

*Mr C D Grieves,
Guardian Construction,
Hallmark Court,
132 Manchester Rd,
ROCHDALE,
OL11 4JQ.*

Friday, 25 August 2023
Ref: rep-tjba-guardian-rudman st-ground stability-250823.docx

**Subject: Land Rudman St, Shawclough, Rochdale, OL12 6LJ.
Ground Stability Assessment.**

Further to the Local Planning Authority's request for a slope stability assessment to accompany the planning application for the above Site, please find our report to support the application.

The Site comprises a vegetated N facing slope set off the S side of Rudman St and varies in elevation nominally 167m aOD from NW corner, and 175m aOD to the SW. The surrounding land uses to the N & W are predominantly residential with public open space to a footpath along the S & E boundaries.

Site Investigations.

Site investigation trial holes were undertaken (Aug 2023) comprising 3No. machine excavated trial holes (THs1-3). They were located to explore the sub strata beneath the proposed plots and excavated to the limit of the machines reach.

The stratigraphy comprised TOPSOIL to nominally 200mm depth, above a soft sandy CLAY upto 0.6m deep overlying a highly becoming slightly weathered dense to very dense, very weak to weak thinly bedded MUDSTONE (shale) approx. 2.0m deep below which was a slightly weathered dense, weak thinly bedded MUDSTONE.

Geological Maps.

Reference was made to the solid and superficial Geological Maps of England 1:50k sheet 76, refer to the Appendix for excerpts from the area.

The superficial geology of the Site comprised exposed Lower Coal Measures with Boulder Clay cover to the N and S. The solid geology was undifferentiated carboniferous MUDSTONES beneath the Site dipping 10 degrees to the S with Old Lawrence Rock SANDSTONE outcropping to the S and Milnrow Sandstone outcropping to the N.

The nearest Coal Seams were the Arley Mine outcropping to the S and the Upper Mountain Mine some several hundred metres below.

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Landmark Envirocheck Ground Stability.

A Landmark Envirocheck Ground Stability Report & associated maps was obtained by T J Booth Associates from the Landmark Information Group. The report comprises risks from Mining & Natural Cavities, Historical Land Uses (1:2500), Historical Land Uses (1:10000), Ground Stability Data, and is summarised in the plans and tables in the Appendix.

From the above data the Site was shown to have been undeveloped throughout its existence. Compressible Soil risk was very low, Land Stability risk was moderate to low and Running Sand risk very low.

Discussion.

Current site investigation records indicate the on-site superficial stratigraphy is of a stable nature regarding slope stability. Apart from the immediate upper soil, weak to very weak MUDSTONES dipping to the S were encountered in the Trial Holes and according to the geology record extend for a substantial depth before encountering the Milnrow Sandstone below.

Coal seams were not present at shallow depth below the Site and thus don't present a hazard.

The Development Site itself was noted as very low to no risk with regards to ground stability related issues from both man-made and natural ground conditions within the Landmark Report.

Temporary excavations will predominantly be within the MUDSTONES which dip down away from the working face so will have a natural stability against collapse. Those excavations with the thin upper superficial CLAYS will be battered back to a safe angle of repose. The excavated profiles in the MUDSTONES will support a vertical face.

The proposed dwellings will be of reinforced concrete & masonry construction, seated into the MUDSTONES, with retaining walls to the rear faces (refer to Site Plan & Sections in the Appendix). The construction will reduce the overall weight of the soil in the slope, thus reducing ground pressures and therefore the risk of gross instability will be reduced. Temporary faces will be protected using a gabion or concrete permanent structure and superficial soils landscaped and seeded.

Conclusions/Recommendations.

From the above referring to the trial hole logs and data search it has been shown that the risk to slope stability of the present hillside slope is very low. The sub strata of MUDSTONE will support the proposed excavations up to 5.0 m deep with vertical faces.

The proposal to construct two dwellings into the hillside will reduce the overall slope mass and thus improve overall stability.

Detailed design of retaining walls and foundations will be produced as part of the Building Regulation requirements.

This study has not identified any issues regarding slope stability that would give rise to the necessity of refusing consent. It is concluded that the above details and conclusions are sufficient to enable planning permission to be granted for the application proposal in respect of the slope stability

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considerations, with relevant planning conditions requiring the submission of more detailed information if considered necessary.

Signed.....

Tim Booth BSc (Hons), C.Eng, C.Env, MICE.

T J Booth Associates.

Appendix.

Site Location Plan.



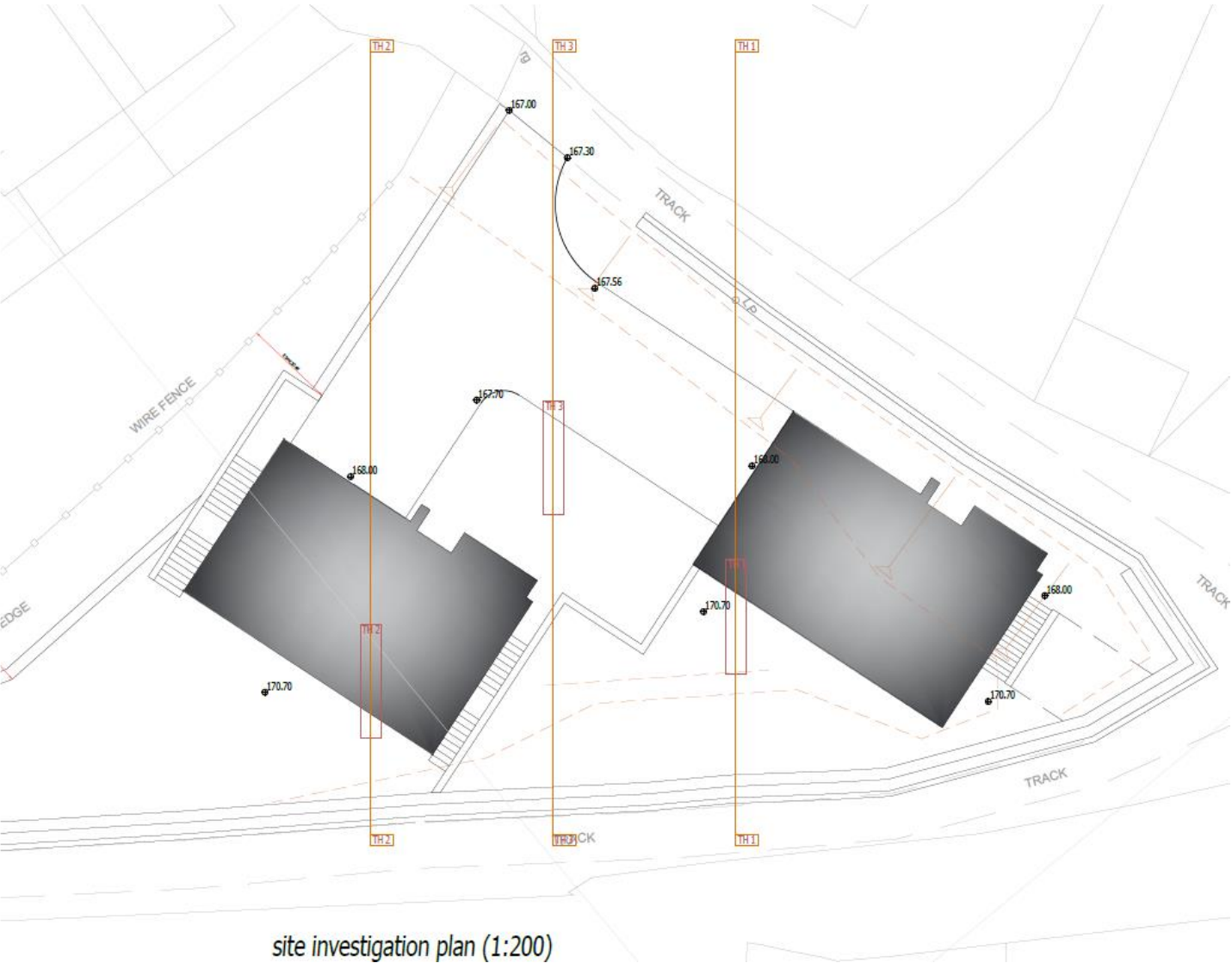
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Existing/Topographic Plan.



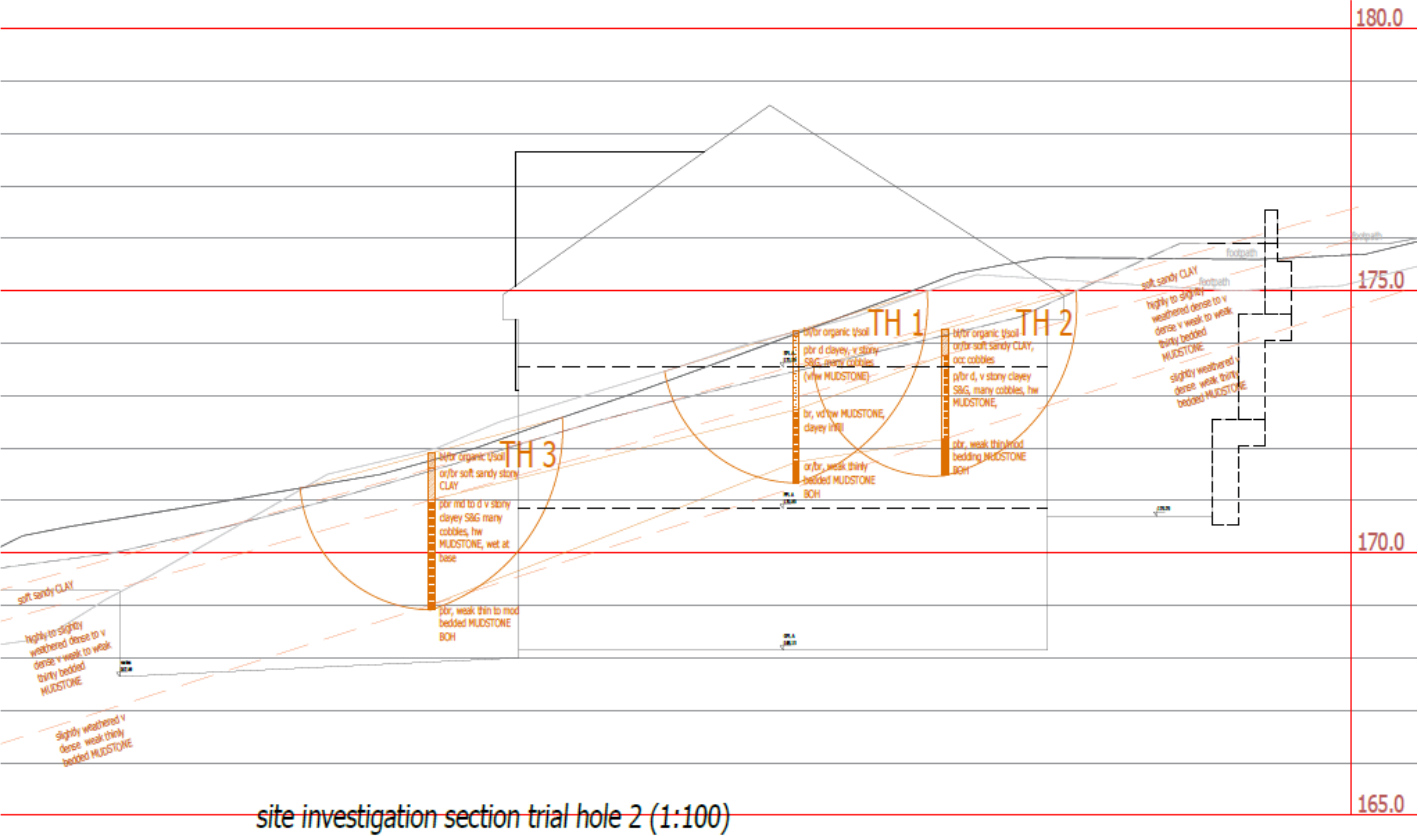
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Site Investigation & Proposed Plan.



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Site Investigation Logs with Proposed Cross Sections.



Site Investigation Logs.

Refer to section drawing above.

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Landmark Ground Stability Report.



Envirocheck® Report: Datasheet

Order Details:

Order Number:
316125844_1_1
Customer Reference:
tjba-250823-00
National Grid Reference:
389080, 414870
Slice:
A
Site Area (Ha):
0.14
Search Buffer (m):
1000

Site Details:

land at Rudman St
Shawclough
ROCHDALE
OL12 6LJ

Client Details:

Mr T Booth
TJ Booth Associates
20a Eastgate Street
Rochdale
Lancashire
OL16 1DH

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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Pennine Lower Coal Measures Formation And South Wales Lower Coal Measures Formation (Undifferentiated)	A13NW (SE)	0	1	389059 414673

Geological					
BGS 1:625,000 Solid Geology	pg 39	Yes	n/a	n/a	n/a
BGS Recorded Mineral Sites	pg 39			1	8
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 40	Yes	n/a	n/a	n/a
Mining Instability	pg 40	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 40	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 40		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 41	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 41	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 41	Yes		n/a	n/a
Radon Potential - Radon Affected Areas	pg 41	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 41	Yes	n/a	n/a	n/a

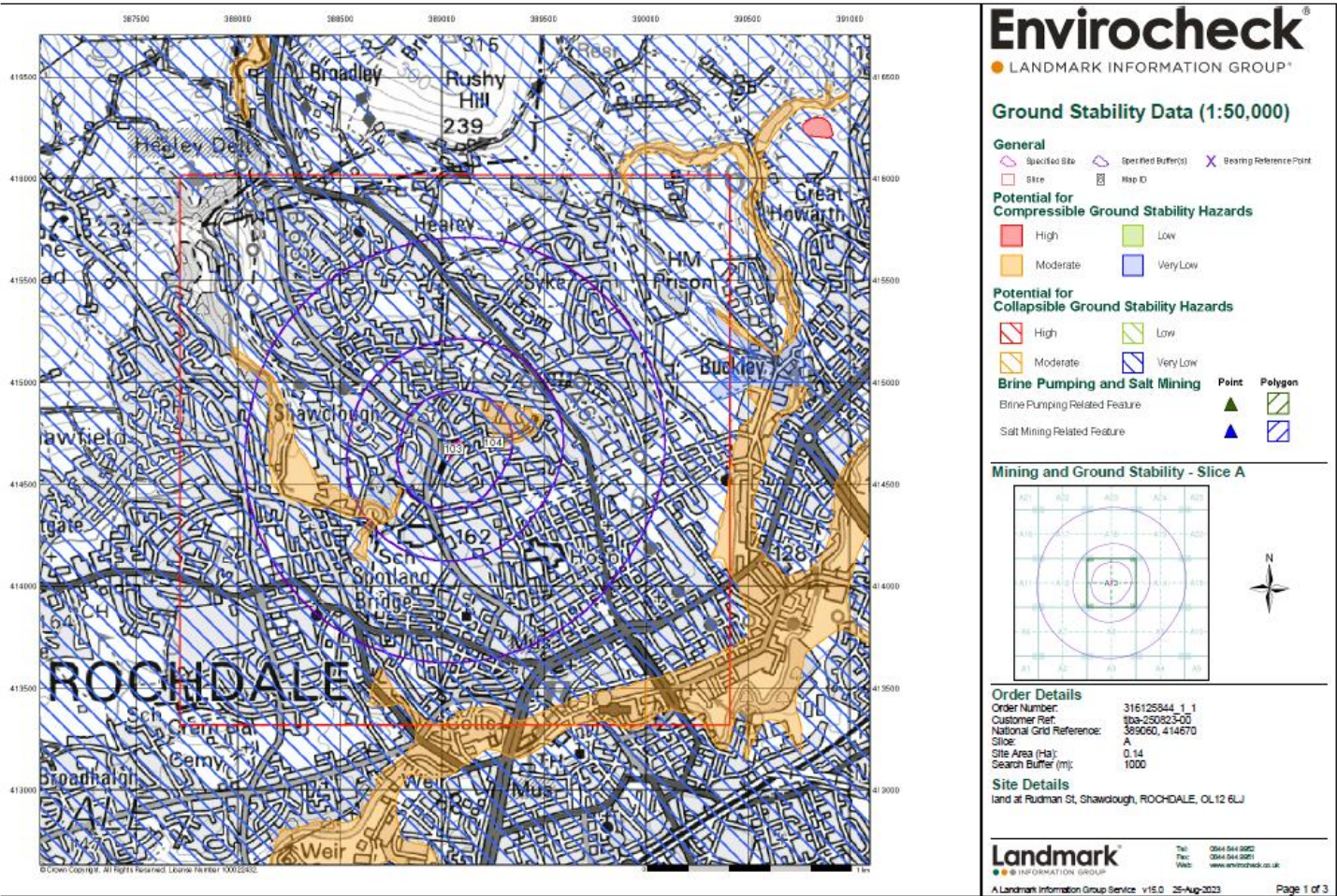
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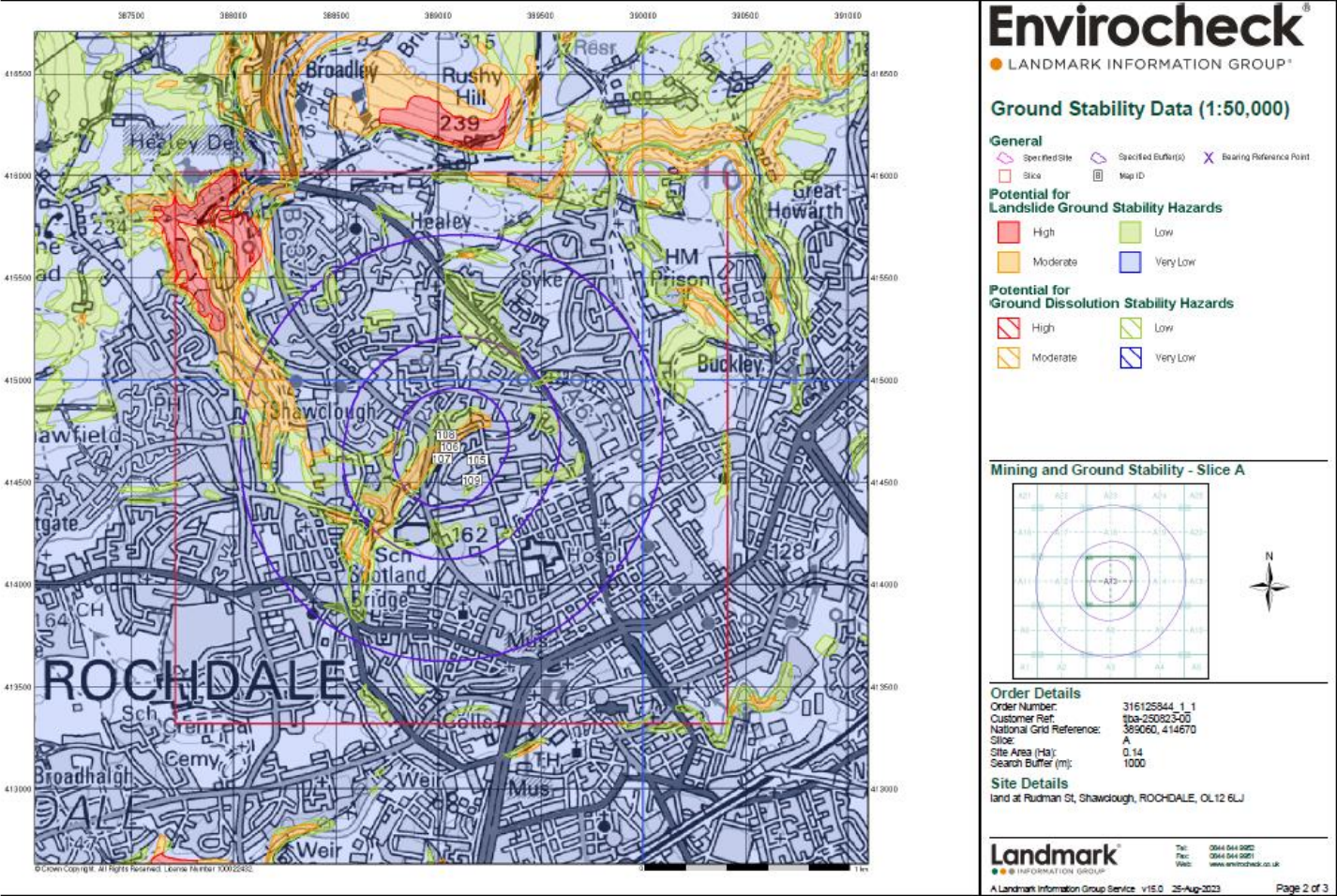
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NW (SE)	0	6	389059 414673
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NW (SE)	0	-	389059 414673
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	160	1	389253 414704
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673

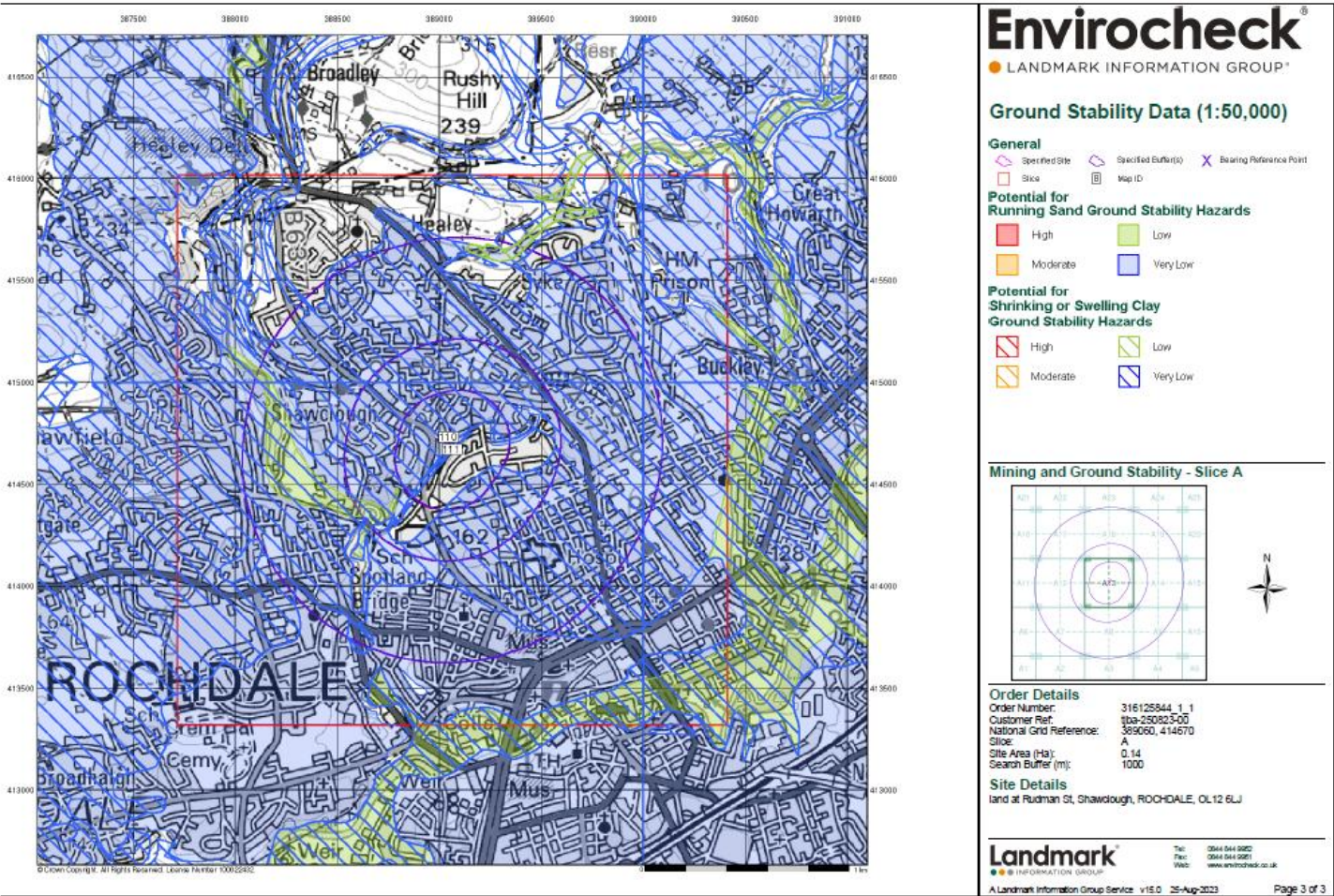
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Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389063 414669
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	16	1	389019 414618
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	17	1	389039 414714
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	173	1	389163 414510
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	1	389046 414684
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389061 414671
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Radon Potential - Radon Affected Areas Affected Area: The property is an intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NW (SE)	0	1	389059 414673

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Solid Geology of England Sheet 76.



Superficial Geology of England Sheet 76.

