Geo-Environmental Ltd

Consulting Geo-Environmental Engineers

Phase 1 Coal Mining Risk Assessment

Drighlington Methodist Church, King Street, Drighlington, Bradford

Report Ref:
20243-PWAG-00-XX-RP-G-7000-P01

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Prepared for:
Halliday Clark Architects

Date:
April 2022

DOCUMENT CONTROL SHEET

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Project: Drighlington Methodist Church

Report: Phase 1 Coal Mining Risk Assessment

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Issue No	Date	Revision Details
P01	22/04/2022	Original Issue.

Executive Summary

PWA Geo-Environmental Ltd (PWAG) was commissioned by Halliday Clark Architects to undertake a Phase 1 Coal Mining Risk Assessment (CMRA) for a proposed extension and alterations located at Drighlington Methodist Church. This report highlights key mining risks associated with the property in the context of the proposed development. A brief summary of the CMRA is provided below but the report must be read in its entirety.

Key Details

Site Location and Description:	The site is approximately 0.13 hectares in size and two church buildings occupy the site to the east and southwest. Tarmacadam hardstanding is present to the north with access gained of King Street. Landscaped areas comprising of paving and gravel line the outer perimeter. It is bounded by residential properties in all directions.
Site History:	A chapel and Sunday school have been denoted on the site from the earliest mapping with the gradual development of Drighlington and Adwalton. One mining related feature (air shaft) is located approximately 250 m north.
Geology:	Based on data available and published mapping, ground conditions comprise shallow superficial deposits over shallow sandstone bedrock of the Emley Rock. The Flockton Thin Coal is expected to be present at shallow depth beneath the site with a reported thickness of 0.3 m to 1.4 m.

Coal Mining Risk Assessment

A risk to the proposed development has been identified associated with historic coal mining activities. In particular, geological records and the Coal Authority Consultants Coal Mining Report indicate that the site is underlain at shallow depth by the Flockton Thin Coal. This seam is reported to be present at 5.0 m bgl, had an extraction thickness of 1.0 m and was last mined in 1879. Whilst the Methodist Church has been standing since the 1890s with no reportable evidence of subsidence the possibility of subsidence occurring in the future cannot be ruled out. Furthermore, proposed alterations and additions to the building could alter load paths that could exacerbate potential subsidence issues. In addition, shallow coal seams can represent a source of ground gas and require further evaluation.

Recommendations

We recommend that:

- Rotary probing is undertaken to evaluate if the Flockton Thin Coal has been worked beneath the site;
- Shallow coal seams can represent a source of ground gas and therefore a gas monitoring programme should be undertaken;
- All works concerning shallow coal mining should be undertaken under an approved/current Coal Authority permit to disturb or enter coal seams, coal mine workings or coal mine entries; and
- Copies of this report are passed to the appropriate regulator for review and comment before undertaking any additional work.

Contents

Appendices

Appendix A – Drawings

Drawing No.	Title
879.01 (90) 001	Site Location Plan
2408/Elevations	Proposed Elevations
2408/TOPO	Topographical Survey

Appendix B – Coal Authority Mining Report

1 FOREWORD

This report has been prepared for the sole use and reliance of Halliday Clark Architects (the Client) and cannot be relied upon by any other parties without the express written authorisation of PWA Geo-Environmental Ltd. Any unauthorised third party relies on this report at their own risk and the authors owe them no duty of care.

The report presents observations and factual data obtained during our site walkover, along with information reviewed during the desk study and intrusive works and provides an assessment of geo-environmental issues with respect to information provided by the Client regarding the site. There may be other conditions on site not encountered during this investigation and which have not been examined. We cannot accept responsibility for any conditions not revealed by this investigation and confirmation of ground conditions between exploratory locations should be undertaken if considered necessary. Any spatial inference of ground conditions between investigation locations are for guidance only and no liability can be accepted for their accuracy.

The groundwater conditions encountered on site and recorded on exploratory records are those observed at the time of investigation. The normal rate of investigation does not enable the recording of an equilibrium water level. Furthermore, groundwater levels are subject to seasonal variation, changes in weather and changes in local drainage conditions. Therefore, this information is provided for guidance only and no liability can be accepted for their accuracy.

The report should be read in its entirety, including all associated drawings and appendices. PWA Geo-Environmental Ltd cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

The findings and opinions conveyed in this report (including review of any third-party reports) are based on information obtained from the sources listed, which PWA Geo-Environmental Ltd understands are reliable. All reasonable skill, care and diligence has been applied in examining the information obtained. However, PWA Geo-Environmental Ltd accepts no responsibility for inaccuracies in the data supplied or for opinions based on any such inaccurate data.

Where the report refers to the potential presence of invasive weeds such as Japanese Knotweed, or the presence of asbestos containing materials, it should be noted that the observations are for information only and should be verified by a suitably qualified expert.

PWA Geo-Environmental Ltd reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

2 INTRODUCTION

2.1 The Commission and Brief

PWA Geo-Environmental Ltd (PWAG) was commissioned by Halliday Clark Architects to undertake a Phase 1 Coal Mining Risk Assessment (CMRA) for a proposed extension at Drighlington Methodist Church, Bradford.

This report has been prepared in response to a letter from Leeds City Council dated 1st April 2022 as a requirement to validate the submitted application.

This CMRA has been prepared in accordance with the Coal Authority's model template presented in their Risk Based Approach to Development Management, Guidance for Developers (Version 4 – 2017).

This report presents factual information collected during this assessment, interpretation of the data obtained and recommendations relevant to the commission and brief. General notes and limitations relevant to all PWA Geo-Environmental Ltd investigations are described in the Foreword. These should be read in conjunction with this report. The text of the report draws specific attention to any modification to these procedures and to any other special techniques employed.

2.2 Description and Layout of the Proposed Development

The development proposal for the site comprises part single-storey, part two-storey link extension between the Church and Church Hall and the creation of an accessible entrance. A site location plan is shown on Drawing No. 879.01 (90) 001 and proposed elevations are shown on Drawing No. 2408/Elevations, both are included in **Appendix A**.

Any changes to the proposed layout, site levels and/ or end use may require amendments to this report.

2.3 Scope of the Coal Mining Risk Assessment

This review comprised a desk-based study. The purpose of this CMRA is to:

- Present a desk-based review of all available information on the mining issues which are relevant to the application site.
- Use that information to identify and assess the risks to the proposed development from mining legacy, including the cumulative impact of such issues.
- Set out appropriate mitigation measures to address the mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how mining issues have influenced the proposed development.
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

2.4 Sources of Information

The information sources used in the preparation of this report include:

- The Coal Authority - Consultants Coal Mining Report (Ref: 51002987303001 dated 6th April 2022).
- The Coal Authority - Shaft Plan and Data Sheets (Ref: 51002987303001 dated 6th April 2022).
- Geological information including the British Geological Survey (BGS) 1:50,000 scale geological map.
- BGS historic borehole records.
- The Coal Authority online interactive map viewer.
- CIRIA C758D. Abandoned mine workings manual. 2019.
- Coal Authority Policy for Building Over or Within the Influencing Distance of a Mine Entry, January 2012.
- Coal Authority Technical Guidance Note TGN01/2019. Findings from a large subsidence event on a residential estate.

PWAG cannot accept responsibility for the reliability and authenticity of published information or reports prepared by third parties.

3 SITE LOCATION AND DESCRIPTION

Table 1. Site Location and Description.

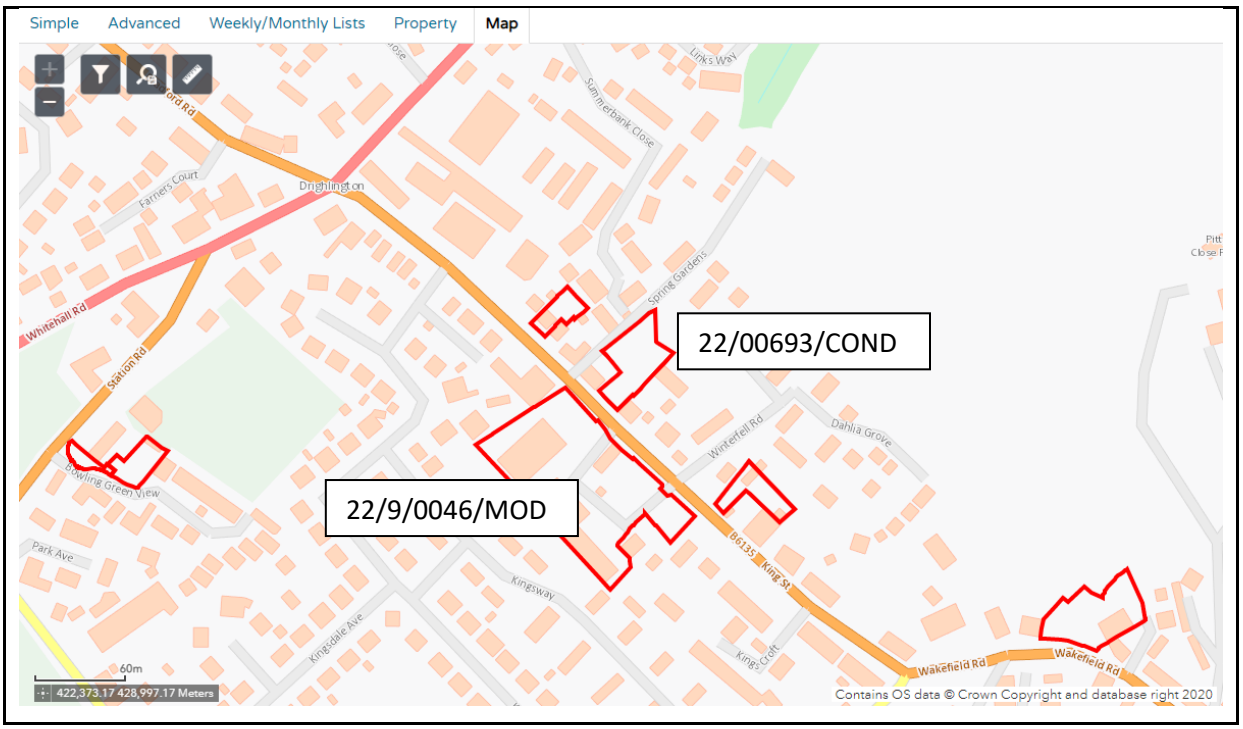
Summary The site is approximately 0.13 hectares in size and two church buildings occupy the site to the east and southwest. Tarmacadam hardstanding is present to the north with access gained of King Street. Landscaped areas comprising of paving and gravel line the outer perimeter. It is bounded by residential properties in all directions.				
Site Address	Drighlington Methodist Church, King Street, Drighlington, Bradford BD11 1EL.			
National Grid Reference	Easting: 422534, Northing: 428863.			
Site Location	The site is located in Drighlington, approximately 7 km southeast of Bradford city centre.			
Ground Cover	**Ground Cover**		**Estimated percentage**	
	Church buildings.		70%	
	Tarmacadam hardstanding with associated landscaped areas around the perimeter.		30%	
Topography	The site occupies relatively level ground. Site topography is illustrated on Drawing No. 2408/TOPO included in **Appendix A**.			
Description	The site is approximately 0.13 hectares in size and two church buildings occupy the site to the east and southwest. Tarmacadam hardstanding is present to the north with access gained of King Street. Landscaped areas comprising of paving and gravel line the outer perimeter.			
Adjacent Land Use	**North**	**South**	**East**	**West**
	Residential.	Residential.	Housing construction.	Residential.

4 PREVIOUS REPORTS AND PLANNING PORTAL INFORMATION

No previous reports for the site were made available by the client.

PWAG carried out a review of Leeds City Council planning records for the site. Of particular interest were developments to the east and south of the site as these contained useful geotechnical information:

- Land to rear of 23 King Street, Drighlington (Planning reference 22/00693/COND); and
- Land off King Street, Drighlington (Planning reference 22/9/00046/MOD).



Both sites referenced above are located within a Development High Risk Area defined by the Coal Authority. Therefore, the Coal Authority required a Coal Mining Risk Assessment (CMRA) Report to assess risks to the proposed development posed by past coal mining activity.

22/9/0046/MOD - The Coal Mining Risk Assessment for land immediately south of the site was rather concise. This concluded 'The site may be affected by shallow coal workings. Therefore, the possible presence of shallow coal seams/workings below the site should be investigated by rotary drilling.'

22/00693/COND – planning records for this site included more useful information including the following:

- TerraConsult Ltd (April 2019). King Street, Drighlington Coal Mining Risk Assessment. Reference 4463/02 Issue 1.
- Arc Environmental Ltd (June 2021). Phase 2 Ground Investigation Report. Reference 21-208.
- Arc Environmental Ltd (August 2021). Proposed Residential Development, King Street, Drighlington – Hazardous Ground Gas Risk Assessment Addendum Report. Reference 21-208.02L.
- Sirius (September 2021). Completion Report for the Drilling and Grouting Treatment of Mine Workings. Reference SDL4271.

The CMRA identified a potential risk of shallow coal workings in the Flockton Thin that was conjectured to subcrop approximately 50m to the north of the site.

The Phase 2 investigation included the drilling of four rotary boreholes to depths of between 5.0 m and 30.0 m that provided information on the shallow Flockton Thin coal seam. No evidence of coal was found in one borehole (RBH1). In the other rotary boreholes (these are located approximately 50 m east of Drighlington Methodist Church) voids and potential broken ground were encountered as follows:

- RBH2 – void encountered between 3.4 – 4.2 m bgl;

- RBH2A – foundered strata encountered between 3.0 – 5.0 m bgl; and
- RBH2B – void encountered between 3.3 – 4.2 m bgl.

Arc concluded that the Flockton Thin had been worked beneath the site by pillar and stall workings. Due to the shallow depth these were considered to represent a risk to the site and recommended that the workings be stabilised by drilling and grouting.

Sirius was commissioned to stabilise the shallow mine workings. They drilled 133 boreholes to depths of between 6.4 m and 8.5 m bgl and encountered workings within the Flockton Thin at depths of between 4.4 m and 7.5 m bgl. Solid coal was encountered in 45 boreholes with a typical thickness of 1.0 m. Soft push was encountered in 88 boreholes with a consistent thickness of 1.0 m. A total of 38.87 tonnes of grout was injected into these boreholes.

Arc carried out a ground gas monitoring programme comprising six monitoring visits at three monitoring positions. Although no methane was recorded they did detect concentrations of carbon dioxide up to a maximum of 9.3%. Based on these readings they recommended that gas protection measures be incorporated into the buildings.

5 SITE HISTORY

A study of historical Ordnance Survey (OS) maps has been undertaken to identify potentially significant mining related constraints on or near the site. This is based on historical maps and information presented on the planning portal for the sites referenced in Section 4.

Table 2. Site History Summary.

Summary

A chapel and Sunday school have been denoted on the site from the earliest mapping with the gradual development of Drighlington and Adwalton. One mining related feature (air shaft) is located approximately 250 m north.

Date	Site	Surrounding Land
1892-1893	Two buildings are present on site, a chapel to the northwest and Sunday school to the southeast.	The surrounding land relates to the developed area of Drighlington with Adwalton located southeast. King Street runs along the northern border in a northwest to southeast direction. Spring Gardens Colliery including a shaft and an air shaft is located approximately 250 m northwards.
1907-1908	No significant changes recorded.	Spring Gardens Colliery is indicated to be disused.
1922-1933	No significant changes recorded.	Further development of Drighlington and Adwalton.
1956	No significant changes recorded.	No further indication of former Spring Gardens Colliery. Further development of Drighlington and Adwalton.
1970-1994	No significant changes recorded.	Further development of Drighlington and Adwalton.
2002	The chapel is no longer present and has been replaced by a building set further back towards the southwest boundary.	Further development of Drighlington and Adwalton.

6 GEOLOGY

Online British Geological Survey (BGS) published geological data www.bgs.ac.uk and Sheet 77 Huddersfield solid and drift at a scale of 1:50,000 shows the following geological sequence.

Table 3. Geological mapping.

Summary

Based on data available and published mapping, ground conditions comprise shallow superficial deposits over shallow sandstone bedrock of the Emley Rock. The Flockton Thin Coal is expected to be present at shallow depth beneath the site with a reported thickness of 0.3 m to 1.4 m.

Item	Description
Made Ground	Not shown on geological mapping.

Table 3. Geological mapping.	
Superficial	No superficial deposits are recorded on site.
Bedrock	Onsite bedrock comprises sandstone of the Emley Rock. Located approximately 200 m southeast bedrock comprises mudstone, siltstone and sandstone of the Pennine Lower and Middle Coal Measures. The Flockton Thin Coal, with a recorded thickness of 0.3 m to 1.4 m, is indicated to outcrop approximately 75 m northeast of the site. The Flockton Thick Coal is indicated to outcrop approximately 225 m southeast of the site: this is a younger seam and not expected on site.
BGS Borehole Records	The nearest BGS borehole records relate to the Cricket Clubhouse, approximately 225 m west. SE22NW1204 identifies made ground 0.85 m thick, over a thin layer of firm clay to 1.20 m bgl with brown sandstone and grey shale to 10.00 m bgl. A void was recorded between 7.25 m and 8.00 m bgl with collapsed workings and broken ground encountered from 8.0 m to 9.0 m bgl. SE22NW1207 identifies made ground 0.75 m thick, over a thin layer of firm clay to 1.20 m bgl with interbedded brown sandstone and grey shale to 10.00 m bgl. A void was recorded between 6.50 m and 7.50 m bgl with broken ground encountered from 7.50 m to 8.70 m bgl. SE22NW1211 reports similar geology but encountered solid good quality coal from 7.20 m to 8.00 m bgl and no broken ground.

7 IDENTIFICATION AND ASSESSMENT OF SITE-SPECIFIC COAL MINING

The table below summarises potential issues identified by the Coal Authority Interactive Map viewer:

Table 4. Coal Authority Interactive Map Information.		
Information	**Site Affected**	**Comment**
Coal Mining Reporting Area	Yes	A report is presented in **Appendix B**.
Mine Entry	No	No mine entries are located onsite. The nearest mine entry is located approximately 100 m southeast. 
Development High Risk Area	Yes	The site is located within development high risk area.
Past Shallow Coal Mine Workings	No	No past shallow coal mine workings are shown on site but are indicated to the northwest.
Probable Shallow Coal Mine Workings	Yes	Probable shallow coal mine workings are anticipated beneath the site and the surrounding area.
Coal Outcrops	Yes	No coal outcrops are shown on site but are present nearby.

The table below summarises the potential risks identified by the Coal Authority Coal Mining Report, and Shaft Plan and Data Sheets presented in **Appendix B**.

Table 5. Coal Mining Risk Assessment.

Summary

The Coal Authority report confirmed the property to be within the zone of likely physical influence on the surface from past underground workings and that probable unrecorded shallow mine workings exist beneath the site. Based on assumed seam thickness detailed below and information understood at this point in the investigation, we anticipate there to be enough competent rock cover for the development. No mine entries exist on site; however, two mineshafts are located approximately 100 m southeast (ref: 422428-021 and 422428-022), these have been appropriately remediated and present no risk to the development.

Issue	Yes	No	Risk Assessment
Past underground coal mining (recorded at shallow depths).	Yes		According to the Coal Authority, the property is within the zone of likely physical influence on the surface from past underground workings and the relevant records are presented below. The shallowest coal seam is the Flockton Thin which is located 5.00 m bgl on site. The Coal Authority has identified the seam to have an extraction thickness of 1.00 m and geological mapping indicates a seam thickness of 0.30 m to 1.40 m. At this stage we do not know if it has been worked. However, due to its shallow depth and records of nearby workings it should be assumed likely. The Top Fenton coal seam is located at a depth of 34 m bgl with an extraction thickness of 1.50 m. We do not anticipate this or deeper seams to influence the ground at the surface. Based on this information, we consider that the risk to the proposed development from unrecorded shallow mine workings in the Flockton Thin Coal is high.

Colliery	Seam	Mineral	CA Ref	Depth (m)	Direction	Dip rate	Dip direction	Extraction Thickness (cm)	Year last mined
Unnamed	FLOCKTON THIN	Coal	62XP	5	Beneath Property	0	East	100	1879
Unnamed	TOP FENTON	Coal	62XY	34	Beneath Property	2.6	Northeast	150	1879

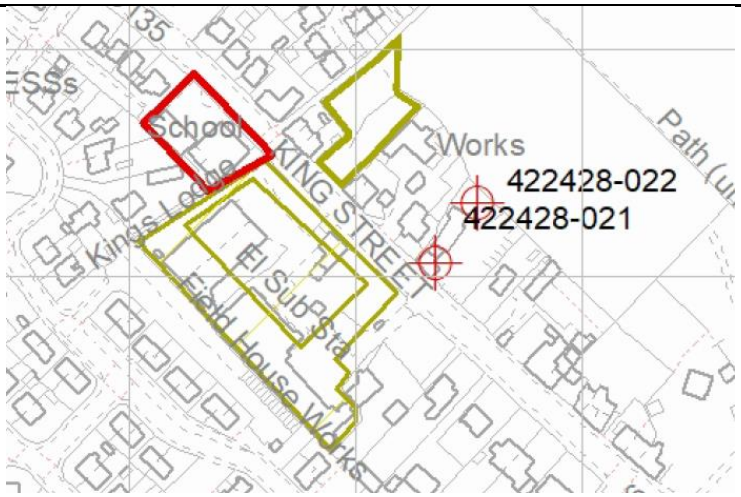
Issue	Yes	No	Risk Assessment
Probable unrecorded shallow workings.	Yes		The property is within an area where the Coal Authority believe there is coal at or close to the surface that may have been worked in the past (i.e. less than 30 m deep).
Mine entries (shafts and adits).		No	 There is no record of mine entries on site. The nearest mine entries are approximately located 100 m southeast.

Table 5. Coal Mining Risk Assessment.			
			422428-021 This mine entry was fully grouted in March 2019. It was subsequently capped with a 2.6m by 2.6m by 0.6m thick reinforced concrete shaft cap founded on bedrock with the top of the cap being 1.30m below ground level at the time of construction. 422428-022 This mine entry was fully grouted in March 2019. It was subsequently capped with a 2.60 m by 2.60 m by 0.6m thick reinforced concrete shaft cap founded on bedrock with the top of the cap being 1.01m below ground level at the time of construction.
Coal mining geology (fissures).		No	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.
Remediated Sites		No	There are no records within 50 metres of the enquiry boundary.
Record of past mine gas emissions or potential		No	There is no record of a mine gas emission requiring action by the Coal Authority within 500 m of the boundary of the property. However, this does not rule out a risk associated with ground gas.
Recorded coal mining hazard.		No	None recorded.
Coal mining subsidence		No	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.
Surface mining (opencast workings)		No	None recorded within 500 m of the enquiry boundary.

8 MITIGATION STRATEGY PROPOSED

8.1 Probable Unrecorded Shallow Mine Workings

As a rule of thumb for crown hole collapse, ten times the seam thickness of competent rock cover is assumed to provide adequate protection for new developments from workings in underground coal. This is based on guidance given in CIRIA Special Publication 32, reprinted 2002. However, the Coal Authority recently released Technical Guidance Note TGN01/2019 describing findings from a large subsidence event on a residential estate. In this note they advised that 'other subsidence mechanisms can occur, such as pillar failure, for which the 10 times rock cover rule of thumb is not an appropriate guide'. Furthermore, CIRIA updated their guidance on building over abandoned mineworkings in September 2019 in Abandoned mine workings manual C758D. In this document they state that "The actual geological, site locale and development circumstances will influence the selection of a site-specific cover ratio, as will the proposed end use. Past performance for the locality can also be a guide, principally meaning either the notoriety or good reputation of the workings regarding surface impacts."

The site is underlain by the Flockton Thin Coal and is reported to be present at a depth of 5.0 m bgl with an extraction thickness of 1.0 m and therefore a risk to the development has been identified. The church building has been standing since the 1890s with no significant visible evidence of subsidence. Furthermore, the proposed new structure is relatively lightweight and comprises a glazed link and building alteration. However, it appears that some walls are being removed that could alter historical load paths. Given these changes we recommend that investigations are undertaken to determine if the site is underlain by shallow mine workings. This should include drilling a series of boreholes across site to investigate depth to rockhead, thickness of competent rock cover, and for the presence of mine workings. Where mine workings are encountered, stabilisation in the form of grouting may be required unless possible to demonstrate otherwise. This would require surveying of the subsurface workings using remote techniques.

8.2 Mine Gas

In addition, shallow coal represents a potential source of ground gas. Therefore, we recommend that the rotary probeholes are completed with gas monitoring wells and that a program of gas monitoring is undertaken to determine if gas protection measures are required.

8.3 Mine Entries

Based on the data reviewed, the potential zone of influence from both mine entries are located outside the development boundary and have been appropriately remediated. These mine entries are not considered to represent a potential risk to the development.

Given the extensive history of mine workings in this area, the prospect of encountering unrecorded mine entries (including bell pits and crop workings) cannot be ruled out. During preparatory works for the proposed new building, we recommend that made ground is removed to expose undisturbed natural ground. This should be inspected for evidence of signs of worked ground that could be indicative of infilled mine entries, bell pits or surface workings. If there is any evidence, advice regarding treatment / foundation precautions should be sought immediately from a suitably qualified engineer.

9 CONCLUSIONS AND RECOMMENDATIONS

A Phase 1 Coal Mining Risk Assessment has been performed for a proposed extension at Drighlington Methodist Church, Bradford. The development proposal for the site comprises part single-storey, part two-storey link extension between the Church and Church Hall.

For the purpose of this report, we have assumed that proposed levels will not be significantly different to those existing. If any of these assumptions are incorrect then the conclusions in this report may require reassessment.

In summary, we have identified a risk to the development from historic coal mining activities. In particular, geological records and the Coal Authority Consultants Coal Mining Report indicate that the site is underlain at shallow depth by the Flockton Thin Coal. This seam is reported to be present at 5.0 m bgl, had an extraction thickness of 1.0 m and was last mined in 1879. Whilst the Methodist Church has been standing since the 1890s with no reportable evidence of subsidence the possibility of subsidence occurring in the future cannot be ruled out. Furthermore, proposed alterations and additions to the building could alter load paths that could exacerbate potential subsidence issues. Therefore, we recommend that rotary probing is undertaken at the site to evaluate if the Flockton Thin Coal has been worked. In addition, shallow coal seams can represent a source of ground gas and we also recommend that a monitoring programme is undertaken.

All works concerning shallow coal mining should be undertaken under an approved/current Coal Authority permit to disturb or enter coal seams, coal mine workings or coal mine entries.

10 REGULATORY APPROVALS

The conclusions and recommendations presented in this report are considered reasonable based on the information that was available. However, these are not guaranteed to gain approval from regulatory authorities. Therefore, we recommend that copies of this report are passed to the appropriate regulator for review and comment before undertaking any additional work.

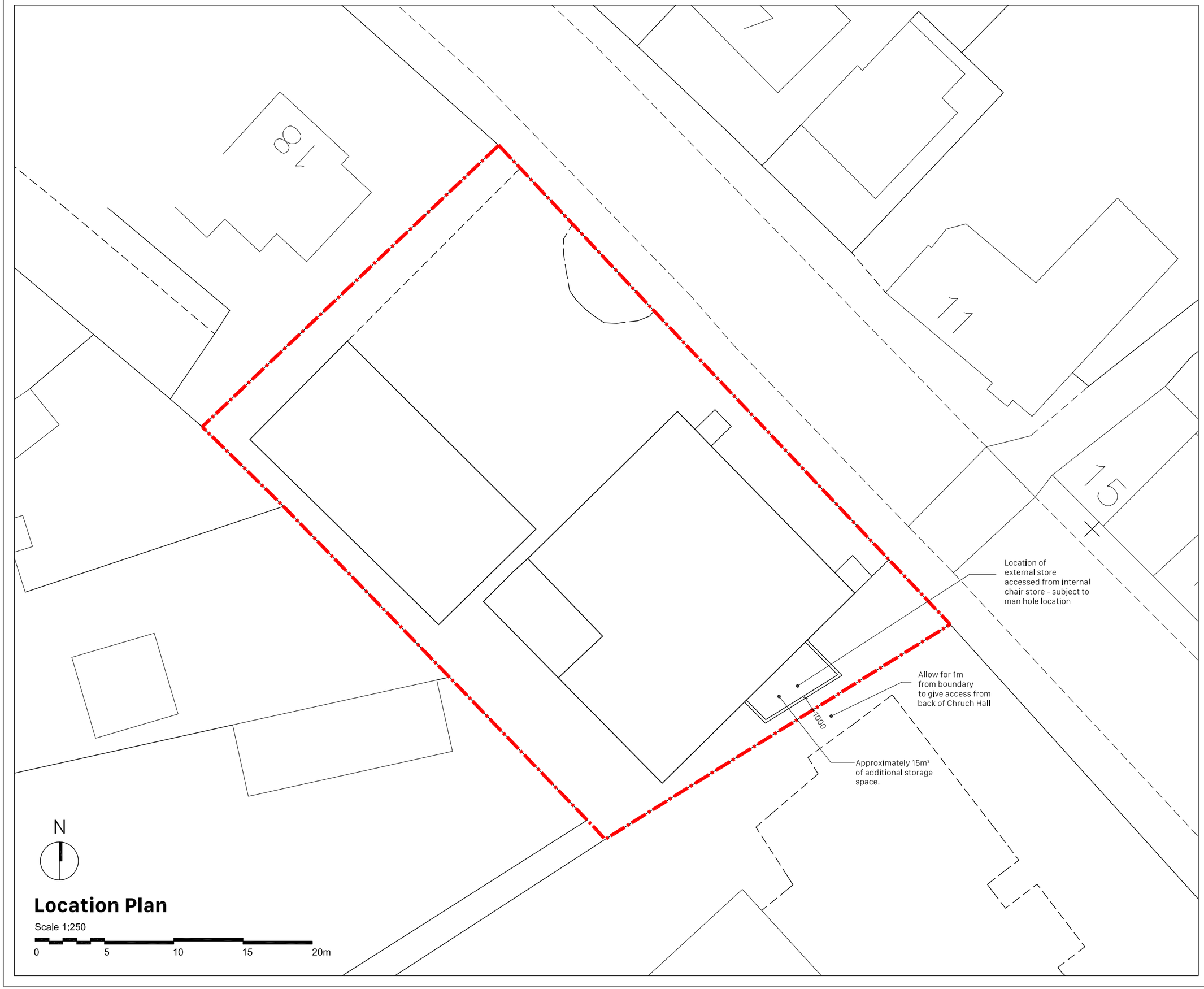
Appendix A

Drawings

NOTES

Drawing based on survey information provided by third party measured surveys. Any discrepancies to be reported to the architect.

Site Boundary



Location Plan

Scale 1:250

0 5 10 15 20m

0 - INITIAL ISSUE	ED	
REVISION - DATE	DRWN	CHKD

FOR APPROVAL

DRIGHLINGTON METHODIST CHURCH
KING STREET
DRIGHLINGTON

FOR
DRIGHLINGTON METHODIST CHURCH

LOCATION PLAN

Scale **1:250 @ A3**

HALLIDAY CLARK
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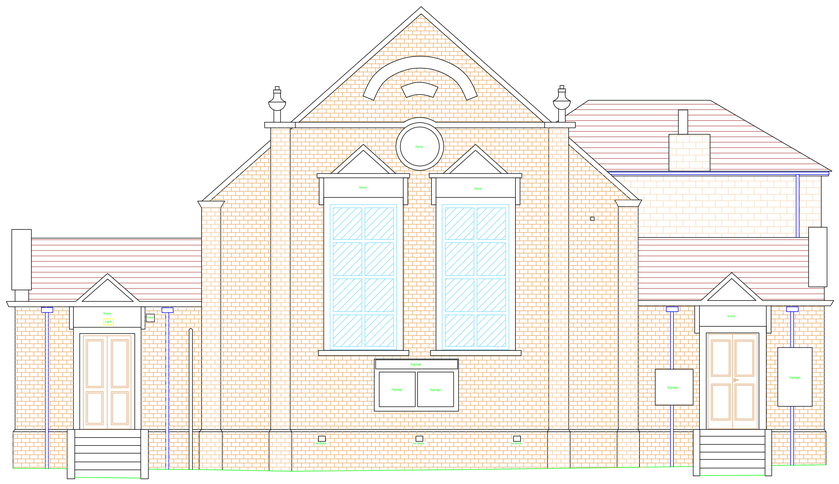
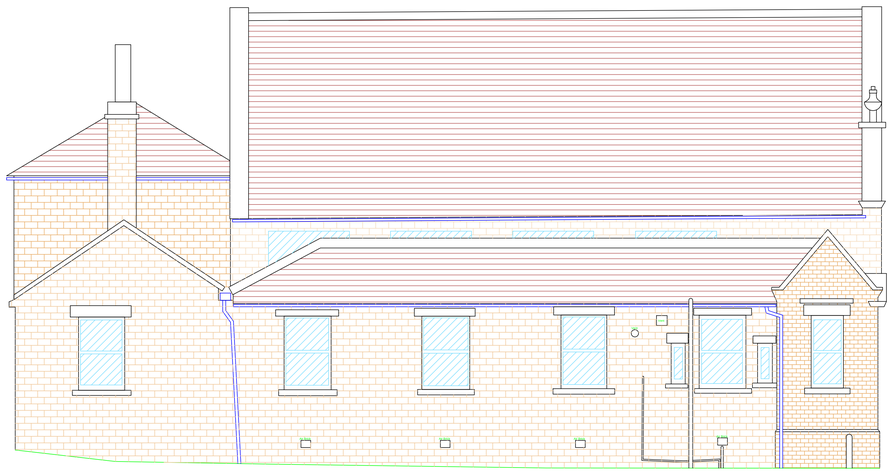
T 01943 604 123
E info@hallidayclark.co.uk
W hallidayclark.co.uk

Dwg. No. **879.01 (90) 001** Rev.



Datum 168.00m

Elevation 1

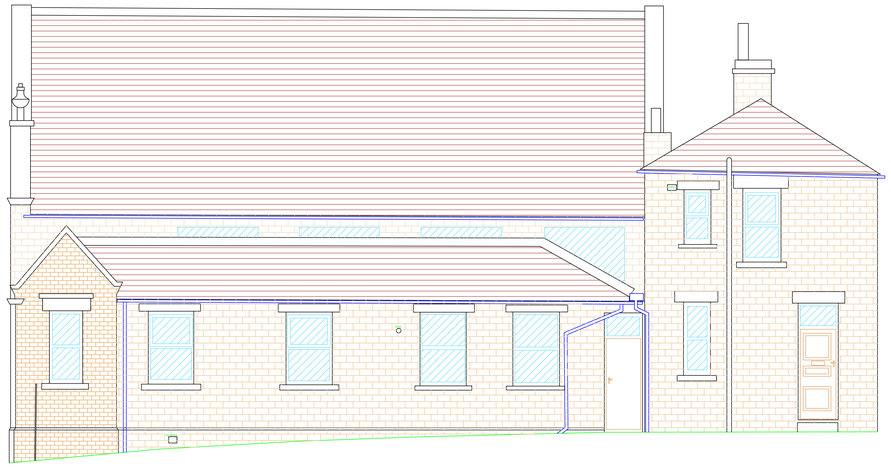


Datum 168.00m

Elevation 2

Datum 168.00m

Elevation 3



Datum 168.00m

Elevation 4

Disclaimer

All dimensions to be checked on site prior to any works commencing.
Any descrepancies must be reported back to Geomatic Surveys Limited immediately.
Although every effort has been made to ensure the accuracy of the information contained within the drawing, Geomatic Surveys Limited are not responsible for inaccurate or missing information which may have an impact on the development of the site.

REV	DATE	DESCRIPTION	BY	APP.

Sheet Layout

Sheet 1

Survey Information
All levels are related to Ordnance Survey Datum.
Refer to Topographical Survey for details.

Geomatic Surveys Ltd

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Client

DRIGHLINGTON METHODIST CHURCH

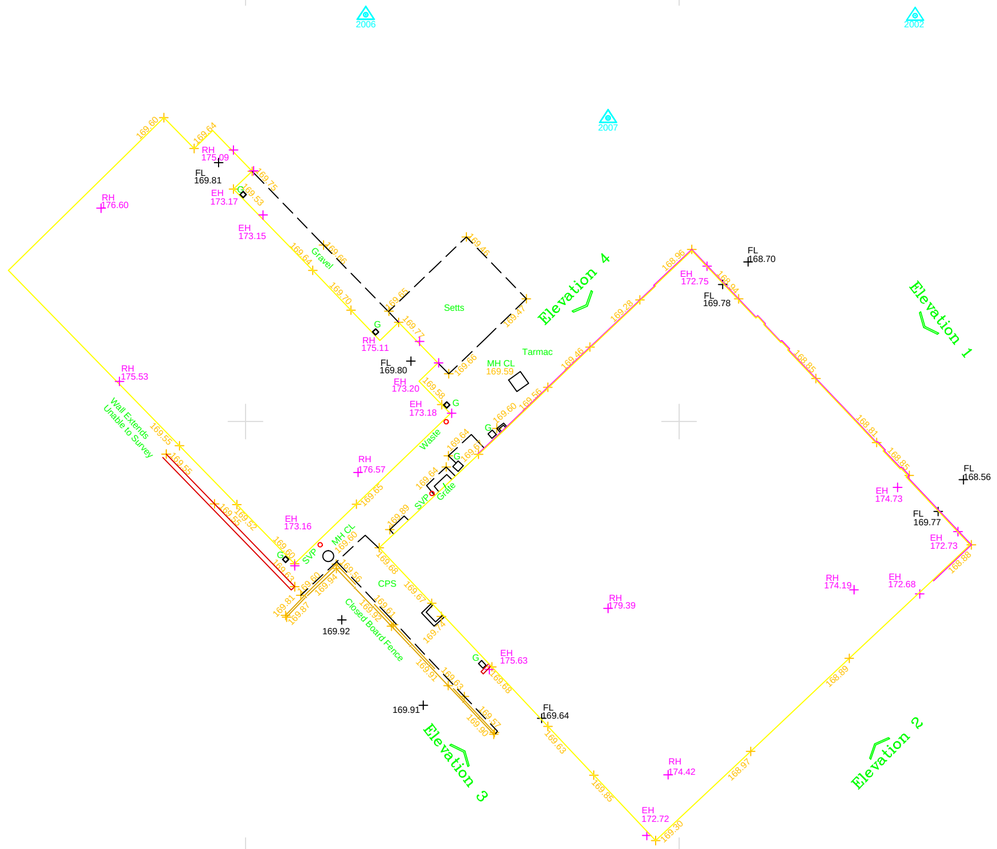
Project Title

DRIGHLINGTON METHODIST CHURCH
KING STREET
BRADFORD

Drawing Title

ELEVATIONS

Drawn	Checked	Surveyed Date
GJD	IRH	06/03/2020
Date	Scale	Sheet No.
13/03/2020	1:50 @ A0	SHEET 1 OF 1
Dwg. No.		Rev
2408/Elevations		



SURVEY CONTROL STATIONS

STN	EASTING	NORTHING	HEIGHT
2001	422585.380	428843.068	168.650
2002	422550.885	428878.720	168.521
2006	422525.547	428878.764	169.351
2007	422536.724	428874.002	168.978

LEGEND

CONTROL STATIONS
MANHOLE — BH / MH SS 33.20
BUSH
TREE
DROP KERB
EMBANKMENT — TOP BANK / BOTTOM BANK
OVERHEAD ELECTRICITY LINE
OVERHEAD TELEPHONE LINE
FOOTPATH
FENCE
HEDGE
FOLIAGE
DITCH
VERGE
EXISTING BUILDING
MAIN CONTOUR — 50.00
CONTOUR — 49.50
SW SEWER
FW SEWER

AV	Air Valve
BH	Borehole
BD	Bollard
BM	Bench Mark
BS	Bus Stop
BT	BT Inspection Chamber
BL	Bed Level
CATV	Cable TV Cover
CL	Cover Level
C/L	Chain Link Fence
COPE	Coton Fit
CPS	Concrete Paving Slab
ECB	Electricity Control Box
EH	Building Eaves Level
ER	Earthing Rod
FB	Flower Bed
FH	Fire Hydrant
FL	Floor Level
GH	Greenhouse
GP	Gate Post
GR	Grate
GV	Gas Valve
G	Gully
IC	Inspection Chamber
IL	Invert Level
KO	Kerb Outlet
JB	Junction Box
LP	Lamp Post
MH	Man Hole
MO	Mooring Post
MS	Mile Stone Marker
NP	Street Name Plate
O/H	Overhead
P	Post
PB	Post Box
PI	Pipe
PM	Parking Meter
P/R	Post & Rail Fence
P/W	Post & Wire Fence
PYL	Electricity Pylon
RE	Rodding Eye
RH	Building Ridge Level
RSJ	Reinforced Steel Joist
R/W	Retaining Wall
RWP	Rainwater Pipe
SC	Stop Cock
SL	Soffit Level
SP	Sign Post
ST	Stop Tap
SV	Stop Valve
SY	Stay Wire
TCB	Telephone Call Box
TH	Trial Hole
TL	Threshold Level
TOW	Top of Wall Level
TP	Telegraph Pole
UFL	Upper Floor Level
WM	Water Meter
WL	Water Level
VH	Building Valley Level

Disclaimer

Man Entry to sewers has not been undertaken. Depths, Pipesizes etc are measured from the ground. All sewers and inverts to be checked prior to any works commencing on site. Geomatic Surveys Limited are not responsible for manholes, services, information not surveyed which may have an impact on site development.
Boundaries shown are physical and may not represent legally conveyed ownership

REV	DATE	DESCRIPTION	BY	APP.

Sheet Layout — Sheet 1

Survey Information
All levels are related to a Local Datum.

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LAND SURVEYORS AND CONSULTING ENGINEERS
Bank House, The paddock
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Handforth
Cheshire
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Tel/Fax:- 01625 521405
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Client
DRIGHLINGTON METHODIST CHURCH

Project Title
DRIGHLINGTON METHODIST CHURCH
KING STREET
BRADFORD

Drawing Title
TOPOGRAPHICAL SURVEY

Drawn	Checked	Surveyed Date
GJD	IRH	06/03/2020
Date	Scale	Sheet No.
13/03/2020	1:200 @ A2	SHEET 1 OF 1
Drg. No.		Rev
2408/TOPO		

Appendix B
Coal Authority Mining Report

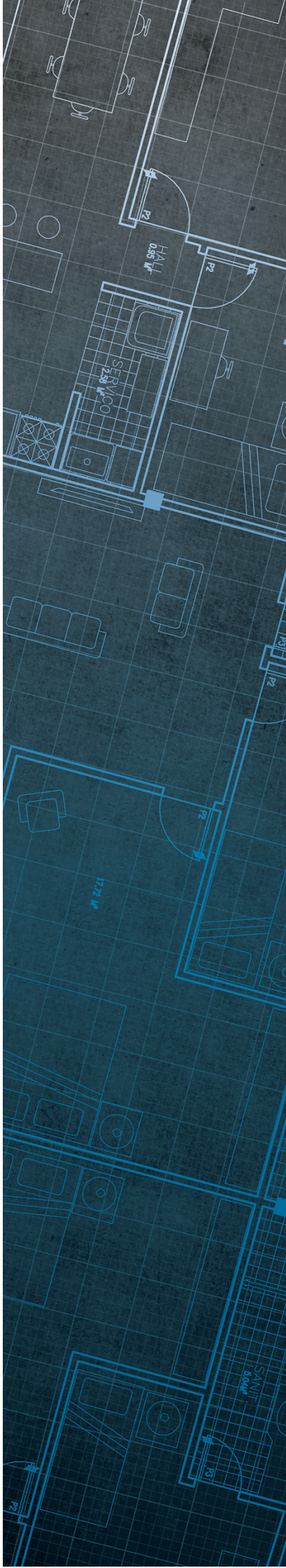
The Coal Authority

Consultants

Coal Mining Report

2 King Street
Drighlington
Bradford
Leeds
BD11 1EL

Date of enquiry:	**6 April 2022**
Date enquiry received:	**6 April 2022**
Issue date:	**6 April 2022**
Our reference:	**51002987303001**
Your reference:	**20243.G.01**



Consultants

Coal Mining Report

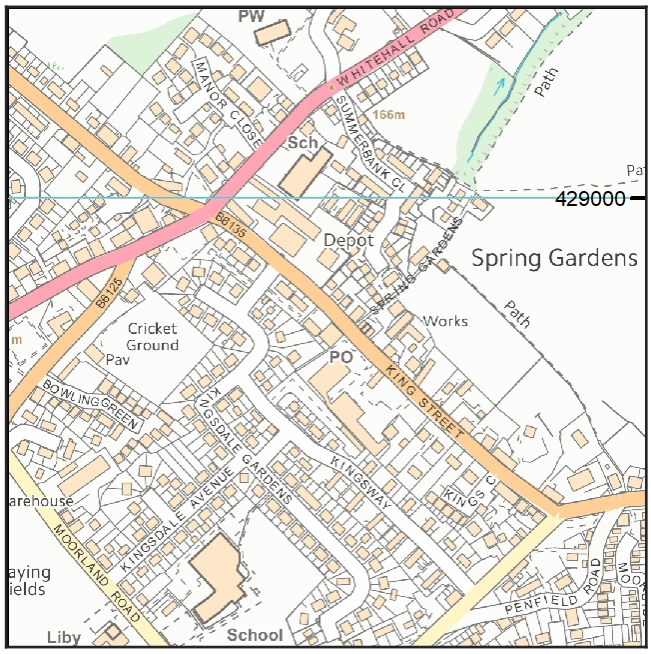
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

PAUL WAITE ASSOCIATES

Enquiry address

2 King Street
Drighlington
Bradford
Leeds
BD11 1EL



Approximate position of property

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
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/thecoalauthority

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	FLOCKTON THIN	Coal	62XP	5	Beneath Property	0.0	East	100	1879
unnamed	TOP FENTON	Coal	62XY	34	Beneath Property	2.6	North-East	150	1879
unnamed	MIDDLETON MAIN	Coal	62Y6	89	Beneath Property	1.0	East	122	1860
unnamed	WHINMOOR	Coal	62Y8	179	Beneath Property	1.4	East	71	1964

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	422428-021	422636 428805	This mine entry was fully grouted by Sirius Drilling Ltd in March 2019. It was subsequently capped with a 2.6m by 2.6m by 0.6m thick reinforced concrete shaft cap founded on bedrock with the top of the cap being 1.30m below ground level at the time of construction	Coal	
Shaft	422428-022	422655 428832	This mine entry was fully grouted by Sirius Drilling Ltd in March 2019. It was subsequently capped with a 2.6m by 2.6m by 0.6m thick reinforced concrete shaft cap founded on bedrock with the top of the cap being 1.01m below ground level at the time of construction	Coal	

Abandoned mine plan catalogue numbers

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

FGB527	FGB528	FGB526
NE794	700A	11101
16759	FGB929	FGB525

Our records show we have more plans than those shown above which could affect the enquiry boundary.

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

No faults, fissures or breaklines recorded.

Opencast mines

None recorded 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
21.2	East
19.7	East
4.9	South-East
0.6	South-East

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 in an area where a notice to withdraw support was given in 1953.

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.

The Coal Authority

Summary of findings

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

Key

Approximate position of the enquiry boundary shown

Disused mine shaft

Site investigations

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