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Foul and Surface Water Drainage **Assessment**

Proposed workshop units
Humber Bridge Garden Centre

Client - W Blyth

DATE – 11^h September 2025 Rev B

Introduction

East Riding Consultants Limited have been commissioned to undertake an assessment of the site drainage to determine how the proposed workshop unit can be drained.

The report is required to :-

To supplement the application for discharge of conditions on a planning permission.

FOUL DRAINAGE

The site is already served by a MATRIX CLF17 treatment plant.
This plant has a capacity to serve 300 people. See details below.

The café normally has a maximum of 100 users per day and there are visitors to the garden centre. Obviously not all visitors use the facilities. It is therefore considered that the existing treatment plant has more than sufficient capacity to serve the existing development and the proposed workshop units.

The image shows three documents related to the MATRIX CLF17 treatment system:

- Left Document:** The cover of the 'OPERATION AND MAINTENANCE MANUAL' for the MATRIX Sewage Treatment Systems. It features the CE mark and states 'Certified Performance to 96.2% efficiency'. It lists models CLF1 (Up to CLF17) (0000) and includes a reference to 'Appendix to model CLF1 - CLF17 000'.
- Middle Document:** A 'PERFORMANCE RESULTS' certificate from PIA (Institut für Wasserwerk-Technologie). It certifies the 'Small wastewater treatment systems MATRIX CLF Submerged aerated filter bed'. Key specifications include:
 - Normal organic daily load: 0.34 t/d
 - Normal hydraulic daily load: 1.00 m³/d
 - Material: PP
 - Treatment efficiency (nominal sequence): COD 91.4%, BOD₅ 95.2%, SS 95.5%, NH₄-N 95.5%
 - Electrical consumption: 1.4 kWh/d
- Right Document:** A test report from CERIS (20231 EPERNON, 09 Dec 819) titled '3.3.5 Results' for the 'MATRIX CLF 7'. It details a structural behavior test (PI Test) on a 50 cm diameter pipe. The test results are summarized in the following table:

Condition of use	Not within the water table (dry ground conditions)			Within the water table (test ground conditions following testing in dry ground conditions)		
	Visual assessment	Volume	Deformation	Visual assessment	Volume	Deformation
Before test	/	V ₀ = 20 970 litres	/	/	V ₀ = 20 128 litres	/
After being tested for 24 hours	/	V ₂₄ = 20 662 litres	- 1.5%	/	V ₂₄ = 20 122 litres	- 0%
2 days after the test	No failure	V ₄₈ = 20 128 litres	ΔV ₂₄₋₄₈ = 534 litres (-2.5% of the initial volume after 2 weeks)	No failure	V ₄₈ = 20 032 litres	ΔV ₂₄₋₄₈ = 896 litres (-4.5% of initial volume after 2 weeks)

The test report also includes a note: 'This test report only certifies the characteristics of the sample submitted for testing and makes no judgement about the characteristics of similar products. It does not, therefore, constitute product certification under article L. 115-27 of the French consumer code and of the law of 3 June 1994. The specifications of the reference standard are given for information.'

SURFACE WATER DRAINAGE.

The proposal is to discharge surface water to the existing pond.

Discharge from the proposed workshop roof for a 1 in 100 year event +40% for climate change.

Roof area = 330 m²

For the 1 in 100 year event assume 80mm rainfall rate

$$Q = 2.78 \times 0.033 \times 80 = 7.33 \text{ L/s}$$

For a storm of 10 mins duration

$$7.33 \times 60 \times 10 = 4403 \text{ L or } 4.403 \text{ m}^3$$

$$\text{Allowing 40 \% for climate change} = 6.164 \text{ m}^3$$

The pond has an area of approx. 5400 m²

Discharging 6.164 m³ will raise the water level by

$$\frac{6.164}{5400} = 1.14 \times 10^{-3} \text{ mm}$$

It is therefore considered that the development of the workshop units should have a direct discharge to the pond.

REPORT ENDS.