

Coal Mining Risk Assessment

Proposed STOR facility

Land at
Booths Farm
Cheadle
Stoke-on-Trent
Staffordshire

On the behalf of
Highview Consultants Limited

February 2015

Reference: 14273-R02v1 CMRA

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Appendix 1: Site location plan

Appendix 2: Proposed development layout

Appendix 3: Non-Residential Coal Authority Mining Report

1. Introduction

- 1.1 This Coal Mining Risk Assessment has been prepared in support of a planning application seeking permission for the development of a Short Term Operating Reserve Facility (STOR) on land at Booths Farm, Cheadle, Staffordshire (hereafter referred to as the Site).
- 1.2 The report considers location of the site and the associated risks attached to the development from historic mining activities, and should be read in conjunction with the submitted plans and planning statement forming the complete planning application.
- 1.3 In preparing this report we have had regard to the advice provided by.

Data sources

- 1.4 In completing this report, we have utilised the following sources of information:
- Planning Practice Guidance, March 2014, concerning Land Stability and applications within the Coal Authority referral area.
 - Coal Authority guidance Risk Based Assessment to Development Management – Guidance for Developers, Version 3, 2014.
 - Coal Authority Interactive Mapping.
 - British Geological Survey Data.

Limitations

- 1.5 This report provides an assessment of the potential status of the ground below the site based upon the available information. It does not provide an environmental Phase 1 report, and is purely focused upon the risk posed by past mining activities upon the proposed development.

2. Site location and conditions

- 2.1 The site is located to the north of Cheadle, off the A521 Froghall Road, approximately mid way towards the village of Kingsley Holt. Booth Farm Is on the western side of the road.

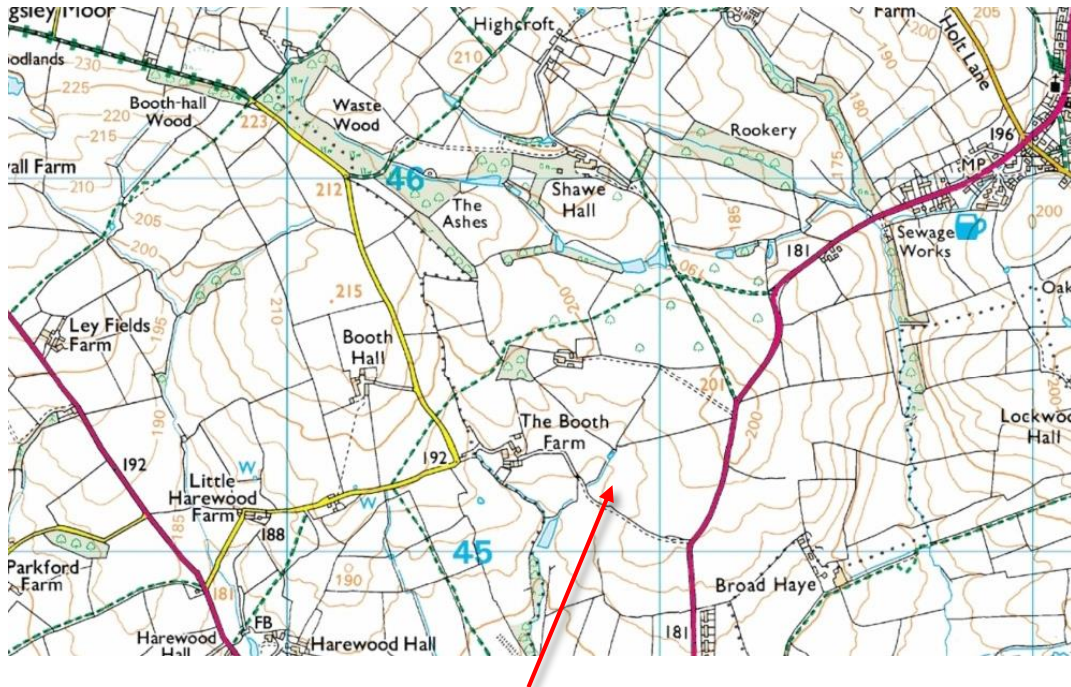


Figure 1: OS extract showing the location for the proposed STOR facility.



Figure 2: Aerial view of the location of the proposed STOR facility.

2.2 The site location can be seen on the plan attached at Appendix 1 and is the extract below.

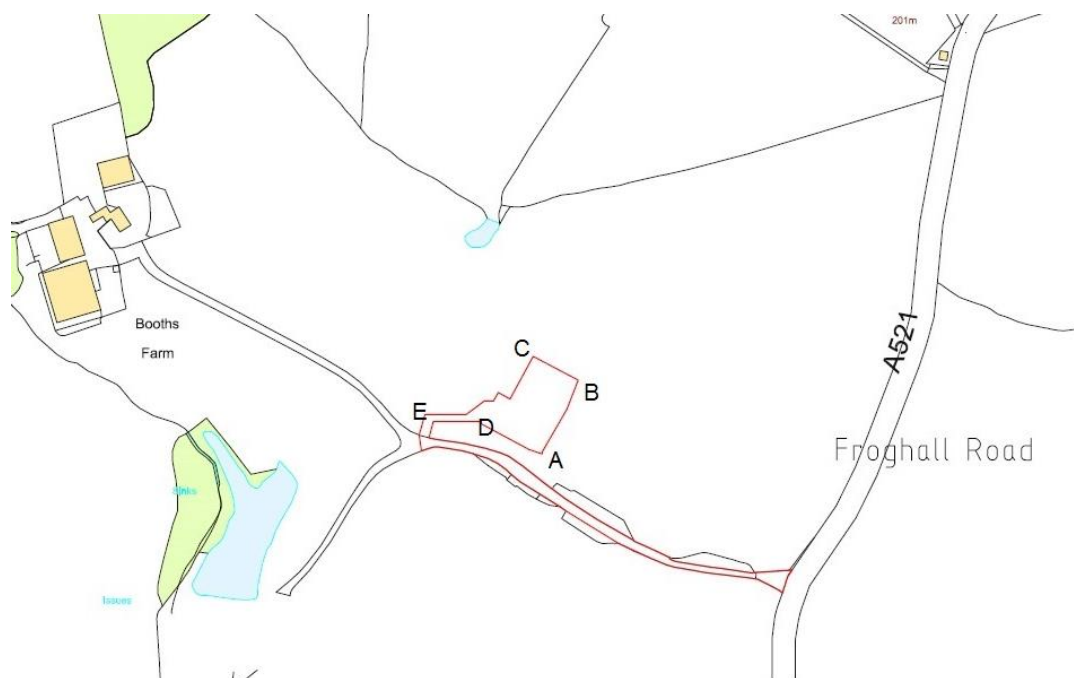


Figure 3: Site location plan.

Grid references

2.3 The site location plan shown above at *Figure 3* identifies the corners of the site. The access is marked as Point E, which the actual development area is contained within Area A through to D.

Reference Point	Easting	Northing
A	400915	345116
B	400935	345163
C	400906	345169
D	400884	345128
E	400832	345128

Geology

2.4 Information provided by the British Geological Survey describes the bedrock conditions as follows:

- Pennine Lower Coal Measures Formation - Mudstone, Siltstone and Sandstone. Sedimentary Bedrock formed approximately 312 to 313 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

2.5 The description of the geology is given as:

- 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.

Ground works

Site clearance

- 3.3 Before commencing excavations, the site would be cleared to create a level area suitable for accepting a hardcore stone base. Any soil excavations would be redistributed across the remaining area of the field or formed into bunds around the edges of the scheme.

Roadways

- 3.4 Excavate 300mm of topsoil and use material to create bunds around the perimeter of the site. Lay advanced geotextile matting. Supply and lay approximately 300mm of granite 6F5 in two (2) compacted layers.

Trenching

- 3.5 Cables shall be buried at a sufficient depth to avoid being damaged by any disturbance of the ground reasonably likely to occur. On all cable routes excavate a 300mm x 600mm deep trench.
- 3.6 Before the cables are laid the bottom of the trench shall be graded evenly, cleared of loose stones and then covered for the full width of the trench with a 75mm layer of compacted sieved sand. Where the level of the trench bottom has to change the rise or fall shall be no greater than 1 in 12.
- 3.7 After the cables have been laid a further layer of sieved sand shall be added over the full width of the trench and tamped to provide finally not less than 50mm cover over the cable.
- 3.8 Trenches shall be backfilled in layers and each layer rammed. The first two layers shall be rammed by hand.

Foundations

- 3.9 Transformer and generator foundations to be a maximum of 500mm deep. Concrete bases will be laid to support the installed equipment.

Summary

- 3.10 All ground works are shallow depth and will not disturb soils below 600 mm.

4. Coal Authority mining record

- 4.1 A Coal Authority Report was obtained on the 17 February 2015 and is included at Appendix 3 of this report. The report has found the following:

Underground coal mining – past

- 4.2 The property is in the likely zone of influence from workings in 1 seam of coal at 90m depth, and last worked in 1857.
- 4.3 Any ground movement from these coal workings should have stopped by now.
- 4.4 In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on Coal Authority Information section of the report.

Underground coal mining – present

- 4.5 The property is not in the likely zone of influence of any present underground coal workings.

Underground coal mining – future

- 4.6 The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.
- 4.7 The property is not in an area for which a licence has been granted to remove or otherwise work coal using underground methods.
- 4.8 The property is not in an area that is likely to be affected at the surface from any planned future workings.
- 4.9 However, reserves of coal exist in the local area which could be worked at some time in the future.
- 4.10 No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

- 4.11 There are no known coal mine entries within, or within 20 metres of, the boundary of the property.
- 4.12 Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

Coal mining geology

- 4.13 The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

Coal mining subsidence

- 4.14 The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.
- 4.15 There is no current Stop Notice delaying the start of remedial works or repairs to the property. The 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.

Hazards related to coal mining

- 4.16 The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Working facilities orders

- 4.17 The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

5. Assessment of coal mining risks

- 5.1 An assessment of the Site's coal mining risks has been undertaken from existing desk based information.
- 5.2 If an issue with the coal mining legacy is identified, a risk assessment is carried out to assess each feature and determine if these pose unacceptable risks to the future development of the site.

Potential coal mining legacy issues

- 5.3 The site has been identified by the Coal Authority as being likely to be within the zone of influence from workings in a seam of coal at 90m depth, which was last worked in 1857. They conclude that any ground movement from these coal workings should have stopped by now.
- 5.4 The table below provides a summary of the potential risks to the site.

Coal Mining Legacy	Yes	No	Risk Assessment
Underground coal mining (recorded at shallow depths less than 30 metres deep)		X	Not required
Underground coal mining (probable at shallow depths less than 30 metres deep)		X	Not required
Recorded mine entries (shafts and adits)		X	Not required
Probable unrecorded mine entries (shafts and adits)		X	Not required
Coal mining geology (fissures)		X	Not required
Record of past mine gas emissions		X	Not Required
Ground gas emissions from surface mining		X	Not Required
Recorded coal mining surface hazard		X	Not Required
Surface mining (unrecorded opencast workings)		X	Not Required

Table 1: Potential coal mining legacy issues.

Ground conditions

- 5.5 The site is known to contain inert backfill material and is made up ground that has been levelled and stabilised by the landowner.

Risk assessment and mitigation strategy

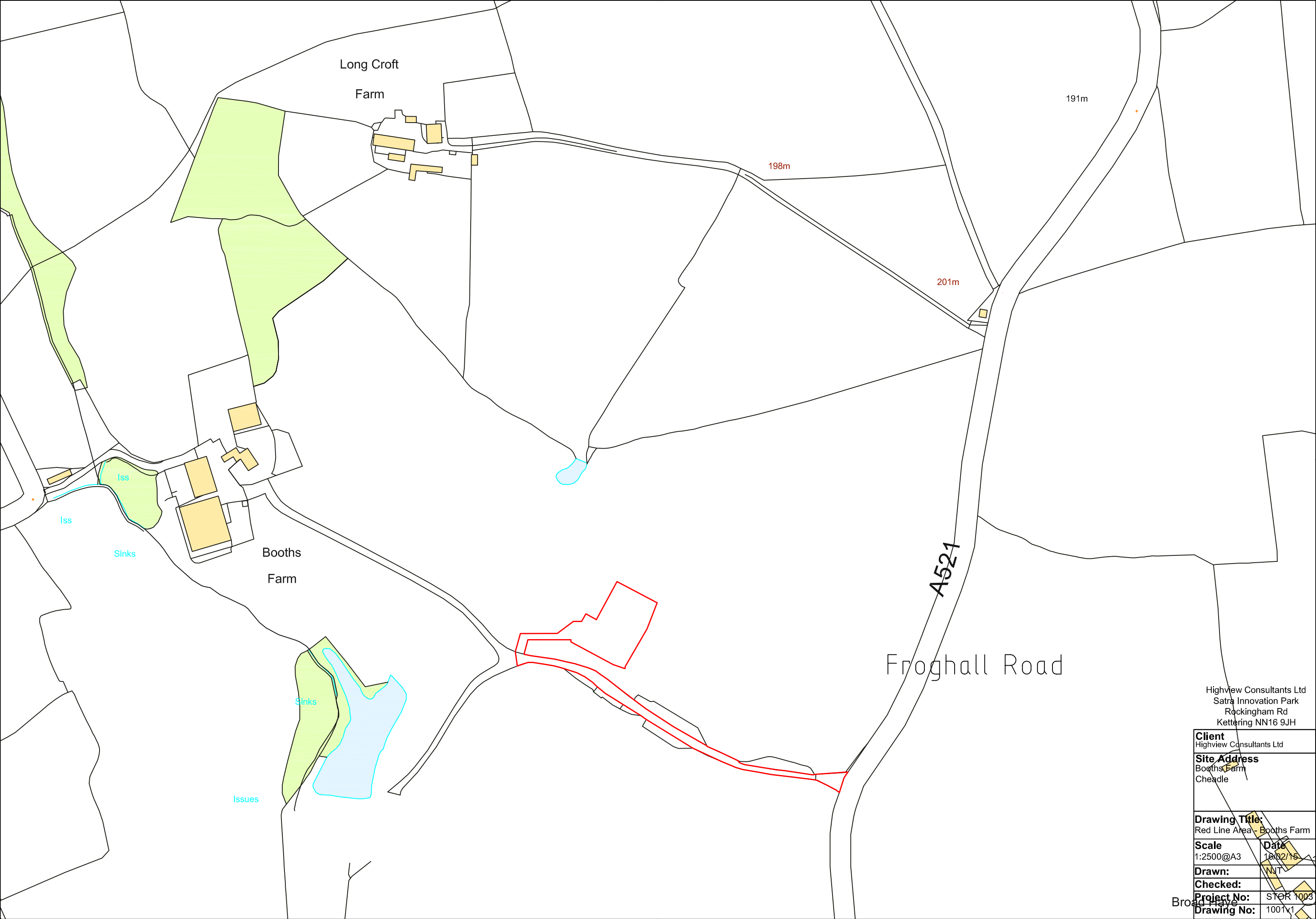
- 5.6 The potential risks to the development would be from unexpected subsidence occurring as a result of ground movement from underground mine workings. This could cause damage the installed equipment.
- 5.7 There are not considered to be any risks to underground mine workings as a result of the development, due to the limited ground works proposed and the relatively small footprint of the installed equipment.
- 5.8 The Coal Authority confirm that ground movement associated with the workings should have stopped, and as such future risks are considered to be low.
- 5.9 The development itself is not occupied, and there is considered to be no risk to human health as result of legacy mine activity.
- 5.10 The site includes made up ground, so the risk of there being undiscovered mine workings at shallow depth unknown to the landowner is considered to be low.

6. Conclusion

- 6.1 This assessment has considered the potential impact of mine workings on the proposed development, and also the potential for disturbance to occur to mine workings from any ground works associated with the construction of the STOR facility.
- 6.2 It has been found that the site is within the likely zone of influence of deeper mine workings dating from 1857, at a depth of 90 metres. However, the Coal Authority have expressed the view that any ground movement associated with these workings should have stabilised by now.
- 6.3 The development itself proposes no deep excavations or foundations and would not be sensitive to ground movement.
- 6.4 On that basis, the risk to the development from coal mining activities is considered to be low.

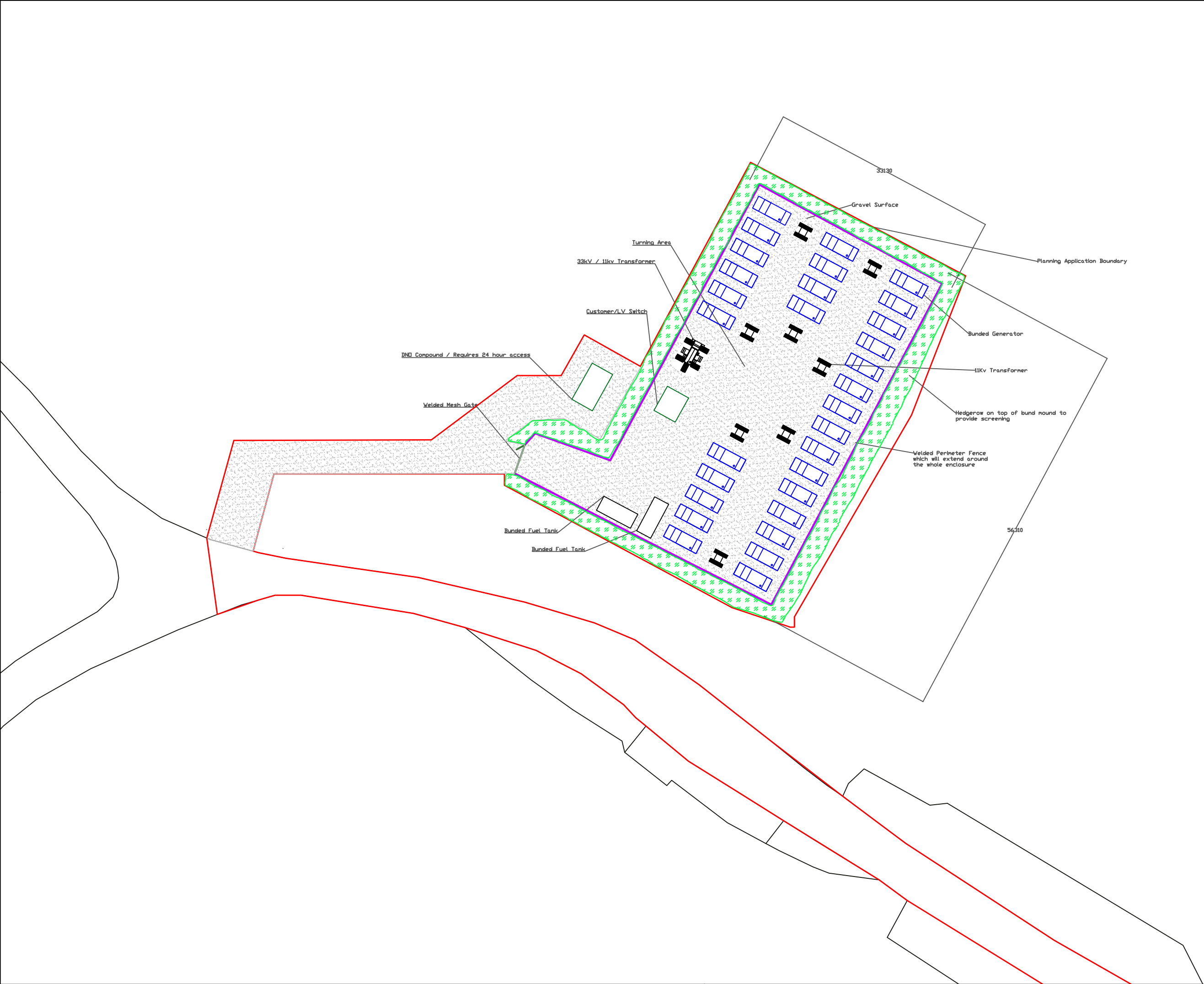
Appendix 1:

Site location plan



Appendix 2:

Proposed development layout



Highview Consultants Ltd Satra Innovation Park Rockingham Rd Kettering NN16 9JH	
Client Highview Consultants Ltd	
Site Address Booths Farm Cheadle	
Drawing Title: Site Layout	
Scale 1:500@A3	Date 12/02/15
Drawn:	NJT
Checked:	
Project No:	STOR 1003
Drawing No:	1001v1

Appendix 3:

Non-Residential Coal Authority Mining
Report



The Coal Authority

Issued by:

The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

**TOWN PLANNING SERVICES
THE EXCHANGE
COLWORTH ESTATE
SHARNBROOK
MK44 1LQ**

Our reference: **51000786353001**
Your reference: **14273 Cheadle, Booths**
Date of your enquiry: **17 February 2015**
Date we received your enquiry: **17 February 2015**
Date of issue: **17 February 2015**

This report is for the property described in the address below and the attached plan.

Non-Residential Coal Authority Mining Report

LAND AT BOOTH'S FARM, CLAMGOOSE LANE, CHEADLE, STAFFORDSHIRE, ST10 2EG

This report is based on and limited to the records held by, the Coal Authority, and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

The property is in the likely zone of influence from workings in 1 seam of coal at 90m depth, and last worked in 1857.

Any ground movement from these coal workings should have stopped by now.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on Coal Authority Information section of the report.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

The property is not in an area for which a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area that is likely to be affected at the surface from any planned future workings.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

Coal mining geology

The Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining.

Opencast coal mining

Past

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

Present

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

Coal mining subsidence

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

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

The 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

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

Withdrawal of support

The property is not in an area for which a notice of entitlement to withdraw support has been published.

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

Working facilities orders

The property is not in an area for which an Order has been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

Payments to owners of former copyhold land

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

Comments on Coal Authority information

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional Remarks

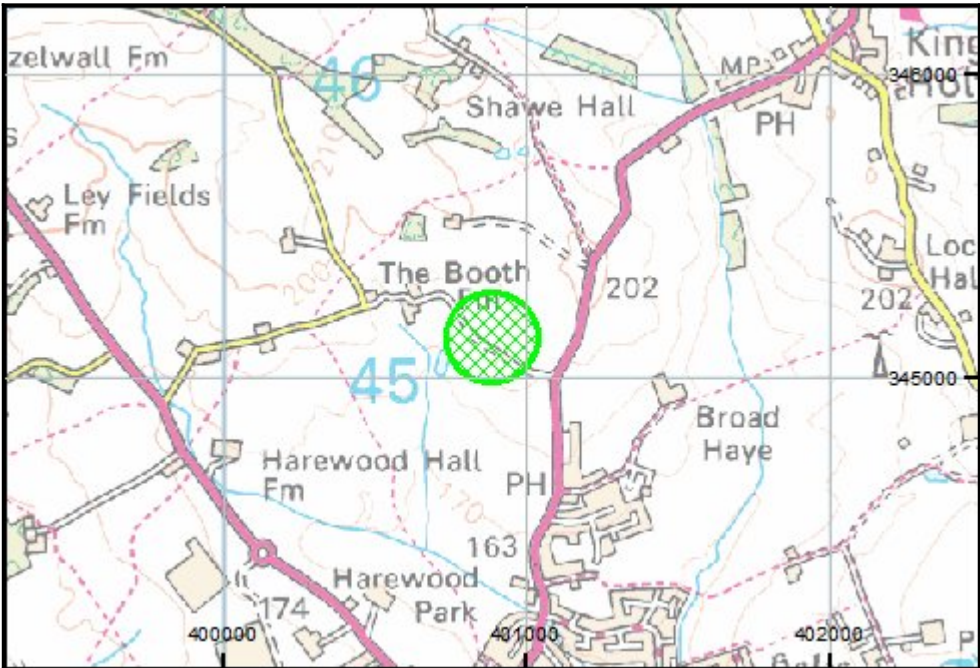
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Tax Point Date:	17 February 2015
Issued to:	TOWN PLANNING SERVICES THE EXCHANGE COLWORTH ESTATE SHARNBROOK MK44 1LQ
Property Search for:	LAND AT BOOTH'S FARM, CLAMGOOSE LANE, CHEADLE, STAFFORDSHIRE, ST10 2EG
Reference Number:	51000786353001
Date of Issue:	17 February 2015
Cost:	£59.00
VAT @ 20%:	£11.80
Total Received:	£70.80
VAT Registration	598 5850 68

Location map



Approximate position of property



Enquiry boundary

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Key

Approximate position of enquiry boundary shown

