



Richard Jackson
Engineering Consultants

FLOOD RISK ASSESSMENT

259 Noak Hill Road – Fisheries Site, Billericay

Mr R Judd

March 2024

Project no: 62308

Document Review Sheet: -

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Issue	Date	Description	Prepared	Checked	Approved
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Title: FLOOD RISK ASSESSMENT
 Project: 259 Noak Hill Road – Fisheries Site, Billericay
 Client: Mr R Judd
 Project No.: 62308

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Appendix I: Drainage Maintenance Schedule

1. Introduction

- 1.1. Richard Jackson Ltd has been appointed by Mr R Judd to carry out a Flood Risk Assessment for the land known as The Fisheries, located off 259 Noak Hill Road, Billericay in support of the planning application for construction of a new single-storey, four-bedroom residential dwelling. The Plans appended to this report also show previously approved proposals for Limni lodge as this is co located with these proposals.
- 1.2. This assessment will follow the checklist for flood risk assessment published as part of the National Planning Policy Framework (NPPF) and the accompanying National Planning Practice Guidance (NPPG).
- 1.3. The proposed development has been carefully designed to ensure that it does not have any greater or significant impact of flood risk to the site or surrounding areas.

2. Development Site and Location

- 2.1. The site is located to the east of Noak Hill Road, Billericay behind number 259 and is accessed via a gravel road off Noak Hill Road. The postcode is CM12 9UN and the Ordnance Survey Grid Reference is TQ 684 911. A location plan is presented at **Appendix A**.
- 2.2. The overarching development site area within the redline boundary is approximately 3288m² (0.329ha). The site is currently occupied by three existing buildings and associated hardstanding and compacted gravel areas accounting for approximate total of 2192m² (0.219ha); a coverage of 66% of the site. It is understood that the two largest buildings were previously used as a fishing supply shops with above ground storage tanks.
- 2.3. The topographical survey indicates that the site falls gently from the northeast to the southwest across the site from a high point of approximately 24.04mAoD to a low point 23.75mAOD. The southern boundary of the site, adjacent to the river has an average elevation of approximately 24.27mAOD across the width of the development boundary. The topographic survey is presented at **Appendix B**.
- 2.4. The flood map for planning presented at **Appendix C** shows this area to be in flood zone 2 (FZ2).

3. Development Proposals

- 3.1. Buildings A and B identified on the existing site/topographical plan presented at **Appendix B**, will be demolished, and replaced with a new single-storey residential building with a reduced footprint of approximately 38% when compared to the demolished blocks.
- 3.2. The new building will be surrounded with associated hard and soft landscaping comprising permeable paving and grassed garden and amenity areas. The proposed architectural site layout is presented at **Appendix D**.
- 3.3. The building known as 259 Limni Lodge is an existing residential lodge. The Limni Lodge was consented and completed in 2022 and does not form any

part of this application. It will, however, remain unchanged and will be maintained to benefit from continued use a single residential building.

4. Climate Change

- 4.1. The NPPF defines climate change allowances that should be considered for various development proposals across the nation. Climate change allowances based on the NPPG climate change for Flood Risk Assessment states that for more vulnerable development that the Central allowance for river flow should be used. For the 2080s and beyond this is as set out below. For rainfall the highest uplift has been used for all epochs. The climate change mapping is presented at **Appendix E**.

Rainfall uplift	45%
Watercourse flow	25%

5. Site Specific Flood Risk

- 5.1. Several sources of flood risk data have been consulted which include the Basildon Borough Council Strategic Flood Risk Assessment (BBCSFRA), the Basildon County Council website and the Gov.UK website, selected mapping from each of these sources is in **Appendix F**.

Ground Water Flood (**Appendix F1**)

- 5.2. Groundwater flooding occurs when the water levels in the ground rise above surface elevations. Groundwater flooding may take some considerable time (weeks/months) to dissipate as the flow is much slower than surface water flows and therefore groundwater levels take longer times to recede and even longer when combined with rainfall.
- 5.3. The predominant underlying geology comprises of clay, silt, sand, and gravel creating an impermeable barrier preventing groundwater rising to the surface, reducing the risk of groundwater flooding. A review of the 2018 South Essex Level 1 SFRA mapping (figure 4.4) assesses that groundwater vulnerability is greater than or equal to 25%, but lower than 50% at this site. Further review of the online "Magic Maps" confirms that the site has a low vulnerability of groundwater flooding and therefore a low risk of flooding at this site from groundwater.

Surface Water Flooding (**Appendix F2**)

- 5.4. The Basildon Borough Council (BBC) mapping for the 1 in 30 year event shows surface water flood risk over the site at a depth in excess of 300mm indicating a medium risk probability. This mapping, although useful, is at relatively small scale. The South Essex Surface Water Management Plan (2012), figure 6-1 indicates that the site is not within the critical drainage area (CDA). Figure 4.3 of the South Essex Level 1 SFRA indicates that there is no evidence of historic flooding from any known source at this site.
- 5.5. The Gov.UK mapping has also been reviewed and provides a clearer picture of the flood risks associated with the site. This source provides depth and velocity mapping for three scenarios discussed below.

- 5.6. In the high risk 1 in 30 year (3.33%) event there is a large area of water to the centre of the proposed site with depth ranging between 300-900mm, the remaining area of the site is less than 300mm deep.
- 5.7. In the medium risk 1 in 100 year (1%) event, the flooding areas described above are slightly larger.
- 5.8. In the low risk 1 in 1000 year (0.1%) event water depth is shown to be more than 900mm across the majority of the site with the remaining area shown at depths between 300-900mm.
- 5.9. Due to the topography and the topography of the site, surface water will pond in the centre of the site.

Fluvial Flood Risk (**Appendix F3**)

- 5.10. The Gov.UK mapping shows this site to be in the lower flood zone 2.
- 5.11. The Environment Agency (EA) has been contacted to provide the best available flood information for this site, the EA Information can be found in **Appendix F4**.

The water levels at proposed building location within the site have been used to assess the fluvial flood risk. The potential water depths are as shown in Table 1 and 2 below using the approximate site level in the location of the proposed dwellings of 24.00m AOD (riverbank level of 24.08m AOD). Node 7 levels have been use it should be noted that node 7 is in the channel and that water levels at the proposed building are likely to be below these levels:

Table 1 – Defended EA modelled water levels at the site.

Event	Base			With CC (25%)
	1 in 30 (3.33%)	1 in 100 (1%)	1 in 1000 (0.1%)	1 in 100 (1%)
Water Level (m AOD)	23.75	23.90	24.29	24.01
Depth (m)	0	0	0.29	0

Table 2 – Undefended EA modelled water levels at the site (*25% climate change not provided by the EA.)

Event	Base			With CC (20%)*
	1 in 30 (3.33%)	1 in 100 (1%)	1 in 1000 (0.1%)	1 in 100 (1%)
Water Level (m AOD)	23.75	24.09	24.56	24.21
Depth (m)	0	0.09	0.56	0.21

- 5.12. The defended EA model mapping shows that the site is not at risk of flooding now and with climate change during the 1 in 100 year event as the water level does not exceed that of the lower bank level of 24.08mAOD. It is shown to be at minor risk of flooding during a 1 in 1000 year event as this will breach the bank, with a potential water depth of 0.29m.

- 5.13. Again, the undefended EA model mapping shows that the site is still only at minor risk of flooding during a 1 in 100 year event with water depths shown to be 0.09m, increasing to 0.21m with 20% climate change applied. It is shown to be at minor risk of flooding during a 1 in 1000 year event with a potential water depth of 0.56m. It should be noted that undefended models do not reflect reality and are usually only used for the definitions of flood zones.
- 5.14. It is proposed to set the finished floor level of the proposed dwellings including the external decking to 860mm above the 1 in 100+CC flood level, 24.87mAOD, and provide flood resilient construction up to the undefended 1 in 1000 year event, 24.56m AOD.
- 5.15. The development proposal is to demolish the existing out-buildings and concrete surround on the eastern part of the site and to construct two new dwellings. The scope to raise the floor level of these buildings is therefore reasonable.
- 5.16. The site is at risk in the extreme events, 1 in 1000 year and also when 35% climate change is added to the 1 in 100 year event. Climate change uplift for watercourse flow is 27% – 37%.
- 5.17. To keep this existing building safe (by providing 300mm freeboard) from fluvial flooding from all events up to and including the 1 in 1000 event, a finished floor level of 24.87m AOD is recommended.
- 5.18. The flood levels originate from the River Crouch which flows west to east immediately bounding the southern edge of the site. The Crouch is noted as a main river. The site re-development is likely to require consent from the EA given its proximity to a main river and the proposed new outfall to the River Crouch.

Reservoir and Artificial Flooding (**Appendix F5**)

- 5.19. The Gov.UK flood mapping shows that flooding from a reservoir failure may reach the boundary of this site. The depth of this flooding could be between 0.3m and 2.0m. Reservoir flood prediction is based on a worst-case scenario of a failure occurring when the reservoir is full. Reservoirs are monitored by the EA in the UK and therefore the risk of such an event is extremely low.
- 5.20. It is likely that there will be foul, surface water sewers and water mains serving the nearby dwellings along Noak Hill Road adjacent to the site, which may be a further source of flooding, however, there have been no recorded historical flooding at this site from any of these sources.

6. Surface Water Management

- 6.1. The proposed development will reduce the existing run-off rate by means of a flow control device and hence is likely to improve upon the existing drainage or flooding on or off site.
- 6.2. The level of discharge from the site needs to be reduced to meet the requirements of the LLFA and local flood planning guidance. As the site is

brownfield and has an impermeable area of approximately 0.219ha comprising of the existing buildings and hardstanding areas, the current brownfield run off is calculated to be 30.44 l/s in accordance with equation 24.5 of the CIRIA SuDS Manual (2015)

- 6.3. The scope for reducing the outflow in line with Essex County Council Lead Local Flood Authority (LLFA) policy is extremely limited. The proposed roof is approximately 0.041ha, which increases to 0.045ha when 10% urban creep is added. The proposed impermeable areas including footpaths parking areas, driveways, gravel bed and access road is 0.093ha, bringing the total drained area to 0.138ha.
- 6.4. The existing Limni Lodge has a dedicated drainage to the watercourse, therefore, the roof and immediate surrounding hardstandings does not form part of the proposed calculations.
- 6.5. The LLFA policy for brownfield sites would be to aim for greenfield runoff rate. The greenfield runoff rate for the whole site was calculated using the HR Wallingford free online SuDS tool and was shown to be 1.07/s for the 1 in 1 year runoff rate. Refer to **Appendix G** for the greenfield runoff rates.
- 6.6. It is proposed the driveway, parking bays and footpaths will be permeable paving and used as storage before discharging direct to the River Crouch.
- 6.7. The outflow rate is proposed to be limited to the 1 in 1yr greenfield runoff rate of 1.07l/s by the provision of a flow control device with a 100mm orifice. The proposed runoff rate is significantly less (96%) than the existing brownfield runoff. Preliminary calculations and drainage drawing of the proposals is presented in **Appendix H**.
- 6.8. The proposed permeable paved areas will be utilised as storage for all flows up to and including the 1 in 100 year plus 45% climate change within a 0.45m deep Subbase.
- 6.9. For the development proposed, the landowners will be responsible for the drainage system. A SuDS Maintenance schedule for is presented in **Appendix I**.
- 6.10. To improve the quality of the surface water from the roof and car park, the surface water will be drained through and attenuated by the permeable paving which will be sufficient to remove and mitigate metals, suspended solids, and hydrocarbons. Soft landscaping will be used elsewhere on site to replace or enhance the existing surfaces.

7. Occupants and Users of the Development

- 7.1. The occupants of the new building will be encouraged to sign up for flood warnings from the Environment Agency. Any occupants of the building will be able to exit to the safer higher ground to the south via the footbridge prior to flooding.
- 7.2. A domestic flood warning and evacuation plan should be prepared and reviewed on an annual basis to ensure the occupants are aware if the

residual flood risk at this site and that they understand the action to take if a severe flood warning for the River Crouch is issued. This can be controlled by a Planning Condition, timed to be in place before occupation.

- 7.3. As climate change occurs, the potential for fluvial and surface water events of a large enough scale to impact upon this site will increase.

8. Exception Test

- 8.1. This application will make a significant and important contribution to meeting the housing needs of the area providing a huge benefit of using suitable site within existing settlement areas. The development is in line with the existing use provided by the Limni Lodge and will not have any significant impact on the flood risk to the site especially due to the smaller building footprint and new permeable areas to replace the existing impervious areas.

- 8.2. Flood risk to the site will remain unchanged and flood risk offsite will be reduced by controlling the discharge rates to the significantly lower greenfield discharge rate of 1.07l/s.

- 8.3. We conclude that the exception does not apply to this site.

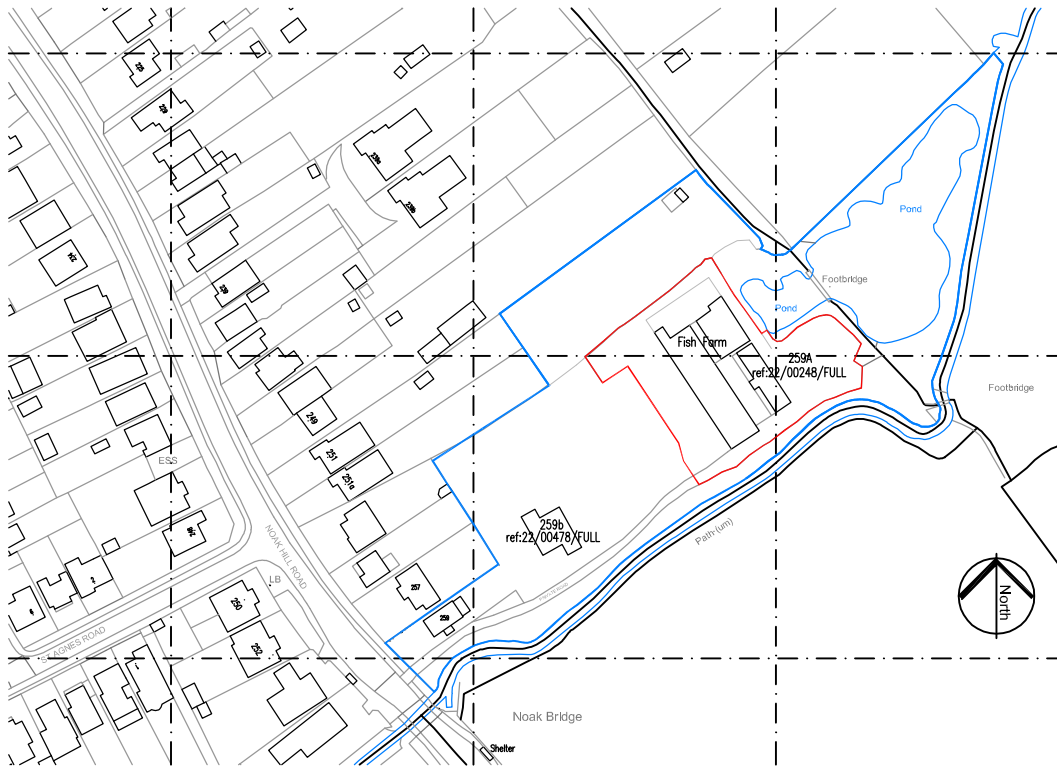
9. Residual Risk

- 9.1. The residual risks of flooding at the site include:

- Fluvial flooding from the River Crouch.
- Surface water flooding.
- Reservoir failure.
- Sewer or water main failure.

Appendix A

Site Location Plan



Ordnance location plan

Scale 1:2500



Scalebar 1:2500

Rev.	Drawn	Description	Date
1	LC	Issued for Planning permission.	05.10.23

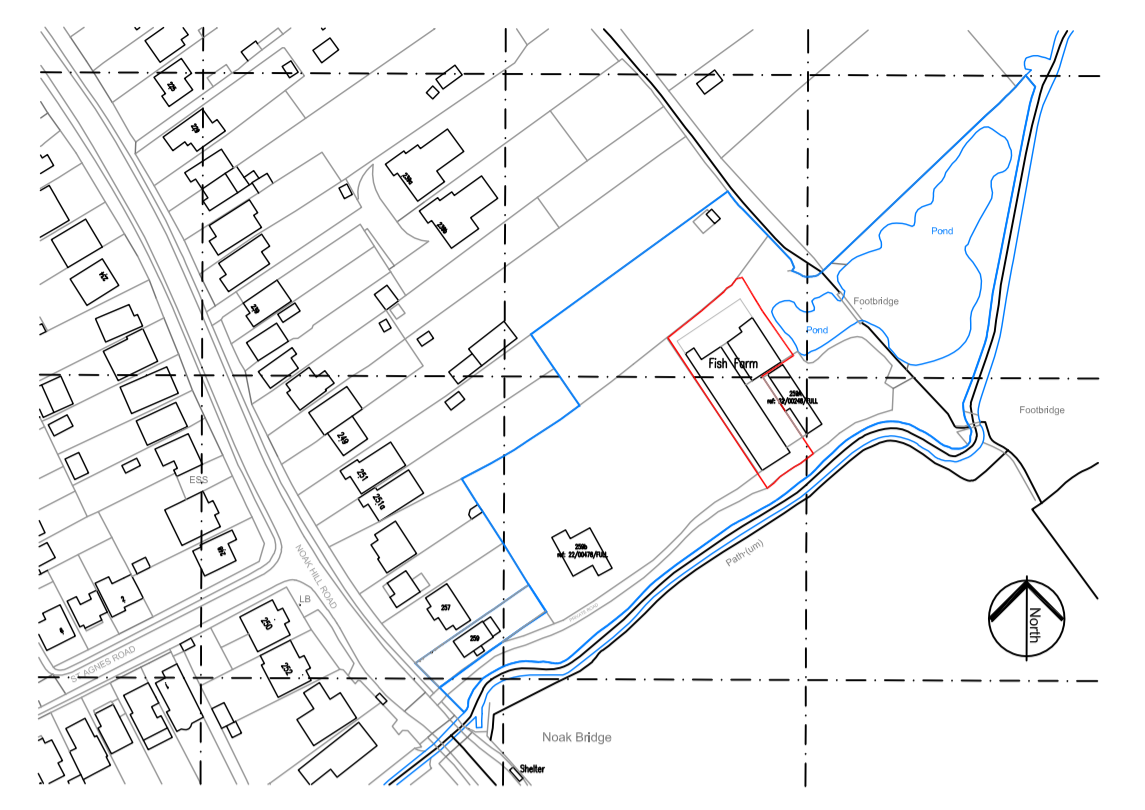
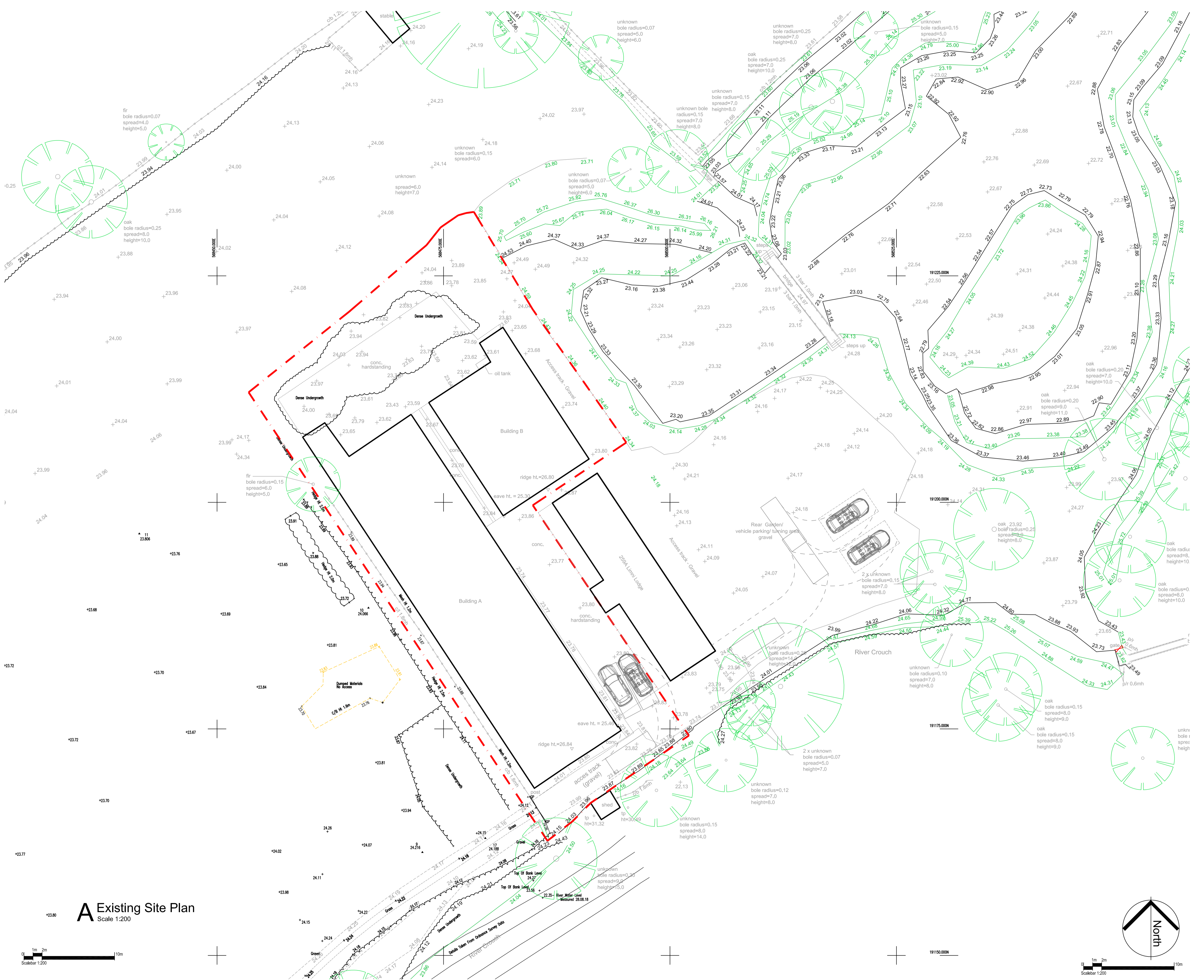


Client	GNB Developments		
Project	Fisheries Site - Rear of 259 Noak Hill Road Great Burstard, Billericay, Essex. CM12 9UL		
Drawing	Ordnance Survey Location Plan Location Plan		
Drawing Status	APPROVAL		
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Drawn by	LC	Project no.	222734
Checked by	LC	Drawing no.	EXOS
Date	OCT 2022	Revision	-

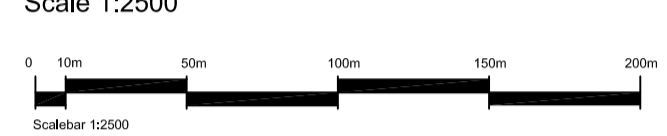
Appendix B

Topographical Survey

Title: FLOOD RISK ASSESSMENT
Project: 259 Noak Hill Road – Fisheries Site, Billericay
Client: Mr R Judd
Project No.: 62308



Ordnance location plan
Scale 1:2500



ABBREVIATIONS (where applicable)

AV	Air Valve	MH	Manhole Cover
BL	Bollard	MK	Marker
BS	Bus Stop	MS	Milestone
BT	British Telecom	MT	Meter
CB	Control Box	MY	Mercury
CB/B	Close Boarded	OH	Overhead
CL	Close Level	PAW	Paving
CLK	Chainlink	PB	Post Box
CO	Column	PE	Pipe
Conc	Concrete	PM	Parking Meter
CP	Catch Pit	P/R	Post and Rail
CPS	Concrete Paving Slabs	PT	Post
CATV	Cable Television	P/W	Post and Wire
DC	Drainage Channel	RE	Rodding Eye
DP	Drain Pipe	RET	Retaining
EC	Electricity Cover	RS	Road Sign
ER	Eorthing Rod	RSJ	Rollled Steel Joist
FB	Flower Bed	SC	Stop Cock
FE	Fence	SK	Stockway
FH	Fire Hydrant	SP	Signpost
FL	Floor Level	ST	Silt Trap
FP	Flag Pole	SV	Stop Valve
GP	Gate Post	SVC	Security Video Camera
GV	Gas Valve	T/CB	Telephone Call Box
GV/G	Gully	TK	Tank
HT	Height	TL	Traffic Light
IC	Inspection Cover	TP	Telegraph Pole
IL	Invert Level	UG	Underground
I	Interceptor	UTF	Unable To Trace Further
I/R	Iron Railings	UTL	Unable To Lift
KO	Kerb Outlet	VP	Vent Pipe
LB	Litter Bin	WL	Water Level
LP	Lamp Post	WM	Water Meter
		WO	Wash Out

- B Floor to Beam Height in cms
 - C Floor to Ceiling Height in cms
 - Cr. Floor to Crown Height in cms
 - D Floor to Door Head Height in cms
 - FC Floor to False Ceiling Height in cms
 - FF False Floor Level
 - H Floor to Head Height in cms
 - S Floor to Sill Height in cms
 - Spr. Floor to Spring Height in cms
- Denotes site boundary

LC Issued for Pre-application advice. 08.12.22
 [Rev.] [Drawn] [Description] [Date]



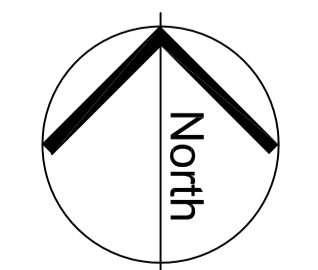
Client: GNB Developments

Project: Fisheries Site - Rear of 259 Noak Hill Road
Great Burstead, Billericay, Essex CM12 9UL

Drawing: Existing Site Plan

Drawing Status	AS SURVEYED
Scale	1:200@A1
Drawn by	LC
Checked by	LC
Date	OCT 2022
Cad file	-2734 EXSP
Project no.	212734
Drawing no.	EXSP
Revision	-

A Existing Site Plan
Scale 1:200



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All dimensions to be checked on site prior to commencement of work

Appendix C

Flood Map for Planning

Flood map for planning

Your reference
Fisheries

Location (easting/northing)
568483/191194

Created
14 Mar 2024 10:24

**Your selected location is in flood zone 2
– an area with a medium probability of flooding.**

This means:

- you may need to complete a flood risk assessment for development in this area
- you should ask the Environment Agency about the level of flood protection at your location and request a Flood Defence Breach Hazard Map (You can email the Environment Agency at: enquiries@environment-agency.gov.uk)
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (find out more at www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

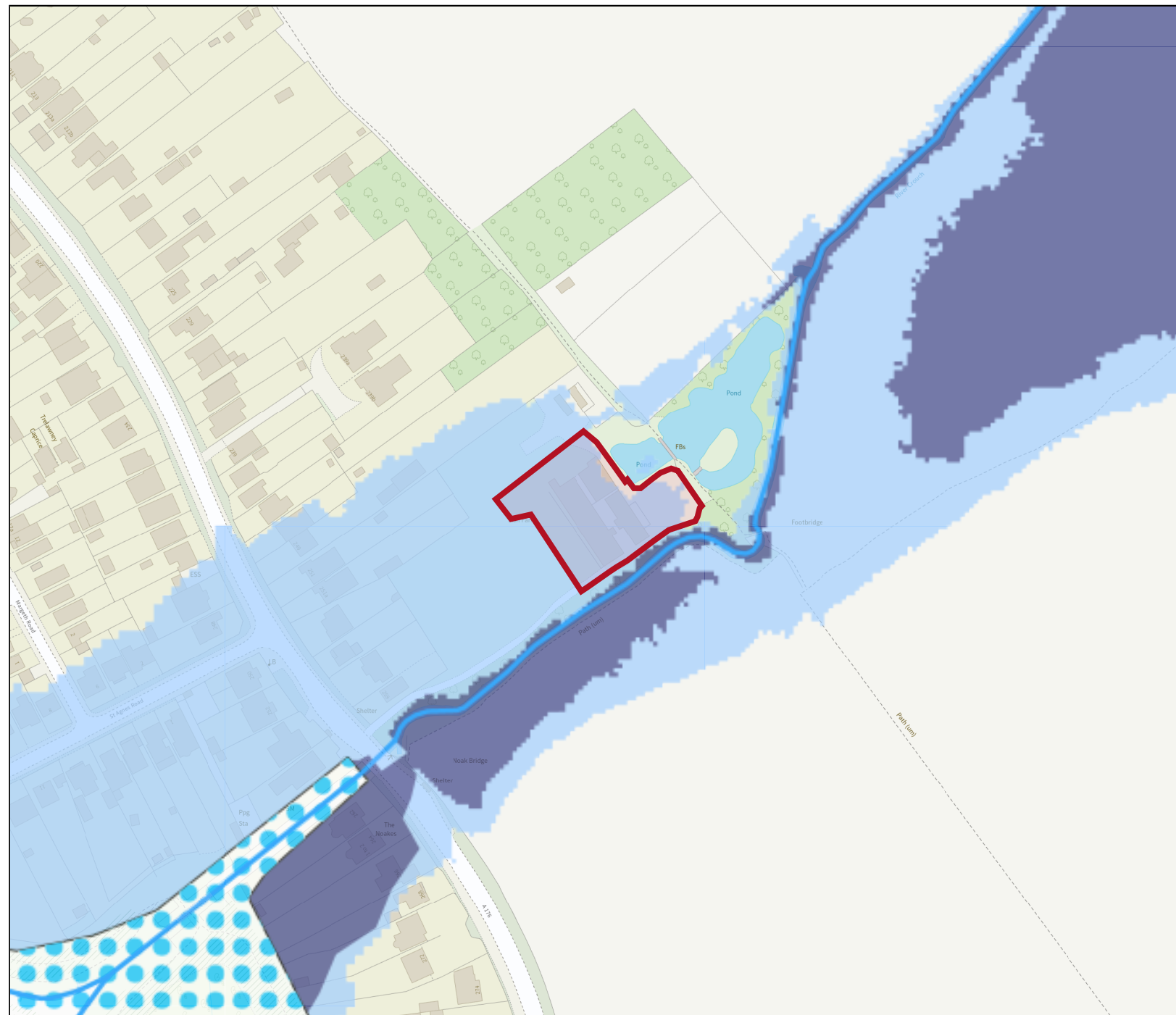
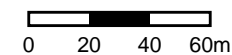
Your reference
Fisheries

Location (easting/northing)
568483/191194

Scale
1:2500

Created
14 Mar 2024 10:24

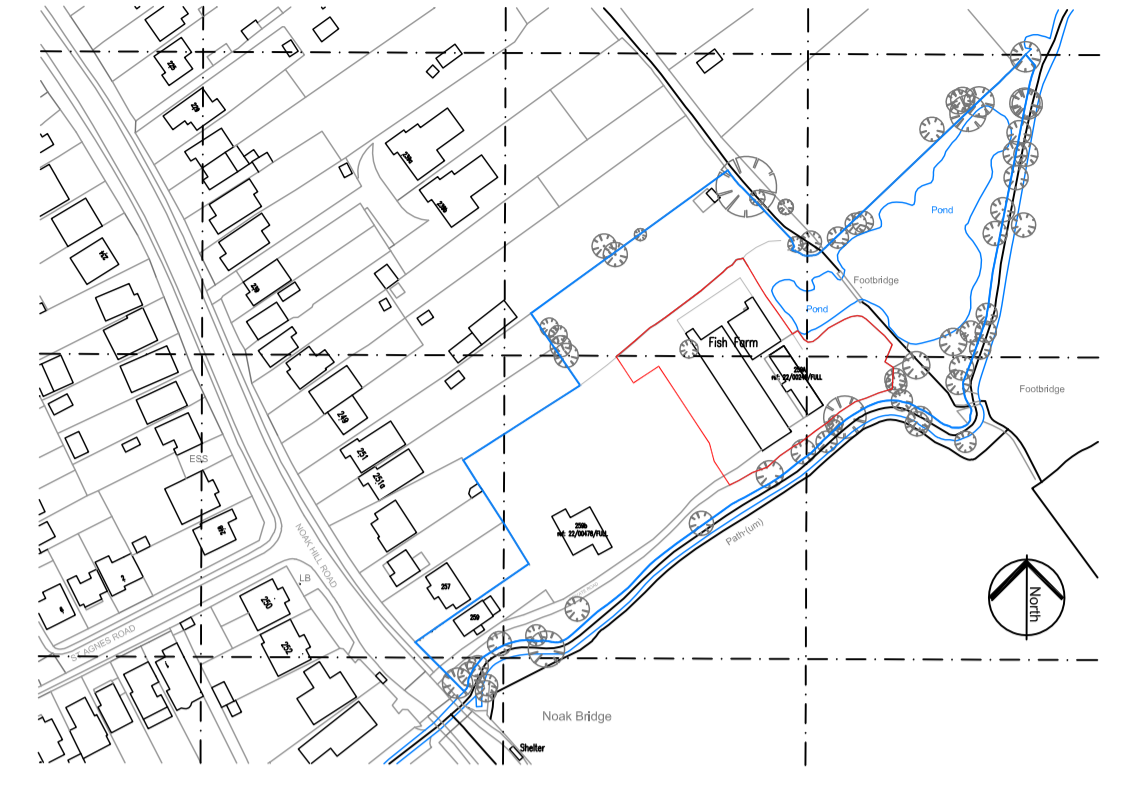
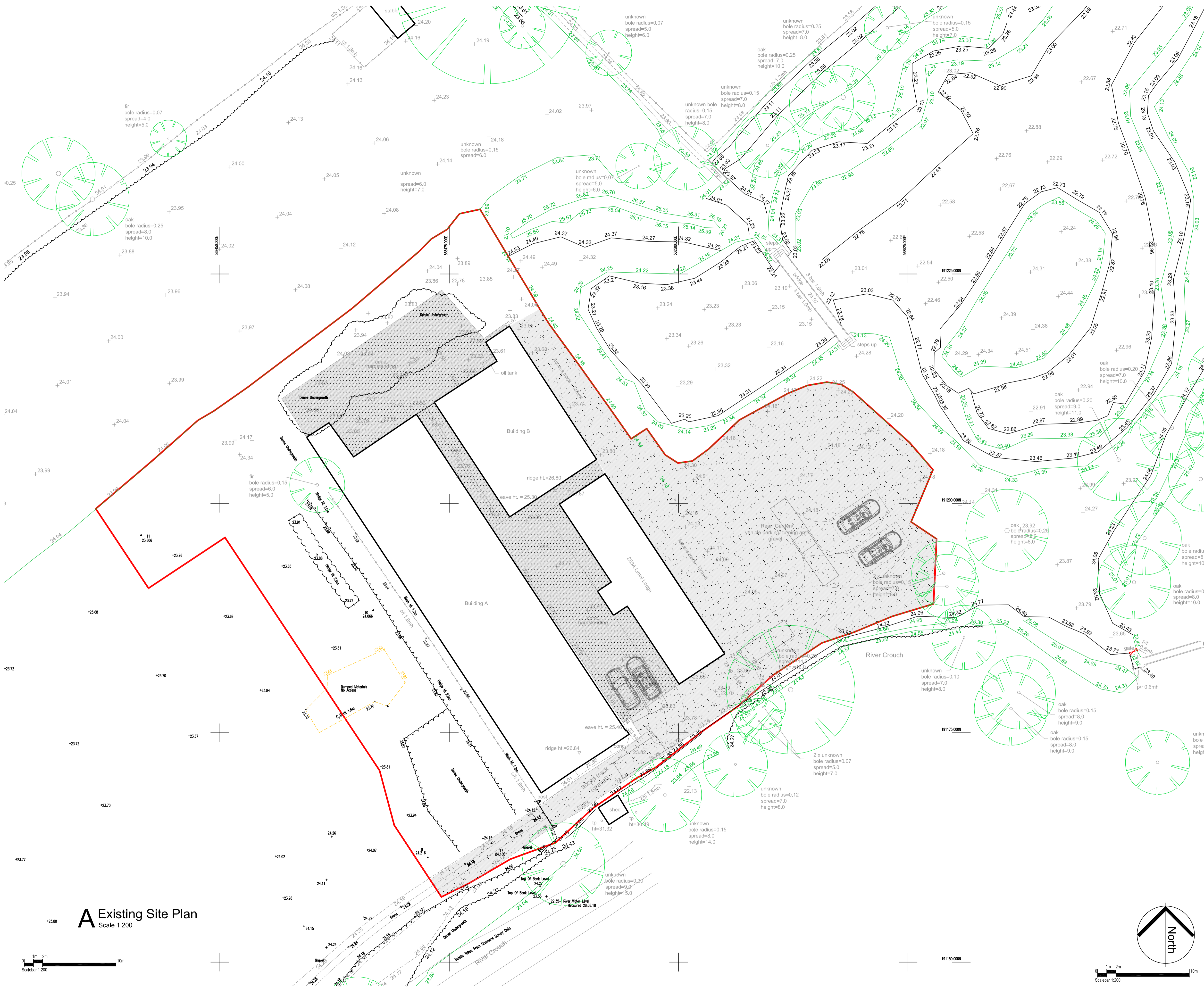
-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area



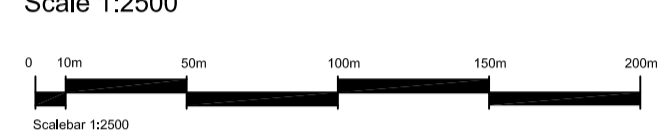
Appendix D

Development Proposals

Title: FLOOD RISK ASSESSMENT
Project: 259 Noak Hill Road – Fisheries Site, Billericay
Client: Mr R Judd
Project No.: 62308



Ordnance location plan
Scale 1:2500



ABBREVIATIONS (where applicable)

AV	Air Valve	MH	Manhole Cover
BK	Brick	MK	Marker
BL	Bollard	MS	Milestone
BS	Bus Stop	MT	Meter
BT	British Telecom	MY	Mercury
CB	Control Box	OH	Overhead
CB/B	Close Boarded	PAW	Paving
CL	Cover Level	PB	Post Box
CLK	Chainlink	PE	Pipe
CO	Column	PM	Parking Meter
Conc	Concrete	P/R	Post and Rail
CP	Catch Pit	PT	Post
CPS	Concrete Paving Slabs	P/W	Post and Wire
CATV	Cable Television	RE	Rodding Eye
DC	Drainage Channel	RET	Retaining
DP	Drain Pipe	RSJ	Road Sign
EC	Electricity Cover	RSJ	Rollled Steel Joist
ER	Eorthing Rod	SC	Stop Cock
FB	Flower Bed	SK	Stockway
FE	Fence	SP	Signpost
FH	Fire Hydrant	ST	Silt Trap
FL	Floor Level	SV	Stop Valve
FP	Flag Pole	SVC	Security Video Camera
GP	Gate Post	TGB	Telephone Call Box
GV	Gas Valve	TK	Tank
GV/G	Gully	TL	Traffic Light
HT	Height	TP	Telegraph Pole
IC	Inspection Cover	UG	Underground
IL	Invert Level	UTF	Unable To Trace Further
IN	Interceptor	UTL	Unable To Lift
I/R	Iron Railings	VP	Vent Pipe
KO	Kerb Outlet	WL	Water Level
LB	Litter Bin	WM	Water Meter
LP	Lamp Post	WO	Wash Out

B	Floor to Beam Height in cms	Area of existing hardstandings	Approx 428.5m ²
C	Floor to Ceiling Height in cms	Area of existing gravel	Approx 950m ²
Cr.	Floor to Crown Height in cms		
D	Floor to Door Head Height in cms		
FC	Floor to False Ceiling Height in cms		
FF	False Floor Level		
HI	Floor to Head Height in cms		
S	Floor to Sill Height in cms		
Spr.	Floor to Spring Height in cms		

--- Denotes site boundary

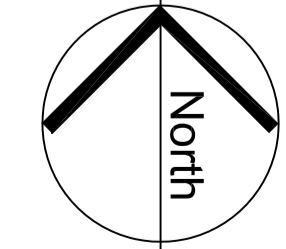
LC Issued for Planning permission. 20.03.24
[Rev.] [Drawn] [Description] [Date]



Client	GNB Developments		
Project	Fisheries Site - Rear of 259 Noak Hill Road Great Burstead, Billericay, Essex CM12 9UL		
Drawing	Existing Site Plan		

Drawing Status	AS SURVEYED		
Scale	1:200@A1	Cad file	-2734 EXSP
Drawn by	LC	Project no.	212734
Checked by	LC	Drawing no.	EXSP
Date	OCT 2022	Revision	-

A Existing Site Plan
Scale 1:200



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Property (GIA) Gross internal floor area = 269.7m²
 Gross External Area (GEA) = 310m²
 Carriage floor area = 34.7m²

Adjacent land owned by Mr. Judd
 To be allowed to grow back as wild meadow

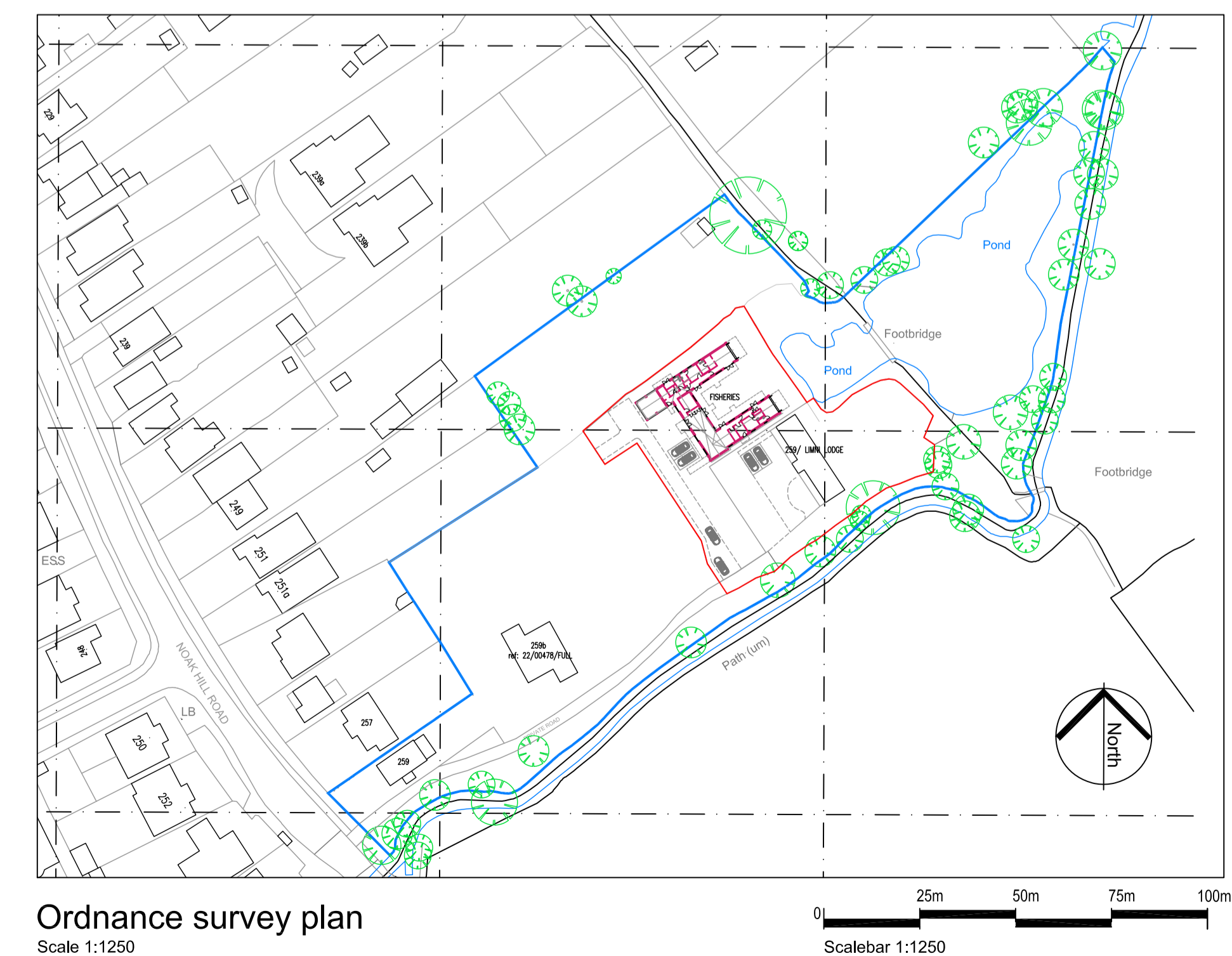
Area of land associated with Limni Lodge to be
 Re-instated garden only

Front area to be used for front
 garden & driveway for Limni Lodge

A Proposed Site Plan
 Scale 1:200

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 All dimensions to be checked on site prior to commencement of work

- Drawing Legend:**
- Denotes area of lawns/ grassland/ gardens
 - 1 Denotes area of existing hard surfaces/ concrete pathways
 - 2 Denotes areas of new permeable block paving
 - Denotes areas of new permeable gravel driveway/ roadway
 - Denotes areas of new raised decking/ steps/ ramps/ walkways
 - Denotes redline site boundary



C	LC	Site plan coordinated with planning statement and extent of works updates to suit. Drawing legend added. Issued for Planning Approval.	20.03.24
B	LC	Site plan coordinated with Flood risk assessment and surface water drainage added. Red/ blue boundaries updated.	09.10.23
A	LC	Floor area reduced and building moved south away from northern most boundary. Issued for Full Planning Permission.	20.04.23
-	LC	Issued for Pre-application advice.	08.12.22
Rev.	Drawn	Description	Date

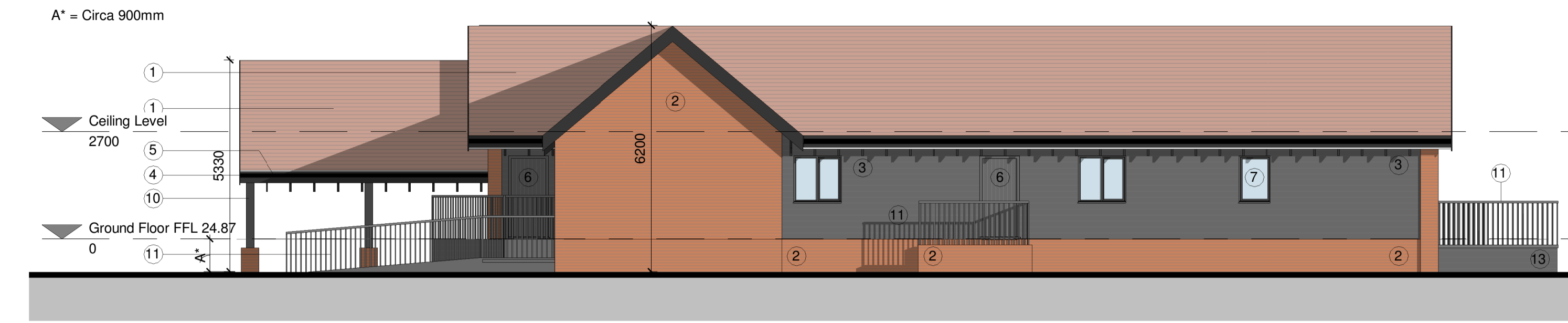


Client Mr R Judd

Project 259 Noak Hill Road - Fisheries Site
 Great Burstead, Billericay, Essex CM12 9UL

Drawing Proposed site plan arrangement

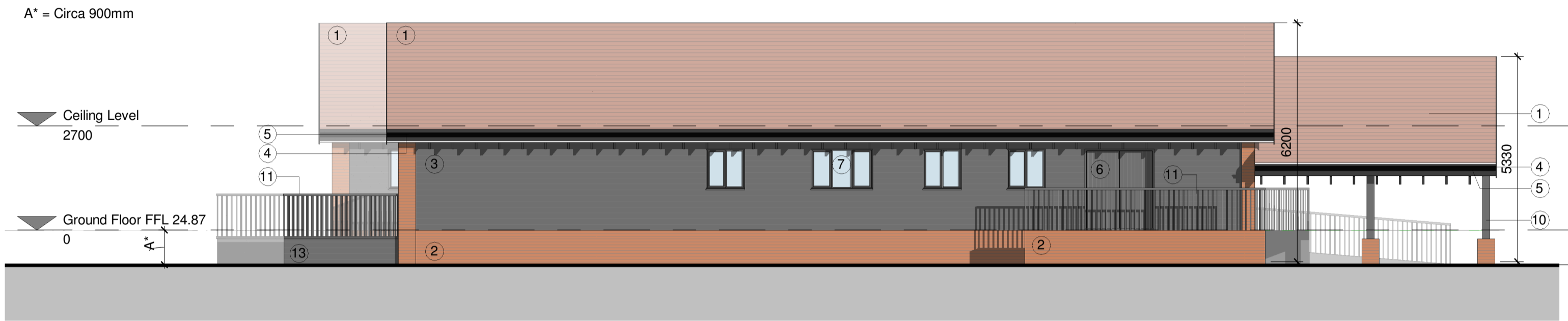
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Drawing no.	PASP
Revision	C



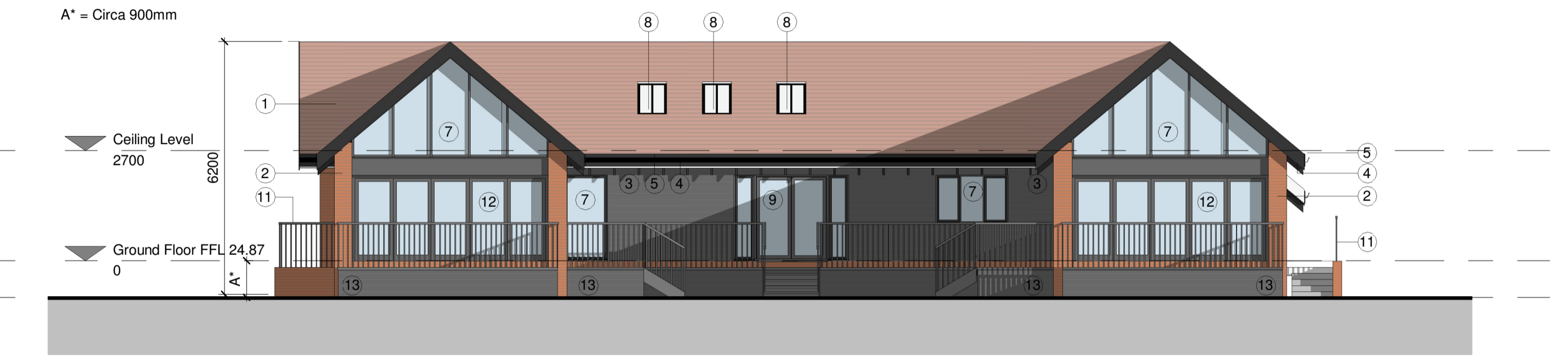
1 Elevation 1 - (South Facing)
Scale: 1 : 100



2 Elevation 2 - (West Facing)
Scale: 1 : 100



3 Elevation 3 - (North Facing)
Scale: 1 : 100



4 Elevation 4 - (East Facing)
Scale: 1 : 100



5 Cross section/ Elevation 5 - (Courtyard)
Scale: 1 : 100



6 Cross section/Elevation 6 (Courtyard)
Scale: 1 : 100

B	LC	Issued for Planning Permission.	20.03.24
A	LC	Drawing revised following 'Pre-Application advice'. Submitted for Full Planning Permission.	29.02.24
Rev.	Drawn	Description	Date



DRAWING LEGEND:

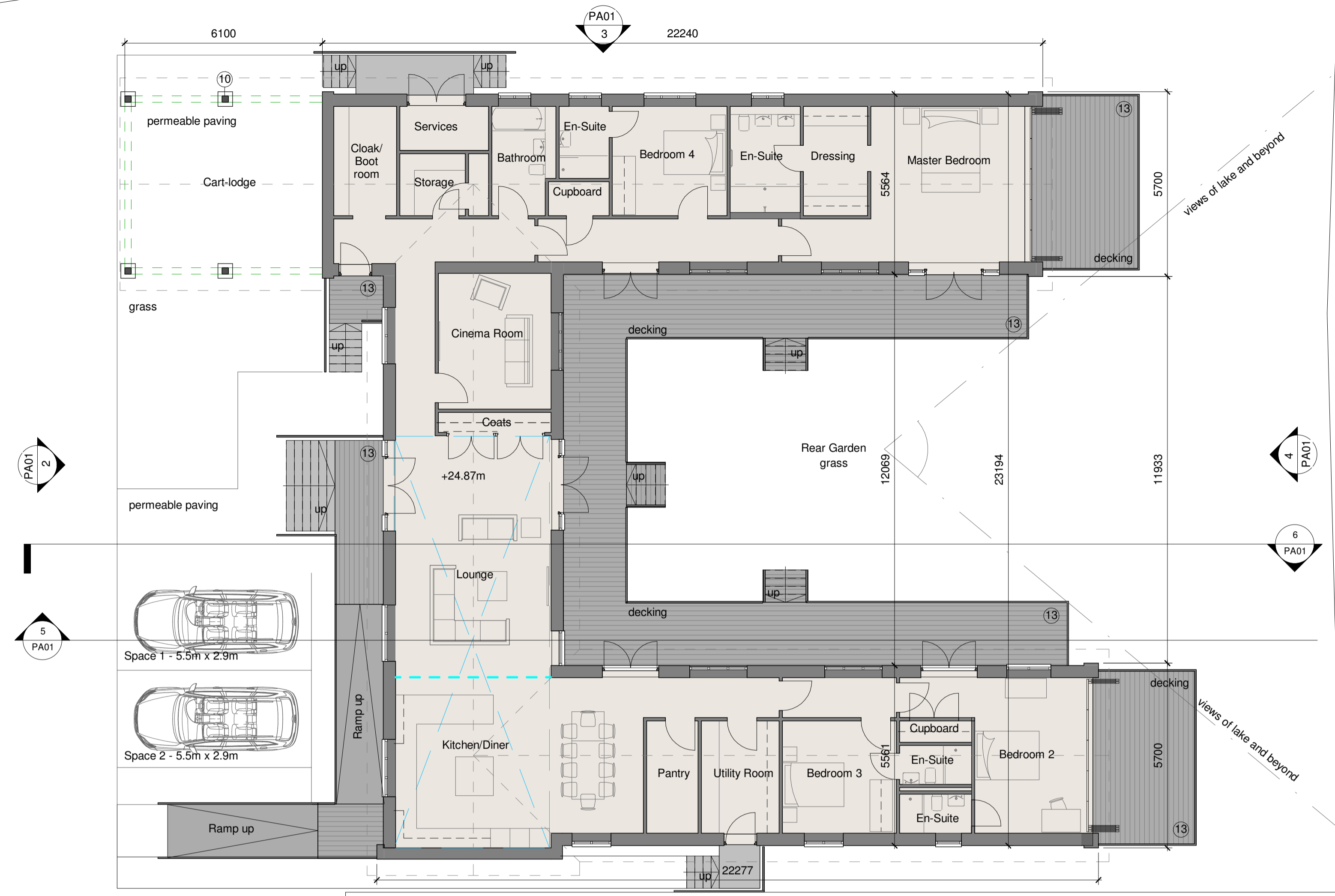
- ① CLAY PLAIN ROOF TILE
- ② NEW FAIRFACE BRICKWORK
- ③ MID-GREY PAINTED TIMBER WEATHERBOARDING
- ④ FASCIA BOARDS AND EXPOSED RAFTER FEET PAINTED BLACK
- ⑤ BLACK uPVC GUTTERING/ DOWNPIPES
- ⑥ MID-GREY DOORS & FRAMES
- ⑦ MID-GREY DOUBLE GLAZED WINDOWS
- ⑧ CONSERVATION STYLE SLIMLINE ROOFLIGHTS
- ⑨ MID-GREY DOUBLE GLAZED FRAMED DOORS
- ⑩ MID-GREY PAINTED STRUCTURAL TIMBER FRAME -WORK WITH BRICK PLINTHS
- ⑪ MID-GREY EXTERNAL HANDRAILS/ BALUSTRADES.
- ⑫ MID-GREY DOUBLE GLAZED FRAMED BIFOLD DOORS
- ⑬ MID-GREY EXTERNAL DECKING, STEPS AND RAMPS.



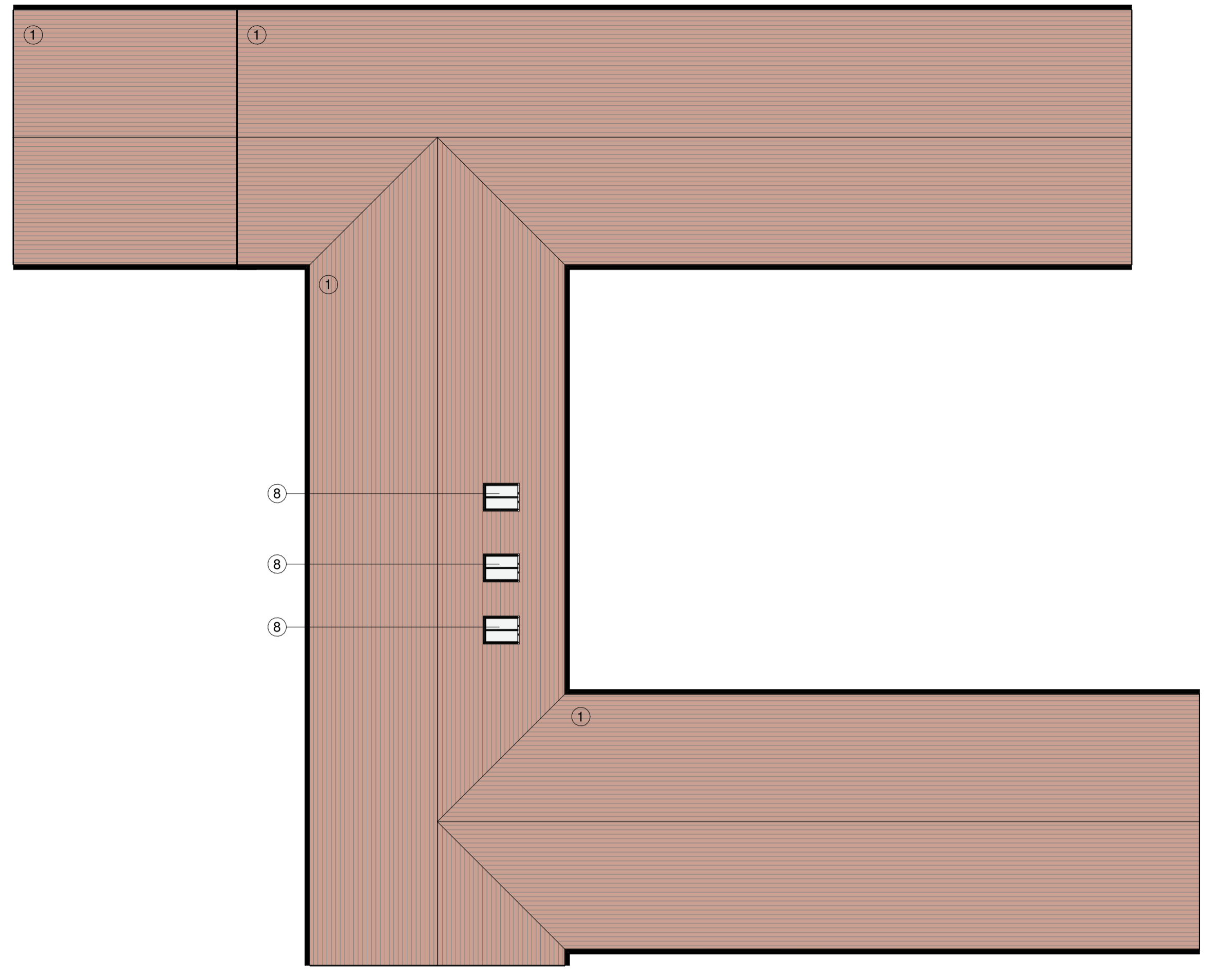
SCALE 1:100 @ A1

Client	Mr R Judd
Project	Land at the Rear of 259 Noak Hill Road Great Bursted, Billericay, Essex, CM12 9UL
Drawing	Proposed Elevations

Drawing Status	APPROVAL
Scale	1 : 100@A1
Drawn by	PDW
Checked by	LC
Date	Sept 2022
Cad file	-2734 PA01
Project no.	222734
Drawing no.	PA01
Revision	B



A Ground Floor Plan
Scale: 1 : 100



B Proposed Roof Plan
Scale: 1 : 100

- DRAWING LEGEND:**
- ① CLAY PLAIN ROOF TILE
 - ② NEW FAIRFACE BRICKWORK
 - ③ MID-GREY PAINTED TIMBER WEATHERBOARDING
 - ④ FASCIA BOARDS AND EXPOSED RAFTER FEET PAINTED BLACK
 - ⑤ BLACK UPVC GUTTERING/ DOWNPIPES
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 - ⑦ MID GREY DOUBLE GLAZED WINDOWS
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 - ⑩ MID-GREY PAINTED STRUCTURAL TIMBER FRAME -WORK WITH BRICK PLINTHS
 - ⑪ MID GREY EXTERNAL HANDRAILS/ BALUSTRADES.
 - ⑫ MID-GREY DOUBLE GLAZED FRAMED BIFOLD DOORS
 - ⑬ MID-GREY EXTERNAL DECKING, STEPS AND RAMPS.

B	LC	Issued for Planning Permission.	20.03.24
A	LC	Drawing revised following 'Pre-Application advice'. Submitted for Full Planning Permission.	29.02.24
		[Rev. Drawn Description]	[Date]



Client	Mr R Judd		
Project	Land at the Rear of 259 Noak Hill Road Great Bursted, Billericay, Essex, CM12 9UL		
Drawing	Proposed Floor Plan & Roof plan		
Drawing Status	APPROVAL		
Scale	1 : 100@A1	Cad file	2734 PA0G
Drawn by	PDW	Project no.	222734
Checked by	LC	Drawing no.	PA0G
Date	Sept 2022	Revision	B



SCALE 1:100 @ A1

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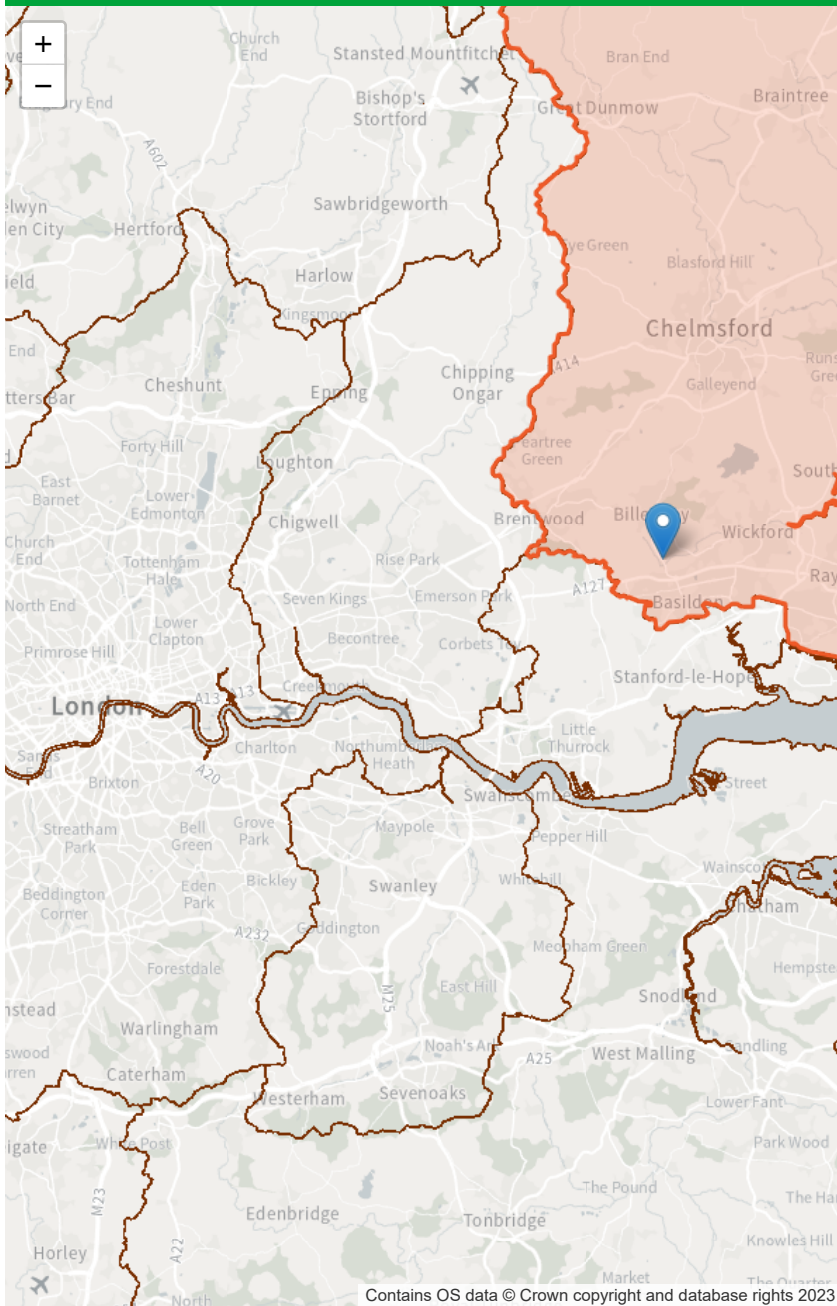
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Appendix E

Climate Change Allowances

Title: FLOOD RISK ASSESSMENT
Project: 259 Noak Hill Road – Fisheries Site, Billericay
Client: Mr R Judd
Project No.: 62308

We would welcome your feedback to help us make future improvements.



Combined Essex Management Catchment peak rainfall allowances

3.3% annual exceedance rainfall event

Epoch	Central allowance	Upper end allowance
2050s	20%	35%
2070s	20%	35%

1% annual exceedance rainfall event

Epoch	Central allowance	Upper end allowance
2050s	20%	45%
2070s	25%	40%

*Use '2050s' for development with a lifetime up to 2060 and use the 2070s epoch for development with a lifetime between 2061 and 2125.

This map contains information generated by Met Office Hadley Centre (2019): UKCP Local Projections on a 5km grid over the UK for 1980-2080. Centre for Environmental Data Analysis, 2022

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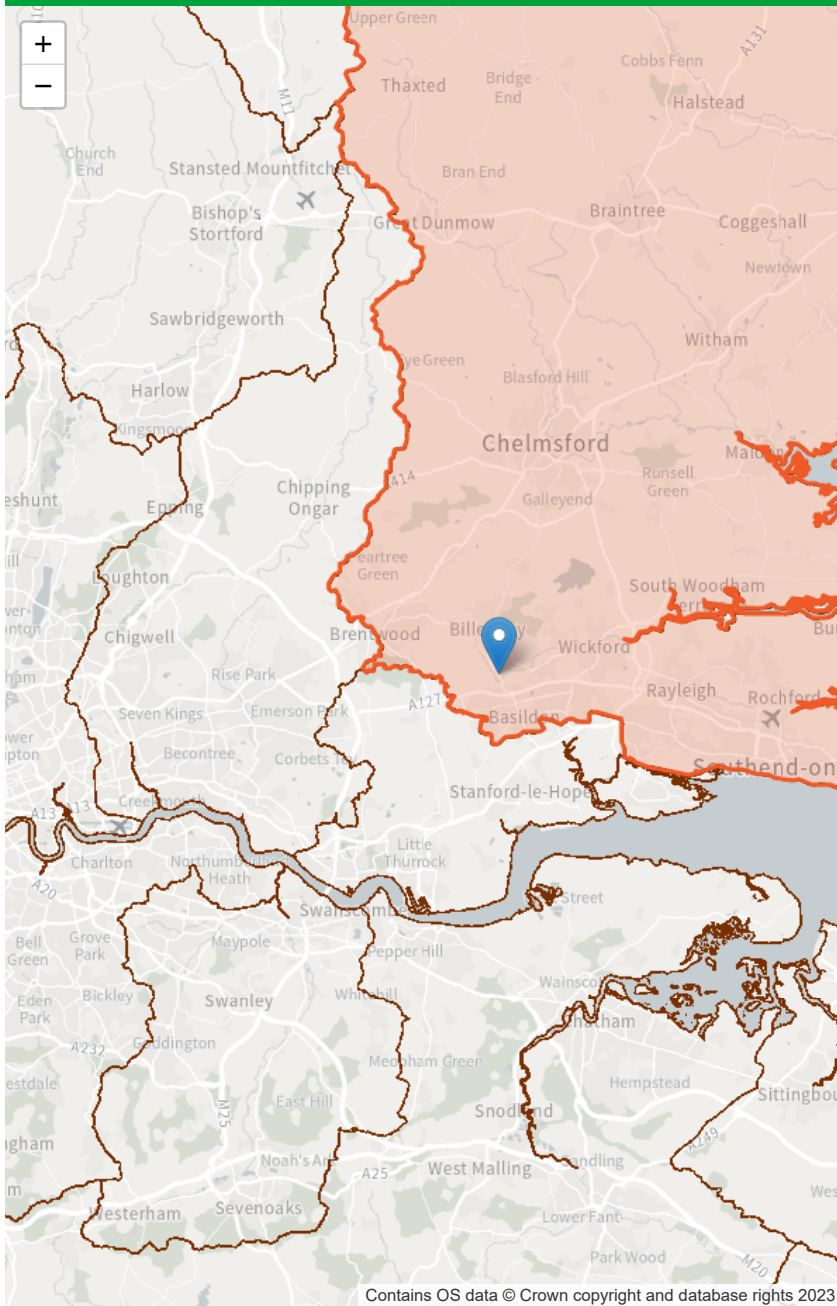
OGL

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We would welcome your feedback to help us make future improvements.



Combined Essex Management Catchment peak river flow allowances

	Central	Higher	Upper
2020s	7%	13%	27%
2050s	8%	16%	37%
2080s	25%	38%	72%

This map contains information generated by [UK Centre for Ecology and Hydrology](#), using UK Climate projections.

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OGL

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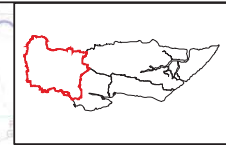
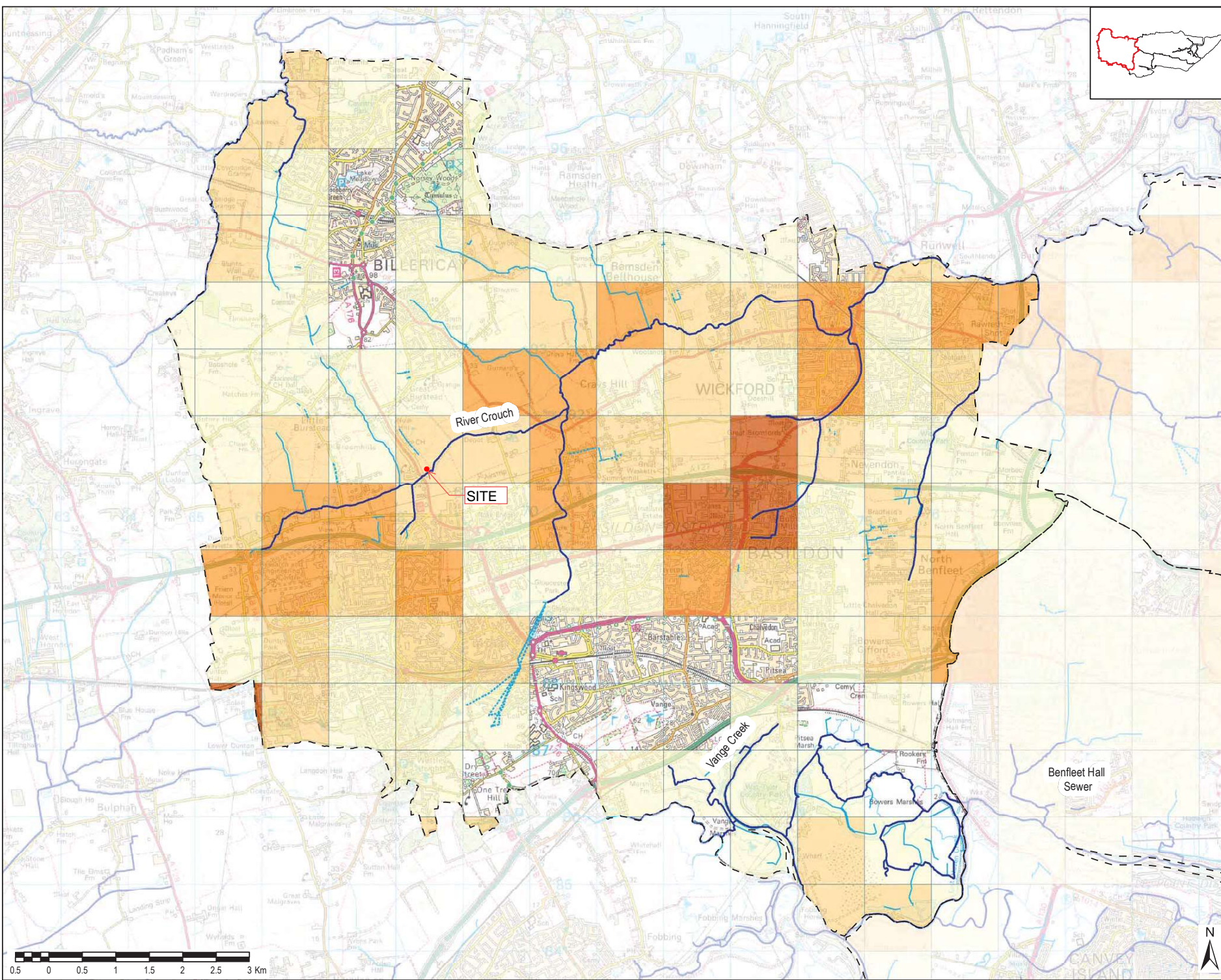
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Appendix F1

Basildon Level 1 SFRA Extract: Ground Water Vulnerability Map

File Name: \\ba-np-003\7100_Velox\Water\New4 - PROJECTS\SFRM\4 - South Essex SFRM\4 - GIS\Project Files\MXD\Fig 4.4.5.4.6.4.7.4 Areas Susceptible to Ground Water Flooding.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Council Boundary
- Main River
- Ordinary Watercourse
- Culvert

Areas Susceptible to Groundwater Flooding - Level of Risk

- $\geq 75\%$
- $\geq 50\% < 75\%$
- $\geq 25\% < 50\%$
- $< 25\%$

NOTES

1. This map is intended to provide a strategic over-view of susceptibility to groundwater flooding and should not be used to assess flood risk for individual properties.
2. Absence of values for any grid square means that no part of that square is identified as being susceptible to groundwater emergence.

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Purpose of Issue **FINAL**

Client

Project Title
**SOUTH ESSEX
 LEVEL 1 SFRA**

Drawing Title
**AREAS SUSCEPTIBLE TO
 GROUNDWATER FLOODING**

Drawn KLD	Checked JW	Approved CP	Date 11/04/2018
AECOM Internal Project No. 60532482		Scale @ A3 1:52,000	

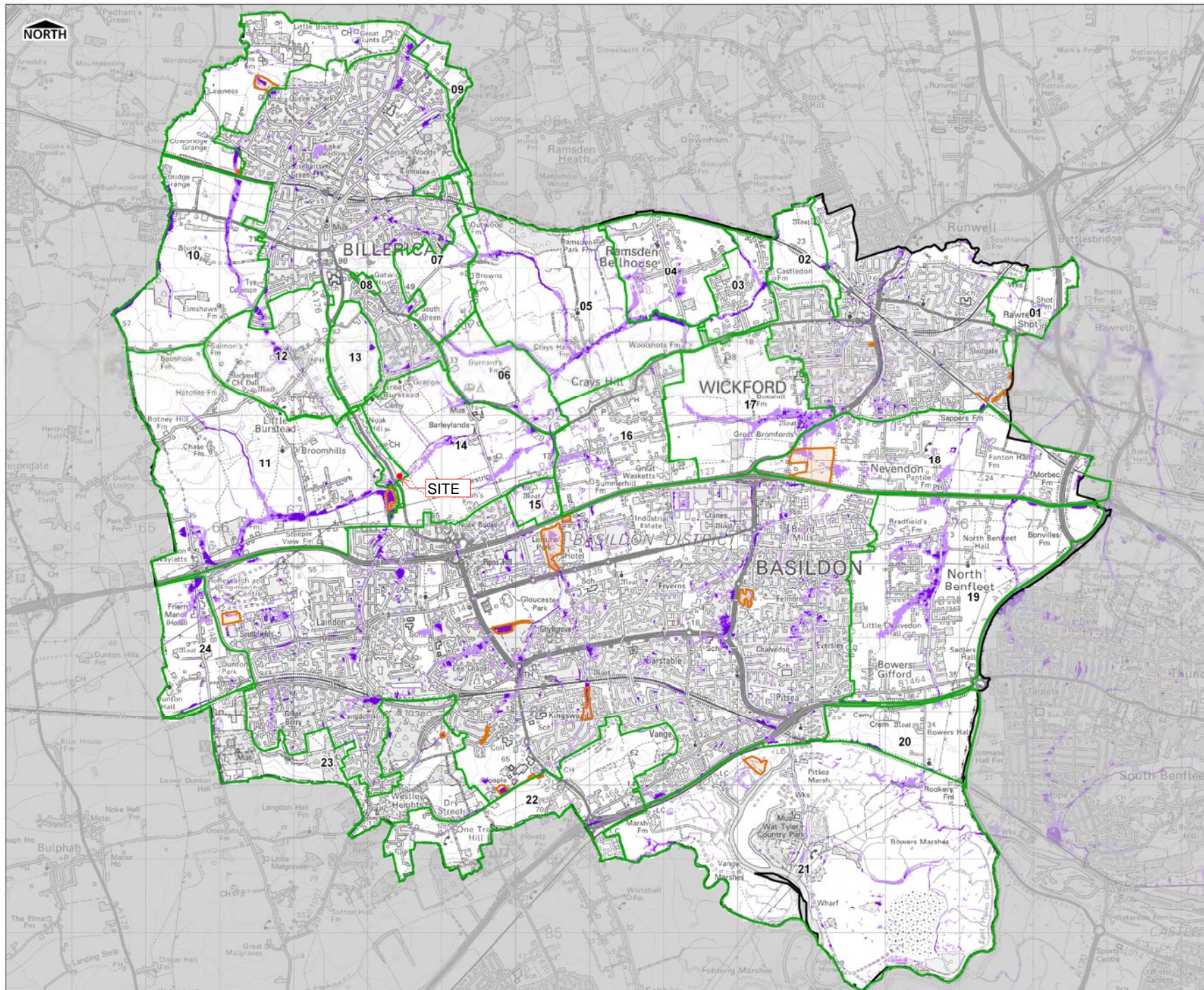
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Drawing Number **FIGURE 4.4** Rev **1**

Appendix F2

Basildon Level 1 SFRA Extract: 1:30 year Surface Water Flood Risk Map



KEY

- Basildon Borough Boundary
- Flood Map for Surface Water (FMSW)**
3.3% AEP (1 in 30 annual probability)
- Shallow (> 0.1m Depth)
- Deep (>0.3m Depth)
- Washland Areas (Flood Zone 3b)
- Areas of Search

NOTES

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Because of the way they have been produced and the fact that the extents are indicative, the Environment Agency surface water flood maps are not appropriate to act as the sole evidence for any specific planning decision (such as objecting to a planning application) at any scale without further supporting studies or evidence.

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DRAWN BY SL	CHECKED BY EC	PASSED BY JR	DATE JUN 2011
SCALE @ A3 1 : 50,000		ISSUING OFFICE London	

**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

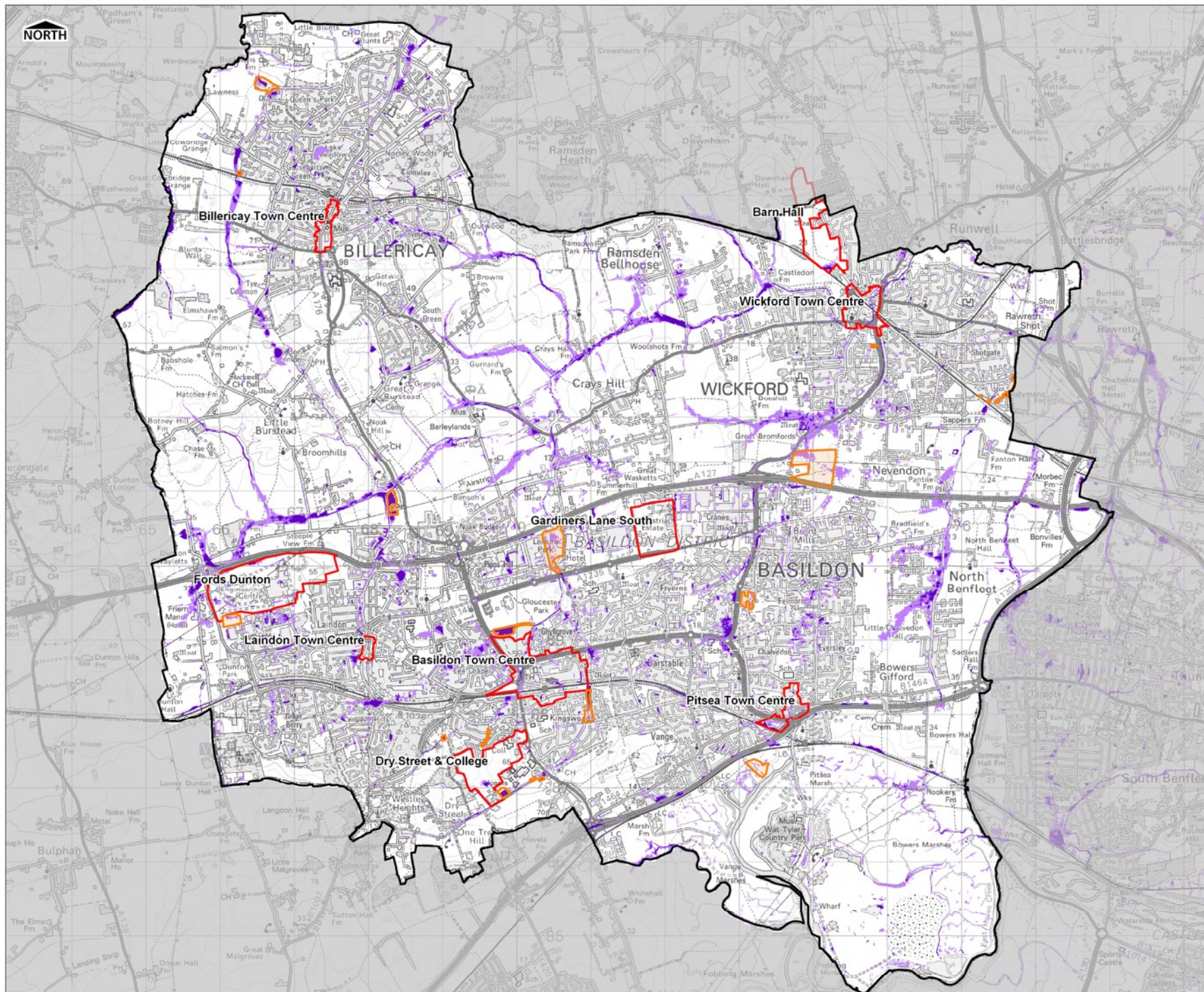
**FLOOD MAP FOR SURFACE WATER
3.3% AEP (1 in 30) RAINFALL EVENT)
& AREAS OF SEARCH**

Basildon Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE A-5



KEY

- Basildon Borough Boundary
- Flood Map for Surface Water (FMSW)**
3.3% AEP (1 in 30 annual probability)
- Shallow (> 0.1m Depth)
- Deep (> 0.3m Depth)
- Washland Areas (Flood Zone 3b)
- Urban Sites

NOTES

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

Because of the way they have been produced and the fact that the extents are indicative, the Environment Agency surface water flood maps are not appropriate to act as the sole evidence for any specific planning decision (such as objecting to a planning application) at any scale without further supporting studies or evidence.

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DRAWN BY SL	CHECKED BY EC	PASSED BY JR	DATE JUN 2011
SCALE @ A3 1 : 50,000		ISSUING OFFICE London	

**THAMES GATEWAY SOUTH ESSEX
STRATEGIC FLOOD RISK ASSESSMENT**

**FLOOD MAP FOR SURFACE WATER
3.3% AEP (1 in 30) RAINFALL EVENT
& URBAN SITES**

Basildon Council

Scott Wilson
6-8 Greencoat Place
London, SW1P 1PL
Tel: (020) 7798 5000

DRAWING NUMBER

FIGURE A-6



Flood risk from rivers or the sea

- Extent of flooding
- Depth and flow estimates at monitoring stations



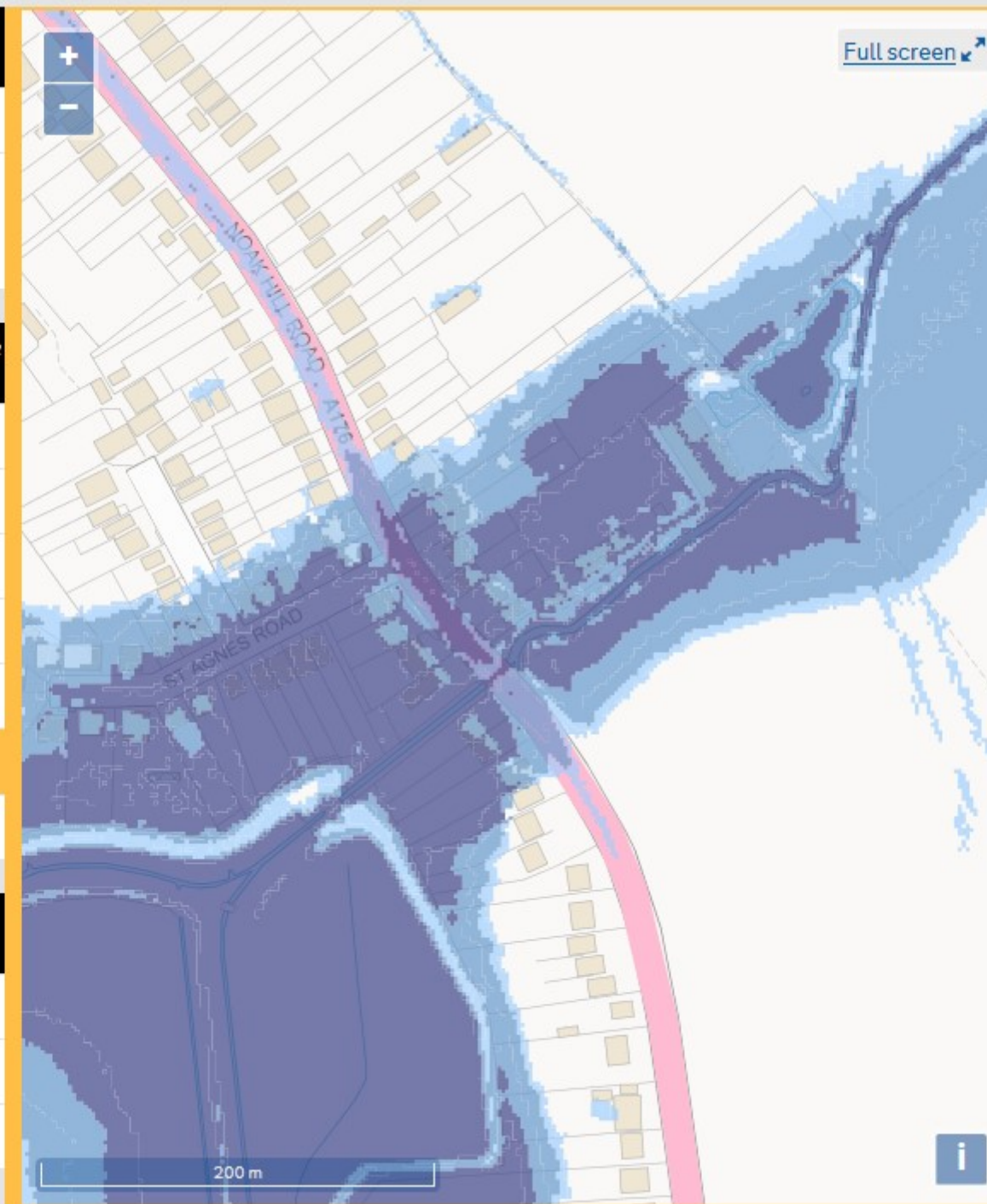
Flood risk from surface water

- Extent of flooding
- High risk: depth
- High risk: velocity
- Medium risk: depth
- Medium risk: velocity
- Low risk: depth
- Low risk: velocity



Flood risk from reservoirs

- Extent of flooding
- Flood depth
- Flood speed



Full screen

Low risk scenario

Flood depth (millimetres)



Over 900mm



300 to 900mm



Below 300mm



Location you selected



200 m



Flood risk from rivers or the sea

- Extent of flooding
- Depth and flow estimates at monitoring stations



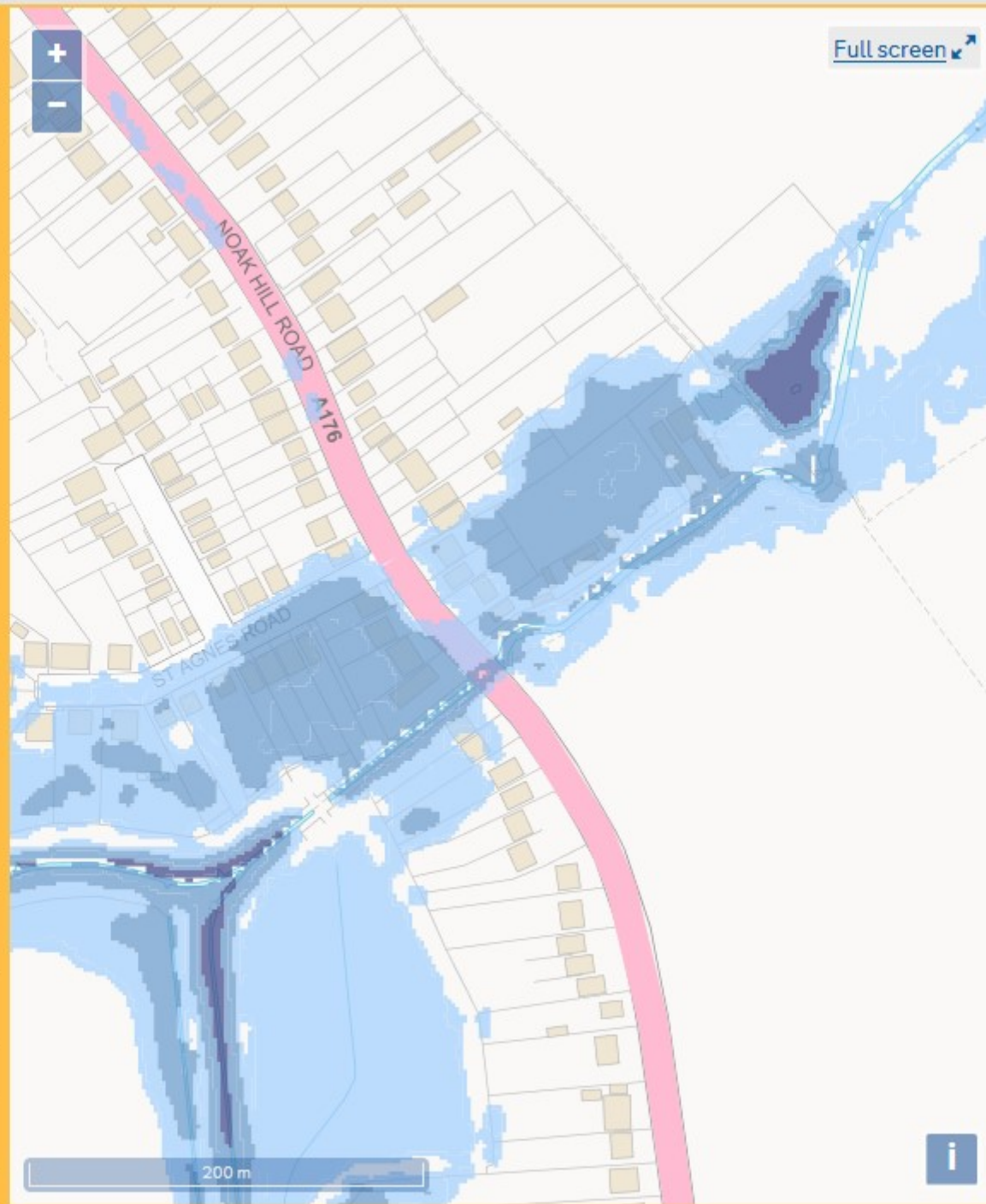
Flood risk from surface water

- Extent of flooding
- High risk: depth
- High risk: velocity
- Medium risk: depth
- Medium risk: velocity
- Low risk: depth
- Low risk: velocity



Flood risk from reservoirs

- Extent of flooding
- Flood depth
- Flood speed



Medium risk scenario

Flood depth (millimetres)



Over 900mm



300 to 900mm



Below 300mm



Location you selected



Flood risk from rivers or the sea

- Extent of flooding
- Depth and flow estimates at monitoring stations



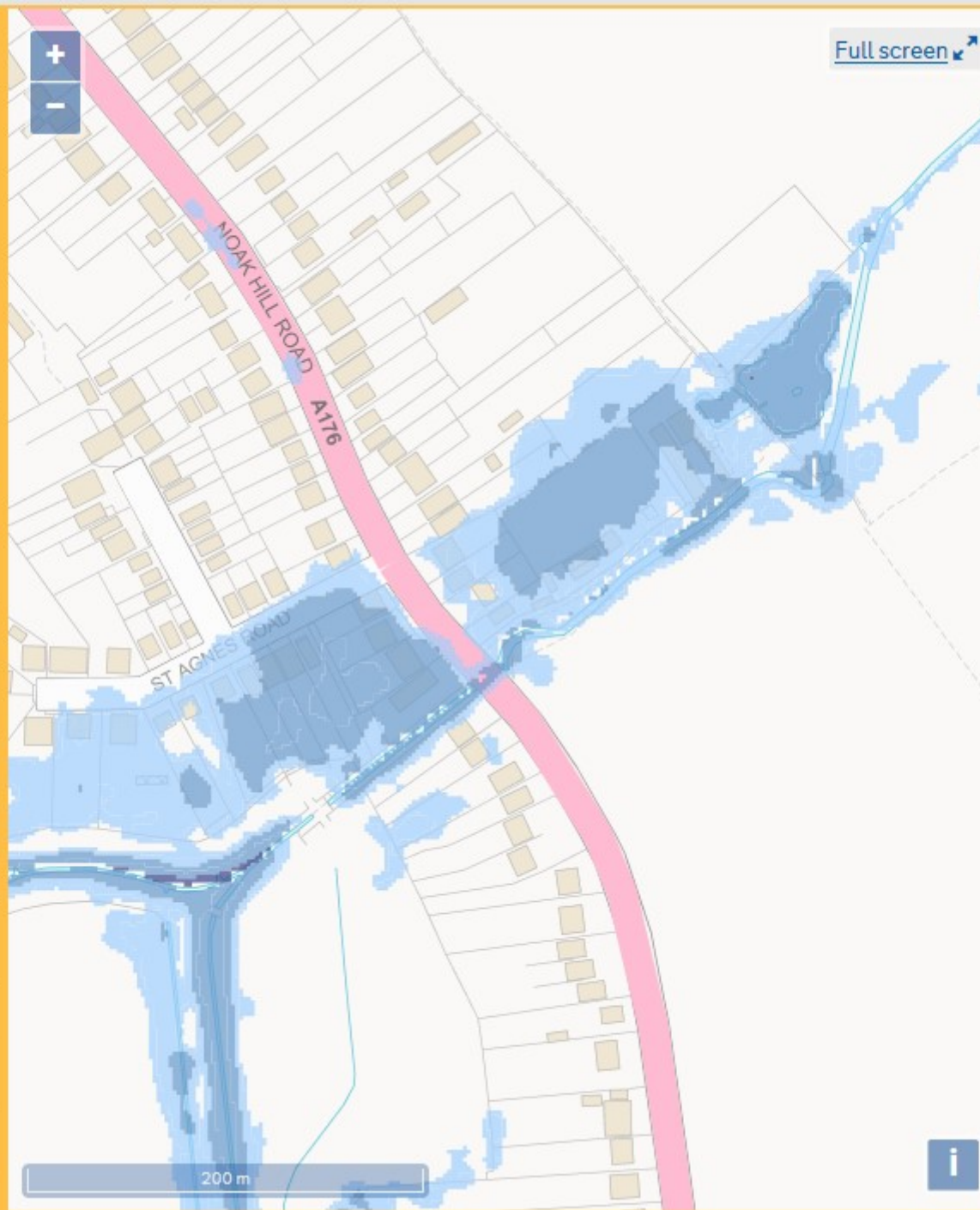
Flood risk from surface water

- Extent of flooding
- High risk: depth
- High risk: velocity
- Medium risk: depth
- Medium risk: velocity
- Low risk: depth
- Low risk: velocity



Flood risk from reservoirs

- Extent of flooding
- Flood depth
- Flood speed



High risk scenario

Flood depth (millimetres)



Over 900mm



300 to 900mm



Below 300mm



Location you selected

Appendix F3

Surface Water Flood Risk Map

< [Back](#)

Learn more about this area's flood risk

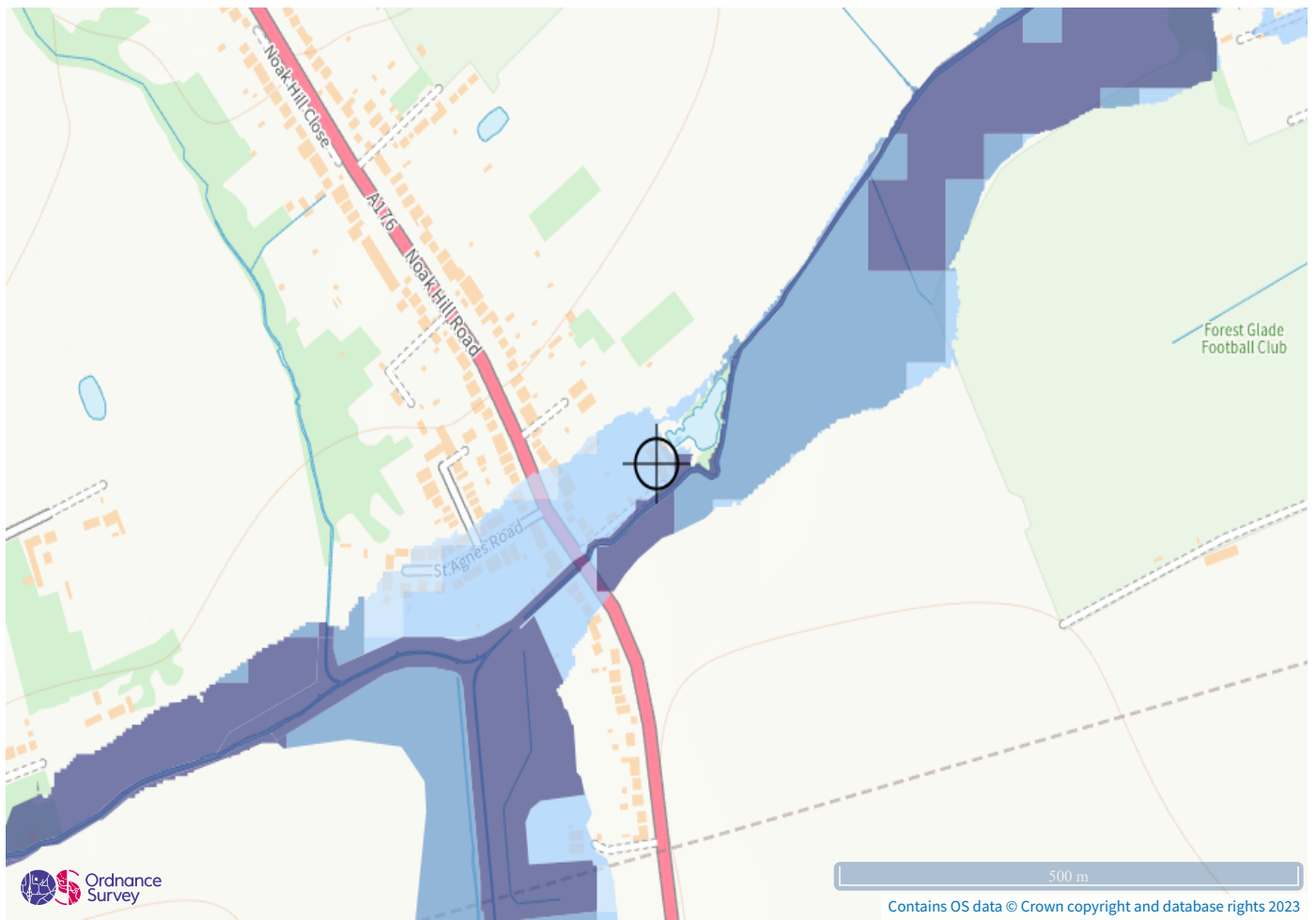
Select the type of flood risk information you're interested in. The map will then update.

Flood risk

Extent of flooding ▼


Location

CM12 9UN



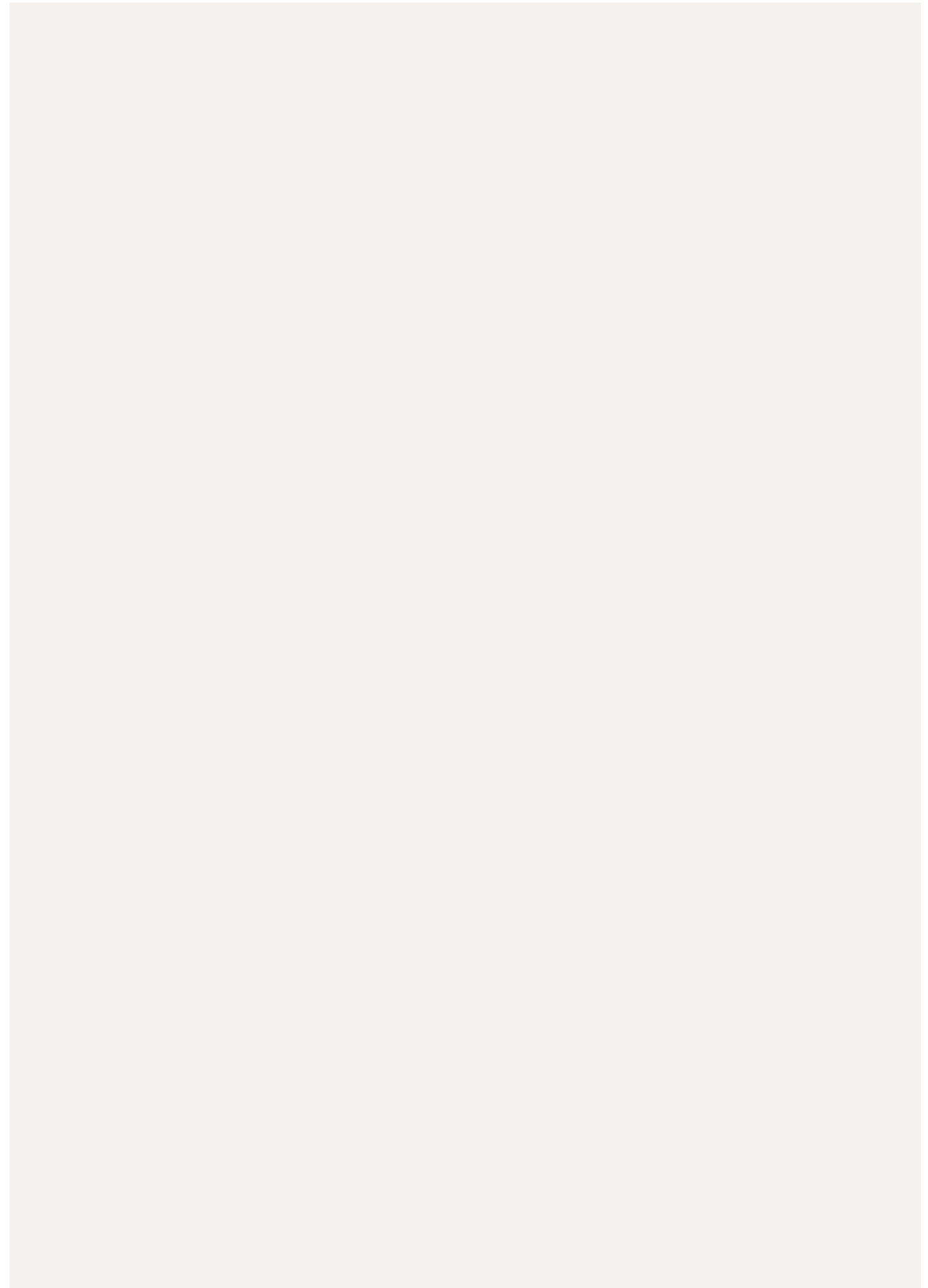
Extent of flooding from rivers or the sea

- [High](#)
- [Medium](#)
- [Low](#)
- [Very low](#)

 Location you selected

[View the flood risk information for the location you originally searched for \(/risk\).](#)

[View the flood risk information for another location \(/postcode\)](#)



< [Back](#)

Learn more about this area's flood risk

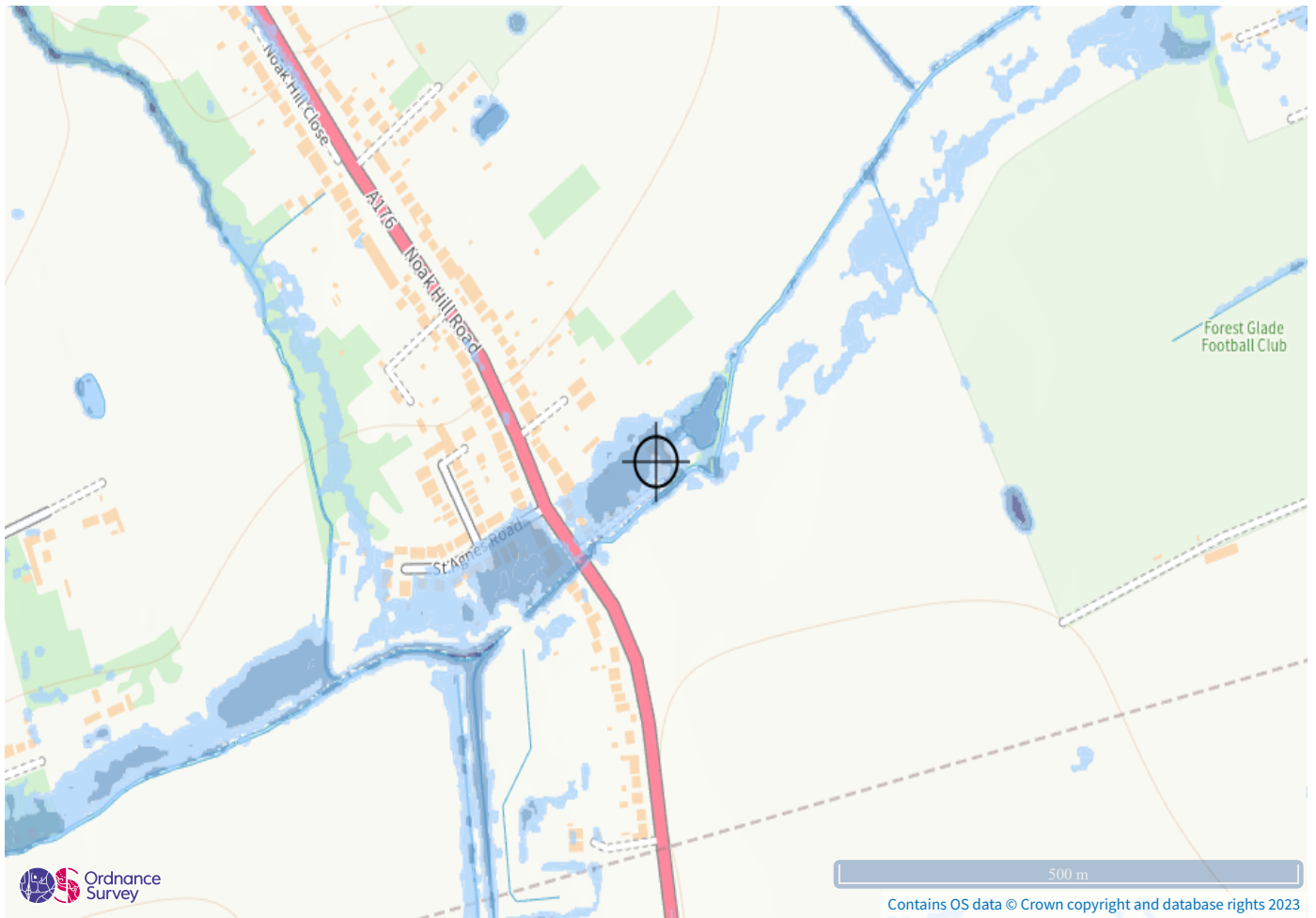
Select the type of flood risk information you're interested in. The map will then update.

Flood risk

High risk: depth ▼

Location

Enter a place or postcode



Surface water flood risk: water depth in a high risk scenario

Flood depth (millimetres)

- Over 900mm
- 300 to 900mm
- Below 300mm

⊕ Location you selected

[View the flood risk information for the location you originally searched for \(/risk\)](#)