6.3 Proposed Drainage Strategy

As outlined above in section 6.1, where required drainage systems are needed to drain the foul and surface water flows arising from the proposed development. The proposed drainage systems must ensure that there is no increase in offsite flood risk that would otherwise impact downstream areas.

6.3.1 Surface Water Drainage

The Building Regulations - Approved Document H (2002) details a hierarchy of potential methods for disposing of surface water as shown below in order of preference:

- Discharge via infiltration
- Discharge to watercourse
- Discharge to sewer

Considering the hierarchy above, the surface water network for the proposed development should infiltrate where possible. Even though the WSP Ground Investigation did not undertake any BRE365 complaint infiltration tests it has indicated that the site is underlain by made ground which is in turn impermeable clay superficial deposits. This is highlighted by the fact that the site investigation report identifies the groundwater as perched water above and within the impermeable clay strata.

This coupled with the lack of space across the site and the fact that Building Regulations Part-H states that no infiltration should take place within 5m of a building or highway, leads to the conclusion that infiltration is not suitable for the proposed development.

As the underlying impermeable clay strata and Building Regulations restrictions have ruled out the use of infiltration, the intention for the development would be to discharge to watercourse. The nearest watercourse is understood to be an unnamed culverted river (potentially Corn Brook) located approximately 440m north-west of the site, with the nearest designated main river being the River Medlock which is located approximately 1.30km north-west of the site. Therefore, due to the distance through developed third-party land, discharging to watercourse has been deemed impractical.

As such, the only practical solution for the discharge of the surface water is discharge to public sewer. As indicated within Section 6.2, the only nearby public sewers are located within the highways surrounding the existing hospital site. As such, it is envisaged that the surface water runoff from the proposed development will discharge to the existing private surface water drainage which currently serves the proposed development.

While every effort to utilise any suitable existing systems should be made, the drainage systems should be designed to suit the proposed site layout and topography which aims to provide an efficient design.

In line with Sewers for Adoption (7th Edition), the requirements for the design of a new surface water drainage systems are as follows:

- Below ground piped drainage to be sized to accommodate the 1 in 2 year (50% AEP) design storm without surcharge.
- System to be designed not to flood any part of the site in a 1 in 30 year (3% AEP) design storm.
- For events in exceedance of the 1 in 30 year design storm and up to and including the 1 in 100 year event, site drainage and topography should be designed where practicable to route surface water run-off away from buildings to safe above-ground storage areas on site, thereby preventing this run-off from leaving the site and increasing flood risk elsewhere.

For each design case described above, the design storm is the critical storm duration for the site conditions. In the case of the 1 in 100 year design storm, a 40% increase in the peak rainfall intensity is applied to allow for the estimated worst case impacts of climate change. This is in accordance with new advice, issued by the Environment Agency, which updates previous climate change allowances outlined in the National Planning Policy Framework.