Heneghan ARCHITECTURE

Date: 7th November 2025
Our Reference: 2533
Unit 16
Queens Square Business Park
Huddersfield Road, Honley
Holmfirth, HD9 6QZ

Flood Risk Assessment (Outline – Access Only with Sequential Test)

1. Introduction

We have prepared this Flood Risk Assessment (FRA) in support of an Outline Planning Application seeking approval for access only at Old Water Hall, Mirfield. This report provides a proportionate, context-led review of flood risk in line with the National Planning Policy Framework (2023) and Kirklees Local Plan Policies LP27 (Flood Risk) and LP28 (Drainage). The report draws upon Environment Agency (EA) mapping, the Kirklees Strategic Flood Risk Assessment (SFRA, 2022), and on-site topographic data to demonstrate that safe access can be achieved without increasing flood risk elsewhere.

2. Site and Local Context

The site occupies a gently sloping parcel of land extending to just under a hectare on the southern side of Huddersfield Road. Old Water Hall, a stone-built dwelling of traditional character, sits prominently near the northern boundary. The land falls naturally southwards towards the Calder & Hebble Navigation, a defining feature of Mirfield's canal corridor. Mature trees, stone walls, and established garden terraces lend the site a strong local identity typical of the Mirfield valley edge.

Our topographic survey confirms levels of approximately 51.9 m AOD at Huddersfield Road, falling steadily to 43.9 m AOD at the canal boundary. EA Flood Map for Planning data (2025) indicates that the majority of the site, including the proposed access, lies within Flood Zone 1, with a small section of grassed land in the southern margin falling within Zone 2. Importantly, no part of the application red line includes Flood Zone 3 land.



Figure 1: View looking south toward the canal.

3. Development Proposal

The application seeks outline consent for access only. The proposed access connects directly to Huddersfield Road and would serve a future residential development. All other matters—layout, scale, appearance, landscaping, and the precise number of dwellings—are reserved for future approval. The indicative site layout (Drawing 2533-0301-R03) demonstrates how development could be accommodated safely within Flood Zones 1 and 2, with open space adjacent to the canal forming part of a wider flood mitigation and ecological buffer.



Figure 2: Indicative layout illustrating access and open-space buffer to southern boundary.

4. Flood Risk Context

Mirfield sits within the Calder Valley, where flood risk is largely influenced by the River Calder and its engineered navigation channels. Historic flood events—most notably those in 2007 and December 2015—affected low-lying land near Ledgard Bridge and Steanard Lane. However, the Old Water Hall site lies on the rising northern valley side, separated from the active floodplain by both the Calder & Hebble Navigation and the railway embankment.

EA flood data for the Ledgard Bridge gauge (approximately 600 m west) records a 2015 peak of 45.08 m AOD. Modelled levels indicate a 1% AEP (100-year) flood at 44.23 m AOD, rising to 44.40 m AOD with a +35% climate change allowance, and 46.55 m AOD for the 0.1% AEP (1,000-year) event. Given that the lowest part of the site sits around 43.9 m AOD, only the most extreme events would marginally influence the southern edge, with all access and buildable land remaining well above predicted flood levels.

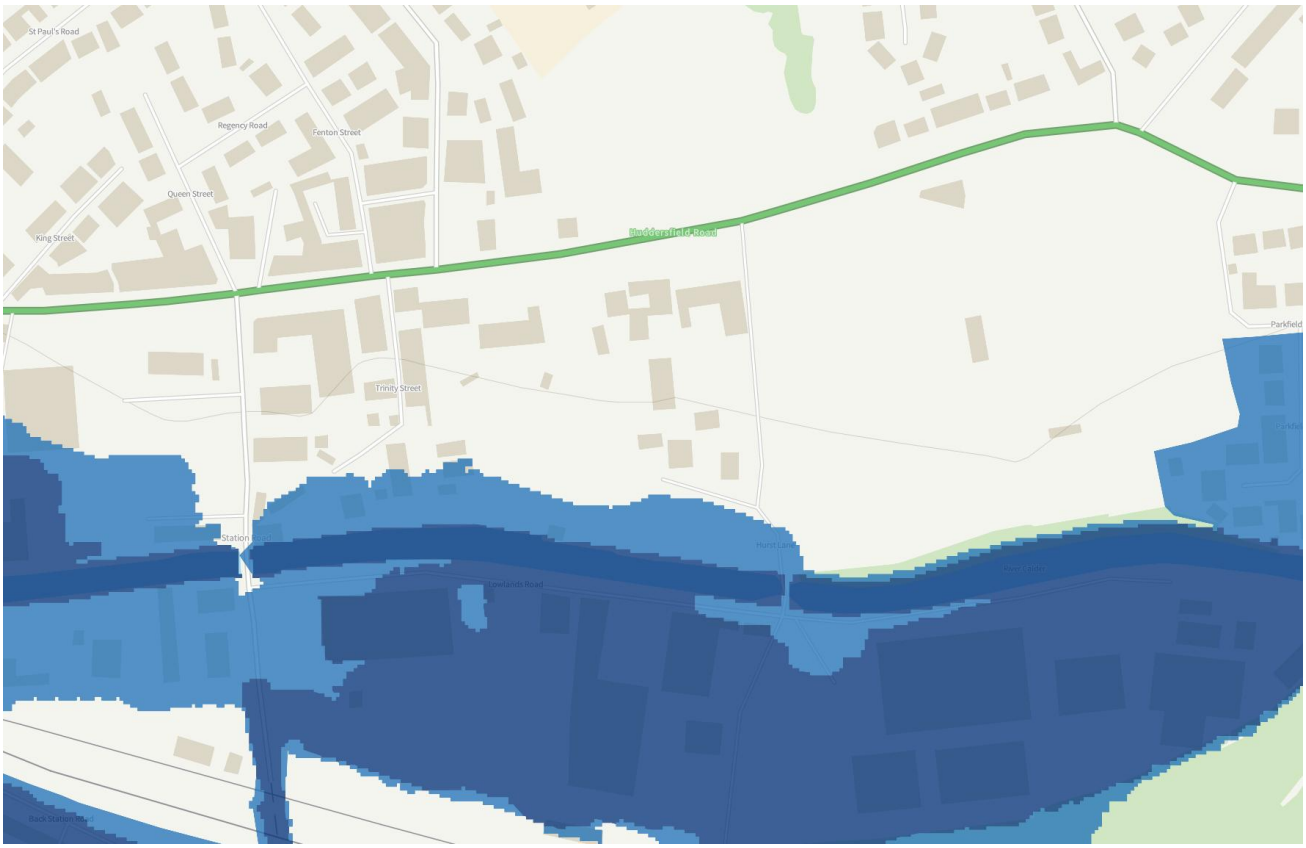


Figure 3: Extract from EA Flood Map for Planning showing Flood Zones 1–2 across the site.

5. Fluvial and Canal Flood Risk

The River Calder flows approximately 130 m south of the site, beyond the canal and railway. The canal reach adjacent to the site is controlled by Ledgard Flood Lock to the west and Shepley Bridge Lock to the east. These are closed during elevated river levels, preventing backflow into the canal network. Historical mapping and FRA data confirm that no canal overtopping has occurred within this stretch, even during 2015 events.

Accordingly, fluvial flood risk to the site is low to moderate (Zone 2) and fully manageable through avoidance and design.

6. Surface Water and Other Sources

EA surface water mapping identifies shallow, low-risk flow paths along the southern boundary during extreme rainfall events. These are consistent with the natural fall of the land and can be directed safely into landscaped areas designed to accommodate exceedance flows. The Kirklees SFRA shows no records of groundwater or sewer flooding within the site vicinity, and the risk of reservoir inundation is classified as very low.

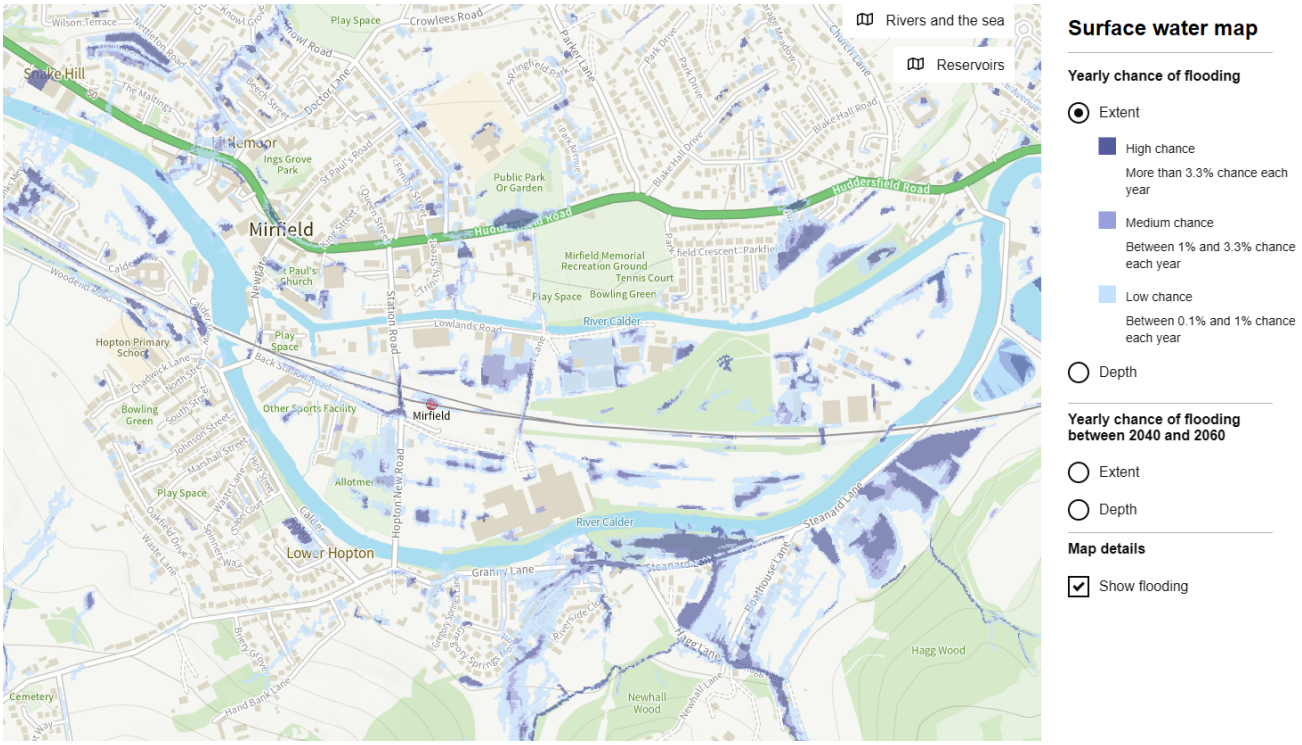


Figure 4: EA Risk of Flooding from Surface Water Map extract.

7. Climate Change and Resilience Design

In accordance with EA guidance for the Calder Management Catchment (2023), we have applied climate change allowances of +35% (central) and +70% (upper-end) for fluvial flow, and +20–40% for rainfall intensity. The proposed access and indicative development platform both sit above the relevant design flood levels, ensuring resilience to future climate projections. At detailed design stage, surface materials and landscape form will further reinforce sustainable water management.

8. Sequential and Exception Tests

We have applied the sequential approach within the site boundary to ensure development is directed toward the areas of lowest risk. All future built form will be positioned within Flood Zone 1, with the lower-lying grassed area in Zone 2 forming part of an open-space and drainage corridor. As no residential development is proposed in Zone 3, the Exception Test is not triggered.

9. Mitigation and Access Strategy

Vehicular and pedestrian access from Huddersfield Road (Zone 1) will remain dry in all design flood scenarios. Within the site, levels will be shaped to ensure any exceedance flow routes toward the open-space buffer to the south. Sustainable Drainage Systems (SuDS) will include permeable surfacing, filter drains, and attenuation basins, restricting discharge to greenfield rates. Any connection to the canal system will require the consent of the Canal & River Trust.



Figure 5: Indicative exceedance flow routing and attenuation area concept.

10. Residual Risk and Emergency Planning

Residual risks—such as extreme fluvial events or surface water system blockage—will be managed through on-site routing and landscape design. The site benefits from dry, direct access to Huddersfield Road (Zone 1) for emergency egress. Future occupants will be encouraged to register with the EA's Flood Warning service, and management arrangements will ensure SuDS assets are maintained.

11. Sequential Test Summary

We have reviewed the site's flood zone classification and confirmed that the red-line boundary encompasses land within Flood Zones 1 and 2 only. There is no Flood Zone 3 overlap. The proposal relates solely to access, with all vulnerable uses located in low-risk areas. Within Mirfield, few alternative sites provide comparable access potential and containment by existing built form without extending into the functional floodplain. Accordingly, the proposal satisfies the Sequential Test in accordance with NPPF paragraphs 163–167 and Kirklees Policy LP27. The Exception Test is not applicable.

12. Flood Risk Summary Table

Source of Flooding	Flood Zone / Risk Level	Mitigation / Design Response	Residual Risk
River Calder (Fluvial)	Zone 2 (Medium)	Development steered to Zone 1; FFLs ≥300 mm above 1% + CC	Low
Canal (Calder & Hebble Navigation)	Managed waterbody	Locks close during flood events; open space maintained	Very Low
Surface Water	Low	SuDS attenuation and exceedance routing to open space	Low
Groundwater / Sewer	Negligible	Sustainable drainage hierarchy	Negligible
Reservoir	Very Low	EA reservoir safety regime	Negligible

13. Limitations and Sources

This assessment draws upon data from the Environment Agency Flood Map for Planning (2025), the Kirklees SFRA (2022), and the applicant's topographic survey (HA_033_Old Water Hall-Site Plan A1-200). As this submission seeks outline consent for access only, the FRA will be revisited at Reserved Matters stage to confirm detailed finished levels, drainage design, and updated flood modelling using EA Product 4 data.

GOV·UK

Flood map for planning

Get a boundary report

Add

Datasets

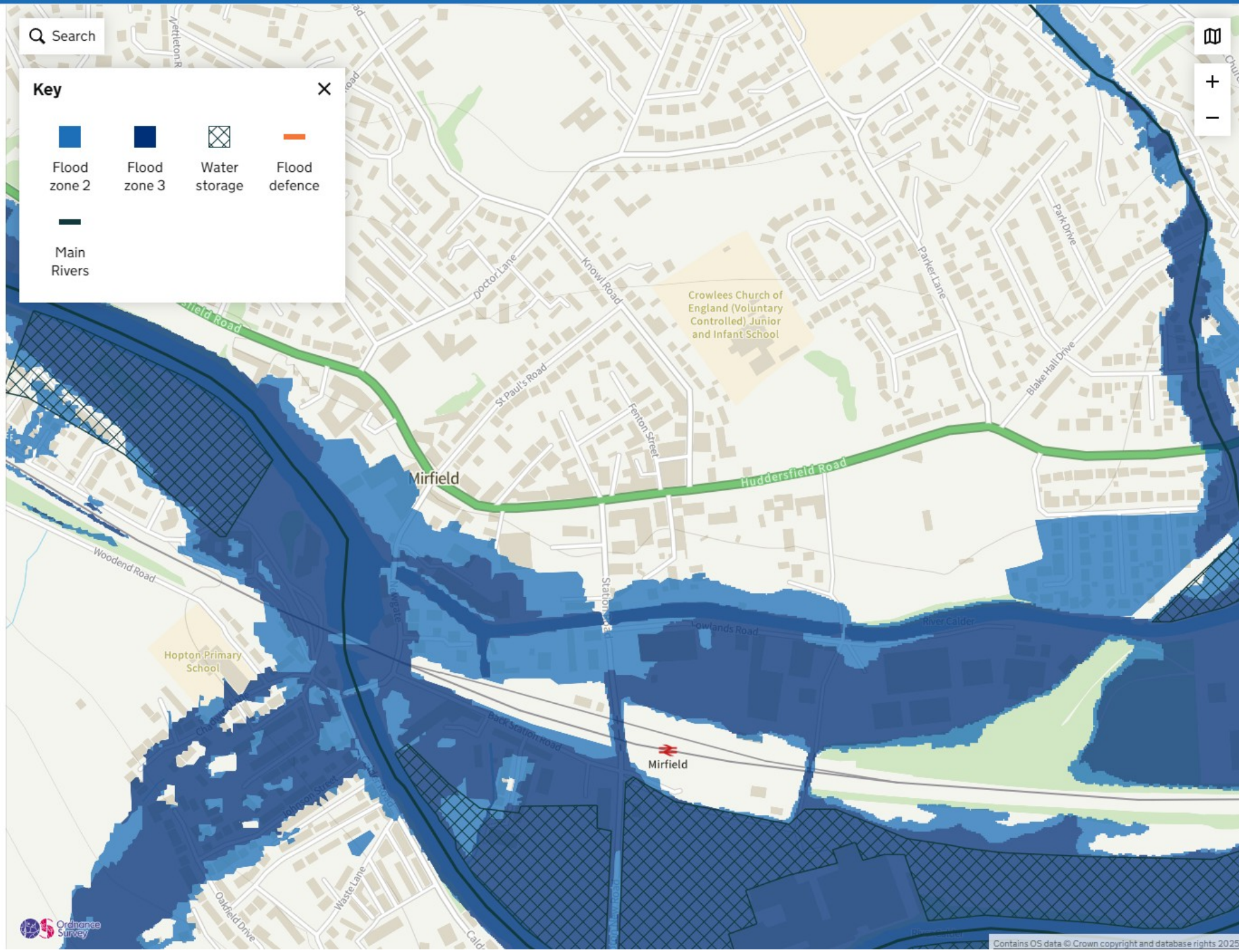
- (●) Flood zones 2 and 3
- ( ) Surface water
- ( ) None

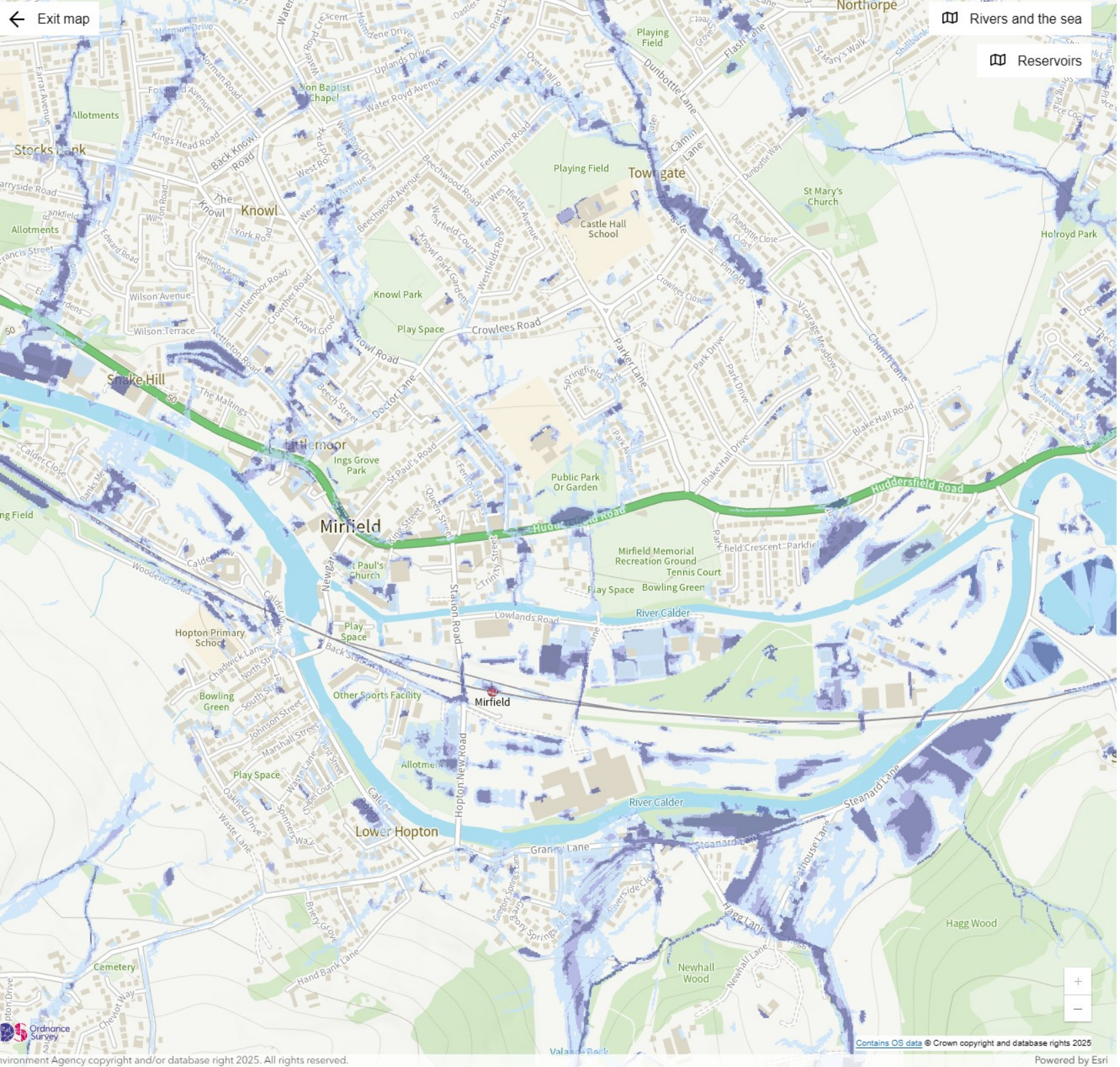
Climate change

- (●) Present day
- ( ) 2070 to 2125

Map features

- [x] Water storage
- [x] Flood defence
- [x] Main Rivers





Surface water map

Yearly chance of flooding

- ○ Extent
- ○ Depth

Yearly chance of flooding between 2040 and 2060

- ◉ Extent
  - High chance
    More than 3.3% chance each year
  - Medium chance
    Between 1% and 3.3% chance each year
  - Low chance
    Between 0.1% and 1% chance each year
- ○ Depth

Map details

- ☑ Show flooding

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North

Scale 1:10,000

421000

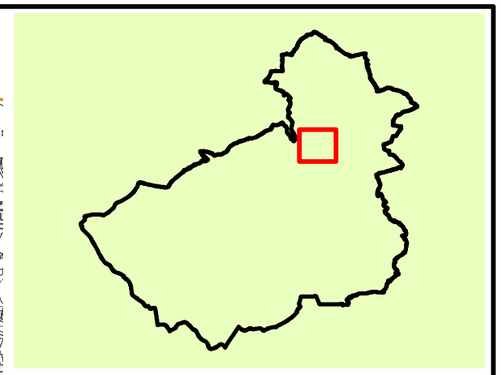
420000

419000

419000

420000

421000



LEGEND

Choose Option Flood Zones

Council boundary

Main River

Detailed River Network

Flood Zones

Flood Zone 3b

Flood Zone 3ai

Flood Zone 3a

Flood Zone 2

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JBA consulting

Kirklees COUNCIL

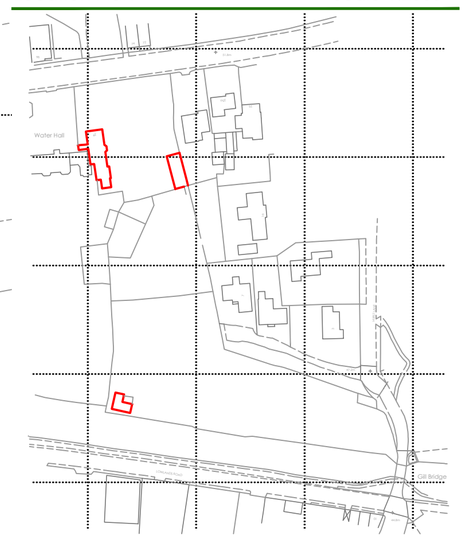
STRATEGIC FLOOD RISK ASSESSMENT

For

KIRKLEES COUNCIL

MAP_W

Location Plan — Scale 1:2000



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Survey Control Co-ordinates

Reference	East	North	Elevation	Description
GPS01	420580.702	419798.208	51.95	Survey Station
GPS02	420587.897	419765.316	51.23	Survey Station
H01	420580.702	419798.213	51.95	Survey Station
H02A	420551.835	419772.926	51.19	Survey Station
H03	420582.816	419737.814	50.79	Survey Station
H03A	420570.169	419737.247	50.93	Survey Station
H03B	420586.340	419703.322	49.98	Survey Station
H03C	420609.107	419712.730	50.16	Survey Station
H04	420563.421	419759.238	51.18	Survey Station
GPS20	420566.635	419612.160	43.96	Survey Station
GPS21	420634.299	419601.596	43.98	Survey Station
NH01	420581.789	419609.901	43.91	Survey Station
NH02	420624.570	419603.637	43.95	Survey Station

Site Survey Control & Datum Information

Grid Orientation:
Survey related to Ordnance Survey "OSGB36" at control point GPS01 and the survey data was processed on a plane grid. (No Scale Factor)

Level Datum:
OS Orthometric Hts

0 5m 10m 15m 20m

SCALE 1:200

Rev	Description	By	Date

Surv.	Drawn	Date	Chkd	Date
NH	NH	30.04.25		

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Holden Surveys Ltd
Topographical Building & Site Surveys - CAD Services

T: 0773 4936469 E: holdensurveys@msn.com

Title. Site Plan

Site. Old Water Hall
Mirfield
WF14 8AE

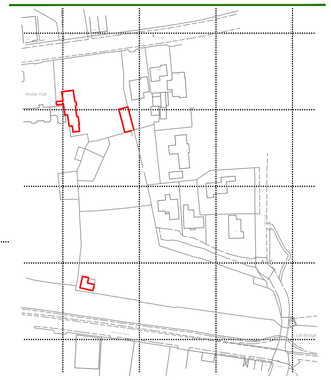
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Dwg No. HA_033_Old Water Hall

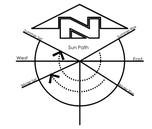
Sheet No. 1

SCALE	1/200	REV.	

Location Plan — Scale 1:2000



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Survey Control Co-ordinates

Reference	East	North	Elevation	Description
GPS01	420580.702	419798.208	51.95	Survey Station
GPS02	420587.897	419765.316	51.23	Survey Station
HD1	420580.702	419798.213	51.95	Survey Station
HD2A	420551.835	419772.926	51.19	Survey Station
HD3	420582.816	419737.814	50.79	Survey Station
HD3A	420570.169	419737.247	50.93	Survey Station
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HD4	420563.421	419739.238	51.18	Survey Station
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GPS21	420634.299	419601.596	43.98	Survey Station
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Site Survey Control & Datum Information

Grid Orientation:
Survey related to Ordnance Survey "OSGB36" at control point GPS01 and the survey data was processed on a plane grid. (No Scale Factor)

Level Datum:
OS Orthometric Hts

0 5m 10m 15m 20m

SCALE 1:200

Rev	Description	By	Date

Surv.	Drawn	Date	Chkd	Date
NH	NH	30.04.25		

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Title. Site Plan

Site. Old Water Hall
Mirfield
WF14 8AE

COMPUTER GENERATED DRAWING - DO NOT ALTER

Dwg No. HA_033_Old Water Hall

Sheet No. 2

SCALE	1/200	REV.	

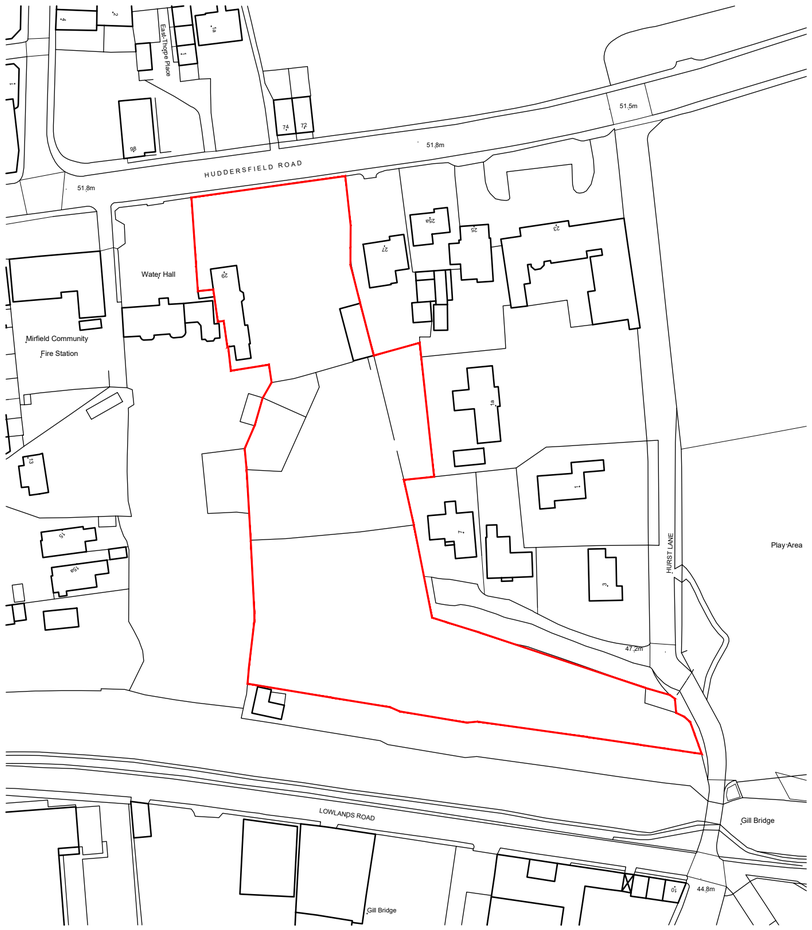
Appendix E
EA Climate Change Rainfall Allowances (Aire & Calder Management Catchment, 2023)

Extracted from the Environment Agency dataset ‘Peak rainfall climate change allowances by management catchment’ (2023). These figures represent the anticipated percentage increases in peak rainfall intensity for the Aire & Calder Management Catchment, which includes the River Calder and associated sub-catchments such as Mirfield.

Epoch	Central Allowance	Upper-End Allowance
2020s (2010–2039)	+10%	+20%
2050s (2040–2069)	+20%	+40%
2080s (2070–2115)	+25%	+45%

Source: Environment Agency (2023) Peak rainfall climate change allowances by management catchment (Aire & Calder). Available from: https://www.gov.uk/government/publications/peak-rainfall-climate-change-allowances-by-management-catchment


HUDDERSFIELD ROAD
51.8m
Water Hall
Fire Station
OPEN SPACE
Remove T5
Remove G4
Remove T3
Existing trees
Hedgerow
Visibility Splay
Proposed trees
Parking for Plot 2
Parking for Plot 1
Visitor Parking
Refuse Turning Area
Existing trees remain outside of plot boundaries
Plot floor levels to accoont for Flood Zone
New trees
HABITAT ZONE
10M LINE FROM CANAL
FLOOD ZONE 2
FLOOD ZONE 3
47.2m
HURST LANE
Play Area
Gill Bridge
LOWLANDS ROAD
27
25
23
25a
1a
1
7
15
15a



0 25 50 75 100 125

1:1250 m

NOTES

This drawing has been prepared specifically for the purpose of obtaining Planning and or Building Regulations Approval. Its suitability for other purposes without additional supplementary details and specifications cannot be guaranteed.

All dimensions are to be checked on site, any discrepancies are to be reported to the designer before work commences. Use only figured dimensions.

All structural components shown are indicative only. Details / calculations of structural members are to be provided by the Structural Engineer.

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N

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Revisions

R01	Preliminary Issue	28.04.25
R02	Red line updated	13.10.25

Project:

Residential Feasibility

at Old Water Hall
29 Huddersfield Road
Mirfield

for Mr & Mrs. Higgins

Location Plan

Purpose of issue: PLANNING

Drawn	DRH
Date	April 2025
Scales	1:1250 @ A2
Drawing No.	2533 - 0101 - R02

INDICATIVE LAYOUT FOR OUTLINE PLANNING

HUDDERSFIELD ROAD

51.8m

51.8m

47.2m

Water Hall

Mirfield Community Fire Station

ACCESS ROAD

OPEN SPACE

OPEN SPACE

OPEN SPACE

HABITAT ZONE

Remove T5

2.4m X 43m VISIBILITY SPLAY

Existing 1m high wall

Existing wall to be taken down and rebuilt behind visibility splay at a max height of 1m

Hedgerow reinstatement to boundary

T1

T3

Retain existing tree

Existing trees

Remove G4

Visibility Splay to

NST

Remove tree(s) to allow access. Retain trees where viable

T6

T7

Retain existing tree

Retain existing tree

Visitor Parking

Proposed trees

Mixed scrub area

Existing trees

Parking for Plot 2

New trees

Existing trees to remain outside of plot boundaries

Remove trees to allow access. Retain trees where viable

Visitor Parking

Refuse Turning Area

Plot floor levels to account for Flood Zone

Existing trees

Proposed trees

New trees

Mixed scrub area

Existing trees

FLOOD ZONE 2

FLOOD ZONE 3

10M LINE FROM CANAL

HURST LANE

Play Area

Gill Bridge

LOWLANDS ROAD

1:500 0 10 20 30 40 50 m

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All structural components shown are indicative only. Details / calculations of structural members are to be provided by the Structural Engineer.

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N

NOTES

Bin Presentation Points for Private Drives. All other plots to present at end of driveways

MATERIALS

- Existing buildings to be retained in natural stone
- Proposed new build dwellings to be in natural stone or high quality brick
- uPVC windows

Heneghan ARCHITECTURE
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Revisions

R01	Preliminary Issue	28.04.25
R02	Ecology and Highway Updates	16.10.25
R03	Highway Amendments	17.10.25
R04	Planning amendments	05.11.25

Project:

Residential Feasibility

at Old Water Hall
29 Huddersfield Road
Mirfield

for Mr & Mrs. Higgins

Indicative Site Layout

Purpose of issue: OUTLINE PLANNING

Drawn	DRH
Date	September 2025
Scales	1:500 @ A2
Drawing No.	2533 - 0301 - R04