

COAL MINING RISK ASSESSMENT

Lidl Great Britain Ltd
Briton Ferry Road, Neath

Client: Lidl Great Britain Ltd

Remada

www.remada.co.uk

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Executive Summary

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Phase 1 Preliminary Risk Assessment for the proposed store extension at Briton Ferry Road, Neath SA11 1AS at the location indicated in **Figure 1**. The objectives of this risk assessment have been to obtain information relating to the potential legacy of historic coal mining beneath the site and to produce an assessment of those risks in relation to the proposed site development.

Site Setting

The existing Lidl store occupies an irregular but very broadly triangular plot of land to the west of Briton Ferry Road (A474) and shares a site access from the main road with another retail unit to north. The site has an elevation of approximately 10m AOD is situated in the valley floor to the east of the River Nedd.

Site History

A review of historic maps did not identify the presence of shafts or adits within the site or vicinity of the site.

Published Geology

The site is located less than 500m south-east from the North-East to South-West trending 'Neath Disturbance'.

The bedrock in the vicinity of the site is formed of the Pennant Sandstone Formation. This parent unit has an approximate thickness of 1000m with units of grey mudstone, coal seams and seatearth subdivided into successive members that are defined by key coal horizons that in the vicinity of the site outcrop perpendicular to the Neath Disturbance.

The Hughes Member sandstone (a child unit of the Pennant Sandstone Formation) is recorded directly beneath the store footprint. The BGS generalised vertical section indicates it has a thickness of 265m with the following vertical succession of coal seams: Coal, Westernmoor, Mountain Coal and Garland. The vertical separation between the Westernmoor and Mountain coal is approximately 80m and the general angle and direction of dip is between 12° to 15° to the north north-east. The Westernmoor coal seam outcrops less than 125m to the north of the site and it is estimated that underlying Mountain Coal seam would be present at a depth of 80 to 100m beneath the site.

Previous Ground Investigation

In 2015 a ground investigation of retail unit land immediately to the north of the Lidl store recorded made ground to a maximum depth of 4.7m overlying very soft clay.

Consultants Mining Report

The Coal Authority Consultants Mining Report did not identify past underground mining or a probability of unrecorded shallow workings beneath the site. The nearest mine entry is an adit to south-east of the site.

Recommendations

The assessment has not identified a potential for the site to be impacted by either shallow worked seams or shafts and no further investigation or action is recommended.



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Issue No /	Date	Prepared By	Technical Review	Authorised
01	12.05.2020	G Jones 	P Dickinson 	G Jones 



1. INTRODUCTION

Remada Ltd was commissioned by Lidl Great Britain Ltd ('the client') to undertake a Coal Mining Risk Assessment for the proposed store extension at Briton Ferry Road, Neath SA11 1AS at the location indicated in **Figure 1**.

1.1. Objectives

The objectives of this risk assessment have been to obtain information relating to the potential legacy of historic coal mining beneath the site and to produce an assessment of those risks in relation to the proposed site development.

1.2. Previous Reports

The following report was provided for review:

- Geo-Environmental Investigation Report Briton Ferry Road, Neath January 2016, Opus CC/J-B0756.00 (R01).

The report investigated the retail unit land immediately to the north the existing Lidl store.

1.3. Limitations

The comments given in this assessment and the opinions expressed are based on the information reviewed, which Remada believes are reliable. Nevertheless, Remada cannot and does not guarantee the authenticity or reliability of the information it has obtained from these sources, and used in the production of this assessment. There may be conditions pertaining to the site that have not been disclosed by this assessment and therefore could not be taken into account.



2. SITE DESCRIPTION AND PROPOSED DEVELOPMENT

2.1. Description of Site

Site Description The existing Lidl store occupies an irregular but very broadly triangular plot of land to the west of Briton Ferry Road (A474). The rectangular store footprint is situated to the rear of the site and parallel with railway line beyond. Lidl shares a site access from the main road with another retail unit to north and the two units are separated by an access road that serves a delivery bay to the rear. The remaining site area is given over to customer car parking. The site has an elevation of approximately 10m AOD is situated in the valley floor to the east of the River Nedd.

Area of Site 5900 m².

Site Elevation The topographic elevation of the site is circa 10m aOD (metres above ordnance datum).

National Grid Co-ordinates 274680 (E), 196500 (N)

2.2. Site Setting

The site is situated in a mixed industrial, retail, commercial and residential area.

North: Land to the north, adjacent to the railway is occupied with various industrial and retail premises and residential streets.

East: Residential housing to the east of Briton Ferry Road.

South: Land to the south is predominately residential.

West: To the west of the railway there are large Industrial units with the River Nedd and its flood plain beyond.

2.3. Proposed Site Use

It is understood that the site is to be extended as indicated in **Figure 2**.

3. INFORMATION REVIEW

3.1. Published Geological Information

The following publications of the British Geological Survey (BGS) have been examined in respect of the strata underlying the site:

- BGS Viewer (on-line mapping)
- BGS Map, Sheet 247 Swansea Bedrock, Scale 1:50,000, 2011;
- BGS Geoindex website (accessed 12th May 2020).

3.1.1. Made Ground and Superficial Geology

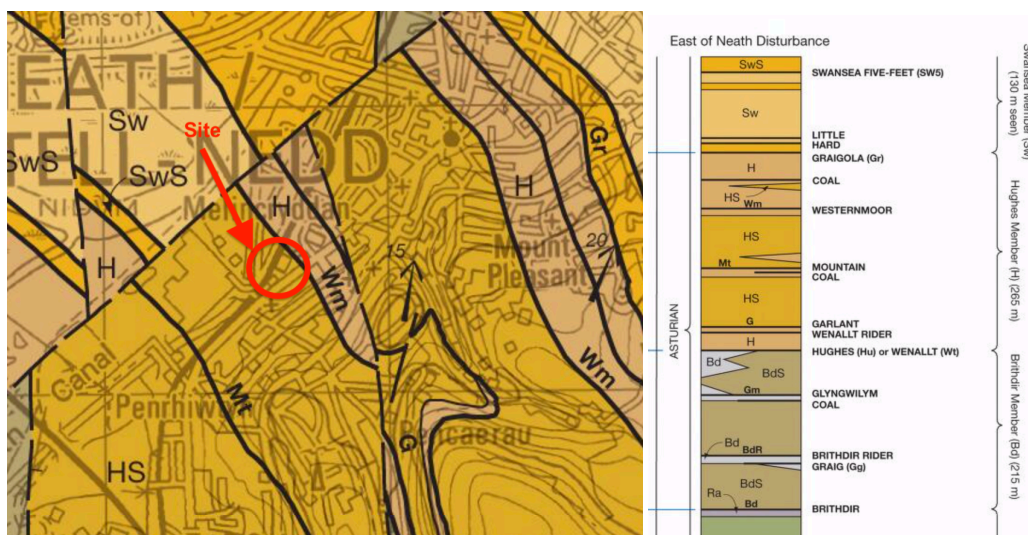
BGS online mapping indicates that the site is underlain by superficial tidal deposits comprising clay, silt & sand associated with the River Nedd to south and west. Glaciofluvial deposits (sand & gravel) are recorded just to north but no superficial deposits are present to the west.

3.1.2. Bedrock Geology

BGS Sheet 247 Swansea (Bedrock) indicates that the site is located less than 500m south-east of the *Neath Disturbance* that trends North-East to South-West.

Bedrock in the vicinity of the site is formed of the Pennant Sandstone Formation. This parent unit has an approximate thickness of 1000m with units of grey mudstone, coal seams and seatearth subdivided into successive members that are defined by key coal horizons that in the vicinity of the site outcrop perpendicular to the Neath Disturbance.

The Hughes Member sandstone (a child unit of the Pennant Sandstone Formation) is recorded directly beneath the store footprint. The BGS generalised vertical section indicates it has a thickness of 265m with the following vertical succession of coal seams: Coal, Westernmoor, Mountain Coal and Garlant. Vertical separation between the Westernmoor and Mountain Coal is approximately 80m and the general angle and direction of dip is between 12° to 15° to the north north-east.



Extract of BGS Sheet 247 Swansea Bedrock, 2011

The Westernmoor coal seam outcrops less than 125m to the north of the site and it is estimated that underlying Mountain Coal seam would be present at a depth of 80 to 100m beneath the site.



3.1.3. Historical Borehole Records

The BGS GeoIndex website holds three borehole records within a few metres of the store and one is within Lidl's site boundary however all of the records are restricted and not publicly available.

3.2. Mining

The site is located within an area which may be affected by coal mining activity. A review of the Coal Authority website indicates that the site is located within a development high risk area.

3.3. Coal Authority Consultants Coal Mining Report

A Coal Authority Consultants Coal Mining Report was obtained for the site (ref: **51002276011001**) dated 11th May 2020) from the Coal Authority.

Past underground coal mining

No past mining recorded.

Probable Unrecorded Shallow Workings

None

Spineways at Shallow Depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Adit	274196-009	274725 196378		Coal	

The adit is located approximately 1km to the south of the site.

Abandoned Mine Catalogue Numbers

SWR1671	SWR2654	PO0
SW1916		

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
WESTERNMOOR	Coal	Yes	Within	N/A	139

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Mine Gas

None recorded within 500 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

3.4. Opus Report 2016

Opus' report presented a review of an earlier report by Earth Science Partnership (2002).

3.4.1. Site History

The earliest available historical map within Opus' report dated 1881 record the site as low lying marsh land in the north and the Japan Works in the south. The marsh land was subsequently developed as an extension of the Melin Crythan Works to the north whilst the works to south was present on the 1983 map but replaced by the current store building in the subsequent map dated 2006.

No shafts or adits appear to be recorded on the historic maps.

3.4.2. Ground Conditions

Earth Science Partnership

The ground investigation comprised seven trial pits and two light cable percussion boreholes, and found that the ground conditions comprised Made Ground to depths of 3.25m to 3.60m bgl, underlain by Alluvial superficial deposits to depths of 5.95m to 7.30m bgl, and further underlain by Fluvio-glacial gravels. Concrete obstructions were identified in five of the exploratory holes. The maximum depth of the trial pits was to 3.50m bgl and the boreholes was to 15.45m bgl.

Earth Science Partnership (ESP) also refer to having sight of Rotary Open Hole Borehole Logs produced by Atkins for the local area which indicate the presence of Fluvio-glacial gravels to depths of 40m bgl. ESP conclude that despite the geological map interpretation, the Westernmoor Coal Seam is likely to be eroded from beneath the site and is no longer present.

Opus

Eight window sample boreholes (WS1-WS7) were advanced across the site using a small, tracked, light percussion window sampling rig on 3rd and 4th December 2015. These were located to provide adequate coverage to characterise the ground conditions beneath the available areas of the site. The window sample boreholes were advanced to depths of between 0.40m and 5.00m below ground level (bgl).

In the area of the car park, the Made Ground generally comprised a thin layer of asphalt, underlain by grey gravel sub-base, and further underlain by ashy, sandy gravel and cobbles. Constituents included brick, metal, sandstone and slag. The Made Ground in this area was penetrated to a maximum depth of 1.20m bgl, and a concrete slab was identified at 0.40m bgl in WS7.

To the rear of the commercial units, the Made Ground generally comprised ashy, gravel and sand, with occasional cobbles of brick and concrete. The base of the Made Ground was proven to the rear of the existing building at a depth of 4.7m bgl in WS3.

Natural strata was encountered beneath the Made Ground in WS3, and comprised grey, very soft consistency, very low strength CLAY.



4. ASSESSMENT OF SITE-SPECIFIC COAL MINING RISKS

From a review of the information sources above, the range of coal mining related hazards relevant to the proposed surface development of the site can be summarised as follows:

Coal Mining Hazard	Potential for Coal Mining Hazard to impact proposed development of the site
Deep underground coal mining >30m depth (past, present and currently proposed)	Low risk identified. Vertical succession of coal seams: Coal, Westernmoor, Mountain Coal and Garlant within the Hughes Member sandstone.
Recorded shallow underground coal mining <30m depth	Low risk identified. None identified.
Un-recorded shallow underground coal mine workings and associated entries <30m (including bell pits, pillar & stall and crop working, etc.)	Low Risk. None identified.
Recorded Mine entries (shafts and adits)	Low risk identified. None identified within the site area. One identified to the south-east of the site but > 20m from boundary.
Coal mining induced or reactivated faults / lines of weaknesses (fissures, etc.)	Low risk identified. (The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining).
Mine gas emissions	Low Risk identified. (The Coal Authority has no record of a mine gas emission requiring action)
Recorded surface mining (opencast workings)	No risk identified.



5. GEOTECHNICAL ASSESSMENT & RECOMMENDATIONS

5.1. Conclusions

Site History

A review of historic maps did not identify the presence of shafts or adits within the site or vicinity of the site.

Published Geology

The site is located less than 500m south-east from the North-East to South-West trending *Neath Disturbance*.

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Consultants Mining Report

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5.2. Recommendations

The assessment has not identified a potential for the site to be impacted by either shallow worked seams or shafts and no further investigation or action is recommended.



STUDY LIMITATIONS

IMPORTANT. This section should be read before reliance is placed on any of the information, opinions, advice, recommendations or conclusions contained in this report.

1. This report has been prepared by Remada, Ltd with all reasonable skill, care and diligence within the terms of the Appointment and with the resources and manpower agreed with (the 'Client'). Remada does not accept responsibility for any matters outside the agreed scope.

2. This report has been prepared for the sole benefit of the Client unless agreed otherwise in writing.

3. Unless stated otherwise, no consultations with authorities or funders or other interested third parties have been carried out. Remada is unable to give categorical assurance that the findings will be accepted by these third parties as such bodies may have published, more stringent objectives. Further work may be required by these parties.

4. All work carried out in preparing this report has used, and is based on, Remada's professional knowledge and understanding of current relevant legislation. Changes in legislation or regulatory guidance may cause the opinion or advice contained in this report to become inappropriate or incorrect. In giving opinions and advice pending changes in legislation, of which Remada is aware, have been considered. Following delivery of the report Remada has no obligation to advise the Client or any other party of such changes or their repercussions.

5. This report is only valid when used in its entirety. Any information or advice included in the report should not be relied upon until considered in the context of the whole report.

6. Whilst this report and the opinions made are to the best of Remada's belief, Remada cannot guarantee the accuracy or completeness of any information provided by third parties.

7. This report has been prepared based on the information reasonably available during the project programme. All information relevant to the scope may not have received.

8. This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of changes in the condition of the site since the time of the investigation.

9. The content of this report represents the professional opinion of experienced environmental consultants. Remada does not provide specialist legal or other professional advice. The advice of other professionals may be required.

10. Where intrusive investigation techniques have been employed they have been designed to provide a reasonable level of assurance on the conditions. Given the discrete nature of sampling, no investigation technique is capable of identifying all conditions present in all areas. In some cases the investigation is further limited by site operations, underground obstructions and above ground structures. Unless otherwise stated, areas beyond the boundary of the site have not been investigated.

11. If below ground intrusive investigations have been conducted as part of the scope, service tracing for safe location of exploratory holes has been carried out. The location of underground services shown on any drawing in this report has been determined by visual observations and electromagnetic techniques. No guarantee can be given that all services have been identified. Additional services, structures or other below ground obstructions, not indicated on the drawing, may be present on site.

12. Unless otherwise stated the report provides no comment on the nature of building materials, operational integrity of the facility or on any regulatory compliance issues.

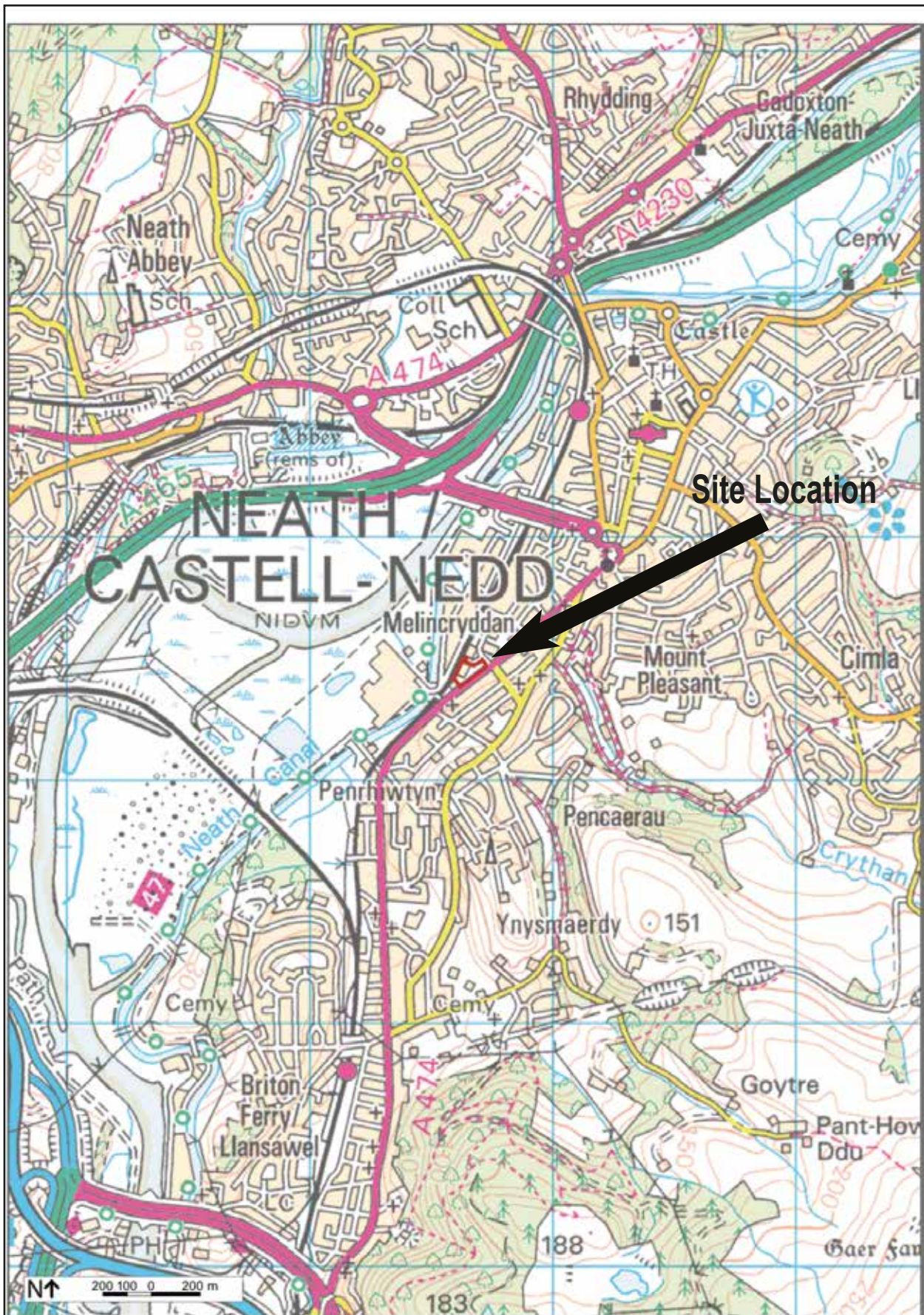
13. Unless otherwise stated, samples from the site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.



FIGURES

Figure 1 Site Location Plan

Figure 2 Proposed Site Layout



Notes

Project Title

Briton Ferry Road, Neath

Scale

as shown

Drawn

PD

Size

A4

Drawing Title

Figure 1: Site Location Plan

Date

12.05.20

Job No.

769

Drawing / Rev No.

01

Client

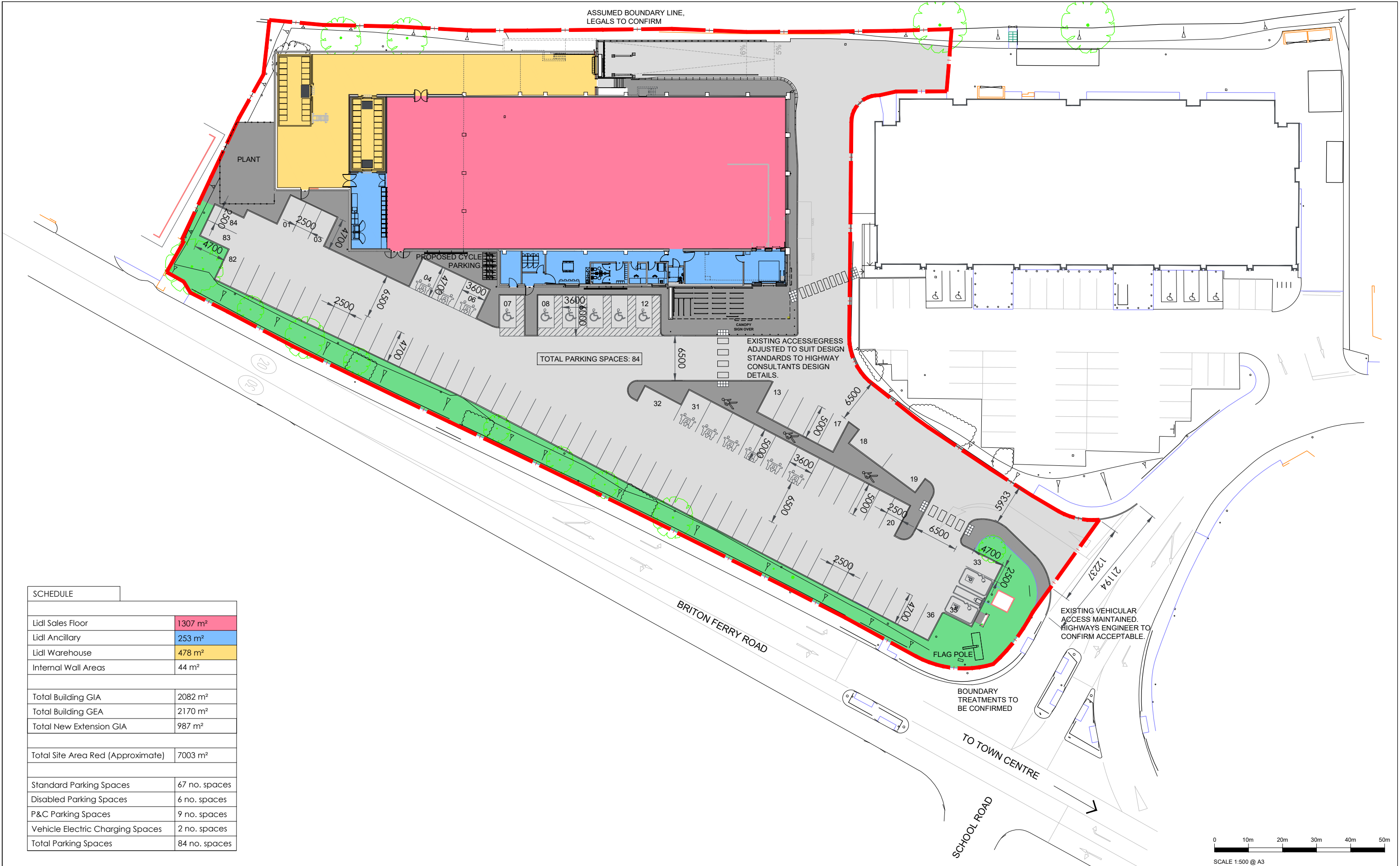
Lidl Great Britain Ltd



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SCHEDULE	
Lidl Sales Floor	1307 m ²
Lidl Ancillary	253 m ²
Lidl Warehouse	478 m ²
Internal Wall Areas	44 m ²
Total Building GIA	2082 m ²
Total Building GEA	2170 m ²
Total New Extension GIA	987 m ²
Total Site Area Red (Approximate)	7003 m ²
Standard Parking Spaces	67 no. spaces
Disabled Parking Spaces	6 no. spaces
P&C Parking Spaces	9 no. spaces
Vehicle Electric Charging Spaces	2 no. spaces
Total Parking Spaces	84 no. spaces



APPENDIX A

Consultants Coal Mining Report
