



Existing Impermeable Area Plan
Scale 1:500

EXISTING BROWNFIELD SURFACE WATER DISCHARGE RATES

Pre-Development Brownfield Catchment Area* = 0.44ha

*Based on existing impermeable area positively drained to outfall only
i.e. remaining greenfield area not included.

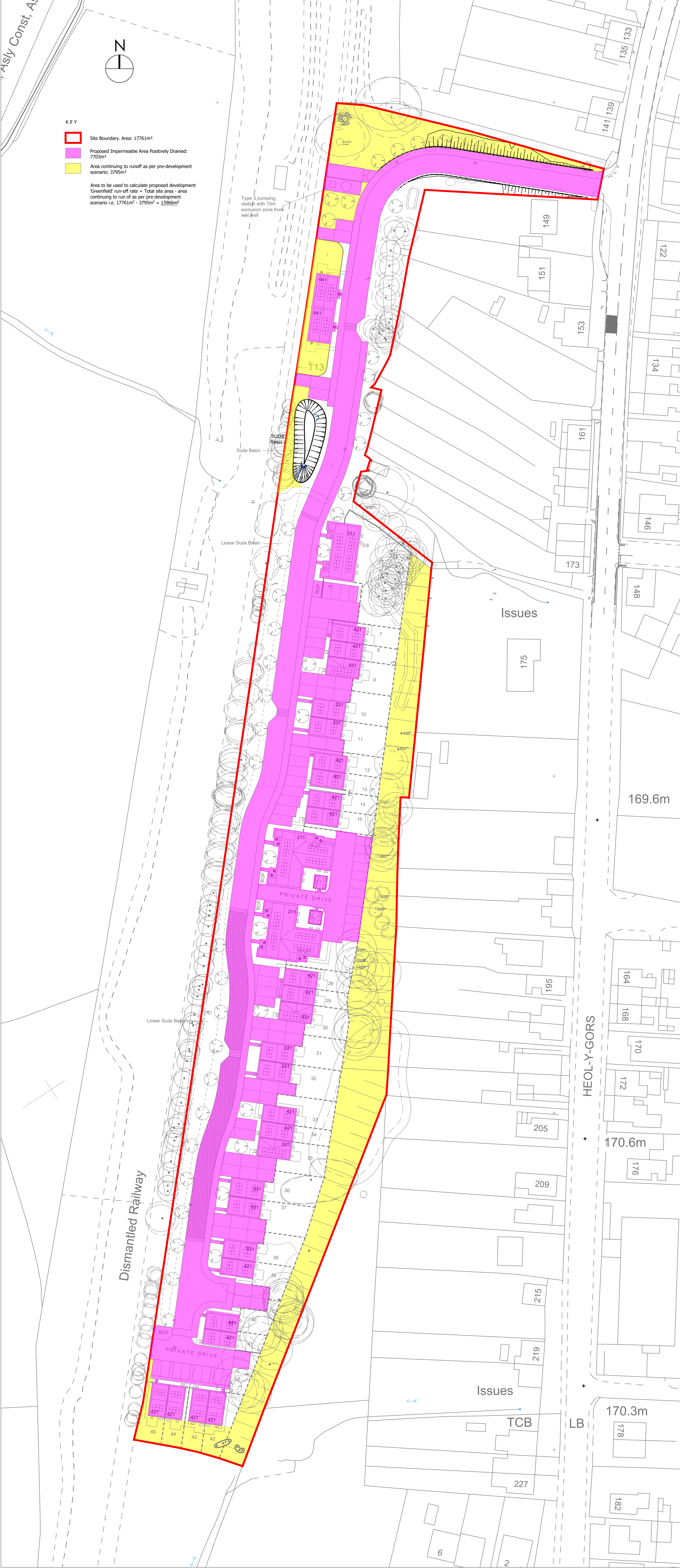
Pre-Development Brownfield Runoff Rates (0.44ha)

Qbar = 54.3 l/s (1.14 x Q)
1 in 1yr = 47.6 l/s
1 in 30yr = 67.2 l/s
1 in 100yr = 69.5 l/s

Note that modelling of the existing 2250 pipe shows restricted flows due to pipe capacity. This is reflected in the above discharge rates.
See Causeway Flow Design Report '2024-08-12 - Brownfield Runoff - Dummy Network'

Pre-Development volume discharge (100yr 360mins) (0.44ha)

*1 in 100yr (360mins) = 301m³



Proposed Impermeable Area Plan
Scale 1:500

EXISTING GREENFIELD SURFACE WATER DISCHARGE RATES

Note: NPT S&B have requested that proposed development discharge rates be reduced to the pre-development greenfield rate and not the pre-development brownfield rate previously calculated. Therefore:

Pre-Development Greenfield Catchment Area* = 1.396ha
*Based on total site area minus proposed site area continuing to runoff as per pre-development scenario (see above)

Allowable Greenfield Runoff Rates (1.396ha)

Qbar = 25.0 l/s
1 in 1yr = 21.9 l/s
1 in 30yr = 44.4 l/s
1 in 100yr = 44.5 l/s

Rates calculated using HR Wallingford 'Greenfield runoff rate estimation'

Post-Development
Approx. Impermeable Area = 0.770ha

Post-Development peak flow rate

1 in 1yr = 20.3 l/s (1.4 l/s)
1 in 30yr = 23.1 l/s (21.3 l/s)
1 in 100yr = 23.3 l/s (31.2 l/s)
1 in 100yr +40% = 24.0 l/s

Discharge Volume (100yr 360mins)

*Post-Dev - 1 in 100yr (360mins) = 497.6m³

Total Volume +/- = +196.6m³ *Note: All flows restricted to pre-development Brownfield Qbar rate. Therefore, discharge volume are provided for information only.

SUDS Features

The above post-development flow rates are based on a traditional piped system with a 5 minute concentration time.

However, all runoff is to be conveyed to pass through a SuDS feature which will further reduce the above discharge rates and volume.

The SuDS components will effectively increase concentration time, reduce flow velocities and rates, and providing significant volume losses through evaporation and evapotranspiration.

Losses are difficult to quantify and will vary depending on plant species, level of saturation and varied ground conditions across the site.