

Appendix A6

Drainage Hydraulic Calculations



CALCULATION SHEET

Job No.

Sheet No.

Rev.

50683-00

1.0

Member/ Location

N/A

Drg. Ref.

Made by

GG

Date 21/02/25 Chd.

Job Title AW2 Uskmouth DevA - Initial

Hydraulic modelling + SuDS sizing

Ref:

Calculation

Output

Catchment Plan from AW2 design layout
 $\approx 23874 = 2.387 \text{ Ha}$

HR Wallingford - Greenfield Runoff
Rate calculator

Soil Type

3

SPR / SPR HOST

0.37

Greenfield runoff rates

Default

Edited

Q_{bar} (l/s):

9.38

9.38

1 in 1 year (l/s):

8.26

8.26

1 in 30 years (l/s):

16.7

16.7

1 in 100 year (l/s):

20.45

20.45

1 in 200 years (l/s):

23.08

23.08

$Q_{bar} = 9.38 \text{ l/s}$

[Quick Storage Estimate - Infordrainage]

- Area - 2.387 Ha
- Volumetric Runoff Coefficient - 0.75
- Discharge rate - 9.38 l/s
- Infiltration rate - 0

QSE Results = 1898 - 2427 m³ (Say 2430 m³)

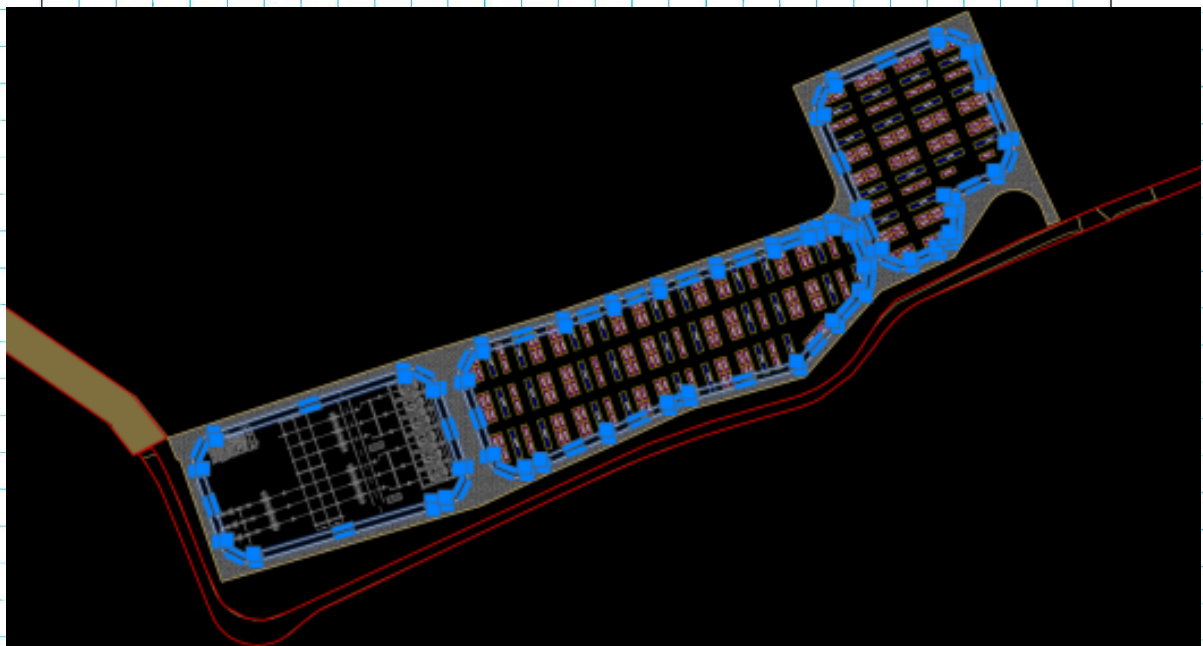
Ref:

Calculation

Output

With reference to calculation sheet '50683-00 AW2 DevA - Existing Drainage Storage Estimate' it was concluded that there is 785m^3 of Storage in existing concrete channels.

$$2430 - 785 = 1645\text{m}^3$$



Total volume from above image = $17,935.7\text{m}^3$

To be conservative, allow for a 25% reduction in volume = $13,451.8\text{m}^3$

void ratio of fill = 30%
 $13,451.8 \times 0.3 = 4035.5\text{m}^3$

Therefore the remaining 1645m^3 of surface water can be stored.



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