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Our ref: 20/12182/PLAN
Your ref: CONNIN/ 20/0875

22nd October 2020

Dear Grant,

Planning Ref: Discharge of Condition 16 (Remediation Verification) 20/0875 of Planning Permission 18/0293 for the Development of 195 no Residential Units, internal Road Networks, Parking, Landscaping and Associated Works Affecting Public Right of Way 407/1 at Land to South of Glan Usk Primary School, Herbert Road, Newport, South Wales

Contaminated Land Consultation:

Many thanks for the recent planning consultation concerning this application. Worcestershire Regulatory Services (WRS) have reviewed the application in relation to contaminated land on behalf of Newport City Council Environmental Health Department. Please note we are unable to comment on the geotechnical aspects of the information provided.

A number of documents have been submitted in respect of the discharge of conditions request for condition 16, and reviewed by WRS, as listed below:-

- **Application form and Cover Letter** dated September 16th 2020 from Asbri Planning – provides a list of documents submitted in respect of the discharge of conditions request.
- **Typical Ground Floor Details Drawing** by EOS dated 17th March 2017 – technical drawing showing potential design of ground features.

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- Ground Gas Protection System Verification Plan: Proposed Residential Development Phases 2B, 2C & 2D Herbert Road, Newport** produced by TerraFirma, dated February 2019, reference TFW_0219_12032_GGVP_V03. The report refers to the development of 195 houses under Phases 2 and 3. Phase 2A is stated not to require gas protection measures and Phase 3 is part of a 'separate contract' and therefore not covered in this report. It is not clear why the area referred to as Phase 2A does not require gas protection measures when the remainder of the site has been classed as CS3 and Phase 1 categorised as CS2. Confirmation needs to be provided in respect of the gas protection measures in this area. This report therefore only covers Phase 2B, 2C and 2D. The report provides an overview of site conditions and states it is part of a wider site subject to investigation and extensive remediation during the later part of 2008 following identification that the ground was impacted by PCBs with removal of 778 drums of PCB type material and approximately 2000 tonnes of impacted material. Further soil analysis following remediation identified residual PCB's at trace levels, marginally above laboratory limits of detection. Due to the potential risk of volatiles generation from residual PCBs, the incorporation of VOC protection was subsequently recommended. Previous investigation and gas monitoring had also identified methane and carbon dioxide across the site thought to be associated with 'organic rich alluvium including peat bands and unsaturated made ground deposits' requiring suitable gas protection measures. The site has been satisfied as 'Gas Characteristic Situation 3' under CIRIA C665:2007. The report outlines the requirement of gas protection measures as follows:-

Table 4.1 Gas Protection Score	
Gas Protection Method	Score
Pre-cast suspended segmental subfloor (i.e. beam and block)	0
Passive sub floor dispersal Layer: Very good performance. Clear void.	2.5
Gas resistant membrane (satisfying BS8485:2015 Table 7 requirements)	2

The report also provides information relating to the detailed design of gas protection measures including a ventilation space with a minimum height of 150mm below the suspended beam and block floor, a Solshield Ultra Gas Barrier Membrane, steps to safeguard the protection measures during onward construction, and integrity testing to confirm the validation and verification requirements. The technical specification for the Solshield Ultra Gas Barrier indicates that it offers suitable protection against vapours as well as methane, carbon dioxide and radon.

- Ground Gas Protection System Validation Report: Residential Development Phases 2B, 2C & 2D Herbert Road, Newport**, produced by TerraFirma, dated September 2020, reference TFW_0920_12032_GGVR_V01. The report provides an overview of the installation of the gas protection system carried out with site verification pro formas (inspection sheet) noting non-conformities and actions taken

to redress. Photographic evidence is provided of ventilation voids, air block spacing, service entries, and membrane installation with relevant repairs etc. Verification is provided for plots 37 to 119.

- **Imported Fill Validation Report Proposed Residential Development Herbert Road, Newport**, produced by TerraFirma, dated October 2016, reference 12032/VR1. Understood to be an earlier version of the '*Preliminary Interim Earthworks Report*' and the '*Earthworks Validation Report*' detailed below. No appendices provided.
- **Imported Fill Validation Report Proposed Residential Development Herbert Road, Newport**, produced by TerraFirma, dated September 2016, reference 12032/VR1. Understood to be earlier an version of the '*Preliminary Interim Earthworks Report*' and the '*Earthworks Validation Report*' detailed below. No appendices provided.
- **Herbert Road, Newport Letter** from Terra Firma to NHBC (Steve Moreby) dated 29th July 2020, reference RH/12032/NHBC, relating to capping of garden and landscaped areas. The letter provides an overview of the clean capping requirements in the various phases of the site. Letter seeks to confirm there is no requirement for a marker layer / no dig barrier at the base of capping soils for Phase 2b – 2d and 3c - 3e. The letter seeks to address a condition relating to '*NHBC Standards Chapter 4.1 and requirement for placement of min 600mm of clean capping soils above a geotextile/granular marker layer in all gardens/soft landscaped areas*'. The letter annexes another letter from TerraFirma to Peter Mackintosh of NCC dated 24th August 2017 entitled '*Herbert Road, Newport: Imported Piling Mat Material, Main Site*'. The letter details import of 500m³ of crushed material for use as the piling mat that had some exceedances of assessment criteria following analysis (1 out of 30 samples contained asbestos, 2 exceed lead criteria, with 3 exceedances of PAH species). The letter concludes that there will be no risks to relevant receptors following implementation of the 600mm clean cover soils. Phases 2A and 3A and 3B are stated to require 600mm of clean soils and double no-dig barrier.
- **Herbert Road, Newport: Imported Piling Mat Material, Main Site Letter** from TerraFirma to Peter Mackintosh, dated 24th August 2017, reference RH/12032/Let46. This letter is also provided as an appendix to the 'Herbert Road, Newport Letter' above as well as in its own right. It is unknown whether Peter Mackintosh / NCC provided confirmation / agreement with the findings.
- **Radbar Amber 1 Membrane Technical Specification** – it is unclear why this document has been provided as no reference to it has been found elsewhere and the gas validation report refers to a completely different product (Solshield Gas Resistant Membrane).

- **Settlement Report** - Proposed Residential Development Herbert Road, Newport, produced by TerraFirma, dated August 2018, reference 12032/SR – refers to geotechnical aspects only.
- **Validation of Capping: Phase 1, Herbert Road, Newport Letter** from TerraFirma to Tom James (Engie) dated 30th July 2018, reference RH/12032P1/Validation. Relates only to three apartments in Phase 1 with landscaped communal lawns. States that no specific remedial measures required but Engie specified 600mm of clean cover with no dig-layer (barrier membrane). The report provides confirmation of soil suitability and no exceedances of generic assessment criteria. It is not clear from photographs provided what depth of material has been placed. I understand this is highlighted within the WRS response for application reference CONNIN/20/0636 which concerned Phase 1 only. There is also some confusion with regards to gas protection in this area. The TerraFirma Site Investigation Report 2017 states site is CS2 (subject to further gas monitoring) and therefore protection measures would be required.
- **'Earthworks Validation Report Proposed Residential Development Herbert Road, Newport Phases 2 -4'** produced by TerraFirma, dated October 2017, reference 12032/VR1-V3. The report appears to be the latest version of previous reports referred to as *'Preliminary Earthworks Report'* (June 2016), and *'Imported Fill Validation Reports'* (September 2016 & October 2016) The report provides an overview of contamination assessment undertaken in 2013 noting presence of contaminants which exceeded the assessment criteria (arsenic, cyanide, PAH, ACM, PCBs) and remedial measures were required. Risks to human health are to be prevented by the thick layer of imported soils (flood raise) and a 600mm clean cap of soils, and gas protection measures, the exact nature of which to depend on further monitoring. Assessment does not identify a significant risk to ground water and therefore no further action was proposed in this respect although it is understood monitoring is ongoing. The report includes details of approximately 45000m³ of imported fill for the land raise (including the 25000m³ reported in the earlier docs) from 8 sites imported between June 2015 to June 2017. The material has been assessed for chemical suitability as per the remedial criteria with some exceedances noted. The report states that the exceedances have been agreed with the Local Authority as suitable for use and references to correspondence are provided. An official response from NRW and NCC is noted as pending. Numerous documents are noted on the contents page of the report to be within the appendices however no appendices have been provided on the planning portal.
- **'Preliminary Interim Earthworks Report Herbert Road, Newport'** produced by TerraFirma, dated June 2016, reference 12032/ER1 (document is in 4 parts). This appears to be an earlier version of the *'Imported Fill Validation Reports'* (Sept 2016 and Oct 2016), and *'Earthworks Validation Report'* (October 2017) and details the import of approximately 25000m³ of material from 5 sites. The report includes in the

appendices previous contamination assessment undertaken including 'Terra Firma (Wales) Limited Geo-environmental and Geo-technical Report' No. 12032 2013 (Annex A) and 'Terra Firma (Wales) Limited Remediation Strategy Report 2015' (Annex B).

The Terra Firma Remediation Strategy 2015 contained within the Preliminary Interim Earthworks report provides a summary of site required remedial works in section 3.1 (Remediation Summary) as below:-

3.1 Remediation Summary

"Based on the site investigative works the following is proposed to protect construction workers and future site end users:

- 1. Cover of site with up to 2.75m of imported fill (intended to raise site above flood plain). Riversee Limited is to raise the site to a level of 8.8m AOD before passing the site on to the developer. This will be an increase in level by up to 1.6m. The developer will further raise the site to a level of 9.95m AOD.*
- 2. Capping with 600mm of clean soil (subsoil and topsoil) in garden and landscaped areas.*
- 3. Current minimum requirements is the installation of a 2000 gauge membrane suitable for protection against ground gas, radon gas and PCB vapours in all new buildings. Passive under-floor venting and taping and sealing of all joints will also be required. Dependant on further on-site flux box gas monitoring (see Section 3.4) more robust gas protection measures may be required.*
- 4. Sampling and analysis of groundwater prior to and following initial fill works.*
- 5. New water supply pipes to be chosen in accordance with UKWIR Report Ref No 10/WM/03/21 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites'.*

The report also sets out the requirements relating to suitability for imported fill material including assessment criteria and sampling frequency of 1 per 250m³ of material for engineered fill and 4 in 250m³ for the 600mm clean cover capping layer and verification reporting.

WRS have also briefly reviewed documents relating to planning reference 18/0293 to try to understand site conditions, previous works undertaken, and relevant comments made in respect of contaminated land. Various information has been found within the various parts of the Environmental Statement and the document entitled 'Geotechnical & Geo-environmental Site Investigation Report for Phase 1' undertaken by TerraFirma dated 2017. The 2017 site investigation report for Phase 1 identified that contamination encountered in soils (TP2 lead & TP6 asbestos) was in the location of the new road and would be therefore suitably covered in hard-standing, CS2 gas protection measures were required in the apartment buildings subject to further monitoring, and that no specific remedial/mitigation measures

were required in garden and landscaped areas. This presents deviation / update to the previously agreed remedial strategy 2015 as referred to above.

WRS Comments and Recommendations:

The site appears to have a complex history with investigation and remediation works dating back to the earlier 2000s with planning cases also dating back as far (eg. 00/0768 and 13/1279). It is understood that during that time various assessment has been undertaken and proposals for remediation have evolved slightly and that there has been ongoing communication with the Local Authority.

Following site clearance and removal of heavily contaminated material the site has been subject to a significant import of material for flood defence comprising approximately 45000m³ of fill equating to a raise of approximately 2.75m in areas brought to site between June 2015 and June 2017. It is indicated from the information provided that the material has been sourced from 8 sites and has been chemical assessed for suitability with some exceedances of assessment criteria noted. It is understood from correspondence provided that materials were assessed and still considered suitable for use, subject to the provision of the clean cover cap, and agreement sought from the Local Authority/NRW.

Following the land raise the residential and apartment properties were to be subject to gas and vapour protection measures due to elevated methane and carbon dioxide and residual PCBs, and provision of a clean cover layer system of 600mm in garden and landscaped areas. It is understood that the development has progressed in various phases, the referencing of which appears to have changed over time.

WRS would like to raise the following points for clarification:-

- The TerraFirma letter to NHBC dated July 2020 seeks clarification that a no-dig barrier is not required beneath phases 2B – 2D and 3C – 3E. Please could clarification be provided as to why the no-dig barrier is not required in this area of the site but still recommended for Phases 2A, 3A and 3B?
- The TerraFirma letter above also refers to (appends) an earlier letter to Peter Mackintosh at NCC dated August 2017 concerning import of 500m³ of material for a piling mat that had some exceedances of site assessment criteria for lead, arsenic and PAHs. Please could confirmation of approval of this material be provided?
- The gas verification report states that no gas protection measures are required in Phase 2A however Phase 1 has been classified as CS2 and the remainder of the site as CS3. Please could justification be provided as to why no gas protection measures are required in Phase 2A?
- A number of the assessment reports refer to categorisation of the gas regime having been done so prior to the import of fill materials and contain reference to further gas monitoring being required once the material had been brought onto the site. This is illustrated by Section 3.1 of the '*Remediation Summary*', copied above, in point 3. Has any further monitoring been carried out since the material has been imported and has this been provided for review?

- The capping validation report provided for Phase 1 has also been submitted under discharge of conditions reference CONNIN/20/0636 and commented on in a previous WRS response. Although sampling of the material to be used shows suitability and compliance with assessment criteria the information provided does not evidence the depth of placement of the material. Also no details of gas protection measures incorporated in Phase 1 have been provided for this discharge request (CONNIN/20/0875).
- Section 3.1 of the '*Remediation Summary*' point 4 refers to requirement for sampling and analysis of groundwater following placement of the imported fill material. Some reference is made in the '*Earthworks Validation Report*' however it is indicated that more is to follow. Has this work been completed and an update provided?
- Inclusion of the 'Radbar Amber 1 Membrane Technical Specification' is not understood as no reference to it has been identified in any of the other documents provided. The gas verification and validation reports refer to 'the Solshield Ultra Gas Barrier'.
- Appendices for a number of reports (*Earthworks Validation Report* – October 2017, and *Imported Fill Validation Reports* – Sept 2016 and Oct 2016) have not provided for review

It should be noted that as part of the review WRS have not been able to identify a copy of the Decision Notice for application reference 18/0293 amongst the application documents. WRS have requested a copy to be provided from NCC but still do not currently have access to it. It is therefore not possible for WRS to comment specifically on the discharge of condition 16 at this time, which is understood to relate to 'Remediation Verification', however it is likely that no discharge of conditions would be recommended until clarification is provided to the points raised above.

If you have any further queries regarding this matter or information provided in support of the application requiring comment by the Land and Air Quality Team please do not hesitate to contact us via wrsenquiries@worcesterservices.gov.uk or 01905 822799 quoting the above reference number. I hope the above is useful to you.

Yours Sincerely,

Stephen Williams
Senior Technical Officer
Land and Air Quality Team
Worcestershire Regulatory Services