



19th May 2026

File Note: River Condition Assessment

Site address: Chalfont House, Silverdale Road, Hayes, Middlesex, London, UB3 3BN

Survey: River Condition Assessment

Recipients: RGP Holdings Limited

Proposal: Temporary planning permission for the erection of two single-storey buildings for industrial use and associated works.

Planning application reference: 71374/APP/2026/424

Introduction

Arbtech Consulting Ltd was commissioned by RGP Holdings Limited to conduct a River Condition Assessment (RCA) survey along the Grand Union Canal, which lies to the south and west of the development boundary. The aim of the RCA was to outline ascertain the pre-development condition score of the watercourses and estimate the post-development condition scores using proposed site plans (included at **Appendix 1**) to inform a Biodiversity Net Gain (BNG) metric for the site, using Modular River Physical (MoRPh) surveys alongside a desk-based assessment.

Methodology

The methodology utilised for the RCA was: *A Guide To Assessing River Condition: Part of the Rivers and Rivers Component of the BioDiversity Net Gain Metric BM3.1 version* as presented within the Cartographer online tools to calculate River Condition Assessment - including the MoRPh Pro surveys. The site survey comprises blocks of five contiguous modules on a river, while the MoRPh River Type Pro survey gathers desk study information in order to help produce the maps on river condition and type, both of which produce the MoRPh Map, the MoRPh5 Map, the River Condition Map and the River Type Map.

The aim of the survey is to collect data relating to sediment, morphological, vegetative and aquatic features for each module from the bank top (10m from the top of each bank in terrestrial habitats), the bank face (between the bank face and the water level, including the marginal zone) and the channel itself including the river bed and water surface features. Subreaches of MoRPh5 surveys are repeated as necessary to ensure that a minimum of 20% of the length of each watercourse located within 10m of the site boundary is surveyed.

As the watercourse is a canal, the length between each module survey was assigned as 50m. One subreach consist of a total of 5 MoRPh modules, which in this case equated to an overall length of 250m. As such, the extent of the subreach equates to more than 100% of the length of the watercourse within 10m, in excess of the minimum 20% requirement.

The reach of the Grand Union Canal is defined as the section of the river between two notable changes in flow. The upstream location of the watercourse (TQ 05601 80913) is where the river joins with Fray's River and a series of wetland habitats, representing a significant change in flow and river dynamics. The downstream location (TQ 05147 87346) is again where the river joins with the River Crane, with a junction within the canal to the north.

As part of the assessment the watercourse is assessed for 'overdeepening', using the following formula:

River shape = (Average MoRPh width) / (Average (water depth+lower bank height))

The guidance states:

"If River shape has a value of < 2 the river is highly likely to be overdeep."

If River shape has a value of < 4 the river is likely to be overdeep, especially if the Average width is greater than 10 m.

Limitations

The survey was undertaken during suitable weather conditions, and the water level was not considered to be abnormally high. The entire length of the river was not accessible from the banks, however the length of the river could be seen and surveyed from accessible areas. Therefore, this is not considered to be a significant limitation, and the field results were supplemented with aerial imagery where sections could not be accurately assessed.

Results

Baseline

The site survey was conducted on 19th May 2026, by Modular River Survey Team RCA accredited ecological surveyor Anya White, in accordance with guidance (The MoRPH Survey Technical Reference Manual, 2024).

The pre-development RCA has been based upon the MoRPH surveys, while the post-development RCA is based upon the proposed site plan included at **Appendix 1**. Based on these plans, the condition of the river is expected to remain the same, as the river will be retained unaffected as a result of the development.

The results of the baseline and post-development MoRPH survey are shown in **Table 1** below.

Given that the watercourse shape for the subreach was less than 4, it is considered likely that the watercourses are overdeep, and guidance states that the overall condition score be downgraded. However, the final condition score is poor, therefore this was not possible to downgrade.

Table 1. Outputs of Baseline and Post-development River Condition Assessment.

Subreach 1		
Category	Baseline	Post-development
Preliminary Condition Score	-1.964	-1.964
River Shape	3.600	3.600
Average Width (m)	14.40	14.40

Positive Index Average	0.421	0.421
Negative Index Average	-2.385	-2.385
River Category	Navigable river/canal	Navigable river/canal
A1: Braiding Index	-	-
A2: Sinuosity Index	1.018	1.018
A3: Anabranching Index	-	-
A4: Level of Confinement	-	-
A5: Reach Valley Gradient	-	-
A6: Bedrock Reach	No	No
A7: Coarsest Bed Material	-	-
A8: Average Bed Material	-	-
Calculated River Type	Navigable/Canal	Navigable/Canal
Overridden River Type	No	No
River Condition Output	Poor	Poor

Table 2. Baseline Positive and Negative Indicator Results.

Group B	Score	Group C	Score	Group D	Score	Group E	Score
B1	0	C1	1	D1	0	E1	1
B2	0	C2	0	D2	0	E2	0
B3	0	C3	2	D3	0	E3	0
B4	0	C4	1	D4	0	E4	0
B5	-4	C5	0	D5	-2	E5	0
		C6	0			E6	3

	C7	0		E7	0
	C8	-4		E8	-4
	C9	-4		E9	-4
	C10	-3		E10	-3
				E11	-3
				E12	0

Table 3. Watercourse and riparian encroachment baseline.

Encroachment		
Riparian Encroachment	Left Bank	Right Bank
Grand Union Canal	Major	Major
Watercourse Encroachment		
Grand Union Canal	Major	

Table 4. Post-Intervention Positive and Negative Indicator Results.

Group B	Score	Group C	Score	Group D	Score	Group E	Score
B1	0	C1	1	D1	0	E1	1
B2	0	C2	0	D2	0	E2	0
B3	0	C3	2	D3	0	E3	0
B4	0	C4	1	D4	0	E4	0
B5	-4	C5	0	D5	-2	E5	0
		C6	0			E6	3
		C7	0			E7	0
		C8	-4			E8	-4
		C9	-4			E9	-4

C10	-3		E10	-3
			E11	-3
			E12	0

Table 5. Watercourse and riparian encroachment post-intervention.

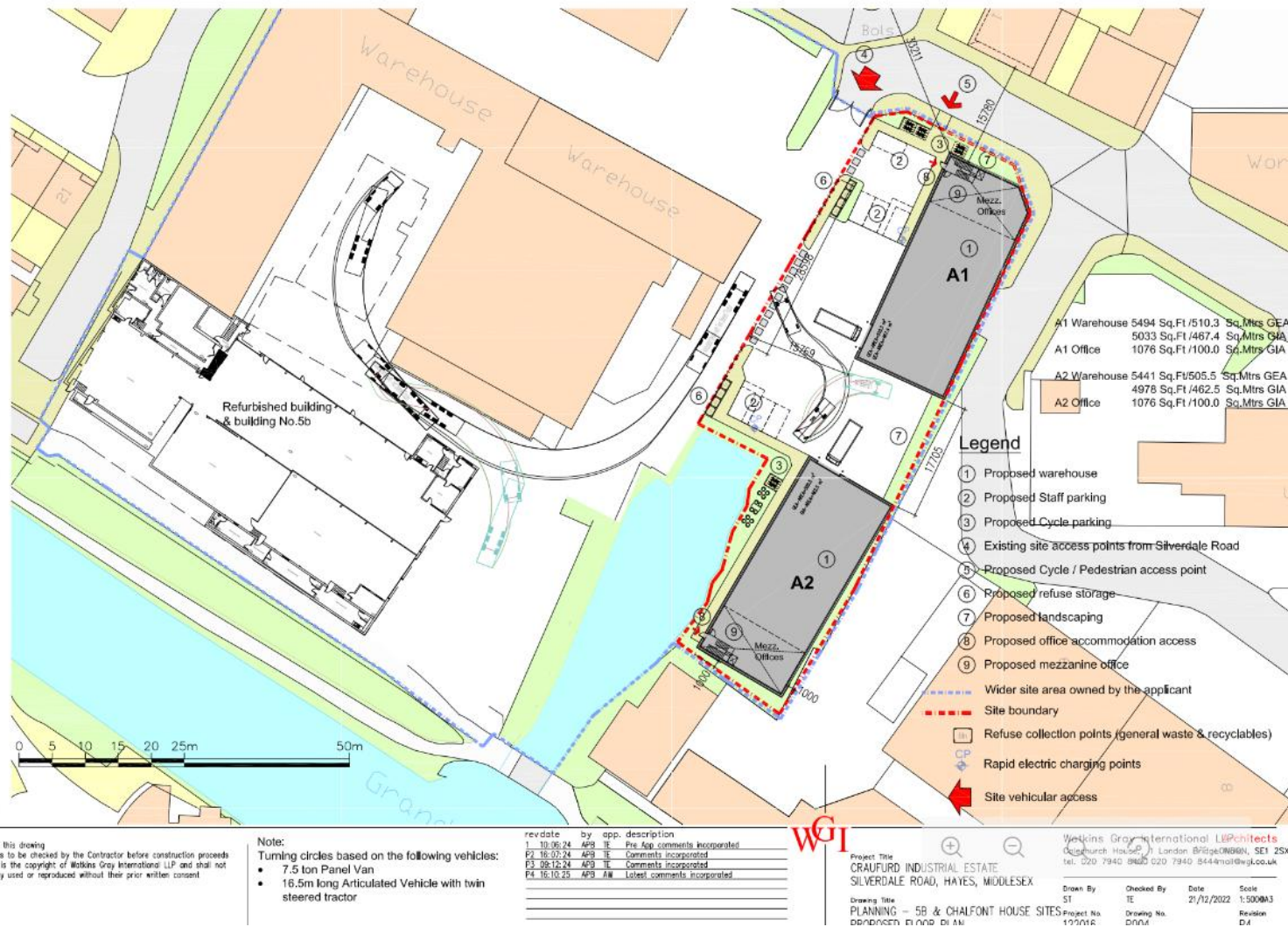
Encroachment		
Riparian Encroachment	Left Bank	Right Bank
Grand Union Canal	Major	Major
Watercourse Encroachment		
Grand Union Canal	Major	

Conclusion

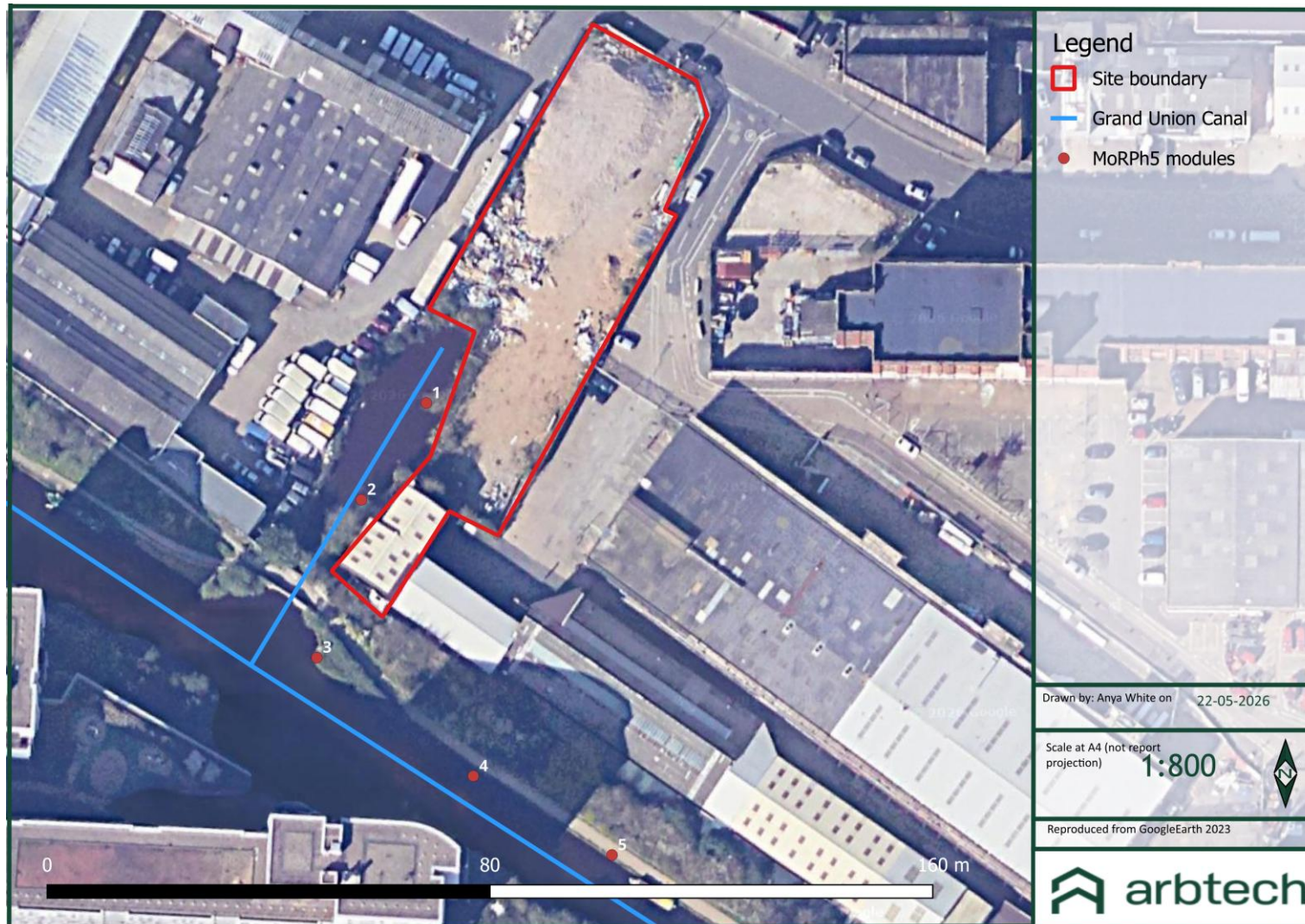
The baseline assessment indicates that the watercourse is currently in *Poor* condition. This suggests that small-scale or targeted enhancement measures may not have the potential to deliver measurable improvements in ecological condition, particularly as the post-intervention scenario will not alter the cover of urban land.

The proposed development measures throughout the site, up to the bank top, are predicted to maintain the rivers condition as poor. However, as the development includes the erection of industrial buildings, the riparian zone will remain as largely urban with light vegetation and therefore any intervention will not be significant enough to elevate the condition of the river as these are likely to be insufficient to mitigate for the urban habitat within the riparian zone.

Appendix 1: Proposed Development



Appendix 2: MoRPh Survey Locations



Appendix 3: Site location map



Appendix 4: RCA Certification



River Condition Assessment Certificate

Name **Anya White**

Email **anyawhite@arbtech.co.uk**

Level **Qualified Surveyor**

*Approved on 25/06/2025 by the
Cartographer RCA Team and RGS
for Continuing Professional
Development*



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