

REF: 2373/Prescot/MinRep/es

Andrew Banks
Life Architecture
16 Column Road
West Kirby
Wirral CH48 8AX

30th October 2020

Dear Andrew,

RE: SITES AT PRESCOT- MINING REPORT

We are pleased to present our updated mining report for the above site.

Introduction

It is proposed to develop two adjacent sites in Prescot, Liverpool. One within Prescot Business Park, with the other on Manchester Road.

During the planning application, the Coal Authority identified that both sites are in a high-risk area for possible shallow abandoned mine workings. Consequently, Life Architecture appointed GroundSolve Ltd (GSL) to undertake a desk study to understand the mining risks at the site and present a way forward for the site's development.

This report was presented in May 2020 and identified three shafts on site, with the possibility of shallow abandoned mine workings beneath the site. It was recorded that the shafts had been treated in 2002 to the highest standards of the day.

It also recommended that a site investigation be carried out, with the site drilled to prove the depth to the underlying coal seams and identify any shallow abandoned mine workings beneath the site.

A report presenting the findings of the desk study and site investigation was issued in September 2020, which presented the findings of a mining risk assessment, giving recommendations to address the mining risks at the site.

At the time of this report, the development layout was not known. This point was raised by the Coal Authority in their reply to this report.

Since then, the development layout has been finished and the risk assessment has been updated to take account of the location of the shafts in relation to the buildings.

Site Location and Description

Both sites are located in Prescot on the western outskirts of Liverpool, at approximate National Grid Reference SJ 465 923, see Figure 1.

Site 1 is located off Sinclair Way, Prescott Business Park, in between Helsby Court and Pilkington Court, which comprises office buildings, see Figure 2. It comprises a series of terraced areas of public open space. The lower terrace area (Area A) is broadly rectangular in shape measuring approximately 65m x 35m, with the southern section comprising a flat car park surfaced with asphalt, with a grassed area in the northern section. The upper terrace (Area B) is also rectangular in shape measuring approximately 50m x 15m, and is approximately 1.5m higher than Area A, and grass covered.

Site 2 is located off Manchester Road immediately to the southeast of Site 1. It has been split into two areas, C and D for description purposes, see Figure 2. Prescott Fire and Police Station borders the north boundary of Site 2.

Area C is rectangular in shape measuring approximately 60m x 20m and is a grass covered area adjacent to Site 1, and at the same elevation as Area B. Area D is broadly square in shape, measuring approximately 66m x 90m, and is bounded by fencing, with access via a gate between Area C and D. This area is flat and surfaced with tarmac in the middle region and asphalt and concrete around the edges. This area has been used to store building materials for the renovation of a building close to the site.

Photographs of both sites are presented in Appendix A.

Geology

The geology of the site has been studied on the 1:50,000 scale geology plan, Sheet 97 Runcorn, which records the site to be underlain by glacial till, overlying the Pennine Lower Coal Measures Formation (PLCMF), which are Carboniferous in age.

The PLCMF typically comprises interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.

The Bastion Mine coal seam is indicated to outcrop some 100m southwest of the site, dipping towards the south. Therefore, this seam will not underlie the site area.

A historic borehole record is available on the BGS website, drilled 300m to the east of the site, which indicates made ground and glacial till deposits to around 2m depth, and then mudstone bedrock. A thin coal was recorded between 7.8 and 8.6m depth, whilst “no recovery”, recorded as “possible workings”, was noted between 12.0m and 13.5m depth.

No geological memoirs have been published for Sheet 97, however, the memoirs for Sheet 84 (Wigan) cover the area immediately north of the site.

The memoir notes that “in the neighbourhood of St Helens the strata for about 300ft (91.4m) above the Rushy Park Mine contains no valuable seams and appear from the records to be extremely variable”.

However, according to the BGS 1:50,000 scale mapping, the seams between the Rushy Park Mine and the Bastion Mine seam (shown to outcrop just southwest of the site) include in ascending order, the Ravine Mine, King Mine, Flaggy Delph, Sir John Mine, and Top Roger Mine.

The memoirs record the Rushy Park Mine as being the highest quality coal in the St Helens area. Whilst, the Sir John Mine seam is noted as being a, “fairly constant seam about St Helens”, which

is locally of good quality. The Bastion Mine does not appear to have been extensively worked in the St Helens locality, according to the memoir.

Mining

A Consultant's Coal Mining Report was obtained from the Coal Authority for the site. The full report is enclosed in Appendix B, with the findings summarised below:

- The site is underlain by workings in the Rushy Park seam, at depths of 140-149m, last mined in 1863. The seam is recorded as dipping at 11° to the south.
- There are probable unrecorded shallow workings beneath the site.
- Three mine entries are recorded on site, numbered 017, 016 and 013 (presented in Figure 3).
- Ten mine entries are recorded within 100m of the site boundary, including two immediately adjacent to the site boundary.
- The three shafts on site are recorded to have been infilled (to depths of up to 70m) and capped with reinforced concrete.

It also records an opencast to the south west of the site, which probably corresponds to workings on the Bastian Mine, which would tally with the geological information.

From the above information, we would concur that there is the potential for abandoned mine workings at relatively shallow depth beneath the site, particularly in the Sir John Mine seam.

In addition, it recorded that there were three old shafts on Site 2, which had all been treated in 2002 to the highest standards of the day. A summary of the treatment works on the shafts is presented below:

Entry type	Reference	Grid Reference	Treatment description	Mineral
Shaft	346392-013	346667 392210	This shaft was located and exposed during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with colliery waste to at least 20m depth. In May 2004 the fill material was drilled to a depth of 59 metres and consolidated by injecting 22 tonnes of cement grout. The shaft was subsequently capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. The treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC.	Coal
Shaft	346392-016	346623 392177	This shaft was located and exposed during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with unknown material. In May 2004 the shaft was drilled to a depth of 72 metres the last 6 metres in hard strata. The fill material was consolidated by injecting cement grout and the shaft subsequently capped with	Coal

			reinforced concrete the cap measuring 6 metres square by 550mm thick. These works were carried out by Piltec Ltd to specifications set by Knowsley MBC.	
Shaft	346392-017	346563 392167	This shaft was located during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with colliery waste to at least a depth of 20m. In May 2004 the shaft was drilled to a depth of 65 metres the last 3.5 metres hard drilling. The fill material was consolidated by injecting 25 tonnes of cement grout. The shaft was capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. These treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC.	

Proposed Development

The proposed development in Site 1 is a large steel framed warehouse located on the eastern side of the site, with a delivery zone to the north and car park to the east, see Figure 3.

Whilst in Site 2, a Garden Centre in the northern section of the site is proposed, with associated car parks and display areas, see Figure 4. The building will also be a steel framed structure.

It is anticipated that both structures will be a raft on reinforced strip footings for the columns and a ground bearing slab.

Site Investigation

Prior to the site investigation being undertaken, permission to investigate the mine workings was applied for. The Coal Authority permit to undertake the works is presented in Appendix C.

The investigation was undertaken by CC Geotechnical under the full-time supervision of a Geologist from GSL. It comprised:

- Six Rotary Boreholes up to a maximum depth of 30.0m (2 on site 1 and 4 on site 2).

The borehole locations are presented in Figure 5, with the borehole logs presented in Appendix D.

Ground Conditions

The findings of the boreholes are summarised below.

Based on information contained in the geological memoirs for adjacent sheets, the top seam encountered in the boreholes is considered to be the Flaggy Delph, as it is described with two seams some 0.50m thick, separated by 0.60m of fireclay. In addition, the seam is contained within a mudstone sequence. Whilst, the Sir John seam is described as a single seam, being between 3 and 4' thick (0.91 – 1.22m). This would mean that the lower seam encountered in the boreholes is the King Mine.

BH No	Made Ground (m)	Mudstone (m)	Sandstone (m)	Flaggy Delph (m)	King Mine (m)	Final Depth (m)	Comments
101	0.0- 3.5					3.50	Terminated due to suspected mine shaft (017).
102	0.0- 1.70	1.70-30.00		18.30-18.50 19.00-19.60		30.00	No flush loss
103	0.10-1.20	11.30-20.90	1.20-11.30			23.70	Loose broken ground- flush loss 20.90-23.70
104	0.10-1.50	1.50-30.00		13.10-13.50 14.20-14.90	25.0- 26.1	30.00	No flush loss
105	0.0- 1.60	1.60-21.00		17.20-18.10		21.00	No flush loss
106	0.0-1.50	1.50-19.00		16.80-17.70		19.00	No flush loss

The general stratigraphy generally confirmed the geology from the desk study. A cross section through the site is presented in Figure 6.

With the exception of BH101, made ground was encountered in all boreholes to a maximum depth of 1.6m. It comprised fragments of brick, concrete, sandstone and reworked clays. However, in BH 105 and 106 in the east of Site 2 tarmac and concrete was encountered. BH101 proved made ground to a depth of 3.5m and was terminated on encountering a concrete obstruction, though to be shaft No. 017.

An aerial photograph from 2017 shows how area D of Site 2 was used as a compound for the construction of the Fire Station to the north of the site, see photograph below.



There were no superficial deposits located on site.

Bedrock was generally encountered at depths between 1.20 and 1.70m depth and comprised mudstone. The sequence proved was also fairly consistent with the dip of the strata confirmed as 11° in a southerly direction.

However, BH 103 on the western site boundary encountered sandstone bedrock beneath the made ground to a depth of 11.30m, before turning to mudstone. Workings in a coal seam were encountered between 20.90 and 23.70m, where the drilling flush was lost.

Due to the complete difference in stratigraphy between the adjacent boreholes BH 103 and BH 104, a fault is considered to be present between the boreholes, the conjectured position of which is presented in Figure 5.

Mining Risk Assessment

Shafts

Three mine shafts have been identified on site, records for which indicate they have been capped to modern day standards. Regardless of the above, it is best practise for developments to be positioned away from the shaft locations where practical. Therefore, the locations of the shafts in relation to buildings is presented in Figure 7.

All shafts are in Site 2, with shaft 017 being beneath an area of open space and 013 being on the site boundary. The closest shaft to the proposed building is shaft 016, which is 5m from the proposed structure. The fact that the cap was 6m by 6m, suggests that the shaft was 3m in diameter.

The closest boreholes to the shaft indicate the depth to the bedrock is between 1.50-1.60m. consequently, even if the shaft had not been capped, any collapse of the shaft would not affect the proposed development.

Whilst the four boreholes drilled to the east of the conjectured fault did not encounter any workings, the reputation of the Flaggy Delph seam means that it is likely that unrecorded shafts could be encountered during any on site works and that the seam was worked at an early date. However, the seam is considered deep enough so not to have been worked by Bell Pits.

Shallow Mining

When assessing the risk of shallow mining to a development, several issues need to be considered, such as the type of working, depth to workings etc.

There are generally two types of mining, partial and total extraction. Methods of partial extraction are nearly all variations of, "Pillar and Stall" techniques, with pillars of coal being left to support the roof of the mine. Extraction ratios of between 30 to 75% were typical, depending on geological conditions and depths. However, it was common practice to work pillars on withdrawal from the mine, so higher extraction ratios may have been possible.

Total extraction is achieved by long wall workings and also by various pillar and stall techniques, where the pillars were removed in a second phase of mining, normally on retreat from the mine. It is important to know the method of mining employed, as total extraction methods normally result in total collapse of the workings, with the exception of the main roadways. While partial abstraction techniques leave voids in the mine, which can become unstable and migrate to surface.

These take the form of “crown holes” at surface, which are generally circular and can be several metres in diameter.

Extensive research on collapse of mining voids has been carried out in South Wales where similar pillar and stall mining has taken place, this research revealed:

- Almost all incidents are “crown holes” in form, delayed general subsidence is very rare;
- About 75% of subsidence incidents are caused by the collapse of mine entrances or workings close to outcrop;
- Mine entrances present the greatest risk and account for over 50% of recorded incidents;
- The recorded rate of occurrence is very low.

The remaining subsidence incidents were analysed for their migration ratio (H/T), where H is the thickness of rock above the workings and T is the typical seam/void thickness, taken here as 2m, the height of a typical roadway. Of these 75% of the incidents had an H/T ratio of less than 2 (4m rock cover), with 90% of incidents having an H/T ratio of less than 6 (12m rock cover). The majority of the remaining incidents were related to special events, probably relating to collapses on main roadways, which would have continually been cleared by miners leading to bigger residual voidage.

There is also strong evidence from data gathered from grouting contracts, opencast sites and site investigations that migration of voids above workings generally extends to a limited height above the original void. Records of over 10,000 drill and grout boreholes were collected, in almost every case, the record of broken ground, workings or voids, occurred at or immediately above the anticipated elevation of the worked horizon.

From the above it can be concluded that the majority of residual voids have already collapsed to a stable profile. Otherwise voids would be encountered at a wide range of depths as they progress to the surface.

To assess the risk from shallow abandoned mining the following risk-based approach is followed, where risk (R) may be defined as: -

$$R = F \times C$$

Where F is the frequency of an undesirable event and C is the consequences of it happening.

The assessment of risk due to mining subsidence is a twofold process, involving first the assessment of probability of a subsidence event happening, i.e. the subsidence potential; secondly the consequences resulting from that event. For a crown hole to occur, the following must coincide at any one point:

- There must be a potential for mining (PM),
- There must be workings under the site (PW),
- A void must remain in the workings (PV),
- The void must be unstable and able to migrate to surface (PI),
- The thickness of rock overburden must be insufficient to choke the collapse feature before hitting rock head (PR),
- The thickness of drift must be insufficient to prevent the void reaching the surface (PD).

PM Potential for Mining & PW Workings Exist

The desk study has confirmed that there is a sequence of coals beneath the site, which may be at shallow depth, which has been confirmed by the site investigation.

West of Fault

The only conclusive evidence of workings was encountered in BH 103, between a depth of 20.90 and 23.70m (2.80m). The rock cover to the seam is some 19.70m, which would give an H/T ratio of 9.85, with the upper 10m being sandstone bedrock. Since the borehole is situated in the northern section of Site 1 and the dip is to the south then the rock cover will be greater over the rest of the area to the west of the fault.

Due to the age of these workings it is likely that they were pursued by Pillar and Stall techniques.

East of the Fault

The boreholes to the east of the fault did not encounter any workings, however, due to the large area and the limited number of boreholes, this cannot discount the possible presence of workings.

The rock cover to the bottom seam, considered to be the King is 23.5m giving an H/T Ratio of 11.75. Therefore, the risk from this seam can be discounted.

For the shallowest seam, considered to be the Flaggy Delph the rock cover proved by each borehole is presented below and varied between 5.8 and 8.3, the lowest cover being in the north where the seam is shallowest.

BH	Rock Cover (m)	H/T ratio
102	16.6	8.3
104	11.6	5.8
105	15.6	7.8
106	15.3	7.65

PV Voids remain in Workings

The boreholes to the east of the fault failed to record any workings. However, the potential for voids to exist in main roadways, which could influence the site in the Flaggy Delph Coal need considerations.

However, as discussed above, the H/T ratio ensures the risk are low.

To the west of the fault the depth to the workings and the presence of strong sandstone bedrock ensures that the risks from shallow abandoned mine workings are very low on this side of the fault.

PI Voids become unstable

The potential for voids to become unstable must also be considered.

As discussed above the only likely voidage remaining in the mine will be the main roadways.

PR Rock cover insufficient to prevent migration of rock

The H/T ratios of between 5.80 and 8.30 on the eastern side of the fault ensures that the risks posed by workings beneath the site are very low.

PD Drift cover insufficient to prevent migration to surface

No superficial deposits are beneath the site, therefore there will be no contribution to the mitigation of void migration from significant thicknesses of drift deposits.

Summary and Conclusions

The site investigation has proven that there is a low risk to the development posed by shallow abandoned mine workings; however, there remains a risk of encountering unrecorded shafts on site. Should unrecorded shafts be encountered, the shallow depth to bedrock means treatment should be easily carried out.

The investigation has proven that the greatest risks lie where the coal seams are at their shallowest. In conclusion, the risk from historic workings is low enough that drilling and grouting is not considered necessary unless high rise development is planned. The likely foundations for the development would be raft foundations or reinforced ring beams founded on the shallow bedrock. The risk from known shafts has been mitigated as far as possible by the adaption of the site layout. However, it is considered prudent to investigate the location of shaft 016 to ensure that it does not interfere with the building foundations.

The findings of this site investigation have been forwarded to the Coal Authority as part of the permit conditions, see Appendix E. It will also be necessary to forward this report to the planners.

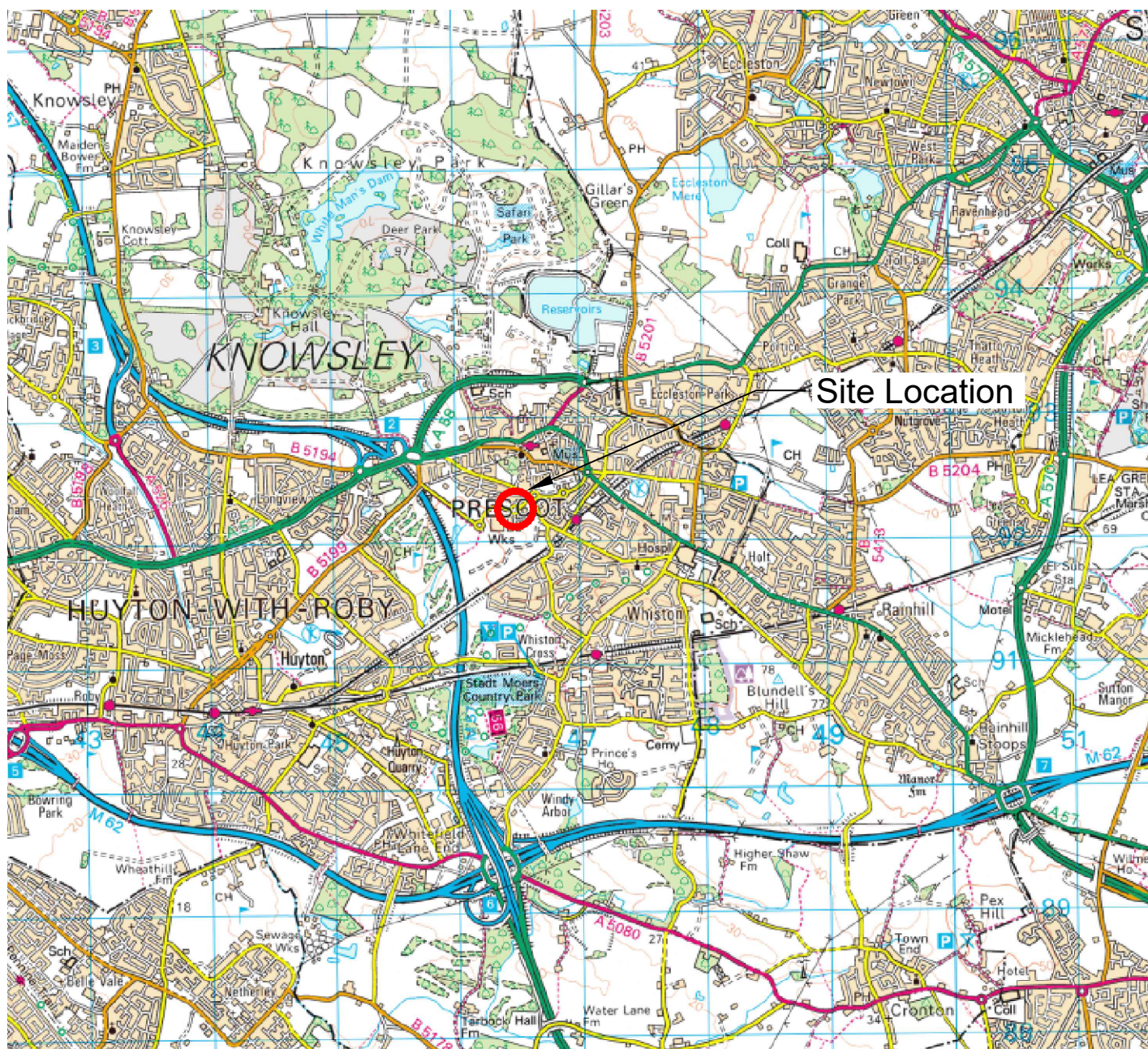
Should you have any queries regarding this report please call Liz Smith on 01244 661361

Yours sincerely

Elizabeth Smith

Elizabeth Smith

FIGURES



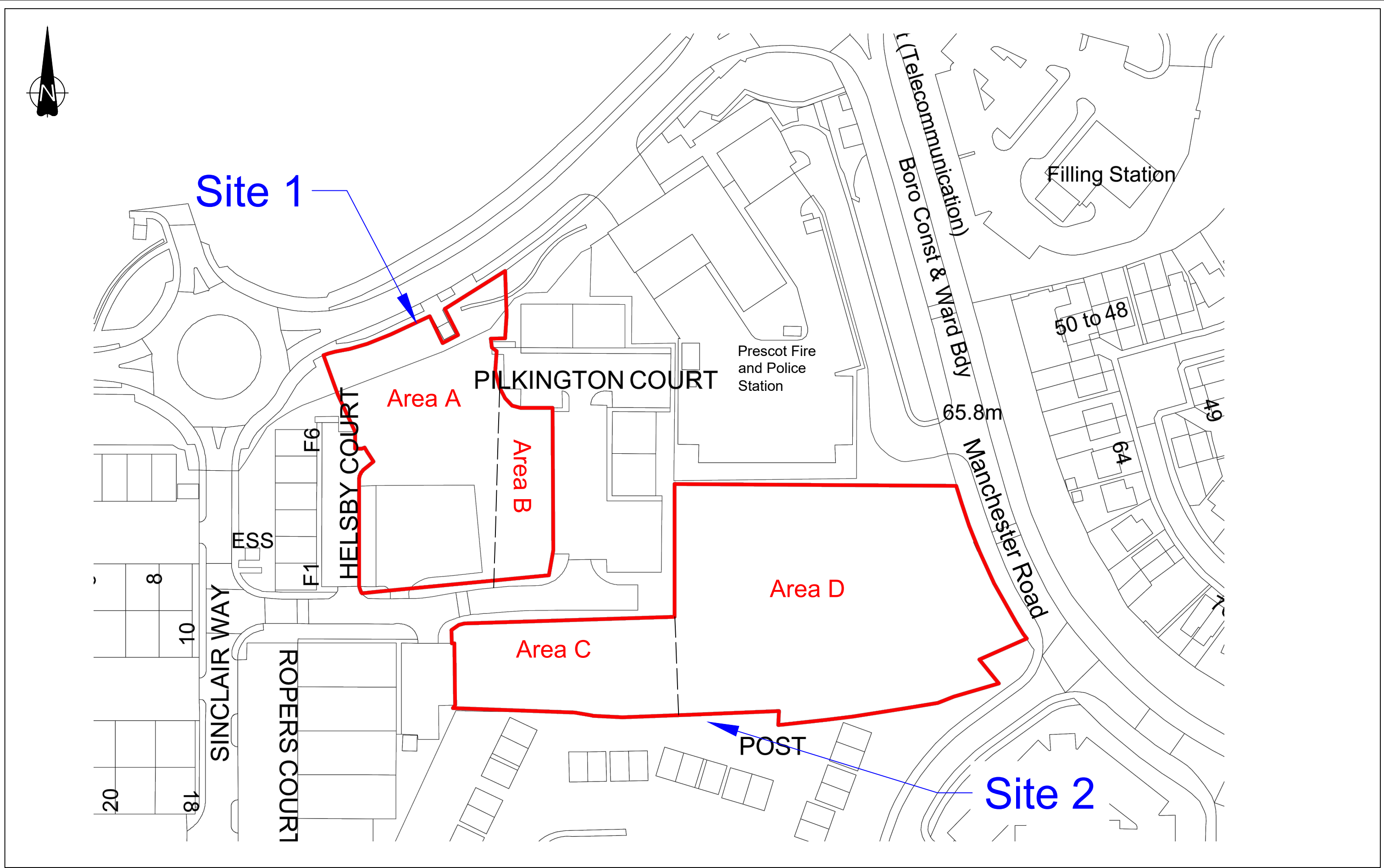
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SCALE 1:50,000 @ A4

Figure Title

SITE LOCATION

FIGURE 1



SCALE 1:1000 @ A3

Figure Title
Existing Site Layout

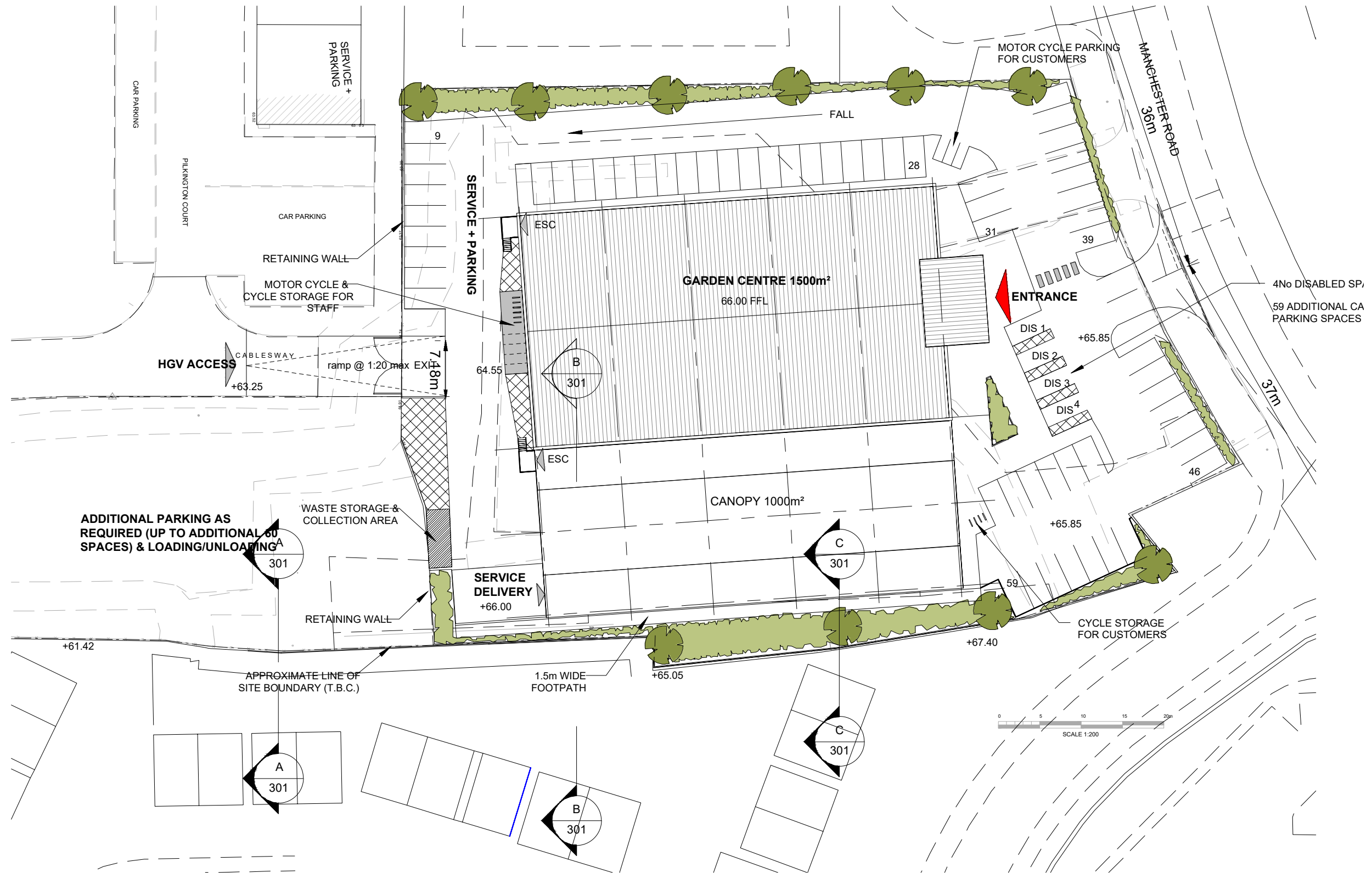
FIGURE 2



Figure Title

Site 1
Proposed Home Improvement
Centre

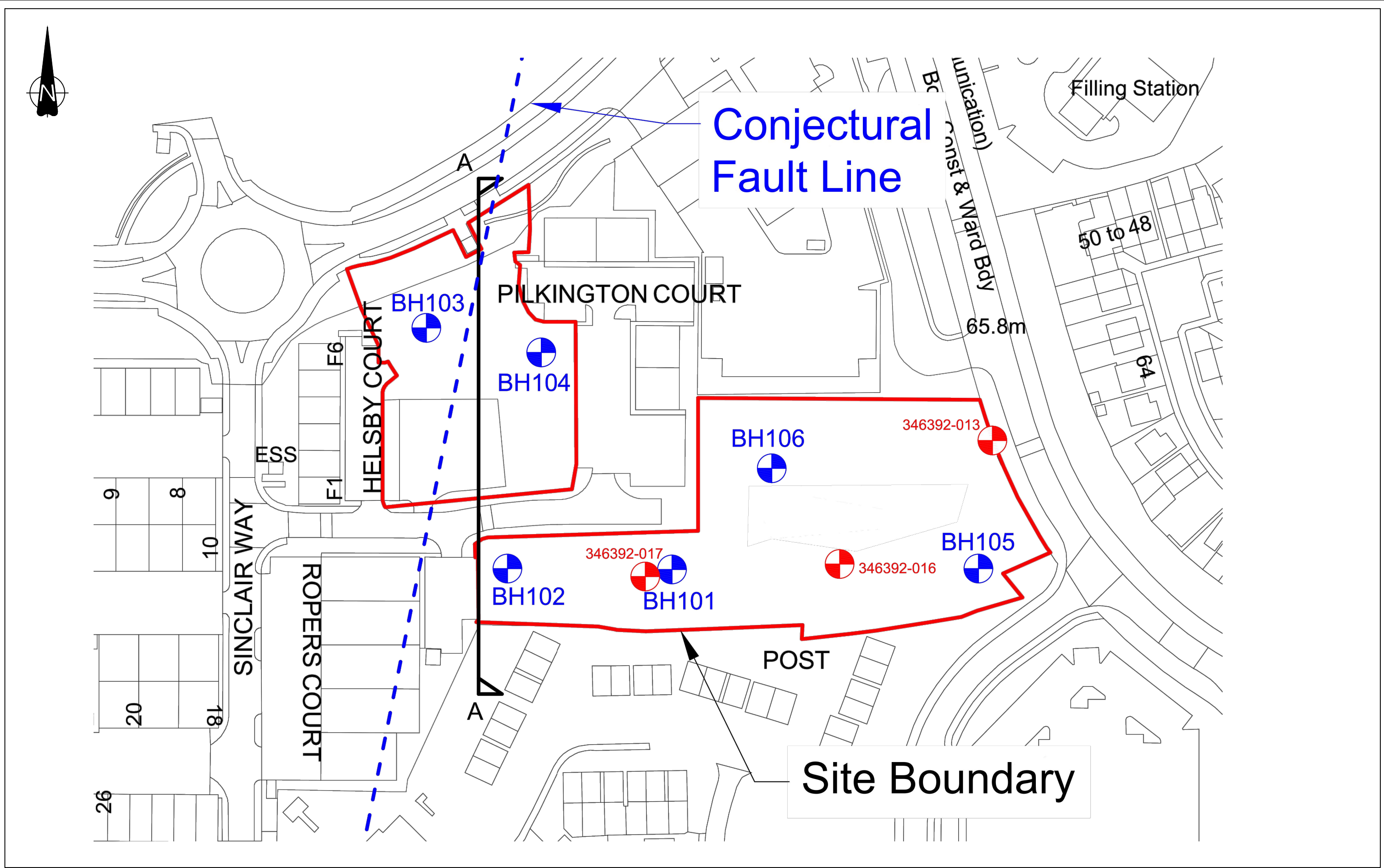
FIGURE 3



SCALE 1:500 @ A3

Figure Title
Site 2
Proposed Garden Centre

FIGURE 4



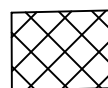
SCALE 1:1000 @ A3

Figure Title
Location of Boreholes
and Mine Shafts

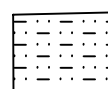
FIGURE 5

LEGEND

Made Ground



Mudstone



Coal



Inferred Coal
Seam



80

70

60

50

40

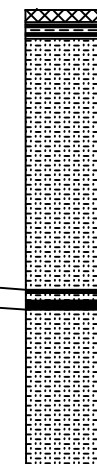
30

20

BH104



BH102



Flaggy Delph

King Mine

80

70

60

50

40

30

20

0

10

20

30

40

50

60

70

80

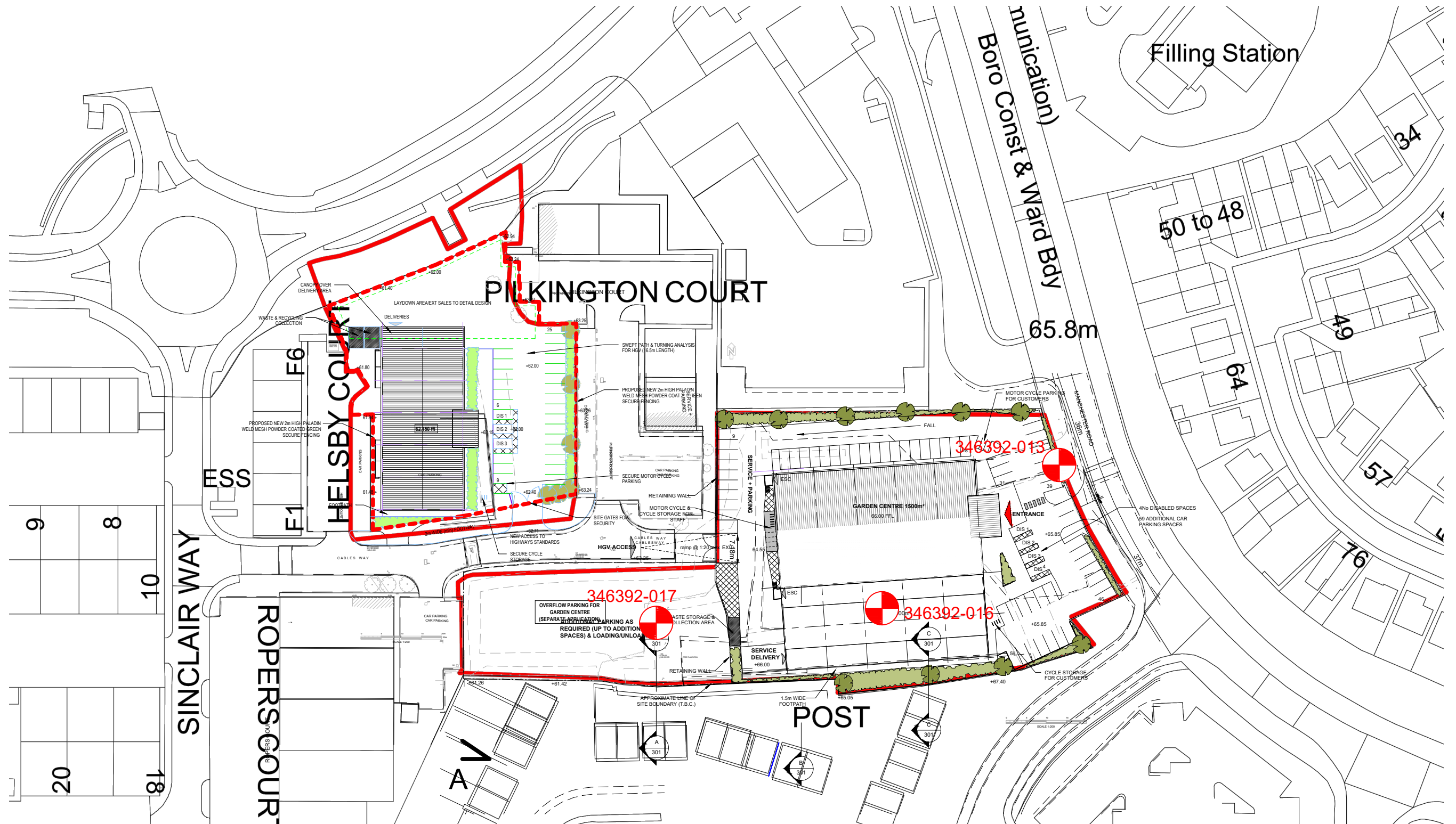
See Figure 3 for location of section.

SCALE 1:500 @ A3

Figure Title

Section A - A
Elevation

FIGURE 6



SCALE 1:1000 @ A3

Figure Title
Proposed Development

FIGURE 7

APPENDIX A

Site Photographs



Site 1- Looking east from area B to the carpark in area A.



Site 2- Looking east to the boundary between area C and area D.



Site 1- Looking north west from area B onto area A.



Site 1- Looking east from area A up to area B.



Site 2- Looking west from the eastern boundary of the site. Site currently used to store building materials.



Site 2- Entrance to site from eastern boundary.



Site 2- Road into site from site entrance facing west.

APPENDIX B

Coal Consultants Report



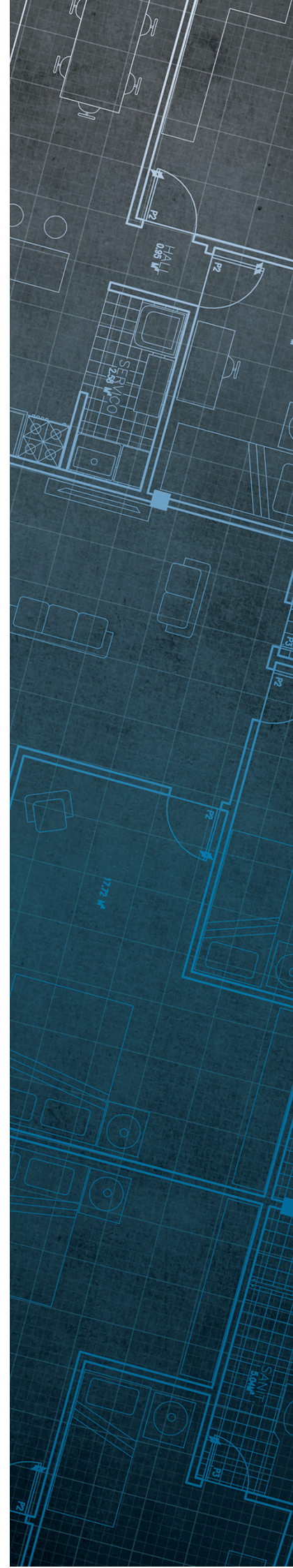
The Coal
Authority

Consultants Coal Mining Report

Land At Cables Way / Manchester
Road
Prescot Business Park
Lancashire
L34 5NQ

Date of enquiry:	18 May 2020
Date enquiry received:	18 May 2020
Issue date:	18 May 2020

Our reference:	51002284631001
Your reference:	



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

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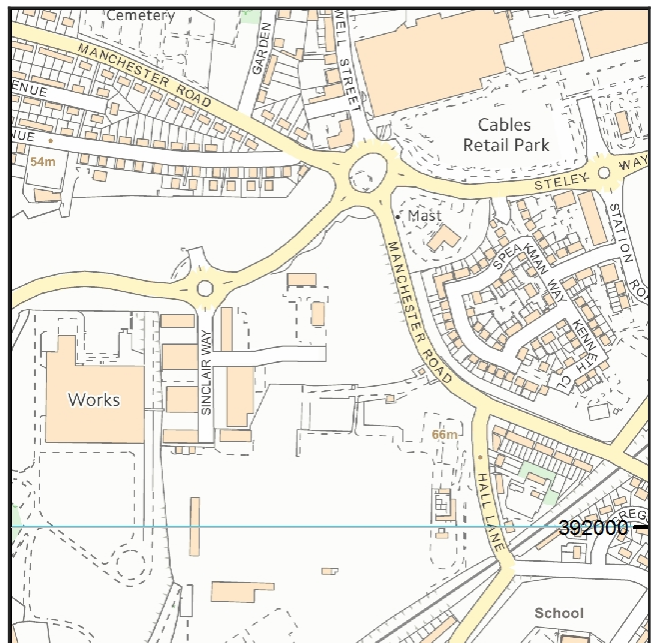
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	RUSHY PARK	Coal	3ZUX	127	North	11.0	South	120	1850
unnamed	RUSHY PARK	Coal	300G	140	Beneath Property	11.0	South	120	1863
unnamed	RUSHY PARK	Coal	3ZUW	149	Beneath Property	11.0	South	120	1863
unnamed	ARLEY	Coal	3ZVH	176	North-West	11.0	South	70	1856

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	346392-003	346622 392285	This shaft was located and exposed during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to capped with a 200mm thick reinforced concrete cap beneath which it was open to a depth of 45m. In May 2004 the shaft was drilled to a depth of 85 metres the last 5 metres in solid strata. The shaft was subsequently filled and the fill material consolidated by injecting 45 tonnes of cement grout. The shaft was recapped with reinforced concrete the cap measuring 6 metres square by 550mm thick. Treatment works were carried out by Piltec Ltd to specifications set Knowsley MBC	Coal	
Shaft	346392-006	346613 392331	This shaft was searched for in March 2002 during site investigations carried out by Manchester Geotechnical Ltd. No evidence of the shaft was found it was concluded that the shaft may be located slightly north of the area covered by the search. Another search was carried out in May 2004 by VHE Construction but again no evidence of the shaft was found.	Coal	
Shaft	346392-013	346667 392210	This shaft was located and exposed during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with colliery waste to at least 20m depth. In May 2004 the fill material was drilled to a depth of 59 metres and consolidated by injecting 22 tonnes of cement grout. The shaft was subsequently capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. The treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	
Shaft	346392-014	346693 392188		Coal	
Shaft	346392-016	346623 392177	This shaft was located and exposed during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with unknown material. In May 2004 the shaft was drilled to a depth of 72 metres the last 6 metres in hard strata. The fill material was consolidated by injecting cement grout and the shaft subsequently capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. These works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	346392-017	346563 392167	This shaft was located during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with colliery waste to at least a depth of 20m. In May 2004 the shaft was drilled to a depth of 65 metres the last 3.5 metres hard drilling. The fill material was consolidated by injecting 25 tonnes of cement grout. The shaft was capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. These treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	
Shaft	346392-018	346617 392096	This mine entry was searched for in 2015 by Groundshire by 145 boreholes but no evidence of features that would indicate the presence of a mine entry were found.	Coal	
Shaft	346392-021	346612 392263	This previously unrecorded shaft was discovered during site investigation works carried out by Manchester Geotechnical Ltd in March 2002. The shaft was found to be filled with colliery waste. In May 2004 the shaft was drilled to a depth of 16 metres the last 6.5 metres in solid strata. The fill material was consolidated by injecting 17.5 tonnes of cement grout. The shaft was subsequently capped with reinforced concrete in conjunction with shaft 346752-021 the cap measuring 10.5 metres by 550mm thick and covering both shafts. These treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	
Shaft	346392-022	346610 392261	This previously unrecorded shaft was discovered during site investigation works in May 2004. The shaft was capped with reinforced concrete in conjunction with shaft 346392-021 the cap measuring 10.5 metres by 550mm thick and covering both shafts. These treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	
Shaft	346392-023	346544 392265	This previously unrecorded shaft was discovered during site investigations in May 2004. The shaft was found to be filled and the fill material was drilled to a depth of 49 metres the last 5 metres in hard strata. Consolidation of the fill material was achieved by injecting 10.5 tonnes of cement grout. The shaft was capped with reinforced concrete the cap measuring 6 metres square by 550mm thick. These treatment works were carried out by Piltec Ltd to specifications set by Knowsley MBC	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	346392-024	346755 392252	This previously unrecorded shaft was found by M & J Drilling Services Ltd working on behalf of Taylor Woodrow Development Ltd of The Beacons, Warrington Road, Birchwood, Warrington, WA3 6XU under the supervision of WSP Group, The Alexandra, 200-220 The Quays, Salford M50 3SP. It was found to have been filled at some time in the past but to an unknown specification. The shaft fill was pressure grouted from the base, in 2m stages, up to the surface. Some 55 tonnes of a 10:1 pfa/cement grout mix was used. Finally, the area surrounding the shaft was excavated to a depth of 3.2m into competent strata where a steel reinforced concrete capping, measuring 5m x 5m x 0.5m, was constructed.	Coal	
Shaft	346392-026	346755 392212	This previously unrecorded shaft was found by M & J Drilling Services Ltd working on behalf of Taylor Woodrow Development Ltd of the Beacons, Warrington Road, Birchwood, Warrington, WA3 6XU under the supervision of WSP Group, The Alexandra, 200-220 The Quays, Salford M50 3SP. It was found to have been filled at some time in the past but to an unknown specification. The shaft fill was pressure grouted from the base, in 2m stages, up to the surface. Some 66 tonnes of a 10:1 pfa/cement grout mix was used. Finally, the area surrounding the shaft was excavated to a depth of 3.3m into competent strata where a steel reinforced concrete capping, measuring 5m x 5m x 0.5m, was constructed.	Coal	
Shaft	346392-028	346732 392187	This previously unrecorded shaft was found by M & J Drilling Services Ltd working on behalf of Taylor Woodrow Development Ltd of The Beacons, Warrington Road, Birchwood, Warrington, WA3 6XU under the supervision of WSP Group, The Alexandra, 200-220 The Quays, Salford M50 3SP. It was found to have been filled at some time in the past but to an unknown specification. The shaft fill was pressure grouted from the base, in 2m stages, up to the surface. Some 6 tonnes of a 10:1 pfa/cement grout mix was used. Finally, the area surrounding the shaft was excavated to a depth of 3.5m into competent strata where a steel reinforced concrete capping, measuring 5m x 5m x 0.5m, was constructed.	Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW67	NW822	0
11227	16820	14928
PO0	NW315	

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Fault under or close to the property recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A
16.4	East
5.4	South
26.3	North-East
Within	N/A
17.7	East
Within	N/A
Within	N/A

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

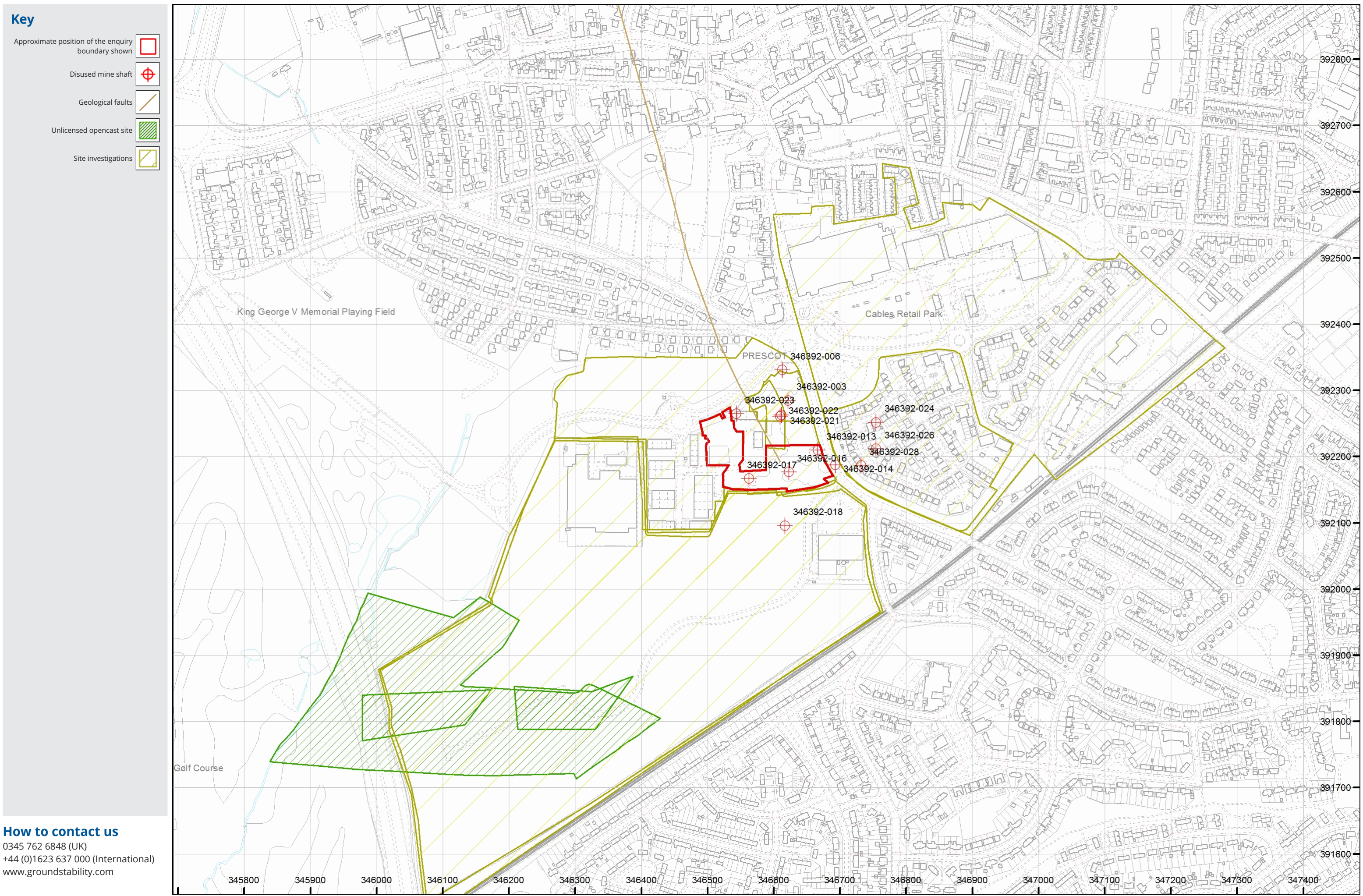
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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VAT receipt

Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	18 May 2020
Issued to	GROUNDSOLVE LTD WELL HOUSE BARNS CHESTER ROAD BROUGHTON FLINTSHIRE CH4 0DH
Property search for	LAND AT CABLES WAY / MANCHESTER ROAD PRESCOT BUSINESS PARK LANCASHIRE L34 5NQ
Reference number	51002284631001
Date of issue	18 May 2020
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68

The map highlights any specific surface or subsurface features within or near to the boundary of the site.



APPENDIX C

Coal Authority Permit



The Coal
Authority

Permit to Enter or Disturb Coal Authority Interests

Permit 20238

Name and Address of Permit Holder:

*Life Architecture Ltd
16 Column Road
Newton
West Kirkby
Wirral
CH48 8AX*

Site Location:

*Cables Way
Prescot
L34 1QG*

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation comprising six rotary boreholes to 30m or as required to determine the presence or otherwise of shallow mine workings and to assess the risk posed to surface development all within the Authority's interests at the identified site location above as shown on the Grant Permit Boundary (overleaf) for the period of 12 months from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Water flush*
- *Gas Monitoring CO, CH₄, CO₂, O₂, H₂S at the borehole and rig*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*

Signed: Leigh Sharpe Granted Date: 29/06/2020

For and on behalf of The Coal Authority

Nominated Representative: Leigh Sharpe, Permitting Manager;

The Coal Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

Tel: 01623 637450; E-Mail: permissions@coal.gov.uk



The Coal
Authority

Granted Permit Boundary

Permit Ref: 20238

Permit Boundary:



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APPENDIX D

Borehole Logs

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 101	
Job No 2373	Date 16-06-20 16-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,569.0 N 392,180.0		
Contractor CC Geotechnical				Sheet 1 of 1	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
			62.80		0.20			Stiff dark brown slightyl sandy gravelly CLAY. Gravel is sub-rounded fine to coarse sandstone with brick fragments. (MADE GROUND)		
					(3.30)			Stiff dark brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is sub-rounded fine to coarse Sandstone with concrete and brick fragments. (MADE GROUND)		
			59.50		3.50					

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
16-06-20 16-06-20	08.00 11.00	0.00 3.50					0	3.5	Air	100	
All dimensions in metres Scale 1:62.5							Client Beesley and Fildes Ltd Method/ Plant Used				Logged By ES

[illegible]

[illegible]

All dimensions in metres Scale 1:62.5	Client Beesley and Fildes Ltd	Method/ Plant Used	Logged By ES
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AGS3 UK DH 2373 PRESCOTT.GPJ GINT STD AGS 3 1.GDT 3/7/20

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 102	
Job No 2373	Date 16-06-20 16-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,523.0 N 392,169.0		
Contractor CC Geotechnical				Sheet 3 of 3	

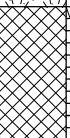
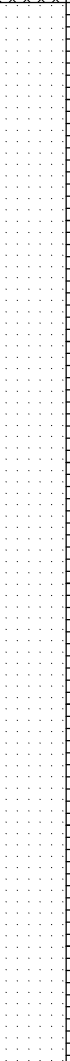
RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
								Grey MUDSTONE <i>(continued)</i>		
			</							

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
16-06-20	16.00	30.00									No groundwater encountered. Inspection Pit to 1.2m

All dimensions in metres Scale 1:62.5	Client Beesley and Fildes Ltd	Method/ Plant Used	Logged By ES
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DRILLHOLE LOG

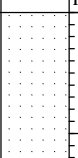
Project Prescot AB				DRILLHOLE No 103	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 60.00	Co-Ordinates () E 346,507.0 N 392,231.0		
Contractor CC Geotechnical				Sheet 1 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
Date						Discontinuities	Detail	Main		
			59.90		0.10			TOPSOIL		
					(1.10)			Very dense brown slightly sandy slightly gravelly CLAY. Gravel is sub-angular to angular fine of concrete and brick (MADE GROUND).		
			58.80		1.20			SANDSTONE		
					(10.10)					

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
17-06-20	09.00	0.00					0	20.90	Air	100	No groundwater encountered Inspection Pit to 1.2m
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

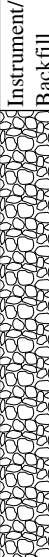
Project Prescot AB				DRILLHOLE No 103	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 60.00	Co-Ordinates () E 346,507.0 N 392,231.0		
Contractor CC Geotechnical				Sheet 2 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
			48.70		11.30			SANDSTONE <i>(continued)</i>		
					(9.60)			Grey MUDSTONE.		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
											No groundwater encountered Inspection Pit to 1.2m
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 103	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 60.00	Co-Ordinates () E 346,507.0 N 392,231.0		
Contractor CC Geotechnical				Sheet 3 of 3	

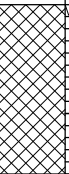
RUN DETAILS						STRATA			Geology	Instrument/ Backfill	
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION					
						Discontinuities	Detail	Main			
			39.10		20.90			Grey MUDSTONE. <i>(continued)</i>			
											Loose broken ground.
			36.30		23.70						
								</			

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
17-06-20	12.00	23.70					20.9	23.7	Air	10	No groundwater encountered Inspection Pit to 1.2m

All dimensions in metres Scale 1:62.5	Client Beesley and Fildes Ltd	Method/ Plant Used	Logged By ES
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DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 104	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 62.00	Co-Ordinates () E 346,526.0 N 392,244.0		
Contractor CC Geotechnical				Sheet 1 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
			61.90		0.10			TOPSOIL		
					(1.40)			MADE GROUND. Stiff brown slightly sandy slightly gravelly CLAY. Gravel is sub-angular to angular fine of concrete and brick (MADE GROUND).		
			60.50		1.50			Brown MUDSTONE		
				(2.80)						
			57.70	4.30	Grey MUDSTONE					
				(1.20)						
			56.50	5.50	Brown MUDSTONE					
				(6.00)						

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
17-06-20	13.00	0.00					0	30	Mist	100	Hole terminated at 23.70m, unable to progress due to flush loss. No groundwater encountered. Inspection pit to 1.2m
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 104	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 62.00	Co-Ordinates () E 346,526.0 N 392,244.0		
Contractor CC Geotechnical				Sheet 2 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
								Brown MUDSTONE (<i>continued</i>)		
			50.50		11.50			Grey MUDSTONE		
					(1.60)					
			48.90		13.10			COAL		
			48.50		13.50			Grey MUDSTONE		
					(0.70)			COAL		
			47.80		14.20			Grey MUDSTONE		
					(0.70)			COAL		
			47.10		14.90			Grey MUDSTONE		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
											Hole terminated at 23.70m, unable to progress due to flush loss. No groundwater encountered. Inspection pit to 1.2m
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

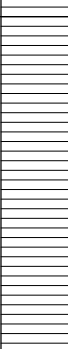
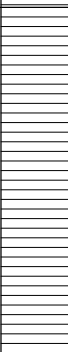
Project Prescot AB				DRILLHOLE No 104	
Job No 2373	Date 17-06-20 17-06-20	Ground Level (m) 62.00	Co-Ordinates () E 346,526.0 N 392,244.0		
Contractor CC Geotechnical				Sheet 3 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
					(10.10)			Grey MUDSTONE <i>(continued)</i>		
			37.00		25.00			COAL		
			35.90		26.10			Dark grey MUDSTONE		
			34.70		27.30			Grey MUDSTONE		
			32.00		30.00					

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
17-06-20	16.00	30.00									Hole terminated at 23.70m, unable to progress due to flush loss. No groundwater encountered. Inspection pit to 1.2m
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 105	
Job No 2373	Date 18-06-20 18-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,663.0 N 392,169.0		
Contractor CC Geotechnical				Sheet 1 of 3	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
			62.50		(0.50) 0.50			Tarmac (MADEGROUND).		
			61.40		(1.10) 1.60			Stiff brown gravelly CLAY. Gravel is sub-rounded fine to coarse sandstone and mudstone with brick and concrete fragments (MADE GROUND).		
			58.70		(2.70) 4.30			Dark brown MUDSTONE.		
			55.90		(2.80) 7.10			Grey MUSTONE		
								Brown MUDSTONE.		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
18-06-20	09.00	0.00					0	21	Air	100	No groundwater encountered. Inspection pit to 1.0m.
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 105	
Job No 2373	Date 18-06-20 18-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,663.0 N 392,169.0		
Contractor CC Geotechnical				Sheet 2 of 3	

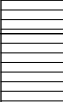
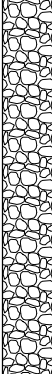
RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
								Brown MUDSTONE. <i>(continued)</i>		
					(10.10)					

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
											No groundwater encountered. Inspection pit to 1.0m.
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used			Logged By ES		

[illegible]

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 106	
Job No 2373	Date 18-06-20 18-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,609.0 N 392,192.0		
Contractor CC Geotechnical				Sheet 1 of 2	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
			62.40		(0.60) 0.60			Light grey slightly sandy angular medium to coarse GRAVEL (BALLAST).		
			61.50		(0.90) 1.50			Firm brown gravelly CLAY. Gravel is angular fine to medium of brick and concrete (MADE GROUND)		
					(4.80)			Brown MUDSTONE		
			56.70		6.30			Grey MUDSTONE.		
										

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
18-06-20	15.00	0.00					0	19	Air	100	No groundwater encountered. Inspection pit to 1.0m.
All dimensions in metres Scale 1:62.5			Client Beesley and Fildes Ltd			Method/ Plant Used				Logged By ES	

DRILLHOLE LOG

Project Prescot AB				DRILLHOLE No 106	
Job No 2373	Date 18-06-20 18-06-20	Ground Level (m) 63.00	Co-Ordinates () E 346,609.0 N 392,192.0		
Contractor CC Geotechnical				Sheet 2 of 2	

RUN DETAILS						STRATA			Geology	Instrument/ Backfill
Depth Date	TCR (SCR) RQD	(SPT)	Red'cd Level	Legend	Depth (Thick- ness)	DESCRIPTION				
						Discontinuities	Detail	Main		
								Grey MUDSTONE. <i>(continued)</i>		

Drilling Progress and Water Observations							Rotary Flush				GENERAL REMARKS
Date	Time	Depth	Casing	Core Dia mm	Strike	Water Standing	From	To	Type	Returns	
18-06-20	18.00	19.00									No groundwater encountered. Inspection pit to 1.0m.

All dimensions in metres Scale 1:62.5	Client Beesley and Fildes Ltd	Method/ Plant Used	Logged By ES
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AGS3 UK DH 2373 PRESCOTT.GPJ GINT STD AGS 3_1.GDT 3/7/20

APPENDIX E

Permit Closure Form



Permit Ref.	20238	Project / Site Location	Cables Way, Prescott, L34 1QG
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Please supply all relevant documents, including this completed form within 3 months of the permitted works being completed.

Where relevant the report should include; borehole logs and details of mine or mine entry treatment works carried out (incl. engineering drawings, grout takes etc.) and a scaled site layout plan (correlated to O.S N' Grid) showing all relevant mine entry positions, coal seams, voids and broken ground proved by the works.

Summary of works

Start date

Finish date

Have any variations occurred? ☒ No ☐ Yes If so was the Authority notified? ☒ No ☐ Yes

Please describe;

Did if any of the following incidents occur?

- ☐ Spontaneous combustion ☐ Water emission ☐ Gas emission (elevated or above action levels)
☐ Geotechnical instability ☐ Legal issues incl. damage or potential claims ☒ None

If yes, please detail each item;

Were any of the following encountered? Please give a brief summary of the works undertaken.

- ☒ Intact coal only ☐ Broken ground ☒ Backfilled ground ☐ Voids

Description;

Fault crossing site
mined to west of fault, see report

Possibly

Will further works be necessary that require a Permit? ☐ No ☐ Yes

If yes, please describe, including any recommendations;

Name: m. Scott	Email: mikescott@groundschool.com
Company: Groundschool	Tel: 01244 661361