

CWA Drainage

- 5.4 The CWA drainage is in the form of central swale running from the proposed outfall 04 to the south-east to where it finally connects to Toddington Ditch at the north-west corner of the application area, which is an existing tributary of the Black Ditch.
- 5.5 The central swale picks up secondary swales that convey the surface water from the adjacent development parcel outfalls 01, 02, 03 and 4, plus and the outfall from the RM planning approved Phase 4. Total peak rate of 377 litres/sec from these outfalls.
- 5.6 There is no other external source of surface water discharging into the CWA apart from these outfalls. Any additional run-off will be generated by the rainfall falling on the 4.48 hectare CWA application area.
- 5.7 There is no surface water attenuation proposed in the CWA. It will act as a conduit to collect the run-off from the new outfalls from the adjacent development platforms and safely convey it to the Black Ditch to the north.
- 5.8 The proposed drainage headlines are as follows:
- Black Ditch to the north is very flat and the water is generally 1.0m AOD.
 - The new central swale will not have any longitudinal fall/gradient from CWA Pond 01 onwards, so will be constructed as completely flat with a constant bed level 1.0m AOD. It is not possible to introduce any longitudinal fall over this 420 metre length of swale, because a relatively longitudinal fall of 1in400 would raise the bed level by 1.0m that would impact the levels and flood compensation calculations.
 - The swales are shallow with a bed level 1.0m AOD and top of bank level of 1.38m. They are 3m wide in total with a 1m wide bed.
 - The swales open into three number lagoons/pools as shown on the drainage plans, where the bed level drops to 0.38m AOD just in the pools. It is anticipated there will be a constant water level in the pools of approximately 1.0m AOD (circa 620mm deep) where the water level will equalize with the water level in the Black Ditch to the north. These pools are there for amenity and treatment purposes only.
 - There will be oversized culverts (2m wide x 1m high) to allow water to pass under the shared footpaths, which will also enable flood water to up into the CWA. These culverts far more conveyance capacity than the maximum combined flow generated by the development platforms (377 litres/sec).

Surface Water Treatment

- 5.9 Table 26.2 of the SuDS Manual identifies the pollution hazard level associated with the land uses within the Proposed Development as being 'Low'. On a scale from 0-1 a 'Low' pollution hazard level relates to the following pollution hazard indices (See table 26.2 of the SuDS Manual) This

is applicable to runoff from residential roofs, driveways, paths, residential parking areas and low traffic roads:

- Total Suspended Solids = 0.5
- Metals = 0.4
- Hydrocarbons = 0.4

5.10 Table 26.3 of the SuDS Manual sets out the indicative mitigation indices provided by different SuDS features for discharges to surface water.

5.11 The surface water run-off discharging from the adjacent development platforms will have already undergone some surface water treatment prior to reaching the CWA. The new central swales will also be entirely flat (similar to the local existing ditch network) so the water will be extremely slow moving allowing pollutants to drop out before it reaches the Black Ditch. Swales can remove coarse to medium sediments and associated pollutants by filtration through surface vegetation and groundcover, providing mitigation indices of 0.5, 0.6 and 0.6, which exceed the requirement set out in paragraph 5.9.

Exceedence Flows

5.12 The entire drainage network drainage network is designed to cope with all rainfall events up to the **1in100yr return period+30%CC** and this water will be contained on site within the developed area (not the wetlands).

5.13 The ground and road levels have also been engineered so it falls either towards a swale or outwards towards the wetland from the new dwelling. The proposed overall drainage plan in Appendix G show the proposed levels and the route of overland flow in the event of system failure, blockage or overload.

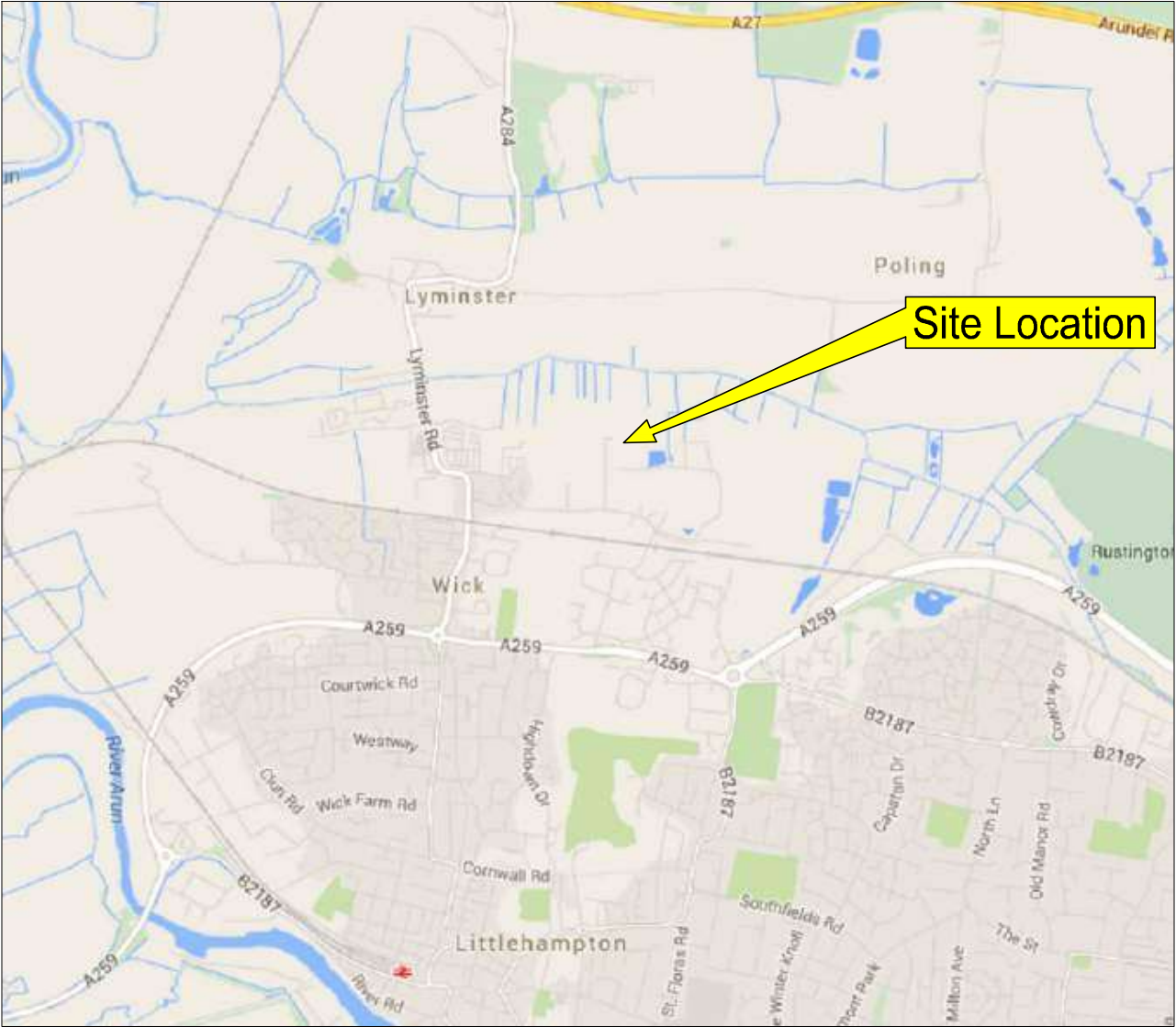
Adoption and Maintenance

5.14 The proposed surface water drainage systems will be offered for adoption to ICOSA Water under a S104 agreement, which will ensure they are maintained in perpetuity.

6 Condition 10 Conclusion

- 6.1 This surface water drainage strategy report, with accompanying drawings and calculations, demonstrate that the reserved matters planning application for Phase 5 and the main avenue of the greater outline approved Hampton Park development can be drained satisfactorily without increasing flood risk elsewhere.
- 6.2 The Surface water runoff will be discharged to the Black Ditch at a peak allowable discharge of 15 litres / second / hectares for up to the 1 in 100-year return period, plus 30% allowance.
- 6.3 It has already been agreed that this proposed rate of discharge will provide considerable betterment when compared to the pre-demolition brownfield arrangement (as established in the west of wetland report). The provision of SuDS and attenuation features will store the balance of surface water runoff.
- 6.4 The ground and road levels have been engineered so it falls either towards the swales or outwards towards the wetlands from the new dwellings. The proposed overall drainage plan in Appendix G show the proposed levels and the route of overland flow in the event of system failure, blockage or overload.
- 6.5 Therefore, it is considered that this evidence base, when read in conjunction with the approved West of Wetlands drainage strategy, provides sufficient information to discharge the outline planning Condition 10 for the Phase 4 reserved matters application.

APPENDIX A: Hampton Park Site Location

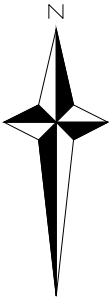


- NOTES**
1. This drawing is to be read in conjunction with all relevant documents and specifications.
 2. Dimensions not to be scaled.

LOCATION

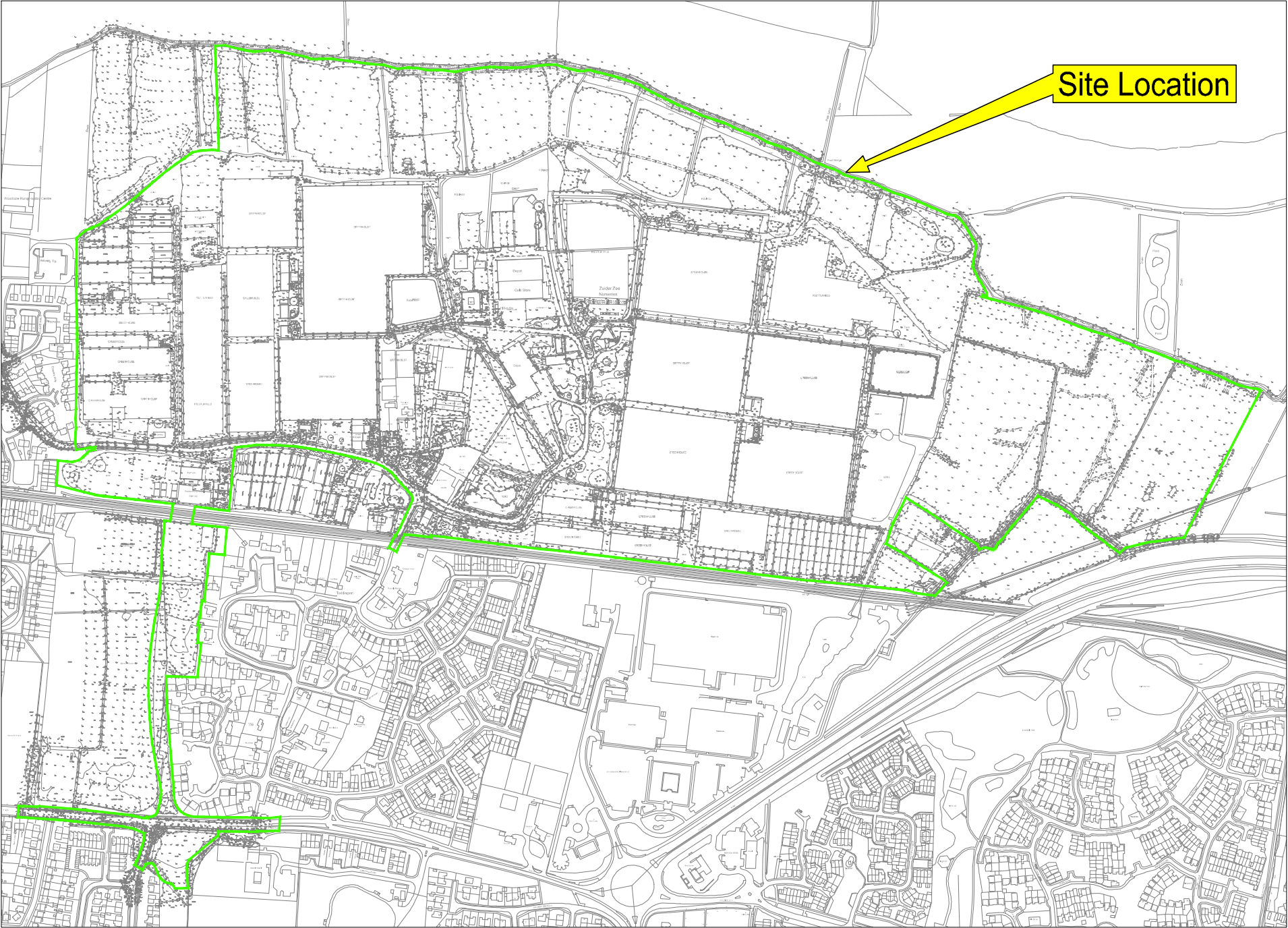
Address: Toddington Lane
Wick
Littlehampton
West Sussex
BN17 7PP

National Grid reference: TQ 03414 03979



Plan NTS

Plan 1:10000



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Project : Land North of Toddington Lane, Littlehampton

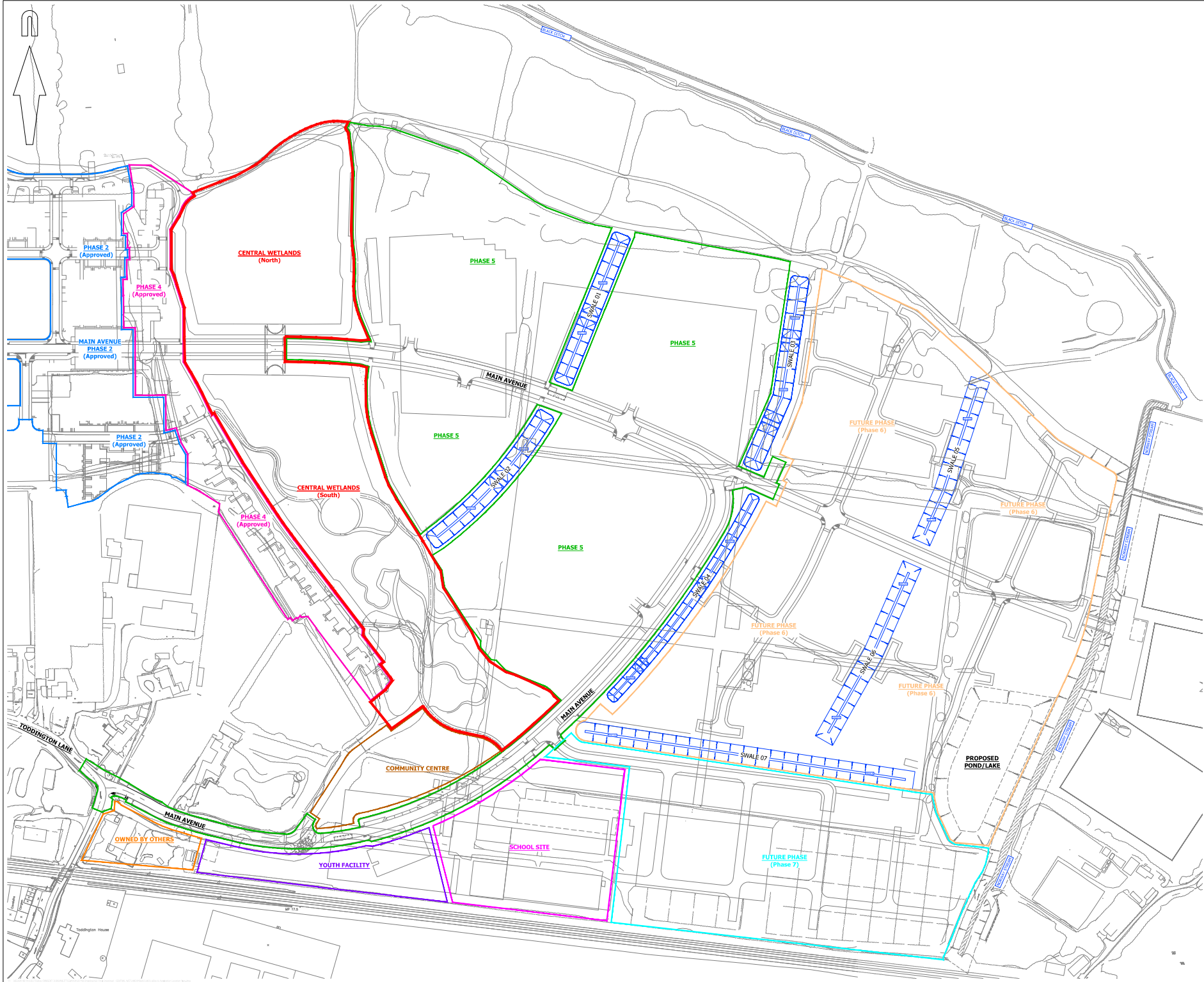
Title : Site Location Plan

Project Engineer : J O'Kelly Scale : As Shown@A4
Project Director : k Rayner Date : December 14

Drawing No. N/A

Rev -

APPENDIX B: Central Wetland Area Location



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A1 ORIGINAL

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KEY:

PROPOSED CENTRAL WETLAND APPLICATION BOUNDARY

FOR INFORMATION
NOT FOR CONSTRUCTION

P1	Initial Issue, (TC)	SF	21/10/2021
rev.	amendment	checked	date



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Client: **PERSIMMON HOMES THAMES VALLEY**

Project: **NORTH LITTLEHAMPTON
EAST OF WETLANDS
MAIN AVENUE & NORTHERN CROSSING**

Scale: 1:1250	Drawn by: TC	Checked by: SF
Date: OCTOBER 2021	cad file: MBSK211021.DWG	

Title: **CENTRAL WETLAND LOCATION PLAN**

Mayer Brown Limited jobcode:	subfile:	revision:
	-	P1

Drawing number: **MBSK211021-1**

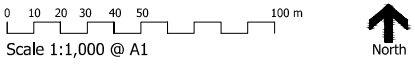
APPENDIX C: Central Wetland Area Landscape Strategy



North Littlehampton
Central Wetland Area sk.CWA.2
Landscape Plan

Key

- 1** **Wetland area:** Pond to be created for interest and to increase the potential for species diversity. Pond to include aquatic plants, rushes and reeds. A footpath link at low level to be provided at the north with a boardwalk where appropriate. Tree and shrub planting provided at the edge of the development plateaux to allow for open uninterrupted views towards the north, to the hills within the National Park.
- 2** **Parkland area:** retained trees to be bolstered with new native tree and shrub planting, and hazel coppice, to create an area for informal recreation. Footpaths at low level to be provided with boardwalks where appropriate. Long grass / species rich grass and wildflowers to be established.
- 3** **Open views** provided across the wetland to the north and south from the bridge. Tree and shrub planting positioned strategically on the embankments, at both ends, to ensure that views from the bridge are maintained. Planting on the bridge embankments will also provide interest from within the wetland area and will integrate the structure into the landscape scheme.
- 4** **Tree planting** positioned at the top of the bank, to provide an edge to the development and define the wetland area. For detail refer to Plant Schedule in DWG no. sk.cwa.3.
- 5** Existing trees to be retained
- 6** Large specimen native trees. For detail refer to Plant Schedule in DWG no. sk.cwa.3.
- 7** Native tree and shrub planting
- 8** Planting within swales
- 9** Low level path: self-binding gravel. Boardwalks provided where necessary. Tarmac paths to be provided on 1:21 gradient slopes into the wetland area



A088461 SK.CWA.2[D].dwg 25 October 2021

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APPENDIX D: Outline Application - Surface Water Strategy & Illustrative Masterplan