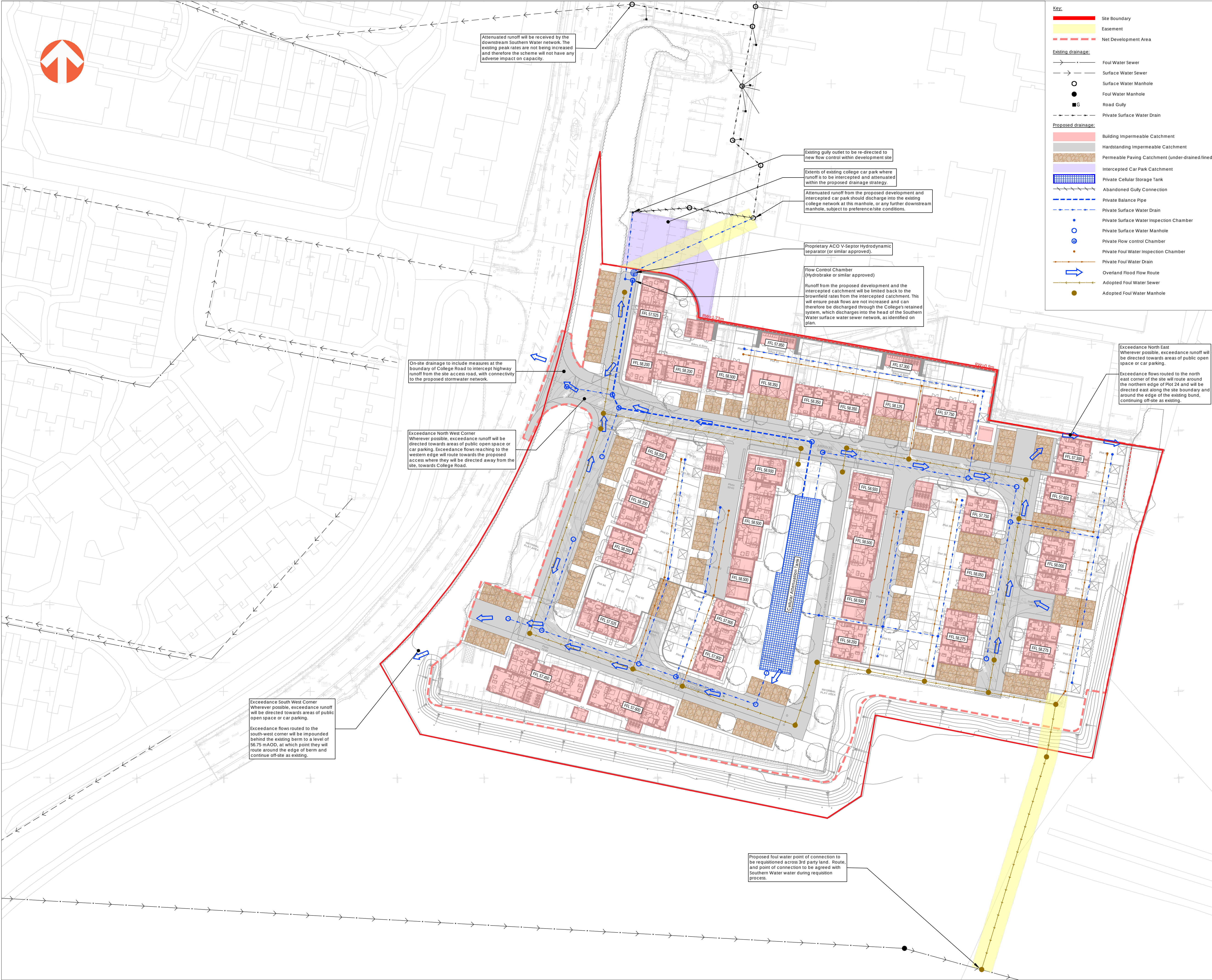




Key:

- Site Boundary
- Easement
- Net Development Area

Existing drainage:

- Foul Water Sewer
- Surface Water Sewer
- Surface Water Manhole
- Foul Water Manhole
- Road Gully
- Private Surface Water Drain

Proposed drainage:

- Building Impermeable Catchment
- Hardstanding Impermeable Catchment
- Permeable Paving Catchment (under-drained/inlet)
- Intercepted Car Park Catchment
- Private Cellular Storage Tank
- Abandoned Gully Connection
- Private Balance Pipe
- Private Surface Water Drain
- Private Surface Water Inspection Chamber
- Private Surface Water Manhole
- Private Flow Control Chamber
- Private Foul Water Inspection Chamber
- Private Foul Water Drain
- Overland Flood Flow Route
- Adopted Foul Water Sewer
- Adopted Foul Water Manhole

Area Summary Schedule

Net Developable Area	1.928 ha
Intercepted catchment from college	0.052 ha
Proposed Imp. Catchment	0.998 ha
Urban Creep	0.022 ha
Total Modelled Catchment	1.072 ha

Pre-Development Runoff

Return Period	Greenfield Rate (l/s)
2yr	8.8
30yr	22.9
100yr	31.7

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)
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	1.072 ha
Control Chamber Invert	53.535 mAOD
Hydraulic Control	Hydrobrake @ L
	Ref: CIL-SW-0118-6400-1070-6400
	0.079mØ Orifice @ L + 1.075m
	0.055mØ Orifice @ L + 1.680m
Tank Invert Level	54.900 mAOD
Tank Cover Level	58.200 mAOD
Porosity	95%
Dimension	423m x 1.6m Deep

Total Volume Required: 646.6m³

Total 2yr+45% Peak Discharge	6.4 l/s
Total 30yr+45% Peak Discharge	17.4 l/s
Total 100yr+45% Peak Discharge	23.2 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:

- 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.
- 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.
- To ensure the development is safe throughout its lifetime, the surface water strategy accounts for runoff in up to the 100 year return period.
- 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.
- 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).
- 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.
- 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.
- During exceedance events runoff will be directed away from buildings and toward low points where exceedance drainage provision is provided.
- Foul flows generated by the development are proposed to be discharged via a requisitioned connection to the public foul sewer to the south of the site.

E	30.04.2024	UPDATED TO SUIT LATEST LAYOUT	TMR	CPY	CPY
D	01.08.2023	UPDATED TO SUIT LFA COMMENTS	TMR	CPY	CPY
C	19.06.2023	UPDATED TO SUIT LATEST LAYOUT	BJG	CPY	CPY
REV	DATE	DESCRIPTION	BY	CHK	APD

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	E

SCALE @ A1: 0 1:500 25 metres

DESIGN BY: **awp** **awcockward partnership**

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