

Technical NOTE



Civil ENGINEERING

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SUBJECT **Drainage Statement**

Introduction

The purpose of this technical note is to provide a brief summary of the proposed drainage strategy to be submitted as part of the Planning Statement in support of the proposed Health and Wellbeing Centre in Monmouth.

Existing Drainage

The site is currently greenfield with no formal drainage in place. The site slopes steeply from north to south, and the River Monnow is located beyond the southern boundary. It can therefore be assumed that the majority of surface water infiltrates on site, and the remainder runs off to the south and eventually discharges into the River Monnow. There is a smaller watercourse which runs from north to south along the western boundary and eventually discharges to the River Monnow. The site has a superficial geology that consists of Alluvial Fan Deposits and is overlain by a bedrock of Sandstone.

Proposed Surface Water Drainage

The location and general layout of the proposal has been confirmed, although there are some minor tweaks and alterations being made to the final location/orientation of the building. The development will be located in the northern portion of the site, in the higher part of the site and outside of the flood zone. The proposed surface water drainage strategy will be designed in accordance with the SuDS statutory standards, as defined by the “statutory national standards for sustainable drainage systems” published by the Welsh Government in response to Schedule 3 of the Flood and Water Management Act 2010 which came into effect in Wales on 7 January 2019. Please see below for Standards and how it is proposed to meet these as part of the proposed development.

Standard S1 – Surface water runoff destination

- Priority Level 1: Surface water runoff is collected for use;
- Priority Level 2: Surface water runoff is infiltrated to ground;
- Priority Level 3: Surface water runoff is discharged to a surface water body;
- Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or another drainage system;
- Priority Level 5: Surface water runoff is discharged to a combined sewer.

Due to the nature of the proposed development, it is unlikely that any water collected would be suitable for use within the building as there is very little anticipated demand for non potable water on site, therefore it is not considered feasible to achieve Priority Level 1 in accordance with the standards (G1.4).

As part of the site investigation works being undertaken, soakage testing in accordance with BRE 365 has been commissioned to determine the infiltration rate at multiple locations across the site. The underlying ground conditions suggest that the site is underlain by sandstone so infiltration may be a viable method of surface water discharge, but due to the proximity of the site to multiple watercourses, it may not be the case.

Should the infiltration rates determined by the test not be favourable enough to enable surface water discharge, then it is proposed that surface water runoff is discharged to the watercourse which runs along the western boundary of the site.

Standard S2 – Surface water runoff hydraulic control

The proposed surface water drainage strategy for the site will be designed to accommodate the 1 in 100 year return period event + climate change. Should the proposed method of surface water discharge be by discharging to the watercourse, runoff rates should be restricted to replicate greenfield runoff rates.

Surface level SuDS features will be considered in the first instance in order to achieve the restricted flow rates, which will also help to achieve the interception of runoff criteria, which aims to achieve zero runoff for the first 5mm of rainfall for 80% of events during the summer and 50% in winter (G2.11-G2.14).

Standard S3 – Water Quality

Wherever the proposed site design delivers interception of the first 5mm, it is anticipated that these SuDS features will also provide the necessary treatment (G3.12). The SuDS Manual index approach will be used to confirm that the components of the SuDS train receiving the first flush of runoff from the development provides sufficient mitigation of the expected pollutants.

Standard S4 – Amenity

Surface level SuDS features will be incorporated where possible which provide a significant improvement to amenity value. The site landscape design will be incorporated within the SuDS strategy, and the soft landscape will contribute to the visual amenity of the site.

Standard S5 – Biodiversity

The aspiration to incorporate as many surface level SuDS features as possible within the scheme provides an opportunity to encourage biodiversity. As mentioned previously the landscape design will be coordinated with the surface water design to promote diverse planting which creates a range of habitat.

Standard S6 – Design of drainage for Construction, Operation and Maintenance

A SuDS maintenance strategy will be produced in conjunction with the drainage strategy, which will identify the regular and occasional maintenance activities that are required to maintain the efficient operation of the respective SuDS features proposed.

Proposed Foul Drainage

The GPR survey undertaken for the site identified a combined sewer to the north of the site which runs along Osbaston Road. As the road is at a higher level than the site, it is likely that a pumped solution will be unavoidable due to the level difference. A pre development application will be made to Welsh Water to confirm capacity in the network at the proposed connection location.

Further investigation has found that there is a Welsh Water pumping station located approximately 300m to the south east of the site, at the intersection of Osbaston Road and Forge Road. Opportunities to connect to this pumping station directly or indirectly via existing sewers may be explored.

Conclusion

Whilst the building location and site layout has not been confirmed, the surface water drainage strategy will be design in line with the Statutory National Standards for Sustainable Drainage Systems. For the foul drainage, discharge can be via a private on site package pumping station and rising main to the combined sewer which runs along Osbaston Road, or potentially to the foul pumping station located to the south of the site.