

12888/JJ

28 April 2023

The Coal Authority
Planning Consultation
200 Lichfield Lane
Berry Hill
Mansfield
Nottinghamshire
NG18 4RG

For the attention of Melanie Lindsley

Planning Application: P/23/0053 – Dragon Parc, Coal Authority Consultation Response

I have reviewed the consultation response from the Coal Authority (CA) relating to planning application P/23/0053 and can provide the following further information in relation to their queries.

For ease of reference, below I have cited the CA comments in italics.

- *“In respect of shallow coal mine workings, the report authors zone the site into A and B in respect of risks posed. They conclude that within Zone A proof drilling and grouting will be required. We would expect the extent of these works to cover all areas where a risk to surface stability is identified, including roads and other external areas.”*

This point is noted. The proof drilling and grouting works will cover all areas where a risk to surface stability is identified.

- *“Regarding the mine shafts on the site the report author’s state that shaft 031 was located during the bulk excavation works and the shaft was capped at a depth of 10m below ground level. They note that the shaft cap was intact and spanned an area of 10m x 10m. Although the report authors have noted that the shaft cap was intact, they make no assessment in the report as to its suitability for the development now proposed. The stand-off from this feature proposed as part of the development layout is noted. It would be appreciated if the report authors could provide further commentary on the suitability of the shaft treatment works in respect of the current development proposals.”*

The size of the advised building exclusion zone around Shaft 031 is considered appropriate for the following reasons:

- (1) The shaft has been treated by grouting (as such the potential risk of the treated backfill slumping is considered low).
- (2) A significant concrete cap was constructed over the grouted shaft (10m x 10m).
- (3) The concrete cap was observed to be intact and in good condition and constructed in competent natural strata (considered to represent weathered bedrock).
- (4) Additional protection to the proposed buildings (situated outside the building exclusion zone) will be provided by the proposed site-wide re-engineering earthworks.
- (5) Additional protection to the proposed buildings (situated outside the building exclusion zone) will be provided by the specified foundation reinforcement criteria (all foundations to be designed to span a 3m lack of support).
- (6) No additional foundation loads will be transmitted through the treated shaft.

It should be noted that intrusive investigation through the existing shaft cap and the shaft backfill was not advised due to the significant depth to the cap, and due to the risk of compromising the integrity of the shaft.

Due to the treatment of the shaft, the likelihood of a future subsidence event is low.

However, due to the nature of the proposed residential development in the vicinity of the shaft (i.e., footpaths, POS etc.) and considering the comments from the Coal authority, additional mitigation comprising a reinforced geo-mattress (at proposed ground level) throughout the full footprint of the building exclusion zone around Shaft 031 is also proposed (see attached plan).

These additional engineering measures comply with guidance presented in CIRIA C758D, which states that the use of reinforced geo-synthetics is applicable in areas where the likelihood of a subsidence event is low or its consequence minimal, and its application includes permanent spanning of potential migrating voids.

- *“The report authors note that mine entries 038, 036, 037, 060 and 030 have all been previously located and treated. Figure 5 in the report identifies the ‘as recorded’ locations of the mine entries and their zones of influence. This is apart from 060, which is an adit, and which the report authors have concluded poses no risk. However, it is not clear if this plan annotation takes account of the potential plotting errors for these features which are still noted on our records as having potential departures from their recorded positions. Further commentary on this issue would be appreciated, along with any revised plan necessary to take account of the potential departures for these features from their recorded positions.”*

This query relates to several mine entries near the south-western site boundary (see Shaft 038, Shaft 036, Shaft 037, Shaft 030, and Adit 60 on the attached plan).

It is understood that the Coal Authority are querying the size of the recommended building exclusion zones around these features because of perceived positional uncertainty regarding their locations.

I spoke with a Mining Information Manager at the Coal Authority last week. Off the back of that conversation, it is understood that although these mine entries were treated, the Coal Authority don't hold a record of their precise locations, and the coordinates provided are considered approximate. However, it should also be noted that these features are recorded on historical OS maps (as such, the confidence in their locations is high).

To corroborate the location advised by the Coal Authority I have undertaken my own georeferencing exercise. Based on this, I agree with the coordinates that have been provided by the Coal Authority.

It should be noted that during the site investigation works, it was not possible to access the locations of these mine entries due to their proximity to the site boundary (and topography).

Following receipt of this additional information from the Coal Authority, and due to the constraints preventing access to these mine entries, a series of 'worst case' building exclusion zones have been applied.

The size of the 'worst case' building exclusion zones around Shaft 038, Shaft 036, Shaft 037, Shaft 030 have been revisited following a review of the comments from the Coal Authority (see revised plan attached).

As shown in the attached plan, for Shaft 038, -036, Shaft 205204-037, and Shaft 205204-030, revised building exclusion zone radii of 17.25m has been applied. The size of the shaft exclusion zones are based on the following factors: an assumed shaft radius of 1.25m (based on the assumed 2.5m diameter detailed on the online CA viewer), a 5m radius Coal Authority plotting departure distance (based on the departure distances detailed on CA viewer), and a depth to bedrock of approximately 11m (based on the average depth to bedrock recorded at the two nearest boreholes – BH122 and BH134).

In addition to the above, a 10m radius building exclusion zone has also been applied around Adit 60 to account for the 10m Coal Authority assigned departure distance for this feature.

It should also be noted that additional protection to the proposed buildings (which are all situated outside the advised 'worst case' building exclusion zones) will be provided by the proposed site-wide re-engineering earthworks and the specified building foundation reinforcement criteria (all foundations are to be designed to span a 3m lack of support).

Additionally, a geo-matress is to be installed throughout the full footprint of the proposed drainage channel as it passes through Risk Zone A.

I trust the above and enclosed are to your satisfaction and will be sufficient for the Coal Authority to now reconsider their objection to this planning application. However, if you have any queries or require any further information, please do not hesitate to contact me.

Yours faithfully,



Jack Jones
For
Intégral Géotechnique (Wales) Limited

Encl.

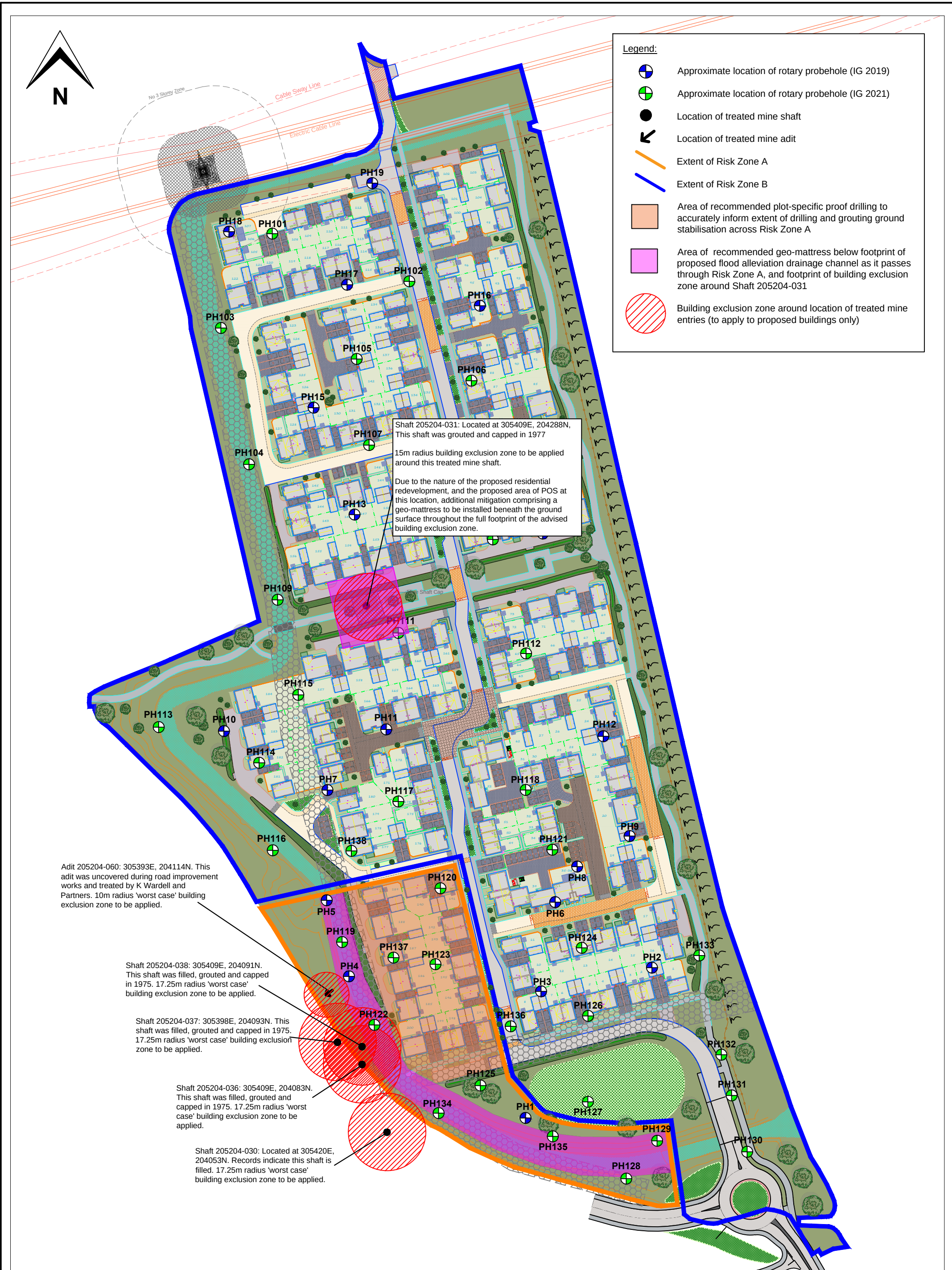


Figure 5: Mining Risk Zones and Mitigation Plan

Project: Land at Dragon Parc, Abercanaid, Merthyr Tydfil

Client: Davies Homes

Job No.: 12888

Scale: 1:1,500 at A3

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