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Our ref: BRD3760-let4

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Dear Grant

COMMENTS FROM ENVIRONMENTAL HEALTH DEPARTMENT
RED MILE NURSERY, PINCHBECK

Thank you for forwarding the various emails from the Principal Planning Officer (PPO) and Environmental Protection Officer (EPO) at South Holland District Council in respect of the BRD remediation strategy submitted in connection with Condition 8(iii) of planning permission H14-0720-18.

The EPO is requesting further information to supplement the remediation strategy supplied. Accordingly, we set out the following response below.

Proposed Gas Protection Measures

In respect of the proposed gas protection measures, it is considered that a sufficient level of detail has been provided in the strategy and the proposed measures are set out quite clearly. Whilst a particular membrane had not been specified within the strategy document, it is stated that the membrane must comply with Table 7 of BS8485:2015+A1:2019. Likewise, the ventilation requirement in the form of appropriately spaced air bricks had also been stated.

Whilst it is appreciated that the individual plot construction drawings need to have the details of the required level of gas protection, it is not practical to have all of these plans for every plot produced for inclusion in the remediation strategy. As you are aware, the remediation strategy is a pre-commencement document and therefore needs to be submitted and approved before any work commences on site. The aim of the strategy is to set out the detailed requirements for the gas protection measures to the engineer so that they can design the foundations and floor slabs appropriately.

It is understood that typical sections with the proposed gas protection measures have now been submitted to the planning department and EPO for their consideration.

We would argue that the lack of final issue construction drawings within the strategy does not mean that the design isn't detailed and finalised. It is more about the detailed design parameters being set, which is presented within the strategy. The guidance within BS8485 and C735 set out how to install and verify gas protection measures and therefore a statement within the strategy that this guidance should be followed surely provides the necessary safeguard that there will be an appropriate level of gas protection.

Verification Plan

In terms of the verification proposals, Section 5.3.1 of the BRD remediation strategy document sets out a clear requirement for the verification of two applicable elements of the specified gas protection measures (noting that the structural barrier is not subject to any verification as it is not providing any points against the CS2 score).

The verification follows the guidance presented through CIRIA C735 document "Good practice on the testing and verification of protection systems for buildings against hazardous ground gases" and the strategy states that it must be undertaken in accordance with that document. On this basis, it would be unnecessary to then list all of the requirements of that guidance as the independent qualified and experienced third party verifier would have to undertake that to produce the necessary inspection report in line with Annex A5 of CIRIA C735. All of this is presented in the strategy document.

In terms of the items to consider for the verification approach, as set out in Paragraph 8.3.3 of BS8485:2015+A1:2019, we would make the following comments:

- *how, when and by whom the verification task/s should be carried out;*

  As stated in the strategy, "Verification needs to be undertaken by an independent qualified and experienced third party verifier, separate to the installation contractor. Verifier to undertake a thorough visual inspection of membrane prior to concrete pour."

- *compliance criteria (i.e. what constitutes a pass/fail);*

  As stated in the strategy, "Should any punctures / failures be identified then the membrane will need to be repaired / replaced and verified again using the same procedures". Further to this, it is noted that the "Verifier is to increase inspection rate to 100% of plots until they are satisfied that the installation contractor has rectified any issues at which point the inspection rate can be reduced to 50%."

- *frequency of verification task/s;*

  As stated in the strategy, "Verifier to undertake a thorough visual inspection of membrane on at least 50% of the plots prior to concrete pour. The integrity of joints and pipe penetrations to be subject to air lance tests in line with ASTM D4437 on at least 25% of the plots."

- *methodology;*

  As stated in the strategy, "Verifier to undertake a thorough visual inspection of membrane prior to concrete pour. Mechanical stress tests of membrane joints to be undertaken at the discretion of the verifier. The integrity of joints and pipe penetrations to be subject to air lance tests in line with ASTM D4437."

- *QA/QC requirements;*

  In accordance with C735, the installation contractor and the verifier are independent of one another. The frequency of the verification is as per C735 and "Should any punctures / failures be identified then the membrane will need to be repaired / replaced and verified again using the same procedures."

- *how and when information should be reported;*

  As stated in the strategy, "An inspection report shall be provided by the verifier in line with Annex A5 of CIRIA C735. Installer to supply sign off sheets or verification evidence for the remaining plots."

- *regulatory requirements;*

  Subject to the officer's response to this letter, but this will be as specified in the strategy and this letter (once the documentation is approved).

- *contingency plan (i.e. what needs to be done if results fail to meet compliance criteria).*

  As per compliance criteria, described above.

Garages

The remediation strategy proposes that where the proposed garages are detached and therefore separate from the houses, it is considered that formal gas protection measures are not required for these structures given the following reasons:

- The relatively low risk gas regime identified at the site, with the source of the gas being the natural organic soils underlying the site and wider surrounding area.

- The limited occupancy of garages.

- The inherent good ventilation within a garage.

It is important to note that where the proposed garages are not detached from the houses, gas protection would be required along the same lines as the main house.

In the first instance, and in respect of the first bullet above, the source of the gas is the natural thick tidal flat soils underlying the site, as these contain organic layers within them. These deposits are widespread across the entire region and are not unique to just the site. Therefore it should be appreciated that every dwelling in the local region is subject to the same gas risk as identified on the site. In the case of the site, an increased (CS2) level of protection is being proposed for the houses. This is already more than most of the existing properties in the local area and given the presumed lack of gas related issues with those properties, this highlights the conservative nature of the proposed gas protection to the new dwellings on this scheme.

The EPO is of the opinion that garages are a 'building' in the context of BS8485. As the site has been assigned a ground gas characteristic situation CS2 classification then any new buildings [including garages] would therefore need adequate protection. Whilst we would concur that there is no differentiation between the different types of building within BS8485, equally there is also no cut off in terms of what buildings need to be considered. For example, is a garden shed or a summer house a building in the context of BS8485? Some level of level of practical judgement is clearly required, based on the gas regime

and the nature of the building, to determine which building types need protection measures and which one don't. We would argue that a detached garage meets that judgement.

By its very design, the garage's primary purpose is to park a motor vehicle within. Consequently it is expected that exhaust fumes will be produced within the structure for short periods of time. The very design of garage doors is that they provide an inherent level of ventilation (garage doors are purposely not designed to be air tight for this reason). We would argue that a car would probably produce more exhaust gases within 5 minutes of the engine idling within the garage in comparison to the amount of soils gases emitted from the site soils over a month. This provides further explanation in respect of the third bullet listed above.

The reason why we have specified that attached garages should have the same level of protection as the houses is because otherwise a continuous membrane cannot be provided to the edge of the building and also these garages are more likely to have internal doors, connecting the garage space to the habitable areas of the house.

The detached garage is not a habitable building and occupancy will be very limited and short duration (as per the second bullet). It is appreciated that some residents may look to convert garages in the future. However, given the site wide CS2 gas protection requirement, we would assume that permitted development rights would be removed from the development. Otherwise how would be LPA be able to protect future residents from any new conservatories and extensions that are not covered by the planning regime. As such, any future change of use to the garage would then enable the planning permission to insist of the correct level of gas protection measures being fitted.

In summary, it is considered that the above response and the accompanying plans should provide sufficient information to address the officer's concerns and thereby enable the discharge of condition 8(iii).

Yours sincerely



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