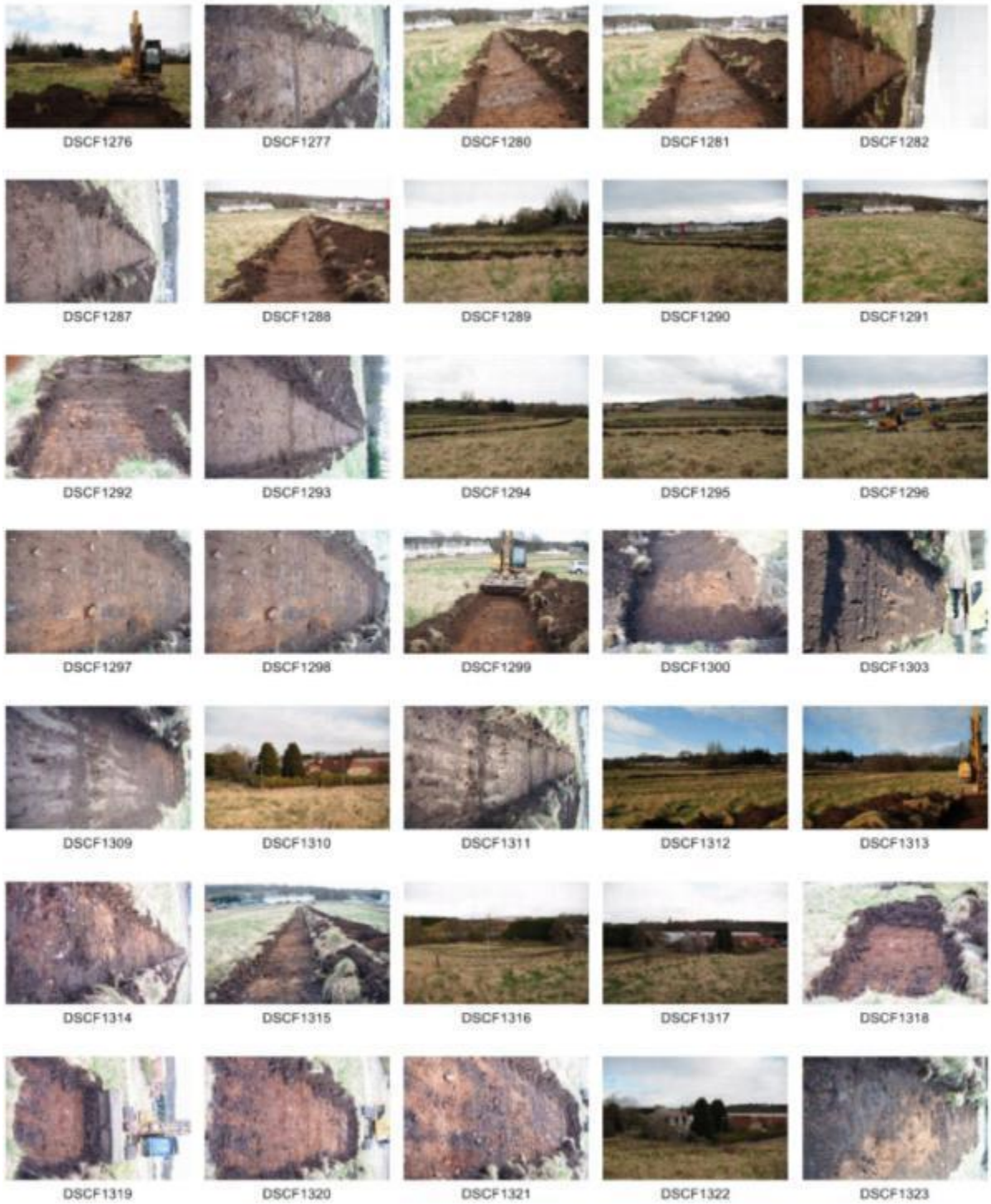














DSCF1324



DSCF1325



DSCF1326



DSCF1327



DSCF1328



DSCF1329



DSCF1330



DSCF1331



DSCF1333



DSCF1334



DSCF1335



DSCF1336



DSCF1337



DSCF1338



DSCF1339



DSCF1340



DSCF1341



DSCF1342



DSCF1343



DSCF1346



DSCF1347



DSCF1348



DSCF1349



DSCF1350



DSCF1351



DSCF1352



DSCF1353



DSCF1354



DSCF1355



DSCF1356



DSCF1357



DSCF1358

<b>Trenches 23 and 24</b>		
DSC_0321-31	Tr 23 Brick surface F24	SE
DSC_0332-36	Tr 23 Dykehead Bonnybridge brick c 1925-c1950	
DSC_0337-41	Tr 23 Stone cobble (cassie surface) F25	SE
DSC_0342-46	Tr 23 Stone cobble (cassie surface) F25	SW
DSC_0347-51	Tr 23 Stone cobble (cassie surface) F25	NE
DSC_0352	Tr 23	SE
DSC_0353-54	Tr 23 brick rubble 3 on underside of concrete 3	
DSC_0355	Tr 23	SE
DSC_0356-58	Tr 23 stone cobbles details	
DSC_0359-71	Tr 23 Section 1	NE
DSC_0372-78	Tr 23	SE
DSC_0379-01	Tr 23 Section 1	NE
DSC_0402-07	Tr 23	SE
DSC_0408-13	Tr 23 from inside Building 26	SE
DSC_0414-18	Tr 23	S
DSC_0419-29	Tr 23	SE
DSC_0430-33	Tr 23 being backfilled	NW
DSC_0434-45	Trench 23 (left) and wall F26 (centre)	
DSC_0446-50	Lade outflow	S
DSC_0451-56	Tr 24 location	SSE
DSC_0457-61	Tr 24	SE
DSC_0462-66	Tr 24	S
DSC_0467-71	Tr 24	SW
DSC_0472-76		
DSC_0477-78	Tr 24 location	SSE
DSC_0479-83	Building B10 (left) B26 (right)	N
DSC_0484-89	Building B10 (left) B26 (right) with Tr 23 backfilled	NW
DSC_0490-07	Building B26	SW
DSC_0508-12	Building B26	S
DSC_0513-17	Building B26	SW
DSC_0518-24	Trench 23 from inside B26	SE
DSC_0525-36	East wall B26	NE
DSC_0540-42	Tr 24 backfilled	SE





#### APPENDIX 4 LIST OF FEATURES

Feature no	Trench	Description
F1	1 & 2	Rubble drain 30cm wide
F2	1 & 2	Rubble drain 30cm wide
F3	1	Rubble drain 30cm wide
F4	1	Rubble drain 30cm wide
F5	3	Rubble drain 30cm wide
F6	5	Deep modern ploughmarks associated with sherds of 20th-century pottery
F7		Drystone dyke between fields and Mugiemoos Rd
F8	6	Deep modern ploughmarks associated with sherds of 20th-century pottery
F9	6	Rubble drain 30cm wide
F10	7	Deep modern ploughmarks associated with sherds of 20th-century pottery
F11	8	Deep modern ploughmarks associated with sherds of 20th-century pottery
F12	11	Deep modern ploughmarks associated with sherds of 20th-century pottery
F13	12	Dump of stones 1m deep
F14		Drystone dyke between fields
F15		Drystone dyke between fields



F16		Drystone dyke between fields and railway track
F17	13	Deep modern ploughmarks associated with sherds of 20th-century pottery
F18	5	Ceramic drain in 20cm wide cut
F19	13, 14, 15	Palaeochannel up to 20m wide
F20	14	Deep modern ploughmarks associated with sherds of 20th-century pottery
F21	14	Deep modern ploughmarks associated with sherds of 20th-century pottery
F22	15	Deep modern ploughmarks associated with sherds of 20th-century pottery
F23	15	Deep modern ploughmarks associated with sherds of 20th-century pottery
F24	23	Brick surface 'Dykehead Bonnybridge' 1925-1950
F25	23	Stone cassie surface
F26	by 23	Embankment wall between mill and river Don
F27		Guard dog graves