Mr Kevin Hutchinson - Principal
Development Control Officer (South)
Eden District Council
Mansion House Friargate
Penrith
Cumbria
CA11 7YG

Our ref: NO/2015/107824/01-L01
Your ref: Fairhill, Penrith

Date: 28 May 2015

Dear Mr Hutchinson

FAIRHILL, PENRITH - PHASE 1 AND ADJACENT MASTERPLAN
LAND TO NORTH OF FAIRHILL PARK, PENRITH

Thank you for an enquiry in regard to the proposed residential development on land in Fair Hill, Penrith, dated 11 May 2015.

Our Preliminary Opinion on this proposal is that the development as submitted raises some environmental concerns/issues and the developer will need to undertake further work to show how these issues can be satisfactorily addressed to ensure no adverse environmental impacts. Based on the information submitted, we wish to make the following comments:

Land Quality

We understand that the whole site (as pictured on masterplan attached with the email dated 11th May 2015) is considered as 2 separate developments; phase 1 development which covers land on Salkeld Road (approximately 4.2 ha) and the larger area to the north.

Please note that the Environment Agency has been consulted previously on residential development proposal at Salkeld Road (phase 1 development) and provided advice in regard to groundwater protection requirements. Please refer to our response dated 30th October 2014 (ref NO/2014/106780) for further details (attached).

Advice to Local Planning Authority / applicant in regard to development of the larger area to the north
The site is in the area underlain by the Penrith Sandstone designated as a principal aquifer. Geological maps indicate that in this area the aquifer is expected to be exposed at or close to the surface, with little or no drift cover shown to occur at the surface. The

presence of drift deposit would normally provide some natural protection to the underlying aquifer from activities taking place at the surface.

Part of this site is within Source Protection Zone 1 (SPZ1) and the remaining area is in SPZ2 associated with the groundwater abstraction boreholes at Fair Hill which abstract water for public water supply. Please find attached to the email a map with the extend of groundwater source protection zones.

The presence of SPZ 1 highlights the sensitivity of the area. The lack or limited superficial deposit makes the aquifer highly vulnerable to potentially polluting activities at the surface. In general residential development is considered to be at the lower end of the risk scale with respect to the protection of groundwater quality and resources. However, in certain areas and close to certain receptors the risk of development can increase significantly.

Considering the geology in the area, it is very likely that the proposed development would have sewerage system and foundations installed within the solid rock therefore directly within the principal aquifer. There is a risk of leakages occurring and not being detected until pollution of the groundwater abstraction source is caused.

The Groundwater protection: principles and practice (GP3) describes the Environment Agency's approach to the management and protection of groundwater. GP3 is available on the Environment Agency website
https://www.gov.uk/government/publications/groundwater-protection-principles-and-practice-gp3

Position statement A2 in the GP3 states: All development must be appropriate to the sensitivity of the site. Where the potential consequences of a development are serious or irreversible we will adopt the precautionary principle to the management and protection of groundwater, particularly in the absence of adequate information with which to conduct an assessment.

The Environment Agency would recommend that development within the SPZ1 is avoided. If other factors determine that these sites should go forward it will need to be considered in any planning application that we will expect higher standards of engineering and mitigation to be employed for any underground works and underground infrastructure.

For example, any planning proposal in SPZ1 must be accompanied by an acceptable hydrogeological risk assessment. Any activities that can adversely affect groundwater must be considered, for example:

- physical disturbance of the aquifer (see also Position statement N8, GP3);
- involve the installation of sewerage within the aquifer (Position statement G8, GP3).

If the risk assessment identifies unacceptable risks then the developer must provide appropriate mitigation. If this is not done or is not possible we will recommend that the planning permission is conditioned or may object to the proposal (Position Statement N7, GP3).

For development on land within SPZ2 we would also expect any planning applications to consider the vulnerability of the land and to propose suitable mitigation measures which will be employed to reduce the risk of pollution of groundwater.

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If development in these areas comes forward we would expect site owners, developers and operators to comply with any relevant statutory codes of good practice and to have due regard to our advice and guidance, and to other reputable standards and guidance (e.g. British Standards).

Yours sincerely

Mr Dave Hortin (on behalf of Jeremy Pickup)
Planning Advisor - Sustainable Places Team

Direct e-mail clplanning@environment-agency.gov.uk

Mr Giles Finnegan - Senior Engineer
Story Homes
Marconi Road
Burgh Road Industrial Estate
Carlisle
CA2 7NA

Our ref: NO/2014/106780/02-L01
Your ref: Salkeld Road, Penrith

Date: 30 October 2014

Your reference: Salkeld Road, Penrith

Our reference: PAC/CMBLNC/00023

For the attention of: Giles Finegan and Darren Linklater

PROPOSED DEVELOPMENT OF 97 DWELLINGS WITHIN SOURCE PROTECTION ZONE – FURTHER INFORMATION SUPPLIED

LAND TO NORTH OF FAIRHILL PARK, PENRITH

Thank you for consulting the Environment Agency with further details regarding the drainage infrastructure for the proposed housing development at Salkeld Road in Penrith. Subsequent to our meeting on 20 August 2014, we received further information on 22 September 2014 from Darren Linklater of iD Civils Design Ltd. Our response to this further information is below.

Environment Agency position

We have reviewed the submitted letter report dated 9th September 2014 and the site investigation report dated 2nd June 2014 regarding the proposals for drainage infrastructure for the development of housing on the site off Salkeld Road, Penrith.

Based on the modified information we can confirm that, should we be consulted on the proposed development by Eden District Council through the planning process, we would not have any objections to the proposed development. However we would expect to see a range of details and information submitted with such a planning application, and for conditions to be attached to any planning permission. We make comments on these matters further below.

Advice to Story Homes Ltd

The site investigation report has identified limited superficial geology comprising mostly granular material with some clay bands. The underlying solid geology comprises the

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principal aquifer of the Penrith Sandstone, which is found at or close to the surface across the site.

The site lies within a groundwater Source Protection Zone 1 for a nearby public water supply abstraction, and as such the site is considered to be particularly sensitive to the input of pollutants at the surface. In accordance with our position statements in Groundwater protection: Principles and practice (GP3), the Environment Agency would require the highest specification pipework and design for the sewerage system at this site. Additional mitigation measures would also be required during the construction phase of the development to ensure that the risk of pollution occurring is minimised.

The submission proposes three mitigation measures in the design of the sewerage infrastructure to reduce the possibility of pollution:

- Trench excavations beneath roadways for both foul and surface water drainage will be lined with a 1 metre thick engineered clay layer beneath the pipework, including regularly spaced clay stanks;

- Trenches beneath gardens and plots will be lined with a 0.5 metre thick engineered clay layer beneath pipework and wrapped in an impermeable HDPE liner; and

- The surface water attenuation tanks will be twin walled, with excavations lined with a 1 metre thick engineered clay layer beneath the tanks.

An inspection regime is proposed to supervise the installation of the liner system and a validation report will be issued to provide confirmation and assurance that mitigation measures have been constructed/implemented as per the agreed design.

A construction phase site plan is proposed to mitigate against the risk of pollution during the construction phase. The developer will need to refer to all relevant pollution prevention guidelines in this respect. In particular it will need to be ensured that any facilities for the storage of oils fuels or chemicals is appropriately bunded and contained to prevent the discharge of contaminated fluids to ground. It would be preferable to locate any site compound as far as possible from the public water supply boreholes.

A management plan for the public open space is to be produced to ensure that the management of the land closest to the public water supply boreholes is effectively managed to reduce the possibility of pollutants entering groundwater. For example this should include restrictions on the use of herbicides or pesticides.

We would expect any planning application to be accompanied by full drainage plans and details demonstrating how the proposals outlined in the letter report dated 9 September 2014 will be incorporated into the development. We would be recommending to Eden District Council that the mitigation measures, inspection regime, validation report, site construction management plan, and a management plan for the public open space be secured by way of planning conditions on any planning permission.

Additionally we would require:

- Confirmation that the imported clay material with which it is proposed to line the trenches will be impermeable. This could be in the form of permeability test

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reports from a supplier demonstrating that the material has a permeability less than 1 x10^{-9}; and

- Trapped gulley pots should be installed to control pollutants entering the surface water drainage system.

If you would like to discuss any of the above comments, please feel free to contact me via: clplanning@environment-agency.gov.uk or ph: 01768 215 716.

Yours sincerely

Jessica Patten
Planning Advisor - Sustainable Places Team
Direct e-mail clplanning@environment-agency.gov.uk

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