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**MINING RISK ASSESSMENT REPORT**

**FOR SITE AT**

**ROSEBANK ROAD, SHOTTS**

**Client :** Mr David Coutts  
43 Pilton Crescent  
Edinburgh  
EH5 2HT

**Report No :** 5342/IS

**Engineer :** W. Simpson

**Issued :** 08 August 2022

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### **3. SCOPE OF STUDY.**

This report details the results of our investigations into the mining stability of the above site. Our report and conclusions has been based on a desk study.

It is intended to construct two new dwelling houses within the site boundaries.

### **4. DESK STUDY.**

The desk study comprised an examination and study of the following maps and publications.

1. The Geological Survey of Scotland, Lanarkshire, Sheet 13 NW, 1 : 10,560, 1921
2. The British Geological Survey (Scotland), Sheets NS 85 NE, 1 :10,000, 1988.
3. The Economic Geology of the Central Coalfield, Area 6, H.M.S.O., 1923.
4. Coal Authority Data Sheets.
5. Bores obtained from the British Geological Survey archives.
6. Catalogue of Plans of Abandoned Mines, Volume 5 (Scotland), H.M.S.O., 1931, and in particular Plan No S509, Glenbank Mine, Mid Drumgray & Plan No 55455, Currieside..

### **5. GEOLOGY.**

The desk study revealed the site to be underlain by approximately 5 metres of boulder clay which rest in turn on rock strata of the Lower Coal Measures.

The strata dip to the north-west at approximately 1 in 18.

### **6. FAULTS.**

There are no known faults within the site boundaries, or influencing distances from them.

### **7. SHAFTS AND ADITS.**

There are no known shafts or adits within the site boundaries, or influencing distances from them.

### **8. OPEN-CAST MINING.**

No open-cast mining has taken place within the site boundaries or influencing distances from them.

## 9. REMEDIAL WORKS.

The Client has indicated that no remedial works have been carried out by the Coal Authority within the site boundaries or influencing distances from them.

## 10. PAST WORKING.

Mining has taken place beneath the site in several seams of coal circa 1840 to 1910.

## 11. GAS EMISSIONS.

The site is underlain by approximately 5 metres of boulder clay which will prevent migration of mine gases on to the site. It is the writer's professional opinion that no precautions are necessary in the design of foundations from a mine gas point of view.

## 12. PRESENT.

No workings are at present taking place beneath the site.

## 13. FUTURE.

No economically workable coals now exist beneath the site. It is highly unlikely that any underground working will take place in the future.

## 14. MINING STABILITY ASPECTS AND FOUNDATION DESIGN.

The general sequence of strata beneath point A, where the coals are at their shallowest, is approximately as given below:

BOULDER CLAY	5.00
STRATA	17.00
MID DRUMGRAY COAL (SHOTTS LAIGH (0.56))	17.56
STRATA	22.00
LOWER DRUMGRAY COAL (SHOTTS FURNACE (0.76))	22.71

(All dimensions in metres)

The above sequence is based on bores obtained from the British Geological Survey archives, Geological Survey maps, and mine abandonment plans.

The Mid Drumgray was a very variable subject, having a tendency to occur in leaves with partings. There is no mention of it having been worked in the Dykehead area in the mining abandonment plans as shown in the Catalogue of Mine Abandonment Plans for the Mid Drumgray in any of the Dykehead, Currieside or Brownrigg Pits. The bores sourced from the British Geological Survey archives show it to be unworked in the position of the bores.

#### **14. MINING STABILITY ASPECTS AND FOUNDATION DESIGN.**

Mine Abandonment Plan No S509 shows this coal to have been worked to the west of the Currie Burn. No working took place in the seam to the east of the burn (below the site).

Given the above it is our professional opinion that the Mid Drumgray has not been worked beneath the site.

The Upper Drumgray was worked beneath part of the site circa 1908 by the longwall method of working. The depth to the old workings, method of working, and time that has elapsed since working ceased will have ensured that all subsidence due to the working of this coal will have long since taken place. It is concluded that the site is stable with regards to the old workings in this coal.

Other coals have been worked by the long wall method beneath the horizon of the Mid Drumgray, but are deep enough to require no further consideration.

#### **15. CONCLUSIONS AND RECOMMENDATIONS.**

- (1) The site is stable from a mining view point.
- (2) There are no known shafts or adits within the site boundaries or influencing distances from them.
- (3) It is our professional opinion that no precautions are necessary in the design of foundations from a mine gas view point.
- (4) A trial pit investigation will require to be carried out to assess the engineering properties of the superficial deposits.



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## 9. REMEDIAL WORKS.

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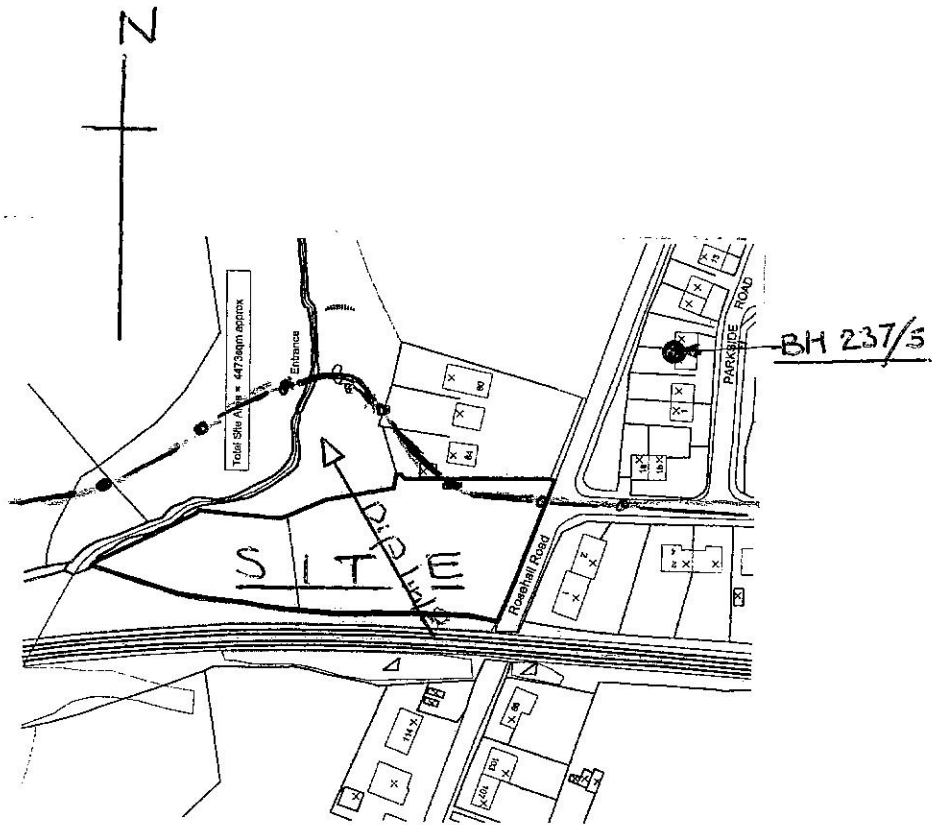
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**APPENDIX**

**APPENDIX 1**

**SOLID GEOLOGY OF SITE AREA**





SCALE 1:2500

————— Conjectural outcrop of MID DRUMGRAY —————

**APPENDIX 2**

**BORE OBTAINED FROM  
BRITISH GEOLOGICAL SURVEY ARCHIVES**

# HYDRACRAT LTD.

SITE INVESTIGATION DEPARTMENT  
REEMA ROAD :: BELLSHILL

*NS85NE/237/5*

## DRILL LOG

No. of Borehole.....5..... Location of Borehole.....Shotts.....  
Customer..... Date 25-24-23/11/76.....

Depth Below Ground Level				Details of Strata	
From	To	Thickness	Core Recovery	Description	Dip°
GL	1'0"	1'0"		Soil	
1'0"	8'0"	7'0"		Sandy Clay	
8'0"	25'0"	17'0"	<i>7.62</i>	Boulder Clay	
25'0"	30'0"	5'0"		Sandy Fireclay	<i>10' Rock head</i>
30'0"	35'0"	5'0"	<i>10.68</i>	Sandy Fireclay	
35'0"	37'0"	2'0"	<i>11-28</i>	Coal MID DRUMGRAY	<i>2' Coal</i>
37'0"	44'0"	7'0"		Sandy fireclay	
44'0"	46'0"	2'0"		Sandstone	<i>14'</i>
46'0"	51'0"	5'0"	<i>15-54</i>	Sandy Fireclay	
51'0"	53'6"	2'6"		Coal LOWER DRUMGRAY	<i>2' 6" Coal</i>
53'6"	56'0"	2'6"		Sandy Fireclay	
56'0"	76'0"	20'0"		Sandstone	<i>23'</i>
76'0"	76'6"	0'6"		Coal	<i>6" Coal</i>
76'6"	90'0"	13'6"		Sandstone	
90'0"	97'0"	7'0"	<i>29.56</i>	Sandy Fireclay	<i>20'</i>
97'0"	97'6"	0'6"	<i>SG</i>	Coal	<i>6" Coal</i>
97'6"	99'0"	1'6"		Soft Sandy Fireclay (loss of air) Loosely packed waste)	<i>1' 6" air loss (WASTE)</i>
99'0"	100'0"	1'0"		Sandstone	
				B/H Complete	
				<i>SG SHOTS GAS.</i>	

Remarks— Openhole drilling

*MD → LD 4-26*

**APPENDIX 3**

**METHODS OF MINING**

## **METHODS OF MINING**

Two methods of mining have been used in the past to extract minerals from stratified deposits, namely the stoop and room system, and the longwall system.

### **STOOP AND ROOM.**

In this method, passage ways or rooms are driven, more or less at right angles to each other through the seam which is thus formed into square or rectangular blocks or stoops.

These stoops are formed in the "first" working, the workings being extended to the limit of the royalty. At the limit of the royalty, the stoops or part of the stoops are removed on retreating back to the shaft, this was some times referred to as the "second" working.

Depending on the depth to the mineral being extracted, thickness of mineral, and condition of the roof and floor, extraction rates of up to 80% could be achieved by this method.

The width of the rooms and pillars depended on depth to the mineral, thickness of mineral and condition of the roof and floor.

These stoops may continue to perform their function of supporting superincumbent strata for many years. However, depending on circumstances, the stoops can eventually fail causing subsidence and movement of the ground, and in the case of very shallow workings plump holes may be formed at the surface.

### **LONGWALL SYSTEM.**

In this method the seam is completely extracted by means of dividing the seam into panels. The strata overlying the mined area is allowed to subside, and as a result all subsidence is normally completed shortly after the extraction of the seam.

However in the case where little or no rock cover exists over the workings instability could result due to the presence of old roadways remaining open.

**APPENDIX 4**

**COAL AUTHORITY DATA SHEETS**

**COAL AUTHORITY DATA SHEET**

**REPORT No 5342  
SITE AT  
ROSEHALL ROAD, SHOTTS**

Mine Entry	N
Abandoned Mines Catalogue	Y
Development High Risk Area	Y
Surface Coal Resource Area	Y
Mine Entry Zone of Influence	N
Fissures and Breaklines	N
Surface Mining (Past and Current)	N
Past Shallow Coal Mine Workings	Y
Probable Shallow Coal Mine Workings	Y
Coal Outcrops	Y
NE Mining & Groundwater Constraints	N
Coal Mine Reporting Area	Y