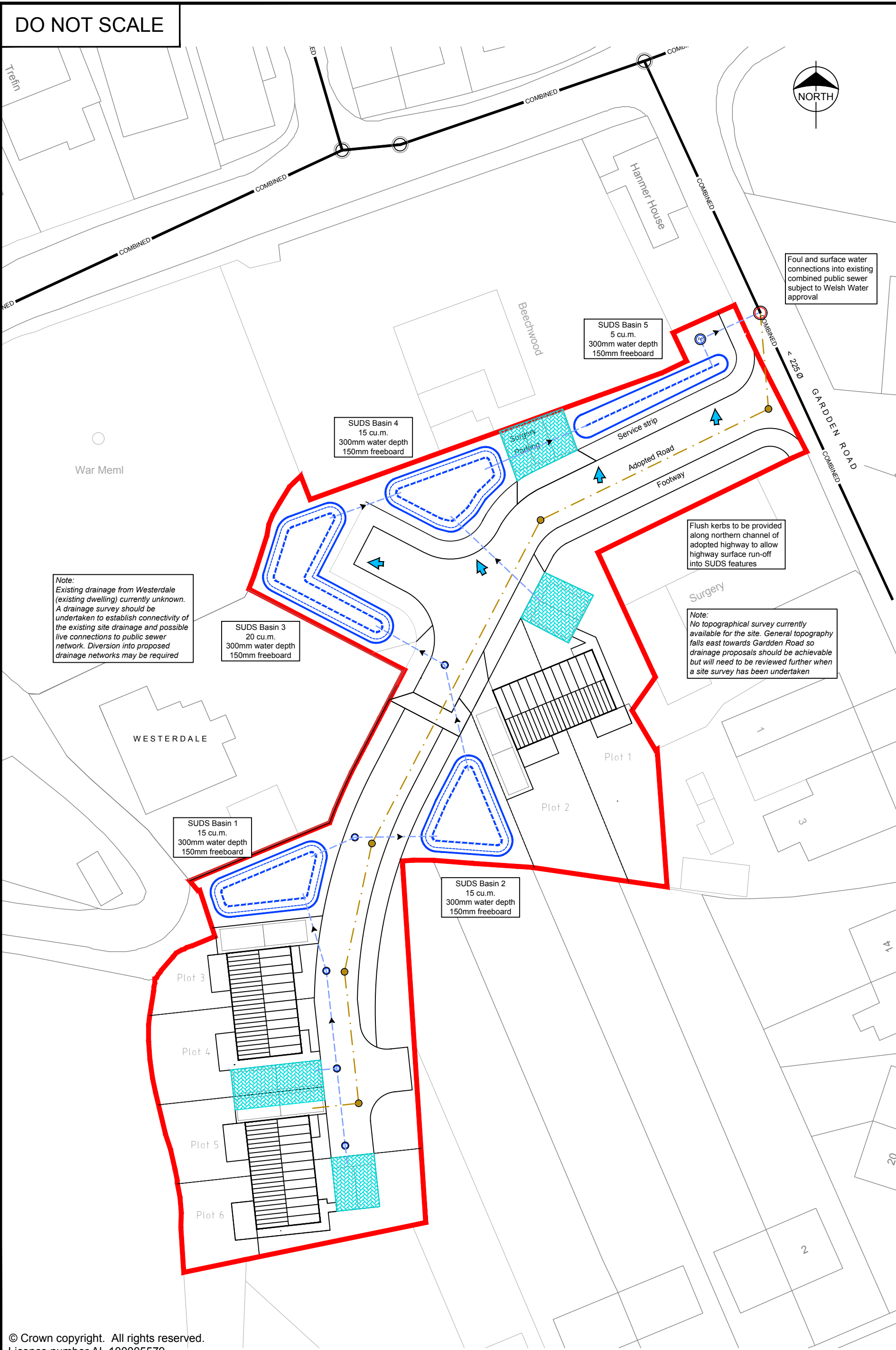




Surface Water Flow Rates

Existing Greenfield Run-off Rates

(Based on 3140sq.m. Site area)

1yr = 1.7 l/s
30yr = 3.4 l/s
100yr = 4.1 l/s

Proposed Run-off Rates

1yr = 1.7 l/s
30yr = 3.4 l/s
100yr = 4.1 l/s

Proposed impermeable areas = 1340sq.m.

100yr attenuation storage = approx 62cu.m
(+40% climate change)

Drainage Strategy

Existing Drainage

We have no information on the existing site drainage from Westerdale. Foul drainage is assumed to connect into the sewers in Gardden Road. Surface water connections are unclear. A drainage survey should be undertaken to establish how the existing site is currently drained and whether any drainage needs diverting or offers a potential point of connection from the proposed development

Proposed Foul

Discharge to existing combined sewer network in Gardden Road via a new manhole subject to Welsh Water approval

Proposed Surface Water

1. Collection for re-use

Water butts to be installed to rear RWPs on individual properties. It is currently assumed the proposed dwellings will not be providing rainwater harveting for re-use within the property (eg: toilet flushing and washing machine)

2. Infiltration

Local geology maps and available BGS boreholes nearby indicate infiltration techniques for disposal of surface water from the development is unlikely. Furthermore, the BGS Infiltration Report also indicates potential as low. However, infiltration testing will be undertaken following the intrusive site investigation should ground conditions indicate presence of suitable strata (sands / gravels)

3. Watercourse

There are no watercourses within the vicinity of the site, the nearest being approximately 300m south east of site (Stryt Las Park). A connection is considered unviable due to cost and potential third party land issues. A route along the highway would be in excess of 600m.

4. Surface Water Sewers

There are no known surface water sewers or highway drains within the vicinity of the site.

5. Combined Sewers

A connection into the combined sewer network is required subject to Welsh Water approval. Discussions with Wrexham SAB / Welsh Water are advised early in the design process to establish an acceptable solution as this is not a preferred surface water destination and is considered a last resort after fully exploring all other options.

Water Quality

Roof

Generally run-off from roof can be considered clean run-off and will not require any treatment

Access road and driveways

Permeable paving and shallow dry basins to provide a sufficient level of treatment

Maintenance / Responsibilities

Adoption and maintenance of all surface water components serving 2 or more properties subject to SAB approval.

A 'Private Management Company should be set-up to maintain the SAB approved surface water network in the future.

WCBC SABS will require details of the Management Company. Maintenance requirements will be considered further at detailed design stage and a SUDS Management Plan will be produced to address the frequency and type of maintenance activities. Residents will be required to pay an annual fee to the Management Company. Details /costs to be determined for Full SABS Application.

Pipes and manholes:

All piped networks to have CCTV survey at end of construction activities. Any debris to be removed. Future maintenance to involve inspections to ensure no silt build ups within network. SUDS Management Plan to be produced to address frequency and type of maintenance activities

Shallow SUDS (dry basin)

To be maintained by private 'Management Company' SUDS Management Plan to be produced to address frequency and type of maintenance activities.

Permeable paving:

To be maintained by private 'Management Company' SUDS Management Plan to be produced to address frequency and type of maintenance activities. Or to be maintained by individual property owner when located within private drives.

Flow Control:

To be maintained by private 'Management Company' SUDS Management Plan to be produced to address frequency and type of maintenance activities.

Legend

	Site Boundary
	Existing Combined Sewer
	Proposed Foul Sewer
	Proposed Surface Water Sewer
	Proposed Flow Control Manhole
	Shallow SUDS Basin
	Permeable Paving
	Surface Water flow direction into SUDS features

Note

- This is a preliminary design demonstrating a drainage solution is achievable to discharge flows from the proposed development. A topographical survey, full site investigation and drainage survey work is required prior to undertaking full design.
- The specification in all respects shall be in accordance with the current Wrexham CBC Specification and Construction publication in force in the county at the time of construction.
- The surface water network will be subject to Wrexham SABS Approval. Surface water drainage systems must be designed and built in accordance with mandatory standards for sustainable drainage published by Welsh Ministers. These systems must be approved by the local authority acting in its SuDS Approving Body (SAB) role before construction work begins. The SAB will have a duty to adopt compliant systems so long as it is built and functions in accordance with the approved proposals, including any SAB conditions of approval.
- The surface water destination is to direct surface water flows to the combined sewer. An evidence based report will be required for Wrexham SAB / Welsh Water to consider the proposal. A topographical survey, existing site drainage survey and site investigation will be required before such a report can be has been undertaken. See Drainage Strategy notes for consideration of surface water destinations higher in the hierarchy than discharge to a public combined sewer.

PRELIMINARY

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Client

Xafinity Pension Trustees Ltd

Project

WESTERDALE
RHOS, WREXHAM

Title

Drainage Layout

DRAWING NUMBER

7406 - SK01

SCALE at A2 1:250

DATE	July 2020	REVISION
DRAWN	AJ	-
CHECKED	AJ	-