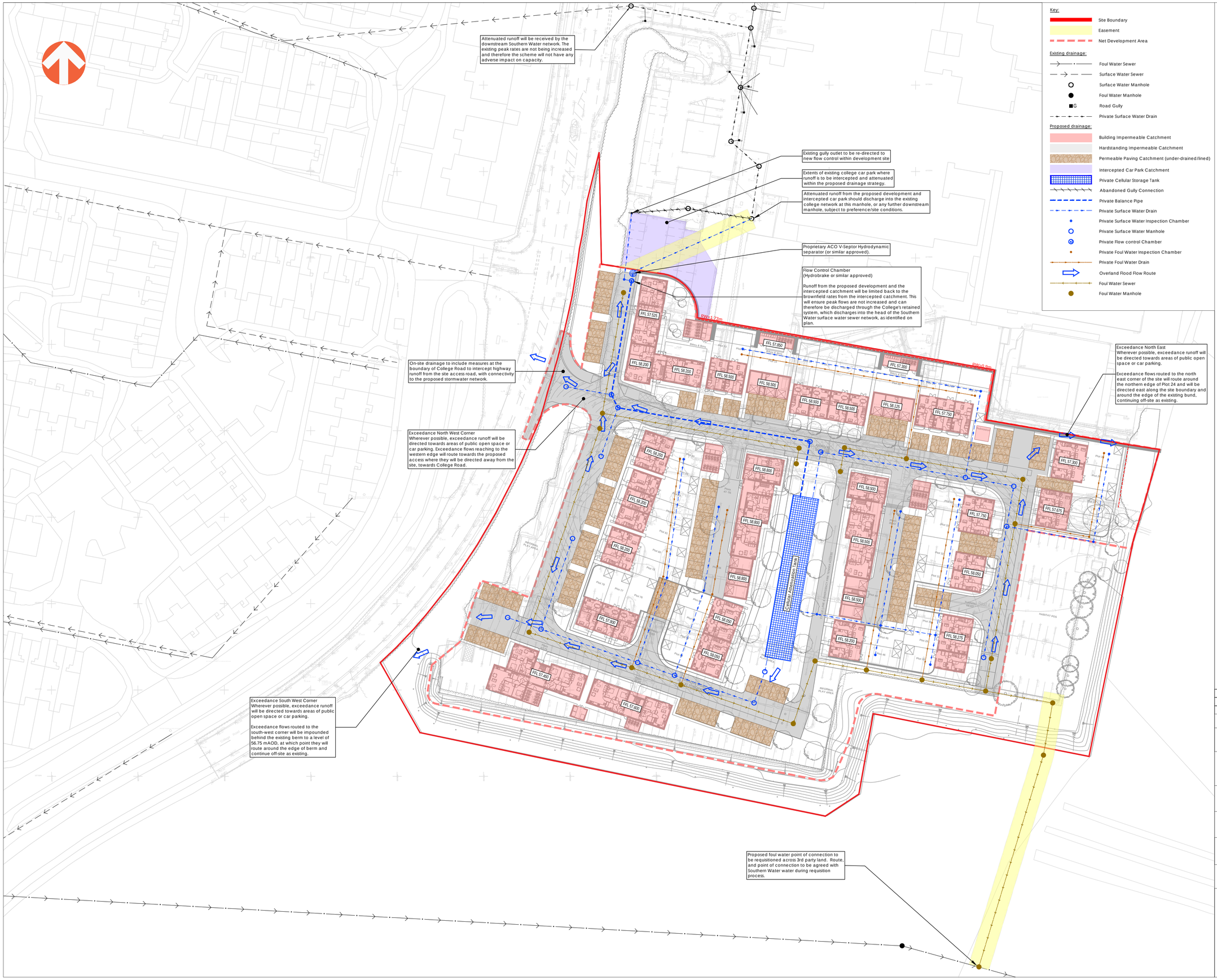


## Area Summary Schedule

| | |
|---|---|
| Net Developable Area | 1.777 ha |
| Intercepted catchment from college | 0.052 ha |
| Proposed imp. Catchment | 0.942 ha |
| Urban Creep | 0.018 ha |
| Total Modelled Catchment | 0.960 ha |

## Pre-Development Runoff

The equivalent greenfield runoff rates have been assessed for the 'net developable area' using the FEH Method. The calculation excludes large areas of open space which will remain undeveloped.

| Return Period | Greenfield Rate (l/s) |
|---|---|
| 2yr | 8.6 |
| 30yr | 19.4 |
| 100yr | 23.7 |

The Southern Water storm network has very limited available capacity and is not able to accept a new discharge at the sites equivalent greenfield runoff rates. To overcome this the proposals will intercept runoff from an area of retained college carpark and will attenuate this alongside new development runoff, with the total discharge limited to the existing brownfield rates from the intercepted catchment only.

The proposed system will intercept 0.052ha of the existing college car park, immediately north of the application site. The peak flow from the intercepted catchment (0.052ha) has been calculated using the Modified Rational Method and is summarised below:

| Return Period | Brownfield Rate (l/s) (0.052ha) |
|---|---|
| 2yr | 6.4 |
| 30yr | 17.5 |
| 100yr | 23.2 |

Runoff from the proposed development and the intercepted catchment will be limited back to the above brownfield rates, ensuring peak flows are not increased and can therefore be discharged through the College's retained system, which discharges into the head of the Southern Water surface water sewer network, as identified on plan.

Ownership and maintenance responsibilities for the proposed flow control chamber, and downstream hydrodynamic separator, lie within the developer's appointed management company, and not the college.

## Attenuation Summary

### Cellular Storage Tank

| | |
|---|---|
| Catchment | 0.960 ha |
| Control Chamber Invert | 53.535 mAOD |
| Hydraulic Control | Hydrobrake @IL<br>Ref. CTL-SHE-0118-6400-1070-6400<br>0.078mØ Orifice @ IL = 1.075m<br>0.055mØ Orifice @ IL = 1.680m |
| Tank Invert Level | 54.900 mAOD |
| Tank Cover Level | 58.200 mAOD |
| Porosity | 95% |
| Dimension | 355 $m^2$ X 1.6m Deep |
| Total Volume Required: | 548.7 $m^3$ |
| Total 2yr+45% Peak Discharge | 6.4 l/s |
| Total 30yr+45% Peak Discharge | 17.4 l/s |
| Total 100yr+45% Peak Discharge | 22.8 l/s |

The storm network also comprises 109 m of 600mm diameter pipework, laid at 1:300, connecting the flow control chamber to the cellular tank (plus online manholes). This section of network provides an additional storage volume of approximately 30m3.

Within the drainage strategy the use of under-drained permeable paving offers treatment of runoff but is not being used to mobilise attenuation storage. At the design stage further controls could be incorporated to attenuate within the paving sub-base, offsetting the cellular tank volume.

## Notes:

1. The proposed development has been assessed in line with the NPPF, to allow the planning application to be progressed and to show that the development can be undertaken in an acceptable manner from a flood risk perspective.
2. The extents of built development are limited to 'Flood Zone 1' only and are not susceptible to surface flooding from pluvial, groundwater, infrastructure or artificial sources.
3. To ensure the development is safe throughout its lifetime, the surface water strategy accounts for runoff in up to the 100 year return period.
4. The strategy also safeguards against the upper end allowances for climate change (45%), providing betterment over undeveloped conditions, where the rate and volume of runoff would continue to increase due to climate change.
5. The Ground Investigation indicates the site has a low infiltration rate that precludes the use of soakaways by virtue of excessive half drain-down time (in excess 7 days).
6. The drainage strategy also provides a 10% allowance for future urban creep and discharge at existing greenfield runoff rates. The cumulative impact of the various design allowances will ensure that flood risk within the downstream catchment is reduced as a result of the proposed development.
7. The drainage arrangements include a treatment scheme to mitigate against degradation of water quality as a result of the development. The proposals contribute to the provision of amenity space, and provide potential for planting to improve biodiversity of the development.
8. During exceedance events runoff will be directed away from buildings and toward low points where exceedance drainage provision is provided,
9. Foul flows generated by the development are proposed to be discharged via a requisitioned connection to the pubic foul sewer to the south of the site.

| REV | DATE | DESCRIPTION | BY | CHK | APD |
|---|---|---|---|---|---|
| F | 31.01.2025 | UPDATED TO SUIT LATEST LAYOUT | TMR | CPY | CPY |
| E | 30.04.2024 | UPDATED TO SUIT LATEST LAYOUT | TMR | CPY | CPY |
| D | 01.08.2023 | UPDATED TO SUIT LLFA COMMENTS | TMR | CPY | CPY |

DRAWING STATUS:
PLANNING APPLICATION

CLIENT:
PLACES FOR PEOPLE

PROJECT:
SOUTH DOWNS COLLEGE

TITLE:
PRELIMINARY DRAINAGE LAYOUT

| PROJECT No: | DRAWING No: | REV: |
|---|---|---|
| 1017 | 01-PDL-1001 | F |

SCALE @ A1: 0 1:500 25 metres

DESIGN BY:

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