

DRAINAGE STRATEGY

This site is part of two Phase development Phase 1Fe & Phase 2FE, with the latter being subject to the development of Housing on adjacent land. It is anticipated the Phase 2FE will include a suitable offsite water body & network to discharge into. At present Booth-king Partnership has no control on the time frame for this development and the strategy below will be set out to reflect this.

Due to the nature of the site being a School we have dismissed the option for any open water features based on health and safety grounds.

A previous Phase 2 SI report has been referred to (pre-2019) and the ground conditions underlying the site have been found to have shallow standing water levels, the use of shallow soakaway was not suitable for disposal of surface water runoff. Soil infiltration tests were found not to be conclusive, further Phase 1 & 2 SI reports are planned and this strategy will be updated to reflect any additional findings.

Surface Water Drainage strategy

The surface water drainage proposals for this site are to discharge into a Private network via a conventional below ground piped network using a storage tank and flow control device to limit flows to agreed discharge rates.

The following final discharge outfall options are then available.

- Housing development starts imminently and an outfall connection is made to discharge into the new offsite Redrow network/depression storage. We currently believe this to be unlikely until the completion of the Phase 1FE stage.

- Phase 1FE is completed without Redrow development in place.

The network will be set-out with future discharge position in mind and to suit on site topography. An immediate outfall will be made into the existing combined sewer within the site boundary and ultimately discharging into the adopted UU combined sewer on Thornham Lane, subject to approval from UU and a Section 106 agreement being granted. At present this appears to be the only viable option on the completion of Phase 1FE.

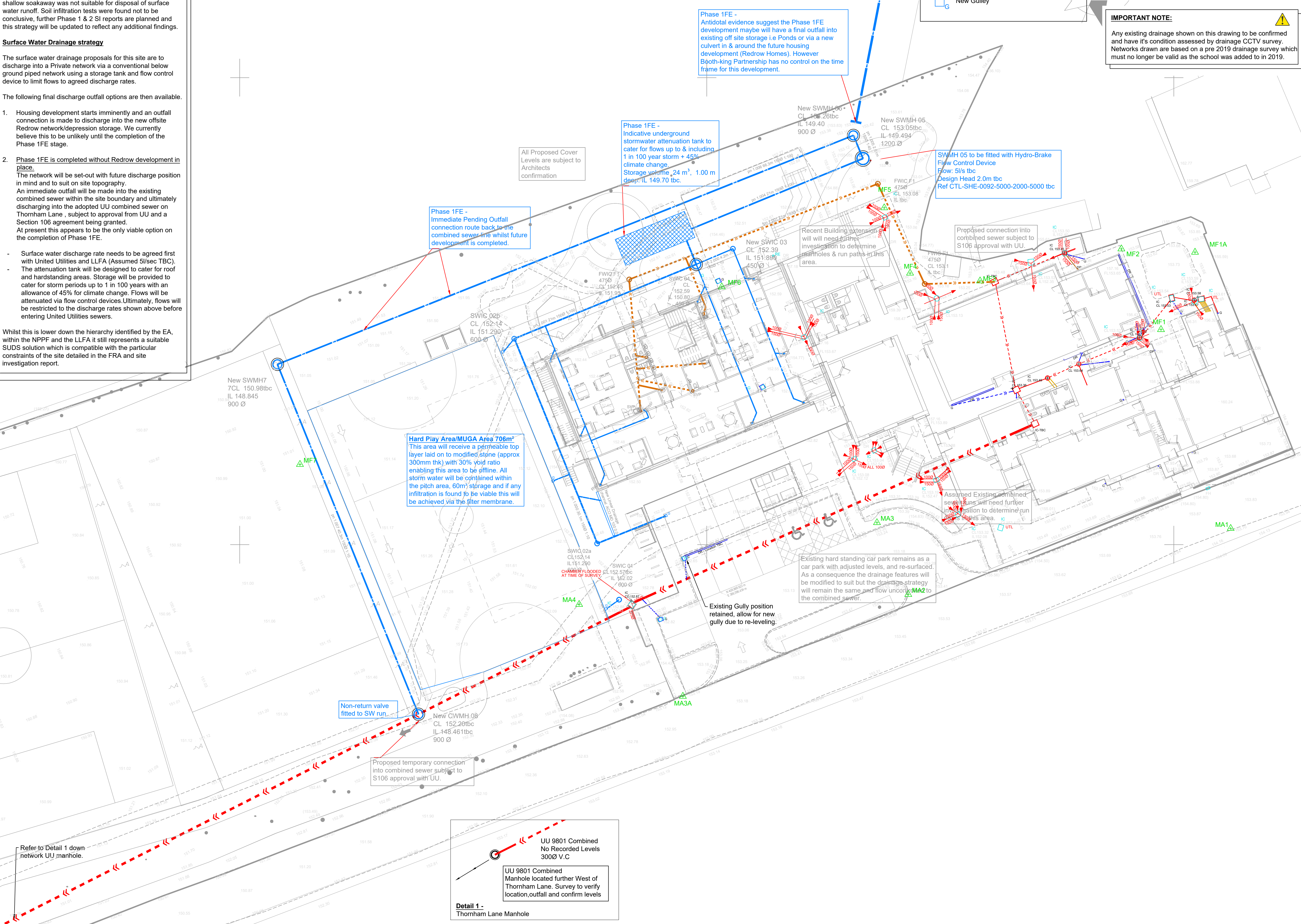
- Surface water discharge rate needs to be agreed first with United Utilities and LLFA (Assumed 5l/sec TBC).
- The attenuation tank will be designed to cater for roof and hardstanding areas. Storage will be provided to cater for storm periods up to 1 in 100 years with an allowance of 45% for climate change. Flows will be attenuated via flow control devices. Ultimately, flows will be restricted to the discharge rates shown above before entering United Utilities sewers.

Whilst this is lower down the hierarchy identified by the EA, within the NPPF and the LLFA it still represents a suitable SUDS solution which is compatible with the particular constraints of the site detailed in the FRA and site investigation report.

DRAINAGE STRATEGY

FOUL WATER

It's planned to convey all foul water into the pre- existing on site private network. The on-site foul water network connects to an existing UU combined water sewer in Thornham Lane.



NOTES

- Do not scale from this drawing.
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- This drawing is to be read in conjunction with all relevant contractual documents.
- Anyone using this drawing must be aware of their legal duties under the CDM Regulations 2015, refer to the HSE website for further information. BKPL are not Principal Designers.
- All dimensions shown on this drawing are in millimeters unless noted otherwise.
- If the Contractor consider that they do not have sufficient information to safely complete the works detailed on this drawing, they should contact the Engineer.
- All works are to be carried out in accordance with the Building Regulations (as amended) and to the approval of Building Standards.

Drainage Notes:

- All adoptable works to be in accordance with 'Design and Construction Guidance - Approved Version 2.1' where applicable.
- All manhole cover levels to be confirmed by Architect in absence of topographical survey.
- Clay pipes to be flexibly jointed and comply with the requirements of BS EN 295.
- Concrete pipes to be flexibly jointed and comply with the requirements of BSEN 1916 and BS 5911.
- Plastic pipes (PVC-U) to be flexibly jointed and comply with the requirements of BS EN 1401-1 1998.
- Where cover to pipes is less than 1200mm in roads and hardstandings or 900mm elsewhere, concrete surround is to be provided.
- Until final surface is placed, heavy traffic is not to be allowed over pipe trenches without special precautions.
- Pipes and fittings are to be laid in accordance with the manufacturers recommendations.
- All Manholes should be concrete manhole rings.
- All SVP positions TBC by Architect.
- For setting out of all pop-up positions refer to Architect's details.
- Civil engineering contractor to arrange for:
 - Own services and temporary supplies
 - Pathway & partial closure as deemed required by their method statement. Including costs.
 - Temporary adequate over pumping as deemed required by civil engineers method of construction.
- Type 2 rodding access is to be provided at all pop-ups.
- For flows of less than 1l/sec, pipes not exceeding 1000 at gradients not flatter than 1:40 have proved satisfactory.
- Where the peak flow is more than 1l/sec, a 1000 pipe may be laid at a gradient no flatter than 1:80, provided that at least one WC is connected.
- 1500 pipe may be laid at a gradient not flatter than 1:80, provided that at least five WC are connected.
- For gradients flatter than those given in (14) and (16), a high standard of workmanship is necessary if blockages are to be minimised. Where this has been achieved, gradients of 1:130 for 1000 pipes and 1:200 for 1500 pipes have been used successfully.
- Protection to drains and gully connections may be concrete bed surround between cover depths of 450mm to 200mm.
- The contractor should confirm the locations for existing services prior construction.
- To be read in conjunction with BKP standard details drawing 14791-BKP-00-XX-DR-C-510-P1-Drainage details.
- Pipes of different diameters entering manholes should be installed with soffits at same level.

ISSUED FOR TENDER

T01	30/04/24	Issued for Tender	T01
P02	29.02.24	CLIMATE CHANGE INCREASED TO 45%	P02
P01	23.02.24	ISSUED FOR INFORMATION	P01
REV.	DATE	REVISION DETAILS	INITIALS

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PROJECT:

St John's CE Thornham
Primary School, Middleton

TITLE:

Drainage GA
Phase 01FE

SCALE @ A1:	DRAWN:	DATE:	REVISION:	STATUS:
1:200	J.L	FEB 24	T01	S1

DRAWING No:

14791-BKP-00-XX-DR-C-500