Consultation Response from: KC Environmental Health (Pollution & Noise Control)		
2019/93903 - 122A Laund Road, Salendine Nook, Huddersfield HD3 3TY		
Erection of one dwelling and associated works		
Date Responded: 19 Jan 2021	**Responding Officer:** Richard Hume	**Responding Ref:** WK/202004024

Previous consultation responses

This application relates to a single building that has already been constructed under a previous planning permission which was for a larger development but the construction is contrary to a condition of that permission relating to the protection the future occupiers of the development from contaminated land risks (including ground gas). In our previous responses dated 13 & 14 Feb, 09 Apr and 22 May and 19 Nov 2020 we have considered information submitted by the applicant, in particular regarding the ground gas situation at the site. Each time we have considered that the applicant has failed to provide satisfactory evidence to clearly demonstrate that the building, which has already been constructed but without any specific ground gas protection measures, does not need any such protection measures.

New review of previously submitted information

A Review of Landfill Gas Risk, Plot 1, Laund Road, Huddersfield by EPG dated 1 Dec 2020 (Version 1) has now been received. This firstly reviews the site history and concludes that this indicates that there are no high-risk sources of ground gas below the site. It does however acknowledge that there is a slight possibility of unrecorded workings. It then reviews the physical site investigations that have been carried out at the site. The findings of the physical site investigations are compared favourably with the predicted depths of coal seams in the area. From this the review concludes that the location of the Pot Clay Coal Seam outcrops just to the east of the site and continues away from the site and therefore does not underlie it. The review also considers the previous assessments for the site (which considered that bell pit mining had been undertaken in the larger site) and disputes this providing detailed information to explain why any coal workings would have been from open excavations. The review also considers the groundwater situation at the site and considers this to be perched water over clay layers which is being fed by infiltration from above and would therefore not push gas out from the ground. The construction of the building is also detailed advising that there is a 150mm ground bearing slab overlaying a 1200-gauge Visqueen damp proof membrane. From a conceptual site model based on this information it considers that ground gas monitoring for this plot would not be required but was actually carried out.

The report reviews the previous ground gas monitoring that has been carried out at a variety of monitoring wells across the wider site area. It notes a number of typographical errors in previous reports where incorrect monitoring well numbers were given. In particular, spot measurements in Dec 2019 & Jan 2020 at WS402 which were labelled as being at WS302 which is adjacent to the single plot of this application. During this period, WS302 was being monitored by a continuous monitor and its results show that it was not spot monitored during that period. The report also discusses groundwater levels in monitoring wells, and the impact that this may have had on the monitoring results, particularly during the continuous monitoring

at WS302 for which two graphs are provided for the monitoring results (Figure 12). From this the report advises that there is no correlation between carbon dioxide levels and water levels. However, the report considers that flow rates at some monitoring wells (WS01A, WS03 and WS04) were affected by ground water. It considers that because these are in monitoring wells that are sealed above the response zone that they are not representative of normal ground conditions and should therefore not be used in the assessment.

The report considers therefore that there are no high-risk sources of ground gas but that some low-risk sources (made ground, and lower coal measures) may cause elevated concentrations of ground gas but that these are not causing significant gas generation. It also considers that any ground gas that is generated will not migrate into the building in quantities that cannot be overcome by the internal ventilation. The report also notes the clay layer at the site at the top of the middle coal measures and also the floor slab & DPC in the building which would all act as barriers to any ground gas migration into the building.

From the assessment of all of the previously submitted information, the report considers that it would be reasonable to conclude that a CS1 classification is appropriate for the site and the assessment maintains a precautionary position as required within the UK planning framework. The report also considers the requirement to consider an increase from CS1 to CS2 if methane concentrations exceed 1% v/v or carbon dioxide concentrations exceed 5%. It considers that because carbon dioxide concentrations are caused by processes that cannot result in hazardous gas emissions and that there is no evidence that Plot 1 is affected by mine gas or landfill gas that it is therefore not reasonable to increase the characteristic situation upwards from CS1 on the basis of elevated carbon dioxide concentrations.

In addition, the report considers a New Approach to Risk Assessment which was published in Ground Engineering in 2019 which also concludes that there is no requirement for gas protection in Plot 1.

A quantitative assessment is also considered in the report and this concluded that even without the floor slab & DPC that for either diffusion-driven flow or advective flow the concentrations of carbon dioxide are estimated to be well the minimal risk limit and would not result in unacceptable gas concentrations in the building.

The review advises that the multiple but separate lines of evidence provided are consistent in demonstrating that there is negligible to very low risk of ground gas emissions affecting Plot 1 and that the building is safe for occupation in its current condition, without a gas membrane present in the construction. It also considers that there are not any credible future changes that would change the gas risk.

Comment

The new report provides a comprehensive review of the previously submitted information. It has identified and corrected typographical errors in previous reports that now enable a more accurate assessment of the monitoring data to be made. It disputes the previous opinion that bell pit mining had occurred in parts of the larger site area. It provides a detailed conceptual site model that clearly indicates that Plot 1 is not underlain by the nearby coal seam. It provides detailed explanations which were either absent or less detailed in previous reports.

It concludes that the site is considered to be Characteristic Situation CS1 and gas protection measures are therefore not necessary in Plot 1.

Recommendations

I consider that the report makes a satisfactory assessment of the ground gas situation for this individual plot and agree with its conclusion that ground gas protection measures are not required for this plot. I consider the review to be satisfactory and I recommend that it is accepted. We have therefore now received the satisfactory evidence that we originally asked for that demonstrates that this building does not require ground gas protection measures and therefore we no longer have an objection to this application.

The conditions that we recommended in our original response dated 13 Feb 2020 are still relevant and necessary and therefore should be retained.