



e3p

Biodiversity Metric Report

Land at Greenbooth Road/Edenfield Road, Norden

Reference: 80-742-R2-4

Date: October 2023



BIODIVERSITY METRIC REPORT

Land at Greenbooth Road/Edenfield Road
Norden

Prepared for:

Stonebond Properties Ltd

Report Ref: 80-742-R2-4

Date Issued: 03/10/2023

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QUALITY ASSURANCE

PROJECT NUMBER	80-742		
VERSION	Version 2	Version 3	Version 4
REMARKS	Updated site layout plans	Updated site layout plans	River Condition Assessment
DATE	June 2023	June 2023	October 2023
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EXECUTIVE SUMMARY

Site Address	Tenterhouse Mill, Greenbooth Road, Norden, Rochdale, OL12 7TD						
Co-ordinates	E 385690, N 414765						
Site Area	Approximately 2.96 ha						
Current Site Use	The site comprised the former Tenterhouse Mill, including derelict industrial units and mill buildings with areas of hardstanding colonised by scrub. The north and east of the site are formed of broadleaved woodland and scrub. Naden Brook flows adjacent to the site and flanks the south and western boundaries. Woodhouse Lane Brook flows through the centre. The north of the site includes a continuation of the broadleaved woodland, with agricultural land situated beyond. Further to the east, south and west is residential housing.						
Proposed Development	Development proposals include the redevelopment of the site to include a residential scheme with associated infrastructure and landscaping.						
Results	The biodiversity metric results show a gain of habitat and hedgerow units, and no change in watercourse units, based on the proposed layout, as follows: <table> <tr> <td>Habitat Units</td><td>0.49</td></tr> <tr> <td>Hedgerow Units</td><td>0.05</td></tr> <tr> <td>Watercourse Units</td><td>0.00</td></tr> </table> A 3.26% gain in habitat units, 100% gain in hedgerow units, and no net change of watercourse units will be incurred on-site as a result of development. However, the trading rules have not been satisfied.	Habitat Units	0.49	Hedgerow Units	0.05	Watercourse Units	0.00
Habitat Units	0.49						
Hedgerow Units	0.05						
Watercourse Units	0.00						
Conclusions and Recommendations	To achieve no net loss in habitat units, the 23 trees proposed outside of the residential plots on-site must be of medium size (above 18 cm girth when planted). Despite these habitat additions, the trading rules cannot be satisfied within the site based on the current proposals and areas for landscaping. As the broadleaved woodland and scrub lost in the site have not been traded up. However, satisfying these rules will not be a mandatory requirement until January 2024. Additional species enhancements could be provided on-site, which could include bat and bird boxes, hedgehog houses and hibernacula.						



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1. INTRODUCTION

1.1. BACKGROUND

E3P has been instructed by Stonebond Properties Ltd to undertake a Biodiversity Metric Calculation at Land at Greenbooth Road/Edenfield Road, Norden hereafter referred to as “the site”.

This report has been produced by Lowri Thomas BSc (Hons), Project Manager (Ecology) at E3P. Lowri holds an Associate membership of CIEEM and has over three 3 years of professional experience as an ecologist. Lowri has experience undertaking condition assessments and Biodiversity Net Gain assessments on a range of projects across the UK.

This report should be read in conjunction with ‘Biodiversity Metric 4.0 Auditing and Accounting for Biodiversity Calculation Tool – Greenbooth, Norden.xl’.

1.2. PREVIOUS SURVEYS

An Extended Phase 1 Habitat Survey and Daytime Bat Survey of the site was undertaken in 2020 by Rachel Hacking Ecology. The site was found to comprise two large former industrial buildings, outbuildings, bare ground, ephemeral/perennial, scrub, a stream, tall ruderal, broadleaved woodland and neutral grassland. Invasive species within the site included wall cotoneaster (*Cotoneaster horizontalis*), Himalayan balsam (*Impatiens glandulifera*), montbretia (*Crocasmia x crocosmiiflora*), rhododendron (*Rhododendron ponticum*) and variegated yellow archangel (*Lamium galeobdolon subsp. argentatum*).

1.3. SITE LOCATION

The site is located in Norden north-west Rochdale. The site is accessed via Greenbooth Road which defines the south-west and western boundary and Edenfield Road which defines the south-eastern boundary. Doctor Dam is located approximately 100 m north-west of the site, which is connected to Greenbooth Reservoir, located 430 m north-west of the site. Naden Brook runs from Doctors Damn along the site boundary and continues to flow south. Residential areas are located further east, south and west of the site. Please refer to Figure 1.1 for the approximate site location.



FIGURE 1.1 APPROXIMATE SITE LOCATION



1.4. OBJECTIVES

The objectives of the Biodiversity Metric are to:

- 🏠 Identify percentage change in on-site habitat.
- 🏠 Identify the number of habitat units lost/gained on-site; and
- 🏠 Determine the need for a conservation offset payment or off-site habitat creation.

The findings of the calculation are detailed within this report, along with recommendations.



2. METHODOLOGY

2.1. BIODIVERSITY METRIC

Department for Environment, Food and Rural Affairs' (DEFRA) Biodiversity Metric 4.0 2023 version was used to undertake the metric calculation. The metric was undertaken following guidance as detailed within The Biodiversity Metric 4.0 User Guide (Natural England, 2023), the Biodiversity Metric 4.0 Technical Supplement (Natural England, 2022) and the Summary of Changes Biodiversity Metric 3.1 to 4.0 (2023).

This metric was calculated by Project Manager – Ecology, Lowri Thomas, BSc (Hons) ACIEEM. Lowri has attended a CIEEM training course on “Biodiversity Net Gain 3.1” and has completed numerous Condition Assessments and Biodiversity Net Gain Calculations on a range of sites.

This metric was reviewed by Associate Director Celia Barlow, BSc (Hons) MSc MEnvSc CEnv MCIEEM. Celia has undertaken a number of online training courses with CIEEM including ‘Calculating and Using Biodiversity Units with Metric 2.0’ and ‘Biodiversity Net Gain Through Development’. Celia has also completed Condition Assessments on a number of sites across the UK and holds a Level 3 Field Identification Skills Certificate (FISC).

2.2. ON-SITE HABITAT BASELINE DATA

The baseline data used to inform the condition assessment was collected on 12th April 2023 during the Preliminary Ecological Appraisal. The Biodiversity Metric 3.1 Habitat Condition Assessment Sheets with Instructions (Natural England 2022) was used to undertake the condition assessment.

On-site baseline habitats were measured off the Phase 1 Habitat Plan using QGIS. Please see Appendix I for the Phase 1 Habitat Plan. Phase 1 habitat types were translated into UKHab habitat types using the metrics Technical Data Translation Tool.

2.3. RIVER CONDITION ASSESSMENT

2.3.1. MORPH SURVEY

A Modular River Physical (MoRPh) Survey was undertaken on Naden Brook and Woodhouse Lane Brook on the 30th September 2023 by Ciara Bass, BSc (Hons) QCIEEM, Consultant Ecologist at E3P with assistance from Sophie Knightly BSc (Hons) QCIEEM, Graduate Ecologist at E3P.

Ciara has attended internal training courses focussing on Biodiversity Net Gain and using the Biodiversity Metric Calculation Tool and has experience undertaking Biodiversity Net Gain and Condition Assessments on a variety of projects across the UK. She has also undertaken the Modular River Survey training course hosted by Cartographer Studios, focussing on generating River Condition outputs for Natural England's Biodiversity Metric calculations, for which she is accredited.

This was undertaken following the methodology detailed within ‘The MoRPh Survey – Technical Reference Manual’ (Modular River Survey, 2022).



NADEN BROOK

The average river width was approximately 5 m and as such five contiguous modules of 20 m in length were used during the MoRPh5 survey. A total length of 100 m was surveyed, comprising over 20% of the length of Naden Brook flowing through or within 10 m of the site. As such, a single MoRPh5 survey was deemed appropriate to provide a condition for the brook. Please see Appendix VI for the survey area.

WOODHOUSE LANE BROOK

The average river width was less than 5 m and as such five contiguous modules of 10 m in length were used during the MoRPh5 survey. A total length of 50 m was surveyed, comprising over 20% of the length of Woodhouse Lane Brook flowing through or within 10 m of the site. As such, a single MoRPh5 survey was deemed appropriate to provide a condition for the brook. Please see Appendix V for the survey area.

2.3.2. RIVER TYPE DESK STUDY

A desktop River Type Survey was undertaken, following guidance in 'A Guide to Assessing River Condition – Part of the Rivers and Streams Component of the Biodiversity Net Gain Metric' (Gurnell et al., 2020). This assessment assigns a watercourse one of 13 river types, based upon a homogenous 'reach' that contains the area of interest. Two alternative river types can be assigned to a river by the surveyor for those that are too large or deep for the riverbed to be adequately surveyed (Large River) or for too heavily modified to conform to one of the other river types (Navigable Rivers and Canals).

The start and end points of the reach are identified using satellite imagery and defined where one of the following is encountered:

- ✳ a major tributary (e.g., likely to contributing > 10% flow in the river/stream)
- ✳ a major artificial barrier (e.g., > 5m tall - likely to significantly change flow or sediment movements)
- ✳ a distinct and persistent change in planform (e.g., meandering to straight / slightly sinuous)

The results of the MoRPh5 survey and River Type Survey were then combined using Cartographer which generated a Final Condition Score for input into the Biodiversity Metric.

2.4. POST DEVELOPMENT HABITAT CREATION

The General Arrangement Plan was used to measure areas of proposed habitat creation on-site (Urban Green, 2023, Drawing Number UG_2003_LAN_GA_DRW_01) Habitat areas were measured using QGIS from the PDF drawing. Tree measurements reflect the canopy cover of the trees to be retained. Areas of proposed trees were measured using the Tree Helper within the Biodiversity Metric.

A 70:30 ratio to the area of built houses: area of vegetated gardens has been applied in the metric. This is to reflect any uncertainty of the status of the vegetated gardens once residents move into the houses as a vegetated garden could be paved with hardstanding, thus reducing the biodiversity value of the garden.



2.5. LIMITATIONS

Access to the right bank of Woodhouse Lane Brook within Modules 1, 2 and 3 could not be gained due to the presence of dense vegetation and health and safety concerns, and access to the left bank within Modules 4 and 5 could not be gained due to the presence of fencing. As such, care was taken by the surveyor to accurately note all visible features and where necessary, assumptions were made for the modules based upon the visible features/characteristics and the surveyor's professional judgement.

The woodland condition assessment was undertaken in April, and as a result of seasonal vegetation die-back and differing flowering times, it is possible that some species of flora, including ancient woodland indicators, may have been missed. However, the presence or absence of a recognisable NVC plant community would not change the overall condition class of the habitat, based on the other woodland condition indicators present. As such, this is not considered to be a major constraint.

The areas of habitat creation are based on the General Arrangement Plan to be submitted as part of an outline application. As such, detailed planting proposals have yet to be provided.

Some areas on the site are double counted, including root protection zones and areas of habitat, where overlap is shown. This means areas of habitat pre- and post-development do not total to the same area.



3. RESULTS

3.1. ON-SITE BASELINE HABITAT CONDITION ASSESSMENT RESULTS

Table 3.1 shows the details of the habitat condition assessment used for input into the metric calculation tool.

TABLE 3.1 HABITAT BASELINE CONDITION ASSESSMENT RESULTS

HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA (HA)	CONDITION ASSESSMENT	DESCRIPTION
BUILDINGS AND HARDSTANDING	Urban – Developed Land; Sealed Surface	0.8596	N/A	N/A
SCATTERED SCRUB	Heathland and Scrub – Mixed Scrub	0.0288	Poor	Passes 1 of 5 criteria: Seedlings, saplings, young shrubs and mature are present.
DENSE SCRUB	Heathland and Scrub – Mixed Scrub	0.3885	Poor	Passes 1 of 5 criteria: Seedlings, saplings, young shrubs and mature are present.
DENSE SCRUB	Heathland and Scrub – Bramble Scrub	0.0098	N/A	Condition assessment automatically assigned by the metric.



HABITAT TYPE (PH1)	HABITAT TYPE (UKHAB)	AREA (HA)	CONDITION ASSESSMENT	DESCRIPTION
EPHEMERAL/SHORT PERENNIAL	Sparsely Vegetated Land – Ruderal/Ephemeral	0.0133	Poor	Passes 1 of 5 criteria: Invasive non-native plant species and others which are to the detriment of native wildlife cover less than 5%.
BROADLEAVED WOODLAND	Woodland and Forest – Other Woodland; Broadleaved	1.4117	Moderate	Scores 28. See Appendix III for details

3.2. HABITAT RETENTION

The General Arrangement outlines a large area of 'Existing Woodland' to be retained throughout the development. This predominantly comprises broadleaved woodland; however, smaller areas of buildings, hardstanding, scattered scrub, and dense scrub are also present within this area, and as such will be retained. Table 3.2 outlines the area of habitat to be retained.



TABLE 3.2 HABITAT RETENTION

HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA)	CONDITION
BUILDINGS AND HARDSTANDING	Urban – Developed Land; Sealed Surface	0.157	N/A
SCATTERED SCRUB	Heathland and Scrub – Mixed Scrub	0.0011	Poor
DENSE SCRUB	Heathland and Scrub – Mixed Scrub	0.0053	Poor
DENSE SCRUB	Heathland and Scrub – Bramble Scrub	0.0096	N/A
BROADLEAVED WOODLAND	Woodland and Forest – Other Woodland; Broadleaved	1.1449	Moderate

3.3. HABITAT CREATION CONDITION ASSESSMENT

A number of habitats are proposed within the site which are located outside of residential gardens and in areas of Public Open Space (POS). Table 3.3 shows the details of the target condition assessment and total areas of habitat creation. It has been assumed that there will be no significant delay in the creation of the proposed habitat features, as such the delay in starting habitat creation has been set to zero.



TABLE 3.3 HABITAT CREATION CONDITION ASSESSMENT RESULTS

HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA)	TARGET CONDITION	DESCRIPTION/ TARGET TIME TO CONDITION
RESIDENTIAL GARDENS	Urban- Vegetated Garden	0.2513	N/A	Target time to condition will be one year.
BUILDINGS	Urban; Developed Land; Sealed Surface	0.9285	N/A	N/A
HARDSTANDING/ HARDWORKS				
SPECIES RICH GRASSLAND SEED MIX	Grassland – Other Neutral Grassland	0.1655	Moderate	Passes 5 of 6 condition assessment criteria: - Grassland is a good representation of the habitat type it has been identified as. - Sward height is varied (at least 20% <7cm and at least 20% >7cm). - Cover of bare ground is between 1 and 5% - Cover of bracken is less than 10% and cover of scrub is less than 5%. - Combined cover of species per m² and physical damage is below 5%. Does not pass criteria F which is essential for a good score: 10 or more vascular plant species per m² present Target time to condition will be five years.
RIPARIAN PLANTING MIX	Grassland – Other Neutral Grassland	0.0148	Moderate	Passes 5 of 6 condition assessment criteria: Grassland is a good representation of the habitat type it has been identified as.



HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA)	TARGET CONDITION	DESCRIPTION/ TARGET TIME TO CONDITION
				- Sward height is varied (at least 20% <7cm and at least 20% >7cm). - Cover of bare ground is between 1 and 5% - Cover of bracken is less than 10% and cover of scrub is less than 5%. - Combined cover of species per m² and physical damage is below 5%. Does not pass criteria F which is essential for a good score: 10 or more vascular plant species per m² present Target time to condition will be five years.
PUBLIC OPEN SPACE GRASSED AREA	Grassland – Modified Grassland	0.0271	Poor	Fails criterion 1 which is essential for achieving moderate condition as there is less than 6-8 species per m². Target time to condition will be one year.
ORNAMENTAL PLANTING MIX (OUTSIDE RESIDENTIAL PLOTS)	Urban – Introduced Shrub	0.0019	N/A	Automatically assigned by metric. Target time to condition will be one year.
NATIVE SHRUB PLANTING MIX (OUTSIDE RESIDENTIAL PLOTS)	Heathland and Scrub – Mixed Scrub	0.0049	Poor	Passes 2 of 5 condition assessment criteria:



HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	AREA (HA)	TARGET CONDITION	DESCRIPTION/ TARGET TIME TO CONDITION
				- At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover. - There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA4) and species indicative of sub-optimal condition make up less than 5% of ground cover Target time to condition will be five years.
PROPOSED NATIVE TREES (OUTSIDE RESIDENTIAL PLOTS)	Individual Tree – Urban/Rural Tree	0.8428 (x 23 medium sized trees)	Moderate	Passes 4 of 6 condition assessment criteria: - The tree is a native species. - The tree canopy is predominantly continuous (individual trees automatically pass this criterion). - No evidence of adverse impact on tree health by anthropogenic activities. - More than 20% of tree canopy is oversailing vegetation beneath Target time to condition will be 27 years.
HEDGE PLANTING	Non-Native and Ornamental Hedgerow	0.0513 km	Poor	Automatically assigned by metric. Target time to condition will be one year.



3.4. BASELINE RIVER CONDITION ASSESSMENT RESULTS

Two watercourses were present on and within 10 m of the site boundary. Please see Table 3.4 for a summary of these watercourses and Appendix IV for the full River Condition Assessments.

TABLE 3.4 RIVER CONDITION ASSESSMENT RESULTS

HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	LENGTH (KM)	PRELIMINARY CONDITION SCORE	FINAL CONDITION CLASS	WATERCOURSE ENCROACHMENT	RIPARIAN ENCROACHMENT
WOODHOUSE LANE BROOK	Other Rivers and Streams	0.130	-0.806	Fairly poor	Major Greater than 20% of the bank length comprises an engineered bank revetment.	Major/Major An expanse of hardstanding was present within 4 m of the Brook's left bank, whilst a building was present within 4 m of the right bank.
NADEN BROOK	Other Rivers and Streams	0.454	-0.709	Fairly poor	Major Greater than 20% of the bank length comprises an engineered bank revetment.	Major/Major Buildings and roads were present within 0-4 m of both bank tops.



3.5. WATERCOURSE RETENTION

Both Woodhouse Lane Brook and Naden Brook will be retained throughout the development. Whilst the creation of a new access road within the east of the site will increase riparian encroachment on both watercourses, this will not change the overall encroachment band for any bank of either brook, which is already defined as 'major' throughout. Enhancement activities could be undertaken to compensate for the increased encroachment upon the watercourses, such as the removal of Himalayan balsam, the disposal of large items of trash, and the planting of diverse plant communities along the bank faces and tops. However, following a Scenario River Condition Assessment, such enhancement activities are not considered sufficient to increase the Final Condition Class of either Brook. For example, the Preliminary Condition Score for Naden Brook would increase from -0.709 to -0.324, but the Final Condition Class would remain 'fairly poor'. As such, they have been input into the metric as retained. Please see Table 3.5 for a summary of the watercourse retention.

TABLE 3.5 WATERCOURSE RETENTION

HABITAT TYPE (LANDSCAPE PLAN)	HABITAT TYPE (UKHAB)	LENGTH (KM)	CONDITION	WATERCOURSE ENCROACHMENT	RIPARIAN ENCROACHMENT
WOODHOUSE LANE BROOK	Other Rivers and Streams	0.130	Fairly poor	Major	Major/Major
NADEN BROOK	Other Rivers and Streams	0.454	Fairly poor	Major	Major/Major



3.6. STRATEGIC SIGNIFICANCE

The broadleaved woodland on site is located within the Rochdale Council Core Strategy. This is predominantly defined as Greenspace Corridor, under policy G/8 within the Unitary Development Plan, although some of the broadleaved woodland in the north of the site is instead designated as Greenbelt. As such, the broadleaved woodland is defined within the metric as 'Formally Identified in Local Strategy'. Due to their proximity to these Wildlife Corridors, the remaining habitats on-site were defined as 'Location Desirable but Not Within Local Strategy'.

3.7. BIODIVERSITY UNIT RESULT

The headline results of the metric show a gain of 0.49 habitat units, 0.05 hedgerow units and no net change in watercourse units will occur as a result of development. Table 3.6 shows the headline results detailed within the Biodiversity Metric.

TABLE 3.6 HEADLINE RESULTS

HEADLINE	CATEGORY	RESULT
TOTAL NET UNIT CHANGE	Habitat Units	0.49
	Hedgerow Units	0.05
	River Units	0.00
TOTAL NET % CHANGE	Habitat Units	3.26%
	Hedgerow Units	100%
	River Units	0%

The trading rules of the metric have not been satisfied as habitats lost have not been 'traded up'. There is a loss in scrub and broadleaved woodland units. However, it is not a mandatory requirement to satisfy trading rules until January 2024.



4. CONCLUSIONS AND RECOMMENDATIONS

The proposed scheme and recommendations show a total gain of 0.49 habitat units (3.26%) and no net change in watercourse units. A gain in 0.05 hedgerow units will also be incurred.

To achieve no net loss in habitat units, the 23 trees proposed outside of the residential plots on-site must be of medium size (above 18 cm girth when planted).

Despite the overall gain in habitat units on site, the trading rules cannot be satisfied within the site based on the current proposals and areas for landscaping. The broadleaved woodland and scrub lost in the site have not been traded up. However, it is not a mandatory requirement to satisfy trading rules until January 2024. It is anticipated that the planning application will receive validation ahead of this date.

The Biodiversity Metric does not take account for additional species enhancements within the site, and to further increase the site's value for wildlife the following could be provided:

-  Creation of hibernacula (following guidance set out within Froglife, 2001) for common amphibians.
-  Artificial otter holts could be created along Naden Brook, to increase the site's suitability for the species.
-  Hedgehog houses may be installed to enhance the site for hedgehogs.
-  Bat and bird boxes could be integrated into the proposed residential units.



5. REFERENCES

- ✿ A. Gurnell, J. England, S. Scott, and L. Shuker (2020) A Guide to Assessing River Condition – Part of the Rivers and Streams Component of the Biodiversity Net Gain Metric
- ✿ E3P (2023). Preliminary Ecological Appraisal (report reference:80-742-R1).
- ✿ E3P (2023). Arboricultural Impact Assessment and Method Statement (report reference:80-742-R3).
- ✿ Urban Green (2023) General Arrangement. (Drawing reference:UG_2003_LAN_GA_DRW_01)
- ✿ Modular River Survey (2022) The MoRPh Survey – Technical Reference Manual
- ✿ National Planning Policy Framework (2021). Ministry of Housing, Communities and Local Government.
- ✿ Natural England Joint Publication JP039. (2022). Biodiversity Metric 3.1 -Summary of Changes.
- ✿ Natural England Joint Publication JP039. (2023). The Biodiversity Metric 4.0. User Guide. Technical Annex 2.
- ✿ Natural England Joint Publication JP039. (2023). The Biodiversity Metric 4.0. User Guide.
- ✿ Natural England. (2023). The Biodiversity Metric 4.0. Technical Annex 1. Condition Assessment Sheets.

END OF REPORT



APPENDIX I

PHASE 1 HABITAT PLAN



Key

- Site boundary
- Running water
- Wall
- Yellow archangel identified in 2020
- Wall cotoneaster identified in 2020
- Montbretia identified in 2020
- Himalyan balsam
- Rhododendron
- Broadleaved woodland
- Buildings
- Scattered scrub
- Dense scrub
- Ephemeral/short perennial
- Hardstanding
- Waterbody

Notes

Issue: 1	Revision: 3	Date: 05/05/2023	Drawn: LT	Authorised: CB
Client: Stonebond Properties Ltd			Job No. 80-742	Date: 05/05/2023
			Drawing No. 81-742-001	Scale: 1:3000 @A4
Job title: Land at Greenbooth Road/Edenfield Road, Norden			Drawing title: Phase 1 Habitat Plan	

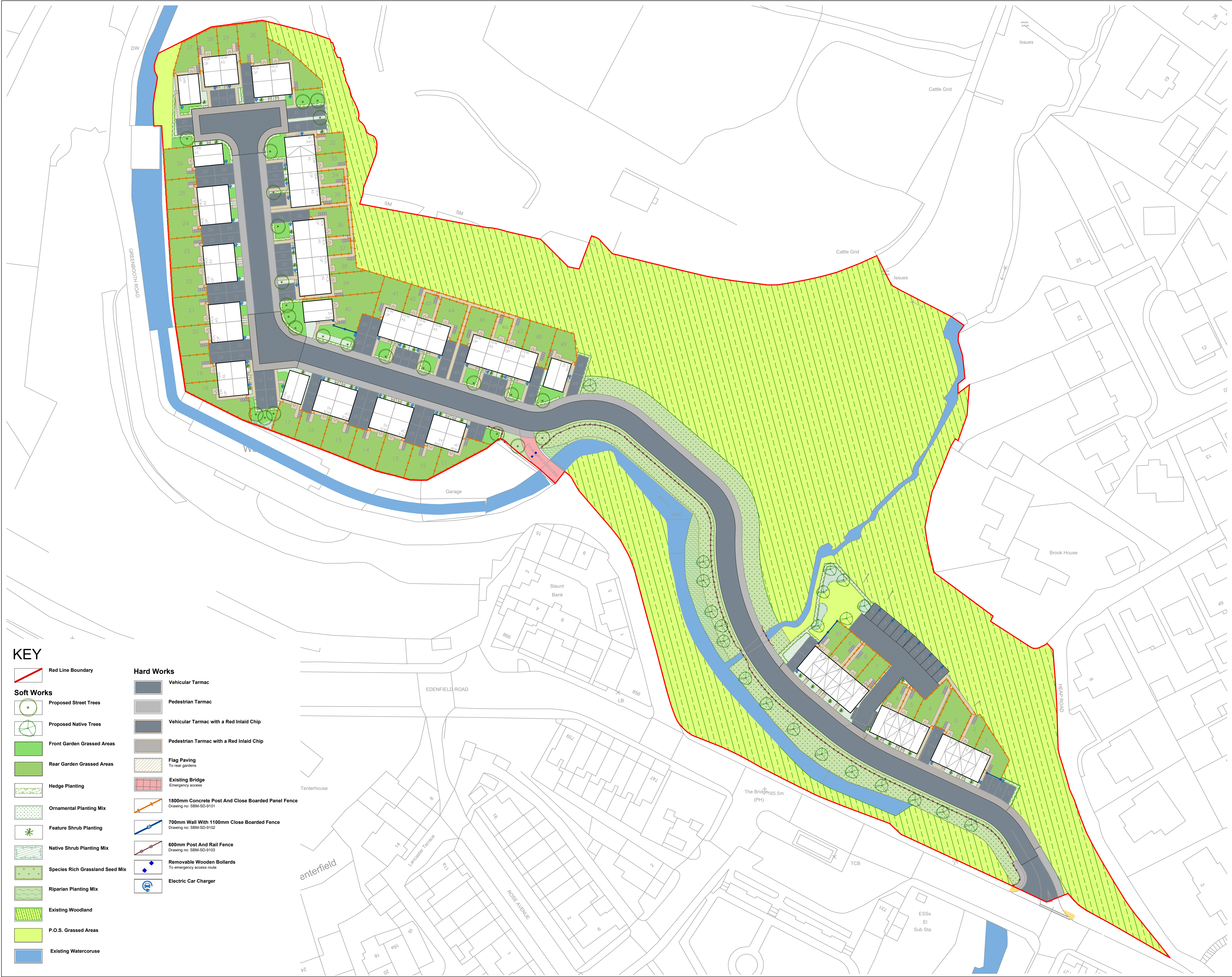


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APPENDIX II

GENERAL ARRANGEMENT



KEY

- Red Line Boundary
- Proposed Street Trees
- Proposed Native Trees
- Front Garden Grassed Areas
- Rear Garden Grassed Areas
- Hedge Planting
- Ornamental Planting Mix
- Feature Shrub Planting
- Native Shrub Planting Mix
- Species Rich Grassland Seed Mix
- Riparian Planting Mix
- Existing Woodland
- P.O.S. Grassed Areas
- Existing Watercourse
- Vehicular Tarmac
- Pedestrian Tarmac
- Vehicular Tarmac with a Red Inlaid Chip
- Pedestrian Tarmac with a Red Inlaid Chip
- Flag Paving
To rear gardens
- Existing Bridge
Emergency access
- 1800mm Concrete Post And Close Boarded Panel Fence
Drawing no: SBM-SD-9101
- 700mm Wall With 1100mm Close Boarded Fence
Drawing no: SBM-SD-9102
- 600mm Post And Rail Fence
Drawing no: SBM-SD-9103
- Removable Wooden Bollards
To emergency access route
- Electric Car Charger

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Notes:-

P04	20/06/23	PLANNING ISSUE	TH	AL
P03	16/06/23	PLANNING ISSUE	TH	AL
P02	13/06/23	PLANNING ISSUE	TH	AL
P01	03/04/23	FIRST ISSUE DRAFT	AL	SA
REV.	DATE	DESCRIPTION	DRAWN	CHK'D

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Client: **Stonebond Properties Manchester Ltd**

Project: **Edenfield Road, Norden, Rochdale**

Title: **GENERAL ARRANGEMENT**

Issue: **PLANNING**

Drawn: AL	Checked: SA	Approved: ME
Project: UG 2003	Scale @ A1: 1:500	Date: 03/04/23
Dwg No: UG_2003_LAN_GA_DRW_01	Revision: P04	

APPENDIX III

CONDITION ASSESSMENT

FOR EXISTING WOODLAND

INDICATOR		GOOD (3 POINTS)	MODERATE (2 POINTS)	POOR (1 POINT)	SCORE PER INDICATOR
1	AGE DISTRIBUTION OF TREES	Three age classes present	Two age classes present	One age class present	2
2	WILD, DOMESTIC AND FERAL HERBIVORE DAMAGE	No significant browsing damage evident in woodland ²	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3
3	INVASIVE PLANT SPECIES	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	1



INDICATOR		GOOD (3 POINTS)	MODERATE (2 POINTS)	POOR (1 POINT)	SCORE PER INDICATOR
4	NUMBER OF NATIVE TREE SPECIES	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	3
5	COVER OF NATIVE TREE AND SHRUB SPECIES	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	3
6	OPEN SPACE WITHIN WOODLAND	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	2



INDICATOR		GOOD (3 POINTS)	MODERATE (2 POINTS)	POOR (1 POINT)	SCORE PER INDICATOR
7	WOODLAND REGENERATIONS	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	2
8	TREE HEALTH	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high-risk pest or disease present	3
9	VEGETATION AND GROUND FLORA	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	1



INDICATOR		GOOD (3 POINTS)	MODERATE (2 POINTS)	POOR (1 POINT)	SCORE PER INDICATOR
10	WOODLAND VERTICAL STRUCTURE	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	2
11	VETERAN TREES	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	1
12	AMOUNT OF DEADWOOD	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	2



INDICATOR		GOOD (3 POINTS)	MODERATE (2 POINTS)	POOR (1 POINT)	SCORE PER INDICATOR
13	WOODLAND DISTURBANCE	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	3
Total Score					28



APPENDIX IV RIVER CONDITION ASSESSMENTS

NADEN BROOK			
GRID REFERENCE OF MORPH5	SD 85777 14724	RIVER SECTION LENGTH:	100 m
RCA RIVER TYPE AND HABITAT DESCRIPTION			
The average river width was approximately 5 m. As such, module lengths of 20 m were used during the MoRPh5 survey, and a total length of 100 m was surveyed. The brook was heavily encroached in the west, with hardstanding roads and buildings on both banks, whilst encroachment eased towards the east as the brook ran through an area of broadleaved woodland. The banks were reinforced with laid brick throughout, which was heavily colonised by mosses, with some tall herbs, trees and shrubs.			
UPSTREAM GRID REFERENCE	SD 85614 14955	DOWNSTREAM GRID REFERENCE	SD 85835 14619
PHOTOGRAPHS			
			





RESULTS

CONDITION ASSESSMENT CRITERIA		RCA INDEX VALUES	NOTES/JUSTIFICATION
RCA INDEX ID	RCA INDEX NAME		
BANK TOP			
B1	Bank top vegetation structure	2	A large proportion of the brook ran through an area of broadleaved woodland, which comprised all five vegetation structural types.
B2	Bank top tree feature richness	0	A small number of leaning trees and large wood, were located upon the bank tops.
B3	Bank top water-related features	0	No bank-top water-related features were present along the surveyed area.
B4	Bank top Invasive Non-Native Species (INNS) cover	-3	Numerous strands of Himalayan balsam were identified along the bank tops during the survey.
B5	Bank top managed ground cover	-4	The bank tops were heavily managed in the west, comprising buildings and hardstanding.
BANK FACE			
C1	Bank face riparian vegetation structure	2	Where the banks did not comprise laid brick walls, the bank faces were colonised by mosses, tall grasses, shrub and trees/saplings.
C2	Bank face tree feature richness	1	Small numbers of J-shaped trees were



			identified along the banks of the brook.
C3	Bank face natural bank profile extent	1	The majority of the banks had clearly been restructured, however there were small areas with a natural profile.
C4	Bank face natural bank profile richness	2	The natural bank face profile was predominantly steep, with some gentler areas.
C5	Bank face natural bank material richness	1	Bank face natural material was limited, predominantly comprising organic material.
C6	Bank face bare sediment extent	4	Large areas of bare ground were present along both banks.
C7	Bank face artificial bank profile extent	-4	The riverbanks were reinforced by laid brick walls throughout.
C8	Bank face reinforcement extent	-4	
C9	Bank face reinforcement material	-4	
C10	Bank face INNS cover	-2	Himalayan balsam was identified along the face of the left bank during the survey.
CHANNEL MARGIN			
D1	Channel margin aquatic vegetation extent	1	Small areas of moss were identified at the bank-water margin. Emergent broadleaved, emergent linear-leaved and amphibious vegetation were not identified at the channel margin during the survey.
D2	Channel margin aquatic morphotype richness	0	
D3	Channel margin physical feature extent	1	Two unvegetated side bars were identified within module 2. No other natural physical features were identified along the channel margin.
D4	Channel margin physical feature-richness	1	
D5	Channel margin artificial features	-1	Three pipes were identified along the river's left bank, within Module 2.
CHANNEL BED			
E1	Channel aquatic morphotype richness	1	The riverbed was predominantly bare,



			although some mosses were present.
E2	Channel bed tree features richness	1	No trees were identified within the channel bed during the survey. However, the channel was heavily shaded by vegetation throughout.
E3	Channel bed hydraulic features richness	3	Water surface flow types included smooth, rippled, no perceptible flow, and broken standing waves.
E4	Channel bed natural features extent	1	Traces of exposed unvegetated boulders were identified within module 5. No other channel bed natural features were identified.
E5	Channel bed natural features richness	1	
E6	Channel bed material richness	3	Channel bed material varied, including cobble, gravel, gravel-pebble, organic and boulders.
E7	Channel bed siltation	0	No channel bed siltation was identified during the survey.
E8	Channel bed reinforcement extent	0	No channel bed reinforcement was identified during the survey.
E9	Channel bed reinforcement materials severity	0	
E10	Channel bed artificial features severity	-4	Narrow bridge shadows were identified within modules 1 and 2. The brook also culverted underneath a building in module 1.
E11	Channel bed INNS extent	-1	Small strands of Himalayan balsam were identified within the channel bed during the survey.
E12	Channel bed filamentous algae extent	0	No filamentous algae was identified during the survey.
OVERVIEW			
PRELIMINARY CONDITION SCORE	-0.709	RIVER TYPE	D - Straight/sinuuous to plane bed, coarsest BO/BE, average GP
RIVER SHAPE INDEX	0.829	IS THE RIVER CHANNEL OVERDEEP?	N/A



Land at Greenbooth Road/Edenfield Road, Norden

Biodiversity Metric Report

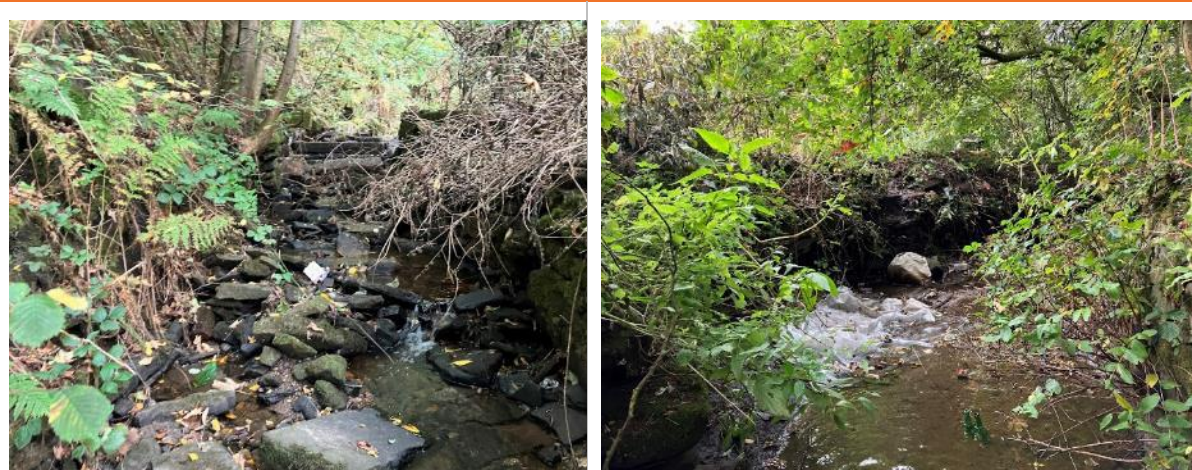
October 2023

FINAL CONDITION CLASS	Fairly poor	IS THE RCA FINAL CLASS MODIFIED?	No, final condition class is fairly poor
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WOODHOUSE LANE BROOK			
GRID REFERENCE OF MORPH5	SD 85831 14678	RIVER SECTION LENGTH:	50 m
RCA RIVER TYPE AND HABITAT DESCRIPTION			
The average river width was approximately 3 m. As such, module lengths of 10 m were used during the MoRPh5 survey, and a total length of 50 m was surveyed. The left bank of the brook was heavily encroached comprising hardstanding, whilst the right bank was colonised by broadleaved woodland. The banks were reinforced with laid brick throughout, which was heavily colonised by mosses, with some tall herbs, trees, and shrubs.			
UPSTREAM GRID REFERENCE	SD 85921 14881	DOWNSTREAM GRID REFERENCE	SD 85814 14668
PHOTOGRAPHS			
			





RESULTS

CONDITION ASSESSMENT CRITERIA		RCA INDEX VALUES	NOTES/JUSTIFICATION
RCA INDEX ID	RCA INDEX NAME		
BANK TOP			
B1	Bank top vegetation structure	4	The brook ran through an area of broadleaved woodland, which comprised all five vegetation structural types.
B2	Bank top tree feature richness	1	Small numbers of leaning trees were identified on the bank tops.
B3	Bank top water-related features	0	No bank-top water-related features were present along the surveyed area.
B4	Bank top Invasive Non-Native Species (INNS) cover	-3	Himalayan balsam was identified along the bank tops.
B5	Bank top managed ground cover	-3	The left bank predominantly comprised hardstanding.
BANK FACE			
C1	Bank face riparian vegetation structure	3	The bank faces were colonised by mosses, tall grasses, shrub and trees/saplings.



C2	Bank face tree feature richness	3	Leaning trees, j-shaped trees, exposed tree roots, and discrete organic accumulations were all recorded along the brook.
C3	Bank face natural bank profile extent	1	The majority of the banks had clearly been restructured, however there were small areas with a naturally steep profile.
C4	Bank face natural bank profile richness	1	The natural bank face profile was predominantly steep.
C5	Bank face natural bank material richness	1	The bank faces predominantly comprised organic material. .
C6	Bank face bare sediment extent	2	Bare sediment extended along both banks.
C7	Bank face artificial bank profile extent	-4	The riverbanks were reinforced by laid brick walls throughout.
C8	Bank face reinforcement extent	-4	
C9	Bank face reinforcement material	-4	
C10	Bank face INNS cover	-2	Himalayan balsam was identified along the face of the right bank face during the survey.
CHANNEL MARGIN			
D1	Channel margin aquatic vegetation extent	1	Small areas of moss were identified at the bank-water margin.
D2	Channel margin aquatic morphotype richness	1	
D3	Channel margin physical feature extent	0	No channel margin physical features were identified during the survey.
D4	Channel margin physical feature-richness	0	



D5	Channel margin artificial features	-1	A pipe was identified along the brook's left bank, within module 1.
CHANNEL BED			
E1	Channel aquatic morphotype richness	1	The riverbed was predominantly bare, however small areas of moss were identified along the river channel.
E2	Channel bed tree features richness	2	Vegetation shaded the channel throughout, with discrete accumulations of organic matter also prominent.
E3	Channel bed hydraulic features richness	2	Water surface flows identified included free fall, chute, rippled and smooth.
E4	Channel bed natural features extent	3	A number of exposed unvegetated rocks were identified throughout the surveyed area.
E5	Channel bed natural features richness	1	No other natural channel bed physical features were identified.
E6	Channel bed material richness	3	Channel bed material included gravel, gravel-pebble, boulders, and organic material.
E7	Channel bed siltation	0	No channel bed siltation was observed during the survey.
E8	Channel bed reinforcement extent	-2	Some areas of the channel bed had been reinforced by laid bricks and washed-out material.
E9	Channel bed reinforcement severity	-3	
E10	Channel bed artificial features severity	-4	Numerous items of large trash were observed within the river during the survey.
E11	Channel bed INNS extent	-1	Small strands of Himalayan balsam were identified within the channel bed during the survey.



E12	Channel bed filamentous algae extent	0	No filamentous algae was identified during the survey.
OVERVIEW			
PRELIMINARY CONDITION SCORE	-0.806	RIVER TYPE	C - Straight/sinuuous to step-pool, coarsest BO/BE, average CO
RIVER SHAPE INDEX	1.344	IS THE RIVER CHANNEL OVERDEEP?	N/A
FINAL CONDITION CLASS	Fairly poor	IS THE RCA FINAL CLASS MODIFIED?	No, final condition class is fairly poor



APPENDIX V

MORPH SURVEY AREA

Key:

- Site boundary
- Naden Brook reach
- Naden Brook survey area
- Woodhouse Lane Brook reach
- Woodhouse Lane Brook survey area

Notes

Issue: 1	Revision: 4	Date: 02/10/2023	Drawn: CB2	Authorised: CB
Client: Stonebond Properties Ltd			Job No. 80-742	Date: 02/10/2023
			Drawing No. 80-742-005	Scale: 1:4000 @ A4
Job title: Land at Greenbooth Road/Edenfield Road, Norden			Drawing title: MoRPh Survey Area	



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