

Water Resources and Flood Risk

- 3.36 The application site boundary is inconsistent in the report (shown with and without the laydown area in the north). This has implications for the 'search radius' applied in the assessments and the exclusion of features that are just outside the arbitrary 1km search radius.
- 3.37 The resultant exclusion of key water receptors (Source protection Zones, abstractions) artificially downplays the perceived sensitivity of these to potential impacts. Figure 3-2 'Known Environmental Considerations within 5km Study Area' excludes Source Protection Zones, licenced abstractions (surface water and groundwater), private water supplies and other (small) water supplies.
- 3.38 Considering the scale of the development and its position upon the exposed Chalk Principal Aquifer, in which flow is virtually all through fractures and other discontinuities (where groundwater flow is rapid) a wider search radius should be applied.
- 3.39 There are conflicting statements within the report as to the level of risk to the site from groundwater flooding. PIER 2 Chapter 11-2 states that the site is not seen to be susceptible to groundwater flooding, while PIER 1 Chapter 11 states that the nature of the geology, relatively high groundwater and reported floods in the wider catchment indicate that groundwater flood risk is considered to be high.
- 3.40 Groundwater level at 6mbgl (~54mAOD) and a proposed building basement of 4mbgl (~58mAOD) mean that a potential rise in groundwater could easily contact the buildings underground structure.
- 3.41 The potential risk to the chalk aquifer is covered only generically and fails to depict the highly vulnerable nature of the chalk in this location as:
- The site will be directly on the chalk across most of the site, the report is slightly misleading stating that head deposits exist over the chalk, this is only across a small area.
 - The unsaturated zone/depth to groundwater is thin and the well-developed fissure/flow zone in the chalk will be close to surface.
- 3.42 There is therefore little potential for the attenuation of pollutants from the site and a high potential for rapid flow in the chalk groundwater. These factors combined with the proximity to highly sensitive receptors in the water environment are not adequately addressed in the assessment of potential impacts (of a potential pollutant release). A detailed groundwater risk assessment is appropriate in this sensitive setting.
- 3.43 Use of soakaways in between two areas of 'known' high groundwater, and within the dry valley (which has a very small area of flood risk attached to it) is questionable. The 'dry valley' is marked by a depression visible on LiDAR imagery and is marked by the sites' superficial deposits.
- 3.44 The proposed soakaway is a cellular system in the south east of the site. This area also has an 'extended earth bund' place over the top of the cellular soakaway. This proposal indicates that there is limited room for water management on site. Soakaways need to be accessible for maintenance and cleaning over the lifetime of the site. Placing an earth

- bund will restrict access and also risks the structural integrity of the soakaway.
- 3.45 It is unclear why soakaways are proposed given the stated intention to recover and re-use water from the facility. Further explanation is required.
- 3.46 The report confirms that water consumption will be by mains supply from Southern Water. The exact source (point) of the mains supply cannot be stated, however all of Southern Water's supply in this area is from groundwater sources. An increase in demand in an already vulnerable region may affect the regional groundwater resources and dependent water features. There is the potential for this development to impact groundwater resources regionally due to the increased pressure put upon the supply of Southern Water. Considering that the area's rivers are almost entirely groundwater fed, this is of critical importance.
- 3.47 No evidence is provided to justify the water requirement of 135,000m³ a year, nor is there any evidence to demonstrate that the level of water required to supply the development is available and that it has been taken into consideration in Southern Water's Water Resources Management Plan which forecasts significant water supply deficits within Hampshire. Further information is required on these points.
- 3.48 The impact on groundwater recharge from such a large building on the aquifer needs to be considered.
- 3.49 In summary, the PEIR does not provide sufficient information to demonstrate the level of potential impact on the water environment from the proposed development. The high importance and sensitivity of the chalk aquifer and its dependent receptors have not been adequately presented.
- 3.50 The Proposal will be situated directly over a highly sensitive and regionally important aquifer and in close proximity to water dependent SSSIs (Rivers Test and Dever). Groundwater is potentially close to the base of the proposed basement construction; this increases the potential for impacts from the construction and operation of the site on groundwater flow and quality.
- 3.51 Further technical comment on the water resources and flood risk assessment is included as an appendix to this report.

Ground Conditions

- 3.52 Table 12-1 acknowledges the requirement in the Scoping Opinion for a full suite of intrusive surveys including borehole investigations and soil sampling to inform the assessment. It is unclear why the applicant's response is that *'an extension to the existing site investigation will be recommended for the eastern and northern parts of the site (identified as 'Construction Laydown Area') post development consent'*. If the site investigation is only done post development consent it cannot inform the assessment and is not in accordance with the Scoping Opinion. The work has to be done before an application for consent can be considered.
- 3.53 It is noted that the full quantitative risk assessment required by the Environment Agency is not proposed to be included despite the exceedances of polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbon (TPH) contamination exceeding the Generic