

Surface Water Drainage Report

Modular Logistics Extension

Bognor Regis Plant

Rolls Royce Motors

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Quality information

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Table of Contents

Introduction	5
Background.....	5
Discussion	5
Conclusion	6
Appendix A.....	7

Introduction

Rolls Royce Motors instructed AECOM UK to provide a surface water drainage report in support of the application to erect a temporary structure within the truck manoeuvring area adjacent to their logistics facility at Oldlands in Bognor Regis.

This report comments on the impact that the proposed temporary structure will have on maintenance access to the existing surface water drainage system for the facility.

Background

The existing facility was constructed in two phases with two planning consents. Phase 1 was consented in 2014 and comprised the two main buildings. The surface water drainage for Phase 1 was attenuated in an open pond that lies to the east of the facility.

Phase 2 was consented in 2016 and extended the building to the east by a number of bays together with a related extension to the concrete slab. A crated attenuation tank was constructed beneath the concrete slab to provide the additional attenuation volume required by the greater area now draining to the surface water outfall.

The proposal to erect a temporary structure on the extended hardstanding area means that some of the surface water drainage infrastructure will be enclosed by this structure. This report discussed the impact of this on the access for maintenance to the surface water drainage system.

Discussion

Drawing 60579154-SHT-00-0000-C-0001 in Appendix A shows the proposed layout overlain on the 'As-Built' drawing showing the surface water drainage system.

Reference to this indicates that two manholes will fall within the enclosed area of the temporary structure. These are:

1. The Flow Control Chamber containing the hydrobrake control, Ref MH S09;
2. The vented catchpit, Ref CP S07 chamber for the symphonic roof drainage system.

Access to both will be provided from within the building which will allow access for vehicles suitable for lifting the covers and cleaning and jetting the pipework if necessary. The doorway to the structure is of 6m width and 5m height. The internal layout of the storage will be arranged so that both manholes lie within corridors and not in storage areas.

As a general note, surface water drainage systems are less likely to require maintenance than foul systems. The pipes will flow full and at self-cleansing velocity at least every year or two so that they are unlikely to require cleaning as a regular intervention.

Subject to the design of the syphonic system in this installation, the syphon will either be broken within the upstream pipe or in the vented chamber CP SO7. Either way, there is no risk to the drainage system from the manhole being enclosed by the temporary structure. It is important that the cover is located in a corridor such that the vents are maintained clear and able to allow air to be drawn into the system during the action of the syphon.

The Flow Control Chamber MH SO9 will require regular inspection to ensure that no deleterious material is causing obstruction. Vortex flow controls such as the 'hydrobrake' are intrinsically self-cleansing unless large objects such as sticks become wedged in the system. Given that the two areas discharging to the system are from a filter drain and a syphonic roof system, the risk of large objects being carried to the hydrobrake is negligible so that any requirement for maintenance access beyond visual inspection from the surface will be very unusual.

Conclusion

The two manholes impacted by this proposed temporary structure will lie within the corridor areas of the facility.

The risk of blockages due to the build-up of deleterious material requiring maintenance is low due to the nature of the collection systems for the surface water.

Inspection access from the surface will be maintained and maintenance access will be allowed by the internal layout of the facility although the likelihood that this becomes necessary is low.

Appendix A

Drainage Overlay Drawing 60579154-SHT-00-0000-C-0001

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