

## **APPENDIX 11.5:**

### **THREE ELMS NORTH EAST QUARTER: DEVELOPMENT MITIGATION PLAN**



# Three Elms Northeast Quarter Development

## Mitigation Plan

B031140

Church Commissioners for England

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Prepared on behalf of Tetra Tech Environmental and Planning (Northern Ireland) Limited

## Explanatory Note

This plan details the mitigation measures outlined in the following reports:

- WYG report reference A101670: 'Three Elms Hydrogeological Risk Assessment Desk Study & Site Investigation Report', dated March 2020.
- WYG report reference A101670: 'Three Elms Ground Investigation Report', dated March 2020.
- Tetra Tech report reference B031377: Ground Conditions Interpretive Report, dated June 2022
- Tetra Tech report reference B031377: 'Three Elms Hydrogeological Risk Assessment', dated June 2022.
- Tetra Tech report reference A072489-2: 'Flood Risk Assessment & Drainage Strategy' dated June 2022

This plan has been prepared to house the supporting detail required to satisfy the draft planning conditions and S106 requirements for the proposed Three Elms development, Hereford. Each mitigation heading below aligns with the current list of draft conditions. Each section provides details of the mitigation measure(s) proposed and the reasons why they are required.

## **1.0 Phasing Condition**

- 1.1 Prior to commencement of any development a phasing plan shall be submitted to and approved in writing by the Local Planning Authority (LPA) identifying the phasing for the development including:
- Residential phase(s) and associated infrastructure,
  - Employment phase(s) and associated infrastructure,
  - Infrastructure phases(s),
  - Timing of delivery of on-site public open space.
- 1.2 The development shall be constructed in accordance with the agreed phasing plan, unless an alternative plan is submitted to and agreed in writing by the LPA.

## **2.0 Compliance with Agreed Excavation Strategy Condition**

- 2.1 An excavation strategy shall be submitted to and approved in writing by the LPA based on the excavation strategy principles agreed with the EA as follows:
- SuDS ponds and flood storage areas constitute 'wide' excavations;
  - Lining of SuDS ponds is acceptable as a mitigation (with a requirement for a 'very robust lining' in SPZ1);
  - Lining of a flood storage area is not considered to be a practical option;
  - The strategy takes account of the thickness of till (boulder clay) over the aquifer, as per Appendix E of the 'Flood Risk Assessment & Drainage Strategy'. This strategy applies to both the left and right banks of Yazor Brook; (Permeability should also be considered)
  - Wherever possible, all excavations in SPZs should be reasonably minimised bearing in mind the overall approach set out in further detail below.
  - Given the likely reduction in the area of SPZ 2 within the site, it is recommended that only one approach is defined for this zone, rather than splitting it into two separate

sub-zones. This should follow the previous SPZ 2a approach with 2.0m of Till cover maintained, or 1.5m with lining (7).

- SPZ 1: 'Wide excavations' only allowed for SuDS with robust lining. No flood storage excavations allowed.
- SPZ 2: 2.0m of till cover to be maintained; if agreed lining is provided till cover could be reduced to 1.5m.

2.2 . The revised excavation strategy enables the construction of SuDS within SPZ 1, if 'very robust lining' is provided, however it requires a 2m (or 1.5m if SuDS are lined) depth of till cover in areas within SPZ 2, as it removes the previously agreed division of SPZ 2. Following further consultations with the EA, it has been confirmed that the minimum till cover requirements set out for SPZ 2 are also applicable in SPZ 1. The EA also clarified what constitutes 'very robust lining', and this is detailed in the correspondence in Appendix D of the 'Flood Risk Assessment & Drainage Strategy'.

### **3.0 Geophysical Survey Condition**

3.1 Prior to commencement of any development further geophysical surveys are proposed to determine the presence and thickness of glacial till. The geophysical survey shall be used to inform the design of the following:

- Formation & finished floor levels;
- Detailed drainage plans;
- Foundation;
- SuDS basins; and
- Flood storage basins.

3.2 The geophysical survey is required to allow compliance with the agreed excavation strategy and allow for further characterisation of the nature, extent and severity of the contamination respectively.

3.3 The interpreted results of the geophysical survey shall be submitted to and approved in writing by the LPA.

#### **4.0 Contamination & Unexpected Contamination Condition**

- 4.1 Further targeted ground investigation is proposed as part of the proposed reserved matters planning application, this is expected to include targeted investigation of:
- Potential made ground deposits at the site.
  - Potentially infilled areas where the Yazor Brook has been straightened in the south of the Site to confirm the presence or otherwise of infilled materials and existence of ground gas.
- 4.2 The site investigation will, where relevant, be used to characterise fully the nature, extent and severity of contamination. This characterisation will incorporate a conceptual model that takes account of the potential pollutant linkages and an assessment of risk to identified receptors.
- 4.3 A copy of the ground investigation report and associated characterisation assessment shall be provided to the LPA prior to the commencement of any development.
- 4.4 If the ground investigation report identifies unacceptable risk(s), including those to the water environment and the water supply (borehole) receptors, a remediation strategy specifying what remedial works and measures are necessary to avoid this risk of contaminants/or gases impacting receptors during the development phase.
- 4.5 The remedial strategy shall be provided to the LPA for written approval.
- 4.6 If, during works on site, contamination is encountered which has not previously been identified, work shall cease on that part of the site until an appropriate remediation strategy has been submitted to the LPA and the LPA have given their written approval of the same.

#### **5.0 Materials Management Plan Condition**

- 5.1 Prior to the commencement of any development, a Materials Management Plan shall be submitted and approved in writing by the LPA. The plan shall describe how soils will be stored, protected and re-used pre and during construction. Works shall be carried out in accordance with the approved plan.

## **6.0 Construction Environmental Management Plan (CEMP) condition**

6.1 Prior to commencement of any development, a Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the LPA following consultation with the Environment Agency. The CEMP will be in accordance with the mitigation measures set out in the Environmental Statement produced by Waterman for the North East Quarter Development (ref. WIB14013-115-R-1-5-1) and should address the following matters:

- The anticipated schedule and programme of works.
- The construction activities and plant to be used, including any mitigation measures to be employed.
- Reference to, and provision of, a framework for compliance with relevant legislation and guidance including groundwater quality control limits or target criteria where practicable.
- Reference to, and adherence with Guidance for Pollution Prevention (GPPs) and guidance at <https://www.gov.uk/topic/environmental-management>.
- Details of what monitoring, and record-keeping will take place prior to and during the construction stage. This will include details of how the CEMP control measures will be periodically reviewed.
- The proposed location, number and type of oil interceptor required to manage waters generated on site as part of the construction stage.
- Proposed routes for heavy goods vehicles travelling to and from the site;
- Impacts on public highways, including temporary carriageway /footpath closures and diversions; and
- Best practice pollution prevention measures such as use of bunding and storage of potentially hazardous materials.
- Details of how and when plant and equipment will be cleaned and or disinfected prior to entering the Site, including the requirement for routine inspections of temporary plant arriving on site to provide confidence that the contractor is implementing the mitigation measures.
- The location of site compound and temporary welfare/storage facilities, including storage of chemicals. The site compound will be located away from the Yazor Brook, and in areas where clay rich glacial till deposits are exceed a thickness of 2.5m.

Compounds will be located on hardstanding and serviced by dedicated drainage. Additionally, the site compound will be located away from the SPZ1 and abstraction boreholes.

*Hydrological and hydrogeological mitigation measures:*

- Early establishment of new water management and drainage features for construction vehicles such as ditches, bunds and silt traps;
- Details of where stockpiled materials will be located, so that they are adequately setback from Yazor Brook;
- Details of what excavation limitations apply.
- Details of what activities and site works can take place during heavy rainfall events.
- Details of what groundwater monitoring will be carried out before, during and immediately after construction. This will include the establishment of monitoring points at locations up-gradient and down-gradient of proposed construction works.
- The CEMP will contain details of what steps will be followed should an impact to groundwater quality be identified.
- A hydrogeologist will be employed to undertake a watching brief during key stages of the development, particularly during the progression of works in more sensitive areas (i.e. where the till thickness is thin).
- The CEMP will detail what temporary protection measures will be put in place for abstraction boreholes (e.g. this may include the placement of concrete 'o' rings around the headworks of boreholes, a 10m buffer zone/set back distance or the use of temporary barriers).
- The CEMP will include details and a plan showing the location of any buffer zones/set-back distances required around third-party pipework / infrastructure on or close to the site boundary.
- The CEMP will detail the process to be employed when removing, decommissioning, replacing or protecting existing field drains identified during the geophysical survey and or other ground investigation works pre-development.
- It is expected that any existing field drains encountered will be removed and replaced with the approved proposed site surface water system. This is to protect the underlying gravel aquifer.

- The CEMP will detail how a 0.5m freeboard is to be maintained or additional mitigation provided (e.g., double skinned foul pipes, specialist trench lining) in all linear excavations. This is to enable the development to be designed in such a manner that it avoids the most sensitive areas.

6.2 The development shall be carried out in accordance with the approved CEMP unless otherwise approved by the Council.

## **7.0 Emergency Response Plan (ERP) Condition**

7.1 Prior to commencement of any development, an Emergency Response Plan (ERP) shall be submitted to and approved in writing by the LPA following consultation with the Environment Agency. The ERP will be in accordance with the mitigation measures set out in Environmental Statement (ref. WIB14013-115-R-1-5-1) and should address the following matters:

- The Emergency Response Plan will detail what provision shall be made in respect of on-site equipment for containment of accidental spillages. This may include equipment such as emergency booms, spill pads and the use of absorbent materials to soak up ground spillages.
- Processes for liaising with the local community and mechanisms for registering and addressing complaints.
- Process for liaising with Avara Foods and Heineken on matters relating to activities that could impact the integrity of their water supplies locally.

## **8.0 Surface Water Drainage Condition**

8.1 Prior to commencement of any development a detailed surface water drainage scheme shall be submitted to and approved by the LPA. The surface water drainage scheme design will have cognisance to the groundwater vulnerability and be protective of the sensitive groundwater resources. The scheme shall also be consistent with the approved excavation strategy.

8.2 A condition / obligation will set out the long-term maintenance arrangements for all parts of the system.

- 8.3 The scheme shall subsequently be implemented in accordance with the approved details prior to occupation of any properties.

## **9.0 Foul Water Drainage Condition**

- 9.1 Prior to commencement of any development a detailed foul water drainage scheme shall be submitted to and approved by the LPA in consultation with Welsh Water. The foul water drainage scheme design will have cognisance to the groundwater vulnerability and be protective of the sensitive groundwater resources. The scheme shall also be consistent with the approved excavation strategy and any proposed phasing.
- 9.2 A condition / obligation will set out the long-term maintenance arrangements for all parts of the system.
- 9.3 The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.

## **10.0 Fluvial Flood Risk Condition**

- 10.1 To mitigate downstream flood risks as required by Herefordshire Core Policy HD5 the flood storage areas should be delivered as detailed on drawings provided at Appendix G of the Flood Risk Assessment and Drainage Strategy (ref. A072489-2) (or any revised drawings for such areas approved by the local planning authority to reflect the outcome of the geophysical survey) and in compliance with the approved excavation strategy.

## **11.0 Foundation Risk Assessment**

- 11.1 Prior to commencement of any development, a foundation risk assessment supported by foundation specific ground investigation with appropriate in-situ and laboratory testing shall be submitted to and approved by the LPA. All foundations shall be consistent with the approved excavation strategy. The development shall be carried out in accordance with the approved details.

## **12.0 S106 Obligation on use of Pesticides**

- 12.1 A management company will be established to manage the areas of public open space. A clause will be inserted in the S106 agreement requiring the management company to comply

with a management scheme including an obligation not to use pesticides and herbicides. The obligations will apply to the development scheme only and not the existing agricultural use. Wording to be agreed with Herefordshire Council.

## **13.0 S106 obligation regarding Occupier Education**

- 13.1 A S106 clause will require a householder pack to be issued to all future occupiers including a leaflet educating residents on how the use of chemicals could migrate to ground and abstraction boreholes. Signage will be erected within the development highlighting the sensitivity of the setting. Wording to be agreed with Herefordshire Council and the Environment Agency.