



1 Croft Stairs
Newcastle upon Tyne
NE1 2HG

Our Ref: 240809.L001.MH
2 September 2024

Planning Case Officer
Planning Ref 2024/0447/01/DET

Newcastle City Council
Civic Centre
Newcastle upon Tyne
NE1 8QH

(Sent via email: planning.control@newcastle.gov.uk)

Re: Coal Authority Consultation: Battery Energy Storage Facility, Newburn, Newcastle.

To Whom it may concern,

Roberts Environmental Ltd. (REL), have produced this letter report in response to the Coal Authority correspondence dated 19 June 2024, sent to the Planning Case Officer at Newcastle upon Tyne City Council, in relation to the following application:

Ref 2024/0447/01/DET. Erection of Battery Energy Storage facility with associated plant and boundary treatment following demolition of existing buildings on site. North East Concrete Ltd, High Street, Newburn, Newcastle upon Tyne NE15 8LN.

This letter report provides further comment and assessment of the risk from historic coal mining activity to the proposed Battery Energy Storage Facility at the abovementioned site. The following information is included within this letter report;

- **Enclosure 1:** Coal Authority Consultee Comment Reference 531196781718891333__-__Dispatched-2024-0447-01-DET-TCA-Response;
- **Enclosure 2:** Proposed Site Layout Plan, Fig Power, Newburn Battery Energy Storage System Drawing Ref: 2991-FIG-DR-0006

In addition and to support the planning application for this development the following Hydrock Consultants Ltd (Hydrock) reports have been produced and should be read in conjunction with this letter report.

- Walbottle Road, Newburn, Phase I Ground Conditions Desk Study, For Fig Power. 29 January 2024. Ref: 29911-HYD-XX-XX-RP-GE-0001-S2-P02.
- Walbottle Road, Newburn, Coal Mining Risk Assessment, For Fig Power. 16 February 2024. Ref: 29911-HYD-XX-XX-RP-GE-0002.

As a statutory consultee, and in relation to the abovementioned planning application at the subject site, the Coal Authority have provided a response to Newcastle upon Tyne Planning Department and have raised a *Substantive Concern* in relation to the risk to the site from historic coal mining activity.

The full document is included in **Enclosure 1** and in summary, the Coal Authority consider that the following coal mining related issues represent a potential risk to the subject site:

- Ground stability issues associated with unrecorded mine workings at shallow depth.
- Emissions of mine gases from historic workings.
- Two recorded mine entries (shafts) are within the site boundary and could represent a risk to ground stability.

REL are pleased to provide the following additional information and assessment of the coal mining risk to support the proposed development, evaluating the perceived risk, and placing this risk into context in relation to the sensitivity of the proposed development.

Site Details and Proposed Development

The site address is High St, Newburn, Newcastle upon Tyne NE15 8LN. Grid Reference 417055, 565275, representative of the central portion of the site. The site comprises two main development areas; a northwestern area and a southeastern area, linked by a linear section of roadway approximately 50m in length.

It is proposed to develop a Battery Energy Storage System (BESS) at the site, including batteries, power conversions systems and transformers. A proposed site layout plan is included with this letter report within **Enclosure 2**.

Geological and Coal Mining Features

To provide further context for this assessment the tables below summarise information obtained from the British Geological Survey (BGS) and Coal Authority (CA) in relation to the geological and coal mining features below and in the vicinity of the site.

Geology	
Details	REL Comments
Made Ground: BGS records indicate no significant deposits on site.	BGS borehole records for the adjacent area to the north, identified Made Ground to depths of 4.60m over mudstone.
Superficial deposits: BGS records Devensian Till	No BGS borehole records available for the site and thickness and composition not known.
Bedrock: BGS records Pennine Middle Coal Measures	The geological dip of the strata below the site is to southeast. BGS data from adjacent site to the north indicates mudstone rockhead at depths of between 4.00m and 7.00m bgl.

Coal Seams: proximal to the site (seams listed in descending geological order).	
Name	REL Comments
Plessy	Inferred sub-crop to the east of the site and dips away from site – not present below the site.
Harvey (Beaumont / Engine)	Inferred to sub-crop below the central roadway and dips to the east. Therefore, inferred to be present only below the southeast portion of the site.
Tilley	Inferred to subcrop immediately to the west of the western site boundary. Therefore, anticipated to be the shallowest coal seam below the northwestern portion of the site.
Top Busty	Inferred to sub crop approximately 50m to the west of the site and present below the site.
Bottom Busty	Inferred to sub crop approximately 200m to the west of the site and is present below the site.
Three Quarter	Inferred to sub crop approximately 330m to the west of the site and present below the site.
Brockwell	Not shown as sub-cropping in the vicinity due to an anticline, but CA data places the coal seam at 62m below the site.

Mine Shafts	
Reference	REL Comments
Mine Entry 417565-017 Located centrally on the northwestern portion of the site.	Shown on CA mine abandonment plans dating from 1877 and labelled as the Engine Seam.
Mine Entry 417565-018 Located on southern boundary of the western portion of the site.	Shown on CA mine abandonment plans dating from 1877 and labelled as the Engine Seam.

Coal Authority Data Mapping and Report Data

According to published CA data and information obtained from the Consultants' Coal Mining Report (Ref: 51003390770001) the following information relates to the site.

- The site is in a Development High Risk Area, which appears to be related to the zone of influence associated with the presence of coal crops below and adjacent to the site.
- The site is not in an area shown to be affected by Probable (unrecorded) Shallow Coal Mine Workings.
- According to the Coal Authority data, the shallowest recorded workings directly below the site are in the Brockwell Seam at a depth 62m.
- Shallow mine workings (less than 30m) are present in the vicinity of the site, but none are recorded directly below the site.
- Two mine entries are recorded on site (ref 417565-017 and 417565-018), there are no records available with respect to whether the mine shafts have been treated.

Hydrock Coal Mining Risk Assessment Information

The Hydrock Coal Mining Risk Assessment conclusions are summarised in the following table along with further comments provided by REL.

Hydrock Coal Mining Risk Assessment Conclusions	REL Comments
<i>There is a high risk of shallow recorded coal workings in the Harvey and Top Busty coal seams. Potentially resulting in collapse at surface/possible subsidence due to upward migration of voids from the shallow mine workings.</i>	According to CA records (including mine abandonment plans) there are no recorded workings in the Harvey and Top Busty seams below the subject site. Any recorded workings within these seams are below areas to the north and east of the site, respectively. Therefore, the 'high risk' rating provided by Hydrock in respect to recorded coal workings in the Harvey and Top Busty is considered to overstate the actual level of risk to the site.
<i>There is a high risk of shallow unrecorded workings within the Tilley Coal Seam.</i>	There does not appear to be any rationale to support the assertion that unrecorded workings may be present within the Tilley seam, other than the presence of the Tilley seam itself. Available CA data does not indicate probable workings are present, it is considered that the 'high risk' rating overstates the level risk to the site.
<i>Collapse of mine entries and the potential for damage to proposed structures from subsidence associated with voids within partially backfilled mine entries is also considered a high risk at this stage.</i>	The mine entries are recorded on mine abandonment plans from Walbottle Colliery dated 1877. The mine entries are labelled Engine Seam. Hydrock has therefore suggested these shafts were progressed to the same named seam, also known as the Harvey/Beaumont seam. However, mine shafts at this location would not have intersected with the Engine/Harvey seam, given the sub-crop of this seam is inferred to be located 40m to 50m to

	<p>the southeast and dips to the southeast, away from these shafts. Therefore, these shafts may have served an alternative purpose.</p> <p>Nevertheless, the site was shown to have been developed with Newburn Steel Works by 1895, a relatively short period time after the dates of the mine abandonment showing the shafts. Historic mapping indicates the steel work's development included extensive earthworks, with cutting into the slope along the east of the site and the diversion and culverting of New Burn. Any such works are considered likely to have exposed the mine shafts and given the development of the steel works, it is considered unlikely that these shafts would have been left untreated. Although any such treatment has not been recorded.</p> <p>Therefore, the risk cannot be wholly discounted, but the risk is considered to be mitigated to a degree.</p>
<p><i>There is a high risk to surface posed by displacement of mine gases within the shallow subcropping seams or partially backfilled mine entries.</i></p>	<p>According to the CA, there are no mine gas issues recorded within 500m of the site. In addition, given that the risk associated with the presence of shallow mine workings has been partially mitigated, it is considered that the risk from mine gas generated from past workings can be reduced from high to medium.</p>

Proposed Site Sensitivity: Battery Energy Storage System (BESS)

The proposed site development is detailed in planning application 2024/0447/01/DET. The application is for the erection of a Battery Energy Storage facility with associated plant and boundary treatment, following demolition of existing buildings on site.

The development is to include a 90- megawatt (MW) Battery Energy Storage System (BESS) and associated infrastructure. A proposed site layout plan is included in **Enclosure 1**. The layout plan details the following aspects of the proposed development:

- The battery storage clusters;
- Transformers and electrical current conversion systems both internal and external (Distribution Network Operator);
- 33Kv Switchgear;
- Substation;
- Temporary site welfare facilities during construction;
- Secure perimeter fencing;
- Temporary construction compound and laydown area.

The proposed development is to comprise energy storage and distribution infrastructure with no long term/permanently occupied structures, individual components of the facility are to be placed on concrete plinths and on areas of hardstanding. Therefore, a proportion of the development is likely to include structures with minimal foundations or groundworks.

Given the lack of indoor airspace there is limited opportunity to allow the accumulation of ground gases; therefore, in the event any ground gases being produced they would likely vent to the atmosphere, which would not be considered to pose a potential risk to human health for any workers on the site or in the case of migration to off-site receptors.

Therefore, the proposed development can be considered as low sensitivity with respect to any perceived risk from historic coal mining activity.

Conclusions

When considering, the re-evaluation of the coal mining risk assessment data presented in this letter report, the level of risk to the site is not considered to be as severe as previously outlined in the Hydrock Coal Mining Risk Assessment.

Furthermore, when taking into account the relatively low sensitivity of the proposed end use, it is considered that a more pragmatic approach to the redevelopment of the site could be considered.

It is acknowledged that the risk to the proposed development from historic coal mining activity cannot be wholly discounted. However, in the unlikely event that any coal mining related ground instability were to occur at the site, the magnitude of the impact to the surface would be limited by the extent of the original workings/voids, which will in general be determined by the depth and thickness of the coal seams. In this case the Harvey, Tilley and Top Busty seams, which have locally recorded extraction thickness of 1.17m, 0.91m and 0.80m respectively and shown to be at depths where any potential void migration would be largely mitigated by the presence of rock cover. Furthermore, given the extensive historic earthworks shown to have been undertaken across the site, the historic development and period of time since shafts were recorded, any remaining voids are unlikely to be significant.

The migration of voids to the surface would be inhibited where rock is present overlying the voids and to a lesser extent by any overlying drift deposits. Therefore, the presence of both rock and any drift deposits will limit the potential magnitude of the impact of mining related ground instability at the surface. In the unlikely event of any ground stability issues occurring at the surface of the site, and when considering the mechanism of collapse, they would likely be identifiable as a deteriorating ground surface, cracks to hardstanding and possibly some depressions forming, as opposed to a catastrophic collapse of the ground.

In the event of any such ground stability issues occurring, it is anticipated that these could be quickly and easily identified and repaired at the surface and any such issues would not represent a significant risk to the integrity of the proposed development.

Therefore, it is considered that a programme of on-going maintenance is considered to offer a far more pragmatic and sustainable use of resources, than a programme of drilling to identify sub-surface voids followed by grouting of shallow voids (if present).

Taking the above information into account, the Client;

Fig Power Ltd.,
Finzels Reach,
Generator Building,
Counterslip,
Bristol, BS1 6BX

Have agreed to accept liability for future ground stability issues related to historic coal mining and will make an allowance for any such repairs going forward in lieu of any requirement to undertake further coal mining ground investigation works.

Recommendations

During and following completion of the proposed development, a Watching Brief should be maintained at the site, supported with a provision for any necessary maintenance. This could include the following;

- A Watching Brief is to be maintained by site users, for any evidence of ground instability issues. Site users should be asked to remain vigilant and report any potholes, surface cracking or depressions that appear on the site, that might be indicative of mining related ground stability issues. Early identification and action will allow appropriate action to be taken.
- The site operator is to assume responsibility for maintenance and repair of the site surfacing and infrastructure.

Provided these recommendations are adopted for the site, we request that the requirement for further intrusive coal mining investigation or remedial work is removed from this planning application.

We trust the information contained within this letter report provides sufficient information to consider this request and should there be any further queries please do not hesitate to get in touch.

Yours sincerely,

[Redacted Signature]
Director

For and on behalf of Roberts Environmental Ltd

[Redacted Stamp]
Enclosure 1: Coal Authority Consultee Comment Reference 531196781718891333__-
__Dispatched-2024-0447-01-DET-TCA-Response;

Enclosure 2: Proposed Site Layout Plan, Fig Power, Newburn Battery Energy Storage System
Drawing Ref: 2991-FIG-DR-0006

Enclosure 1



The Coal
Authority

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

W: www.gov.uk/coalauthority

For the attention of: [REDACTED] Case Officer
Newcastle upon Tyne City Council

[By email: planning.control@newcastle.gov.uk]

19 June 2024

Dear [REDACTED]

Re: 2024/0447/01/DET

Erection of Battery Energy Storage facility with associated plant and boundary treatment following demolition of existing buildings on site; North East Concrete Ltd, North East Concrete Ltd, High Street, Newburn, Newcastle Upon Tyne, NE15 8LN

Thank you for your consultation letter of 3 June 2024.

The Coal Authority is a non-departmental public body sponsored by the Department for Energy Security and Net Zero. As a statutory consultee, the Coal Authority has a duty to respond to planning applications and development plans in order to protect the public and the environment in mining areas.

The Coal Authority Response: Substantive Concern

I have checked the location plan and I can confirm that the site falls within the defined Development High Risk Area. The records identify that there are numerous coal mining related risks pertaining to the application site.

The Coal Authority records indicate that the application site is likely to have been subject to historic unrecorded coal mine workings at shallow depth and that thick coal seams outcropped across the site. Voids and broken/disturbed ground associated with such workings can pose a risk of ground instability and may give rise to the emission of mine gases.

As well as the above risks, there are two recorded mine entries (shafts) that are within the immediate vicinity of the development proposals (mine entry references 417565-017 and 417565-018). The Coal Authority holds no treatment details for these mine entries and, due to plotting inaccuracies, there could be some deviation, by several metres from the inferred location. An untreated or an inadequately treated mine entry and its resultant zone of influence pose a significant risk not only to surface stability but also public safety.

We note that the application is accompanied by a Coal Mining Risk Assessment (16 February 2024, prepared by Hydrock Consultants Ltd), the content of which confirms that potential shallow coal mine workings require investigation. These investigations could be ensured by way of condition.

Turning the situation with regard to the mine entries, the Coal Mining Risk Assessment recommends the investigation of them. However, and despite any justification being provided for potentially building directly over these coalmining hazards, the Coal Authority would expect the investigations to have been undertaken prior to the determination of the planning application, specifically to ensure the agreement of the details of any necessary remedial/mitigatory measures. The Coal Authority therefore **objects to this planning application**.

The Coal Authority considers that the building over or within the influencing distance of a mine entry raises significant safety and engineering risks and exposes all parties to potential financial liabilities and as a general precautionary principle, should wherever possible be avoided.

Building over or within the influencing distance of a mine entry will only be permissible when expert advice allows a suitable engineering design to be developed and agreed to take account of all the relevant safety and environmental risk factors including gas and mine-water. This information should be submitted alongside the Coal Mining Risk Assessment and should be considered prior to the determination of the planning application. A link to The Coal Authority's Policy for Building Over or within the Influencing Distance of a Mine Entry is included at the end of this letter.

It is a requirement of the National Planning Policy Framework, paragraphs 189-190 that the applicant demonstrates to the satisfaction of the LPA that the application site is safe, stable and suitable for development.

The Coal Authority Recommendation to the LPA

The information submitted has revealed that there is a significant risk to the development from two recorded mine entries (shafts).



Initially the applicant should be required to demonstrate the operational reasons as to as to why the proposals are required to be where they are located, or whether the layout could be amended to avoid these coal mining hazards and their respective zones of influence.

The applicant should therefore be advised of the Coal Authority's view as technical expert in the field of coal mining legacy and land instability. Furthermore, if the applicant can demonstrate the operational requirement for the location of the proposals, they should be required to carry out further work in the form of the development of suitable engineering design to take account of all the relevant safety and environmental risk factors including gas and mine-water. This information should be submitted alongside the Coal Mining Risk Assessment and should be considered prior to the determination of the planning application. In the event that any subsequent revised detailed layout is submitted showing the proposals avoiding the mine entries, but within influencing distance of them, the details of a remediation strategy confirming how the proposals would be safeguarded in the long term should be submitted.

The Coal Authority considers that this issue goes to the heart of whether planning permission should be granted; it is not an issue therefore that would be appropriate for the imposition of conditions in this case.

The Coal Authority would be very pleased to receive for further consultation and comment any additional information prepared and submitted by the applicant.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely



Planning Liaison Manager

General Information for the Applicant

Under the Coal Industry Act 1994 any intrusive activities, including initial site investigation boreholes, and/or any subsequent treatment of coal mine workings/coal mine entries for ground stability purposes require the prior written permission of The Coal Authority, since such activities can have serious public health and safety implications. Failure to obtain permission will result in trespass, with the potential for court action. In the event that you are proposing to undertake such work in the Forest of Dean local authority area our permission may not be required; it is recommended that you check with us prior to

commencing any works. Application forms for Coal Authority permission and further guidance can be obtained from The Coal Authority's website at:
<https://www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property>

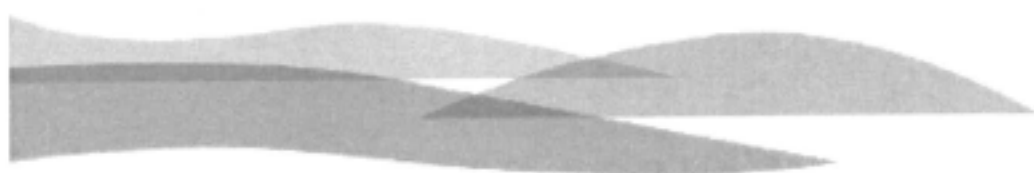
Building over or within the influencing distance of a mine entry (shaft or adit) can be dangerous and has the potential for significant risks to both the development and the occupiers if not undertaken appropriately. The Coal Authority would draw your attention to our adopted policy regarding new development and mine entries:
<https://www.gov.uk/government/publications/building-on-or-within-the-influencing-distance-of-mine-entries>

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available coal mining data on the date of the response, and electronic consultation records held by The Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.

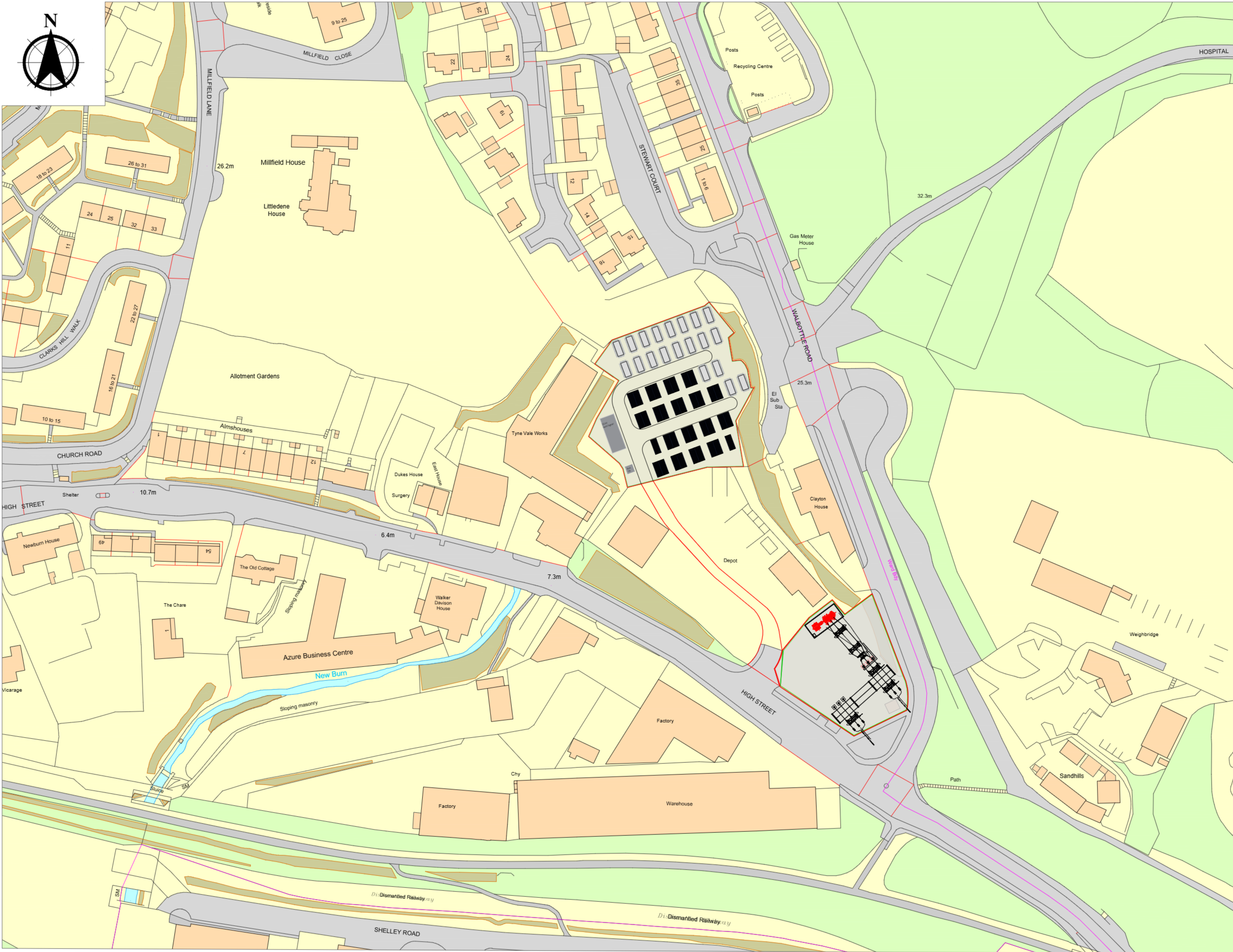
In formulating this response The Coal Authority has taken full account of the professional conclusions reached by the competent person who has prepared the Coal Mining Risk Assessment or other similar report. In the event that any future claim for liability arises in relation to this development The Coal Authority will take full account of the views, conclusions and mitigation previously expressed by the professional advisers for this development in relation to ground conditions and the acceptability of development.





Making a **better future** for people
and the environment **in mining areas**

Enclosure 2



KEY PLAN

NOTES
Any equipment shown is indicative of dimensions and general appearance and may be subject to minor amendments by the manufacturer or supplier

LEGEND

- BATTERY
- PCS AND TRANSFORMER
- CONCRETE PLINTHS
- HARDSTANDING AREA
- FENCE
- GATE
- ON SITE SUBSTATION

REVISIONS

INITIAL VERSION						
PO1	CL	22/01/24	XX	XX	XX	XX

REVISION NOTES/COMMENTS						
REV	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE



CLIENT
FIG POWER

PROJECT
NEWBURN
BATTERY ENERGY STORAGE SYSTEM

TITLE
SITE LAYOUT
FOR OPERATION

HYDROCK PROJECT NO. 29911	SCALE @ A1 1:500	PAGE NO. X:XXX
STATUS DESCRIPTION FOR INFORMATION		STATUS S2
DRAWING NO. (PROJECT CODE-DR-0006) 2991-FIG-DR-0006		REVISION PO1