MASON EVANS

Geo-Environmental Consultants

SITE A, GLASGOW BUSINESS PARK, GLASGOW

PHASE I COAL MINING RISK ASSESSMENT

DATE

April 2021

CLIENT

Hermiston Securities

APPROVED BY

Patrick Barry

Director

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Hermiston Securities

Site A,
Glasgow Business Park,
Glasgow

Phase 1
Coal Mining Risk Assessment

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EXECUTIVE SUMMARY

We understand that Hermiston Securities (the Client) are proposing the development of a new commercial/industrial unit with associated areas of parking and road infrastructure at a site located at 'Site A, Glasgow Business Park, Glasgow'.

The site lies in close proximity to an area defined by The Coal Authority as a 'Development High Risk Area', Glasgow City Council have advised that a Coal Mining Risk Assessment Report is required to be submitted in support of the planning application. We were appointed by the Client to undertake the necessary examinations and this report provides an account of our assessments with advice on the risks to the proposed development from mining related impacts.

The report presents available information on the geological and mining conditions within the site. The object of the report is to demonstrate to Glasgow City Council 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.

The report has established:

a) The Virgin Coal (0.64 m thick) has been worked at minimum depths of approximately 28 m bgl. However, as rockhead was encountered at 14 m bgl, we consider that there is sufficient rock cover (minimum of 14.0 m) to ensure no future ground stability issues.

b) The younger Glasgow Splint Coal (0.60 m thick) underlies the site at minimum depths of 23 m bgl, however, there was no indication that this coal seam has been worked below the site.

c) The Coal Authority did not record any mine entries within the site or immediate surrounding area. Note that as in all areas of historical mining, unrecorded mine entries could still exist.

d) Based on our desktop researches and intrusive mineral investigations, we consider that shallow mine workings and recorded mine entries do not pose a risk to future development within the site.

1.0 INTRODUCTION

1.1 General

1.1.1 We understand that Hermiston Securities (the Client) are proposing the development of a new commercial/industrial unit with associated areas of parking and road infrastructure at a site titled 'Site A, Glasgow Business Park, Glasgow' (refer to Drawing Nos. P17/478/CMRA/F/01 and 02). In relation to the proposed development, the Client has requested a Coal Mining Risk Assessment be undertaken in support of the development. As a specialist geo-environmental consultancy firm with experience of impacts related to shallow mine workings, we were subsequently requested to advise accordingly.

1.1.2 The purpose of the Coal Mining Risk Assessment Report is to present available information on the coal mining issues which are relevant to the site, and to identify and assess any potential risk to the proposed development, the result of Coal Mining.

1.1.3 The object of the report is to demonstrate 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.

1.1.4 This report provides the findings of our examinations of the site, which have been based on researches of available geological and mining maps, plans and information provided by the Coal Authority. The scope of the investigations has been restricted to fulfil the necessary enquiry regarding the mining context of the site alone. Whilst in the course of our examinations we have identified other aspects of the geology relevant to the development, we anticipate that these will be considered in separate investigations dedicated to the wider geo-environmental impacts.

1.2 General Methodology

1.2.1 Our examinations involved researches of various published documents on the geological and historical background of the site, in-house sources and reports, and consultations with The Coal Authority. In assessing the potential site instability impacts, we considered typical mine stability assessment criteria and have reviewed the area relative to our expectations of the geological conditions. Our confidence on the geology and the potential impacts of mining are discussed relative to the quality of the data available to us, with recommendations provided on the scope of future intrusive investigations (where required).

1.3 Context

1.3.1 It should be recognised that the report is prepared in accordance with current recommended practice and existing legislation.

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project title:	drawing title:
SITE A, GLASGOW BUSINESS PARK GLASGOW	SITE LOCATION PLAN

project no:	drawing no:	revision:	date:	drawn by:	approved by:	scale:
P17/478	P17/478/CMRA/R/F/01		16.04.21	RC	PB	1:50,000

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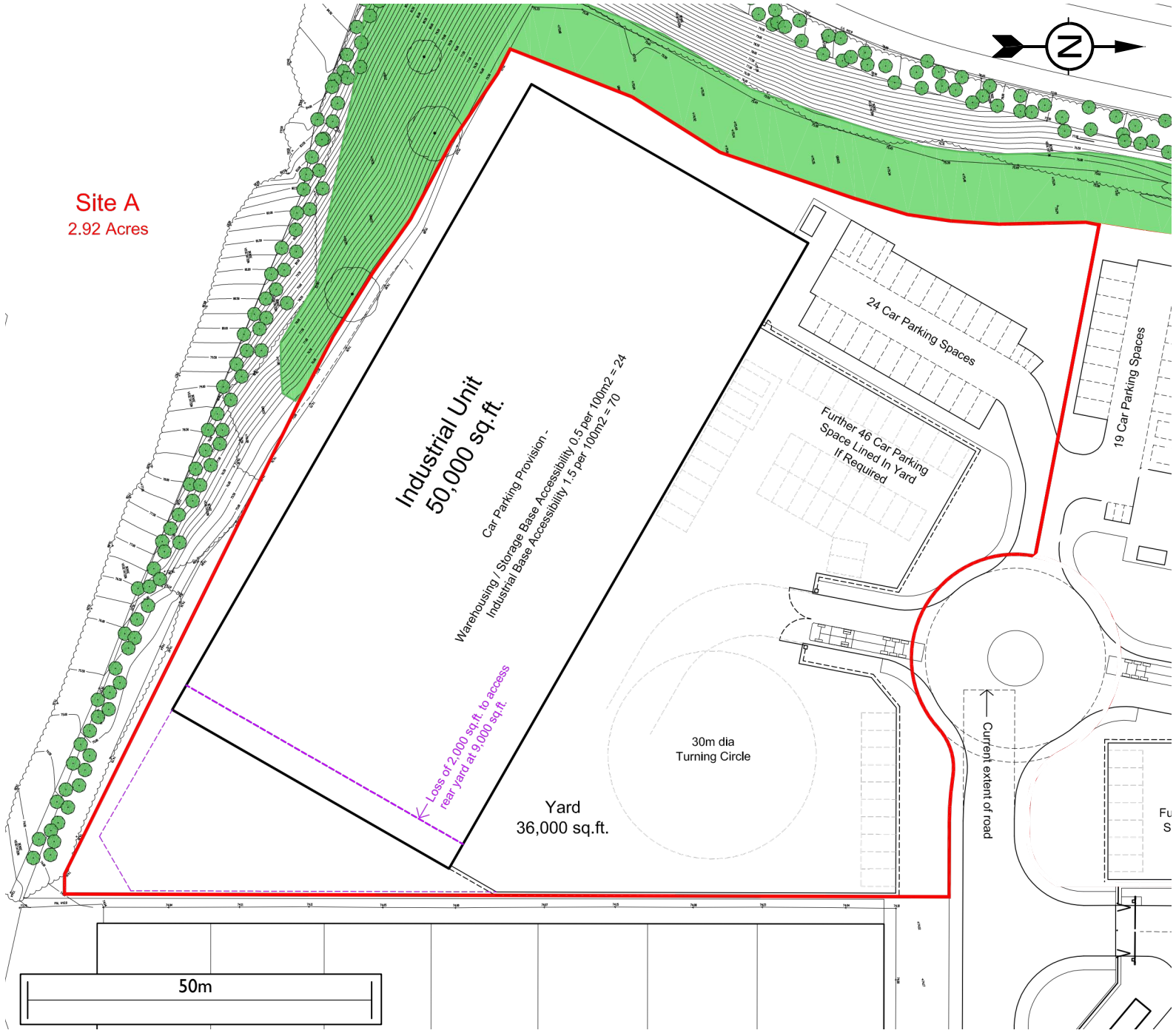

NOTES

Site boundary

Note:
Proposed development plan supplied by Struer Consulting Engineers Ltd, September 2020.

REV	DATE	DETAILS

HERMISTON SECURITIES
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PROJECT TITLE

SITE A, GLASGOW BUSINESS PARK
GLASGOW

DRAWING TITLE

PROPOSED DEVELOPMENT
LAYOUT PLAN

DRAWN BY	CHK'D BY	APP'D BY	DATE	SCALES
RC	SA	PB	16.04.21	Not to Scale

PROJECT No.	DRAWING No.	REVISION
P17/478	P17/478/CMRA/R/F/02	

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2.02.0 SITE LOCATION AND DESCRIPTION

2.1 Site Details

2.1.1 The summary details of the site as understood from supplied survey information are as follows:

- Existing Site Name - Site A, Glasgow Business Park, Glasgow
- Local Authority - Glasgow City Council.
- Site Area - Approx. 1.2 Ha.
- Location - The site is located to the south of the M8 motorway and to the north of Springhill Parkway.
- Current Usage - Unoccupied land.
- Topography - The ground level within the site was noted to be relatively flat lying with surface levels of approximately 75 mAOD.

2.2 Local Context

2.2.1 The context of the site is indicated on Plate 01, which showed it to be bound by the unoccupied land to the north and commercial units to the east. Our recent walkover survey showed that construction of a commercial warehouse was ongoing within the land to the east. The main access route into the site was from Springhill Drive North, as shown below.

Plate 01 – Aerial Photograph of the Site (courtesy of Google Maps, approximately dated 2019)

3.0 HISTORICAL BACKGROUND

3.1 General

3.1.1 An examination of the past history of a site can often provide valuable information in relation to potential constraints to its development. In this particular instance, our focus has been to establish evidence of any mining within the site or its immediate environs. To facilitate these investigations past copies of Ordnance Survey maps and other historical data were examined dating back to the middle of the nineteenth century. It should be noted that considerable periods elapsed between successive Ordnance Survey map editions and the possibility that mining activities took place on the land in the intervening years and were not therefore recorded by the maps, cannot be discounted. In these circumstances, while we have tried to ascertain the complete record of the site history, the possibility that historical mining activities took place but were undisclosed by our researches, cannot be discounted.

3.2 Historical Background

3.2.1 A summary of the history of the site and surrounding area is presented in Table 01 below and a copy of the maps are included in Appendix A.

Table 01 – Summary of History (Ordnance Survey Map Records)

Ordnance Survey Map Edition	The Site	The Surrounding Area
1864 (10,560 scale)	• A few small buildings (i.e. East Hallhill) were located within the south-eastern area (conjectured to be cottage buildings). • The remainder of the site was unoccupied land.	• Monkland Canal was located approximately 200 m to the north of the site, running in a north-west to south-east direction. • Hallhill Basin was located 150 m to the north-west. • Occasional coal pits were recorded within a 1 km radius. • The surrounding area generally comprised unoccupied land with occasional residential properties, schools and roads.
1899 (10,560 scale)	• No changes were recorded.	• Railway line was developed approximately 150 m to the south running east to west. • Development within Easterhouse approximately 350 m to the east. • Expansion of Ballieston 1 km to the south-east. • Springhill Nurseries were developed 400 m to the south of the site.
1914 (10,560 scale)	• No changes were recorded.	• No significant changes were recorded.
1922 (1:10,560 scale)	• No changes were recorded.	• Wilderness Plantation located within forested area approximately 200 m to the north. • No other significant changes were recorded.
1938 (1:10,560 scale)	• No changes were recorded.	• Edinburgh Road developed 400 m to the south running north-west to south-east. • Significant expansion within Ballieston to the south including housing, roads and schools.
1957 - 1958 (1:10,000 scale)	• No changes were recorded.	• Monkland Canal disused. • Residential development approximately 100 m to the north-west. • Slight expansion to the settlement of Swinton to the south-east.
1967 (1:10,000 scale)	• No changes were recorded.	• Significant residential development to the west and north of the site (Easterhouse) as well as schools and road networks.
1980 - 1982 (1:10,000 scale)	• No changes were recorded.	• M8 motorway under construction in place of the former canal to the north. • Further expansion to Easterhouse.

Table 01 – Summary of History (Ordnance Survey Map Records) continued…

1994 – 1996 (1:10,000 scale)	• No changes were recorded.	• M8 constructed to the north. • Slight residential expansion to the south.
1999 (1:10,000 scale)	• No changes were recorded.	• No significant changes were recorded.
2018 (1:10,000 scale)	• No changes were recorded.	• Industrial units developed to the immediate east of the site area. • Several other units developed across Springhill Parkway to the south. • Further (presumed office) development 300 m to the east of the site.

3.2.2 In summary, no evidence of mining or quarrying activities were recorded within the site. However, there was evidence of mineral extraction within the surrounding area (i.e. old coal pits and shafts).

4.0 SITE GEOLOGY AND MINING

4.1 Superficial Soils

4.1.1 Anecdotal evidence from historical ground investigations (Ref: Thorburn Colquhoun, 1997) suggests the potential for fill material to have been deposited in an engineered manner within the site (up to 3.50 m thick).

4.1.2 The BGS Drift Lithology Maps (Drawing Nos. P17/478/CMRA/F/03 and 04) indicated the site to be underlain by SAND and GRAVEL deposits. The thickness of these deposits was noted to be between 10 m and 15 m

4.1.3 Historical boreholes from within the site and immediate surrounding area recorded MADE GROUND underlain by natural SAND and GRAVEL underlain by GLACIAL TILL, proven to depths of between 12.95 m bgl and 16.80 m bgl. Bedrock was generally described as SANDSTONE or MUDSTONE with seams of COAL plus igneous (dolerite) intrusions.

4.1.4 Historical borehole information is included in Appendix B.

4.2 Solid Geology

4.2.1 The BGS Solid Map (Drawing No. P17/478/CMRA/F/05) indicated the underlying solid strata to belong to the Carboniferous aged Lower and Middle Coal Measures, comprising sequences of SANDSTONE, SILTSTONE and MUDSTONE with seams of COAL, recorded to be dipping to the south.

4.2.2 The BGS map indicated an igneous intrusion comprising dolerite outcropping to the north-east of the site.

4.2.3 The BGS Map conjectured the 'Virgin Coal' and the 'Glasgow Splint Coal' to outcrop in an east-west direction approximately 150 m to the north of site, dipping to the south at approximately 8° (i.e. below the site). Based on the information from The Coal Authority report and mine abandonment plans (Appendix C) the thicknesses of these seams are recorded to be 0.64 m (Virgin) and 0.60 m (Splint), respectively.

4.2.4 The BGS Solid Map also conjectured the 'Glasgow Main Coal' / 'Pyotshaw Coal' to outcrop in an east-west direction, 75 m to the south of the site, dipping to the south (i.e. away from the site).

4.3 Mining History

4.3.1 According to The Coal Authority Interactive Viewer map (refer to Appendix C), the site is not located within a 'Development High Risk Area'.

4.3.2 In April 2021, MEP received a report from The Coal Authority (refer to Appendix C), which stated that the site is within a surface area that could be affected by underground mining in 3 seams of coal from 28 m (i.e. the Virgin Coal) to 553 m depth, last worked in 1975.