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**Our ref:** KT/2011/113113/05-L01  
**Your ref:** TM/11/01191  
**Date:** 27 July 2012

**Proposal:** ERECTION OF 177 DWELLINGS, CREATION OF 6.82HA OF OPEN SPACE INCLUDING LOCAL AREA OF EQUIPPED PLAY (LEAP), NEW VEHICULAR ACCESS ONTO HAUL ROAD AND MODIFIED VEHICULAR ACCESS ONTO QUARRY HILL ROUNDABOUT. PROVISION OF ROADS, FOOTPATHS, LANDSCAPING AND ALL ASSOCIATED INFRASTRUCTURE, REMOVAL OF BRICK DECK TO ISLES QUARRY EAST.

**Location:** ISLES QUARRY, QUARRY HILL ROAD, BOROUGH GREEN, SEVENOAKS.

Dear Ms Egerton,

Thank you for your letter received 31 May 2012 and the request for our consultation. Please note this letter supersedes our previous correspondence dated 12 July 2011 (KT/2011/113113/01-L01), 05 August 2011 (KT/2011/113113/02-L01) and 22 June 2012 (KT/2011/113113/03-L01) and supports that of 30 August 2011 (KT/2011/113113/04-L01).

#### **Environment Agency position**

The proposed development will only be acceptable if the planning conditions in this letter are included on any planning permission granted.

**Condition 1:** The development hereby permitted shall not be commenced until such time as a scheme to dispose of foul and surface water has been submitted to, and approved in writing by, the local planning authority. The scheme shall be implemented as approved.

**Reason 1:** To ensure adequate disposal of surface water, and to ensure the risk of surface water flooding is appropriately managed.

*For design purposes, analyses should normally be based upon the critical 2yr, 30yr and 100yr rainfall events. Relevant supporting MicroDrainage calculations and drawings should be submitted in order for us to discharge this condition (upon review).*

**Condition 2:** Prior to the commencement of the development approved by this planning permission (or such other date or stage in the development as may be agreed in writing with the Local Planning Authority), the following components of a scheme to deal with the risks associated with contamination of the site shall each be submitted to and approved, in writing, by the local planning authority:

1. A preliminary risk assessment which has identified
  - a. all previous uses;
  - b. potential contaminants associated with those uses;
  - c. a conceptual model of the site indicating sources, pathways and receptors;
  - d. potentially unacceptable risks arising from contamination at the site.
2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.

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3. The results of the site investigation and detailed risk assessment referred to in (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

Any changes to these components require the express consent of the local planning authority. The scheme shall be implemented as approved.

**Reason 2:** To ensure development does not result in unacceptable risks to groundwater, in the underlying principal aquifer within Source Protection Zone 3 for a public water supply. To ensure development is carried out in accordance with PPS 23: Planning and Pollution Control to deal with risks associated with historic contamination.

**Condition 3 :** Piling or any other foundation designs using penetrative methods shall not be permitted other than with the express written consent of the Local Planning Authority, which may be given for those parts of the site where it has been demonstrated that there is no resultant unacceptable risk to groundwater. The development shall be carried out in accordance with the approved details.

**Reason 3:** To ensure ground improvement works are carried out with due regard to the risks to groundwater presented by contamination present in the made ground beneath the site, as highlighted from site specific investigations.

**Condition 4:** All shared surface water drainage infrastructure shall be publicly accessible from the point of connection to each individual dwelling through to the final discharge point.

**Reason 4:** To ensure access for maintenance purposes by the appropriate body responsible for drainage maintenance and to minimise the risk of flooding.

We also recommend the Local Authority request entering into a s106 agreement with the applicant to cover the issue of long term maintenance of the proposed drainage infrastructure. We understand Kent County Council have been identified as the lead Flood Local Authority and will set up a Sustainable Drainage Approval Board (SAB). The SAB will be responsible for receiving commuted sums and undertaking maintenance of the approved Sustainable Drainage Systems. This will ensure future maintenance of the drainage infrastructure and therefore minimise flood risk both on the site and elsewhere as a consequence of the development.

If the above cannot be achieved we recommend the following condition;

**Condition (5):** The applicant shall submit, to the local planning authority, a long term surface water drainage management plan, to be undertaken by a competent organisation. The frequency and means of maintenance should be based on guidelines within C697: The SUDS Manual, published by CIRIA. The management plan shall be implemented on written approval by the local planning authority.

**Reason (5):** To ensure appropriate long term maintenance of the surface drainage infrastructure and to minimise the risk of flooding.

### **Supporting notes**

#### **Groundwater Protection**

The site lies in a sensitive setting with regard to groundwater, being underlain by a principal aquifer and within Source Protection Zone 3 for the Borough Green public groundwater abstraction.

As such, based on information provided so far, we consider that discharging into the made

ground at the site would be unacceptable due to the risk of mobilising contamination via preferential pathways. Soakaways may also be unsuitable from an engineering perspective due to the risks of creating ground instability.

We note that in section 3.3.1.10 of the revised Flood risk assessment (FRA) (Scott Wilson November 2011) our concerns regarding potential contamination of the aquifer have been taken on board.

#### Land Contamination

We note the conclusions of the Geo-environmental and Geotechnical Ground Conditions Report 2010 (Scott Wilson, April 2011). In general the conclusions are acceptable and the proposals for further investigative works at the site are satisfactory. We would agree that further delineation works are needed, especially in Area 1, to establish hydrocarbon impacts on soil (and thus potential for impacts on groundwater).

We note the comments regarding the limitations of leachate testing that have been carried out so far during the investigation. Further comment on potential risks to groundwater across the whole site should be made once further investigations have been completed (in support of condition 2). A detailed risk assessment/remediation strategy (including target concentrations protective of human health and groundwater for materials retained on site following development) would be expected.

#### Piling

With respect to any proposals for piling through made ground, we would refer you to our guidance document "Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention". <http://publications.environment-agency.gov.uk/PDF/SCHO0202BISW-E-E.pdf> . We advise the approval of piling methodology be further discussed with us to design appropriate piling regimes at the site.

#### Flood Risk

Section 3.3.18 of the FRA states that detention basins, storage tanks and oversized pipes will be provided under private roads and the public open space to store attenuated flows - the FRA then goes on to say that during the detailed design, the method of storage will be reviewed to determine the most suitable method - "*which will either be attenuation tanks or lined permeable paving*".

We would like to remind the applicant that providing the bulk of the attenuation by tanks is not best practice. We appreciate the difficulty due to the restriction on infiltration and the feasibility of utilising swales, however we do not support the current plans. We recommend the applicant consider the use of rainwater harvesting to contribute towards the storage requirement for the site, reducing the reliance on modular storage and reducing the consumption of domestic potable water. This option would contribute towards increased biodiversity and the amenity potential on site as well as providing a more sustainable means of managing surface water runoff and would contribute towards a reduction across the catchment. As a minimum, we expect to see a mix of attenuation in the form of permeable paving, storage tanks and the provision of water butts for each dwelling.

The Micro Drainage (MD) outputs including within the submitted FRA include pipe runs for the proposed system under various storm conditions and appear to be based on the 360 minute winter storm. It is assumed that this storm has been found to be the critical event which has informed the storage requirement of 1330m<sup>3</sup> but no information has been submitted to substantiate that. This information should be provided in order to discharge the drainage condition (condition 1).

The design of a surface water management scheme can significantly effect the design and layout of the site, which is why it is of benefit to the developer to consider it early.

We note that section 3.3.1.4 states that the drainage under the adoptable roads will be designed to ensure that there is no surcharging under the 1 in 1 year storm. This is likely a typing error but to clarify, there should be no surcharging under a 1 in 2 year storm.

### **Informatives:**

The River Bourne is a designated 'main river' under our jurisdiction for the purposes of its land drainage functions. Written consent is required under the Water Resources Act 1991 and associated Byelaws prior to the carrying out of any works in, over, or under the channel of the watercourse or on the banks within eight metres of the top of the bank, or within eight metres of the landward toe of any flood defence, where one exists. For maintenance reasons, we will not normally consent works which obstruct the eight metre Byelaw Margin.

Although we have a right to enter onto the land within the 8 metre Margin to carry out maintenance and repairs, we are not under any obligation to do such work. In the absence of any express agreement to the contrary, maintenance or repair of the riverbank and any structure affecting the channel is the responsibility of the riparian owner. We are aware that works are required to upstream sections of the River Bourne to the east and on the outside of the site boundary (but within the curtilage of land ownership). Specifically, desilting is required within the open section of watercourse and possible renewal/repair of the culverted section. Both of these remedial actions will restore/improve the hydraulic capacity of the river, and reduce flood risk to nearby receptors. We advise that these works are undertaken as soon as possible in order to reduce flood risk within the overall area.

### **Pollution Prevention**

Care should be taken during and after construction to ensure that all fuels, oils and any other potentially contaminating materials are stored (for example in bunded areas secured from public access) so as to prevent accidental/ unauthorised discharge to ground. The areas for storage should not drain to any surface water system.

Where it is proposed to store more than 200 litres (45 gallon drum = 205litres) of any type of oil on site it must be stored in accordance with the Control of Pollution (oil storage) (England) Regulations 2001. Drums and barrels can be kept in drip trays if the drip tray is capable of retaining 25% of the total capacity of all oil stored.

### **Adjacent Landfill**

The proposed development lies approximately 250m (at the closest point) north of Stangate Quarry landfill. We currently regulate this site under two environmental permits, with the landfill classified as an A4: Household, Commercial & Industrial Waste Landfill

The landfill is no longer accepting waste, but is still generating landfill gasses which are collected and either flared or used to generate electricity at the gas utilisation plant (GUP) to the north of Mill Lane.

Our current concerns and priorities for the site are as follows:

- Capping remedial works: Our immediate concern regarding the site is the required repairs to the cap. There are areas of the site where cracks have appeared in the capping and previous fires within the waste have caused significant craters in the surface, leading to further damage to the capping. We have evidence that these cracks and damage are allowing landfill gas to escape from the site. The cracks and damage have the potential to cause additional in-waste fires (if oxygen is able to ingress into the landfill). This can also lead to water entering through the cap and into the waste, which could increase the production of leachate and the potential for pollution of groundwater.

FCC, the site operators, have prepared and submitted a Construction Quality Assurance Plan outlining the repairs needed to the cap. We are currently working with FCC to ensure these repairs are made as a priority.

- Permitting the GUP: The landfill is currently operating under two outdated environmental permits, one which covers the majority of the site and the second covers a small area in the north-eastern part of Stangate West. The GUP and landfill gas flares are currently not permitted and the emissions from which are currently unregulated. We are working with FCC towards regulating the site with a modern permit to incorporate the whole landfill and the GUP under one permit. We are currently processing the application and once

additional information has been received from FCC we will be in a position to determine it, this will hopefully take place by September 2012.

- Restoring the integrity of the boreholes: A national review of all closed landfills led to Stangate Landfill being identified as a high risk site requiring a landfill gas review. The review took place in 2011 and identified work needed to improve the state of repair of some of the gas extraction wells and monitoring boreholes, and that landfill gas management could be improved.

In summary immediate work is required to repair the current damage to the cap and infrastructure, this will improve the gas collection from within the waste, lead to reduced emissions from the site and increased energy production. Soils will need to be imported to site (subject to the relevant permissions) to complete these works.

The repairs to the cracks in the capping and to the areas suffering from slumping are essential to restore the integrity of the landfill, prevent gas escaping and water entering the waste. Once the landfill is fully restored to the requirements of KCC planning permission we consider that further remediation works will be required in the future, due to additional settlement. This could involve importation of more soil and further access to the landfill by drilling rigs and other heavy equipment will be required.

With regard to on going management of the site, we envisage that FCC will need suitable vehicular access to enable the importation of more soils for capping remedial works, both to address the previously mentioned, identified damage and any additional damage caused by landfill settlement in the future. On going maintenance of the gas and leachate collection and monitoring infrastructure may also require the transportation of large equipment, such as drilling rigs, onto site. The same applies to the maintenance of the GUP and flares within the gas compound. Large tankers currently collect leachate from the site approximately once a week and this may continue for some time. These on going management activities are essential to ensuring that the risk of pollution from the landfill is minimised.

Please note the final restoration of the site can not be achieved until the site is fully settled and has ceased generating gas. The time this will take is unknown, therefore we can not set any deadline for surrender of the permit and are not overly concerned with the ultimate permit surrender date. Our focus is on ensuring the appropriate level of management and maintenance of the site in this aftercare phase until such time it can be demonstrated that the site has reached a suitable, stable condition to surrender the permits.

We would also like to take this opportunity to raise concerns we have that the development may lead to nuisance complaints in relation to odour, noise or dust from both ongoing maintenance of the site and the GUP.

For information FCC have submitted a Combustion Emission Assessment (dated January 2012) with their permit variation/consolidation application. We feel that the impact of combustion emissions from the GUP (flares and engines) on this proposed development should be considered.

If you have any further queries please contact me on the details below. Please remember to quote our reference number in any correspondence, as this will help to speed up your request.

We trust this information is of use. Please do not hesitate to contact me if you have any further questions.

Yours sincerely

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