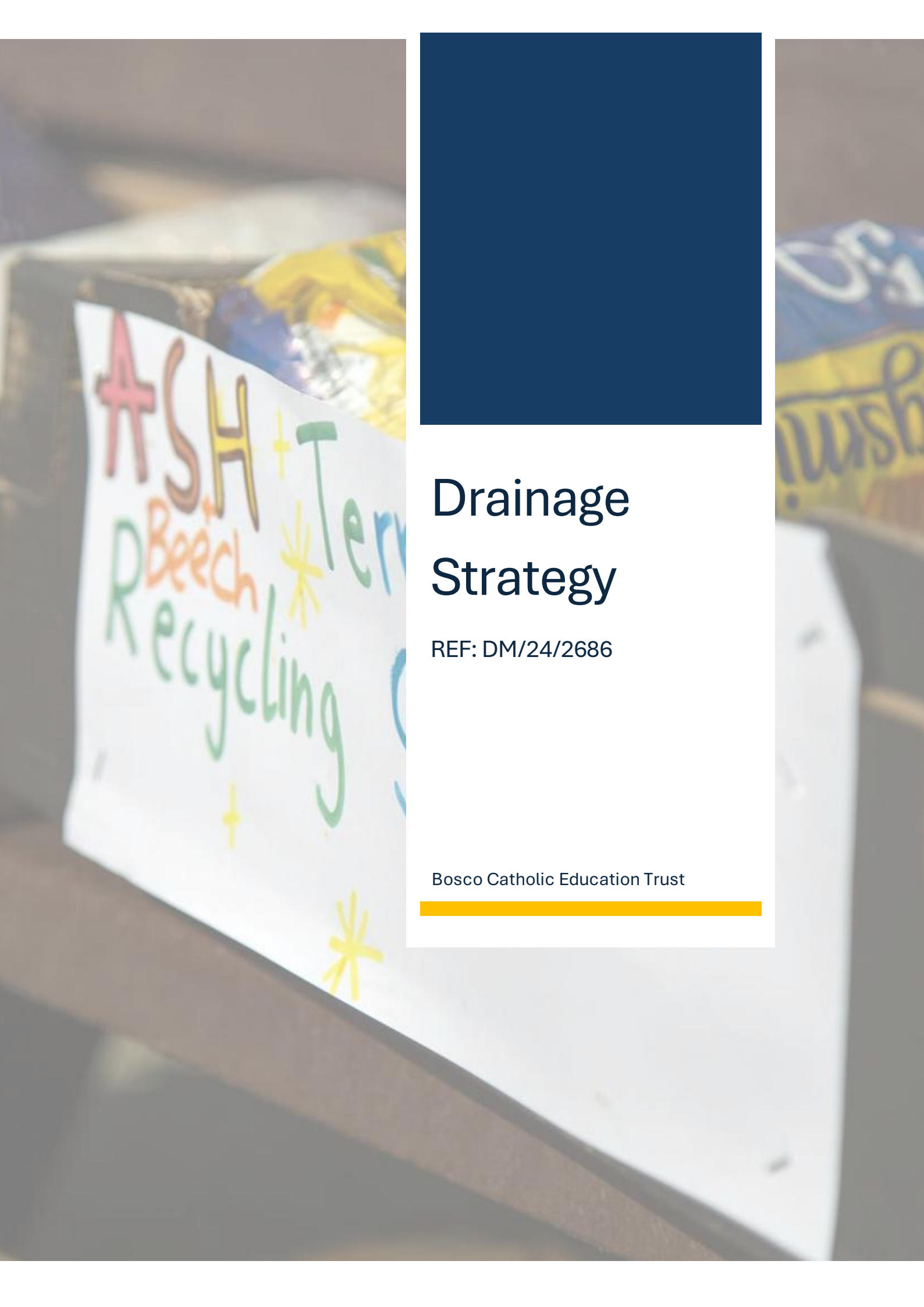




Drainage Strategy

REF: DM/24/2686

Bosco Catholic Education Trust

Drainage Strategy Proposal

1. Development Overview

This Drainage Strategy has been prepared in support of the proposed alterations and extension works to the office and reception facilities at St Paul's Catholic College, Burgess Hill. The proposal seeks to utilise the existing site drainage infrastructure where feasible while providing new foul and surface water drainage connections, inspection chambers, rainwater downpipes and threshold drainage systems to serve the development. The strategy has been developed in accordance with the requirements of Building Regulations Part H and relevant drainage design standards.

2. Existing Drainage Assessment

The existing drainage network comprises separate foul and surface water systems serving the existing building. Existing inspection chambers, drainage runs and selected rainwater downpipes are proposed to be retained and incorporated into the new drainage layout wherever practicable.

Prior to commencement of construction works, the contractor shall undertake a detailed investigation of the existing drainage infrastructure, including verification of pipe locations, condition and invert levels. This will ensure that all proposed connections can be achieved while maintaining satisfactory hydraulic performance and the required drainage gradients. In addition, the existing private foul sewer serving the site shall be subject to CCTV inspection and watertightness testing, with any defective sections repaired or replaced as necessary.

3. Surface Water Drainage Proposal

3.1 Surface Water Discharge Hierarchy

Surface water will discharge to an on-site soakaway system designed in accordance with BRE Digest 365. The feasibility and capacity of the soakaway will be confirmed through site-specific percolation testing. Should infiltration prove unsuitable, an alternative discharge strategy will be agreed in writing with the Local Planning Authority prior to implementation.

3.2 Proposal

Surface water runoff generated by the proposed development shall be collected through a system of 112mm half-round gutters discharging to new 68mm diameter rainwater downpipes.

The precise locations of all existing discharge points shall be confirmed on site prior to installation. Channel drains shall be installed at all level-access door thresholds to prevent surface

water ingress into the building and to provide positive interception of runoff adjacent to entrances.

Where external ground levels exceed the level of any suspended floor voids or oversite areas, suitably sized drainage gullies shall be incorporated and connected to the surface water drainage network to prevent water accumulation around the building structure.

In accordance with sustainable drainage principles, all new surface water drainage shall discharge to a soakaway system located a minimum of 5.0 metres from any existing or proposed building. The final soakaway design and storage volume shall be determined following site-specific percolation testing undertaken in accordance with BRE Digest 365. Should testing demonstrate unsuitable ground conditions for infiltration drainage, an alternative approved method of disposal shall be agreed with the Local Authority and Building Control prior to implementation.

The proposed surface water strategy will ensure that runoff is effectively managed on site whilst minimising the risk of localised flooding, standing water and building ingress.

4. Foul Water Drainage Proposal

Foul water generated by the development will discharge to the existing private foul drainage network which ultimately connects to the public sewerage system.

Prior to construction, all proposed connection points shall be exposed and surveyed to verify pipe condition, route and invert level. This investigation will confirm the suitability of the existing system and ensure that new drainage connections can achieve the required minimum gradient of 1:40.

New foul drains shall comprise 100mm diameter PVC-u OSMA pipework laid at a minimum gradient of 1:40 and connected to new inspection chambers located as indicated on the drainage drawings. Pipework shall be laid on and surrounded by a minimum 150mm thickness of pea shingle bedding and surround material. Where drainage passes beneath buildings or where minimum cover depths of 450mm cannot be achieved, the pipework shall be protected by concrete encasement.

Where drainage passes through foundations, suitable movement accommodation shall be provided through the installation of rocker pipes or a minimum 50mm clearance around the pipe. Foundation openings shall be bridged using precast concrete lintels.

Subject to the status of the receiving sewer, any necessary approvals and consents shall be obtained from the relevant sewerage undertaker prior to commencement of works. Where development is proposed over or near public or shared sewers, appropriate Build Over Agreements or associated applications shall be secured in accordance with the requirements of the relevant water authority.

4.1 Waste Plumbing

All above-ground sanitary waste pipework shall comprise PVC-u pipework with traps providing a minimum 75mm water seal.

The proposed waste pipework arrangement shall comprise:

- WC branch connections: 100mm diameter.
- Sink and shower wastes: 40mm diameter, increasing to 50mm diameter where runs exceed 1.7m in length.
- Wash hand basin wastes: 32mm diameter.

All sanitary appliances shall discharge to new 100mm diameter PVC-u Soil Vent Pipes (SVPs) or Air Admittance Valves (AAVs), as indicated on the drainage design drawings. Cleaning eyes shall be provided at all significant changes in direction and at suitable maintenance locations.

Ventilation of the drainage system shall be achieved through roof-mounted SVPs terminating not less than 900mm above any opening, window or rooflight located within 3.0 metres horizontally, thereby maintaining compliance with Building Regulations Part H.

5. Drainage Infrastructure

The proposed drainage network shall incorporate new proprietary inspection chambers positioned to facilitate inspection, maintenance and future access. Chamber covers shall be selected to suit anticipated loading conditions and finished surface treatments.

All below-ground pipework and fittings shall comply with BS EN 1401-1 and BS EN 752. Pipework shall generally be installed with a minimum cover depth of 600mm and provided with appropriate bedding, surround and protection measures in accordance with manufacturers' recommendations and current standards.

6. Flood Risk and Surface Water Management

The proposed development represents a relatively minor extension to the existing building footprint and does not significantly increase impermeable area across the site. Consequently, no material increase in peak runoff rates is anticipated.

Surface water generated by the development will be managed through positive drainage measures including roof drainage systems, threshold channel drains, gullies and soakaway attenuation. These measures will minimise the potential for standing water, surface flooding and water ingress into the building while ensuring the effective management of stormwater runoff.

7. Construction and Commissioning Requirements

Prior to construction, all existing drainage assets shall be surveyed and protected where they are to remain operational. Invert levels, pipe alignments and connection details shall be verified on site before installation of new drainage infrastructure.

All drainage works shall be completed in accordance with Building Regulations Part H, relevant British Standards and manufacturers' recommendations. Upon completion, the drainage systems shall be inspected, tested and approved by Building Control. Air testing and commissioning records shall be provided as part of the project handover documentation.

8. Maintenance Strategy

The drainage design incorporates inspection chambers and accessible maintenance points throughout the network, allowing for routine inspection and cleaning operations.

A planned maintenance regime should be implemented to include periodic inspection and clearing of gutters, rainwater downpipes, channel drains, gullies, inspection chambers and associated pipework. This will ensure the continued efficient operation of both the foul and surface water drainage systems throughout the life of the development.

9. Conclusion

The proposed foul and surface water drainage systems have been designed to ensure satisfactory disposal of wastewater and surface water arising from the development. The proposals accord with the National Planning Policy Framework, Policy DP41 of the Mid Sussex District Plan 2014-2031 and the requirements of Building Regulations Part H. The drainage works will be completed prior to occupation of the development.

This proposal demonstrates that the development can be effectively served by a robust and compliant drainage system incorporating separate foul and surface water drainage networks. The strategy utilises the existing drainage infrastructure where appropriate, introduces new inspection chambers and drainage connections, and incorporates sustainable surface water disposal through soakaway drainage designed in accordance with BRE 365. Subject to detailed site investigations and statutory approvals where required, the proposed drainage arrangements are considered suitable to accommodate the anticipated drainage demands of the development and comply with the requirements of Building Regulations Part H.