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For the Attention of: Barry Jefcoate – Director
Booth King Partnership Ltd

[By Email: development.control@bury.gov.uk]

15 December 2020

Dear Mr Jefcoate

Pre-application Enquiry: PAS00020

To review a Site Investigation Report and Coal Mining Risk Assessment Report and to provide comments on the suitability of a foundation in lieu of further site investigations and remedial works.

Thank you for your enquiry email received, and payment confirmation provided on the 27 November 2020, seeking the views of the Coal Authority through our Pre-application Advice Service regarding the above matter.

You have requested that we review and provide written comments on the submitted Supplementary Site Investigation & Coal Mining Risk Assessment Report, dated 28 April 2020 and prepared by NX Consulting Ltd and the suitability of the foundation as detailed on the drawing entitled 'Preliminary Frame and Foundation Scheme.' Dr Leigh Sharpe, Licensing and Permitting Manager and Mr Mark Bettney, Head of Engineering have reviewed the information. Their comments have been incorporated into the content of the letter below.

Coverage of the site refers to five rotary boreholes undertaken, two previously undertaken by LK group and three commissioned by NX, which were supervised by Atlantic Environmental Consultants UK Limited. NX planned only two rotary boreholes (Permit 19671) but one of those suffered difficult drilling in the glacial sands and gravels, was terminated early and repositioned.

Interpretation of the mining risk posed to the proposed new carriage shed are provided in the following points,

It is hampered by.

1. Limited rock cover has been proven in the holes conducted. RBH01B proved 13.5m and RBH02 the greatest cover of 15.5m.

The outcome which we concur with was;

2. As a result of the potential absence, variability or discontinuous nature of the coal seams combined with the ability of the drilling/logging to detect them, the presence of the Trencherbone seam cannot be discounted as existing below the level of drilling undertaken and therefore the proposed carriage shed.

Examining our own records;

3. The closest information the Coal Authority hold to the site where the Trencherbone seam is recorded to have been worked puts the seam thickness (not necessarily extracted thickness) at 1.60m. To meet the C758D 10T criteria would necessitate at least 16m of competent rock cover being proven over the Trencherbone seam were it to be present and worked as could potentially be the case beneath the entire building footprint.

Points for clarification;

4. It is understood that in the north of the site reliance rests upon LK borehole R1. The logs from this hole are relatively illegible within the report but suspect that approximately 15.5m rock cover, equivalent to RBH02 was proven.
5. The Hell Hole Mine seam or Wigan 4 feet was expected to be encountered above the Trencherbone but most boreholes did not indicate its presence however, LK borehole R2 did encounter a seam at 26-27.5m depth. It would be useful for NX to confirm that this is their understanding as the report text does is unclear on that point.

In examining the report, we can confirm that the available records we possess have not been able in this case to offer support to the report's conclusions but equally they do not contradict the overall outcome.

Permission's data, mine entry and mine workings data, subsidence and claims records have been searched, interrogated and examined but they fail to change the fundamental conclusions expressed. Worthy of note are the four mine entries recorded in the vicinity of Baron Street to the north of the site, all of which are expected to intersect the Trencherbone seam and none of which have recorded mine workings associated with them. There is as a consequence a potential that these entries are connected to workings in this seam and all are roughly equidistant from the interpreted Coal Authority crop position for the Trencherbone. This conclusion we admit is presently circumstantial.

We anticipate that NX Consulting are content, as presented in their report, on partial reliance of ground information designed, carried out and subsequently recorded by others.

In terms of further work which may inform the risk assessment. Whilst the report in section 1.2 refers to BGS data if not undertaken to date it would be useful to search the relevant memoir online, the BGS geosindex and compare what data is available over the wider local Bury area to understand if information contained in those sources gives any assurance with respect to the Trencherbone seam. It may be that a local record confirms the interburden thickness between the Wigan four feet Seam and Trencherbone, which further influences the probability of risk. This factor

is critical to the assessment as to whether structural precautions are appropriate or if more investigation to provide proof is necessary.

The proposal acknowledges that a risk exists but there is no confirmatory evidence to determine presently whether the Trencherbone seam is or is not present and worked below the building. The scope and results of the investigation could be questioned against the scale of the building and the risk that was evident and highlighted in the coal mining report, which places the northern portion of the site at least into a Development High Risk Area based on the potential for mine workings.

Structural precautions can of course be a consideration for marginal risk sites. NX have proposed strip and pad foundations supported on vibro-treated granular made ground and glacial sands. This will have the effect of transferring foundations to a deep location and amplifying the potential for future subsidence should shallow workings exist. The current proposals may not accommodate and mitigate against any future localised settlement caused by potential shallow coal workings. However, it is accepted that a steel frame structure incorporating none brittle walling materials has inherent plasticity to accommodate some settlement. As alluded to (Section 6.2), the adoption of a form of reinforced concrete foundation in line with CIRIA report C758 may mitigate against minor residual settlement risk associated with potential shallow coal workings, assuming the consultant is confident that is the case. Further consideration should therefore be given to the final proposal. If a structural precaution approach is chosen to mitigate against the residual impact of potential shallow coal workings this will need to be submitted to the Coal Authority via the Permitting Team for engineering appraisal.

Provided that the consultant is confident in their risk assessment given the points outlined above we would be minded not to object to a structural precaution solution or impose the need for further ground investigation. We would like to understand the detail of the mitigation measures any structural solution will incorporate over and above what would normally be necessary in overcoming the geotechnical considerations posed by the nature of the superficial deposits present. The consultant should also present the results of any further work or research, which has lead them to consider structural precautions to be acceptable.

We note that the borehole referencing throughout the report is confusing and a single plan showing the proposed building, GI locations, correctly orientated and labelled would have assisted significantly. The LK investigation was not covered under a permit and the Coal Authority do not possess the reporting from those works.

If you would like to discuss this matter further, please do not hesitate to contact us.

Yours sincerely

Chris MacArthur

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Planning Liaison Manager

General Information

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: www.gov.uk/get-a-permit-to-deal-with-a-coal-mine-on-your-property

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