14 Bankside Road, Didsbury, Manchester, M20 5GD.

FLOOD RISK ASSESSMENT

A. Ul-Haq; I.Eng, MICE

8 November 2022

Status	Revision	Date	Issued By
First Issue	-	08/11/2022	AUH
Second Issue	A	20/01/2023	AUH

Contents:

1. Introduction 2
2. Site Location 2
3. Development Proposals 3
4. Flood zone Allocation 3
5. Flood Zone Maps and Flood Defence Data 8
6. Flood History of the Property 10
7. Conclusion 10
8. Flood Risk Management/Resilience 10

Apendices:

Appendix A: Tables
Appendix B: Existing and Proposed Plans and Elevations (P2)
Appendix C: Sections (P2)

1. Introduction:

The Flood Risk Assessment has been prepared in support of the planning application for a two storey side extension at 14 Bankside Road, Didsbury, Manchester M20 5GD.

The Flood Risk Assessment has been prepared in accordance with the Environment Agency's current guidelines.

2. Site Location:

The site is a semi-detached property that lies on the border of Manchester and Stockport, in East Didsbury, a popular residential suburb of Manchester.

Grid Reference: SJ 84760 89577

Eastings/Northings: 384760/389577

Elevation: The site is located at 32.705m above ordinance datum.

The primary and high schools are located within walking distances. It has excellent transport links as the A34, M60 and M56 only a few minutes away. The River Mersey meanders around the site on three sides and is closest to the site on South side, where it is approximately 350 metres from the site.

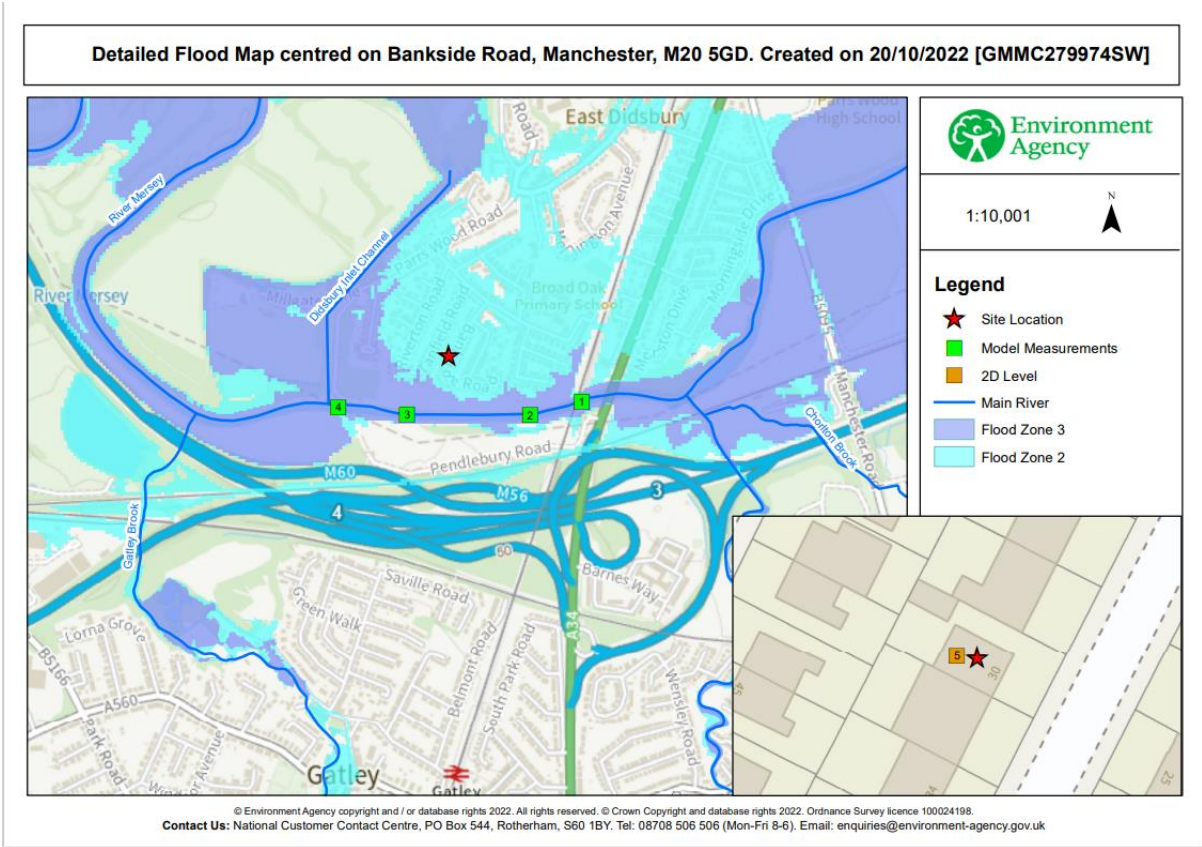
3. Development Proposals:

The development proposal is for a two storey side extension to a domestic property, providing additional living space. The proposed extension comprises of a floor area of 23.0Sq.m on each floor, a total of 46.0sq.m.

4. Flood Zone Allocation:

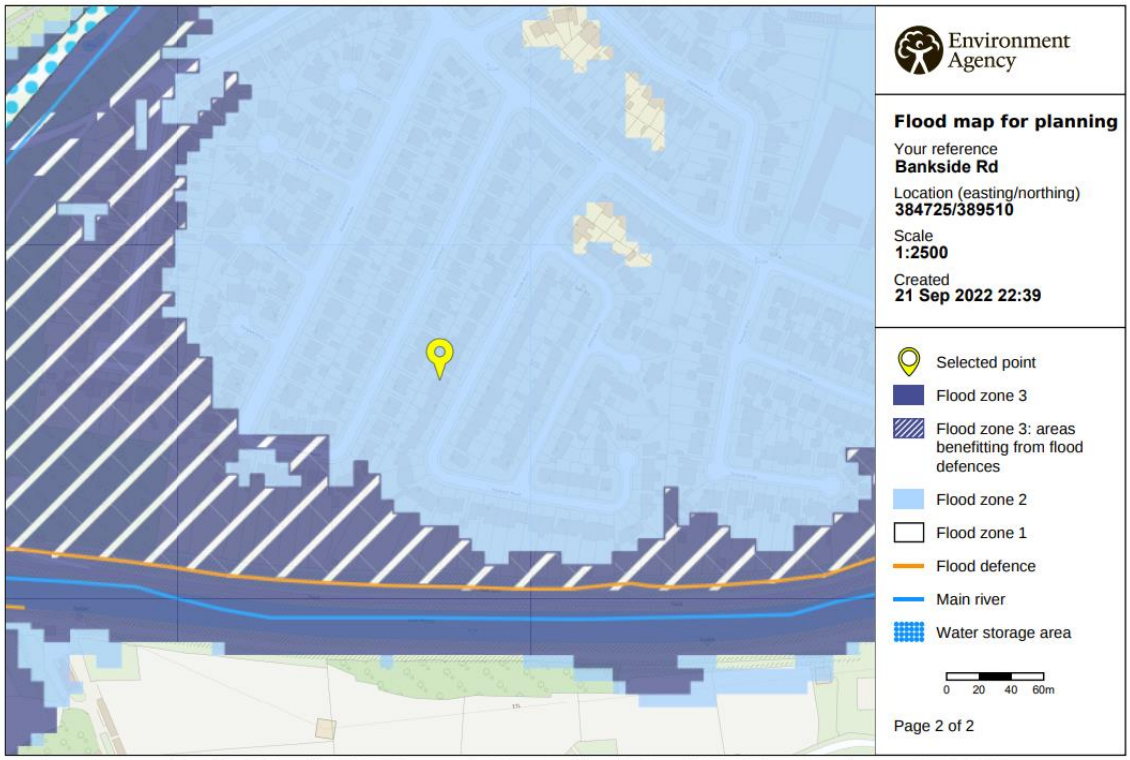
As per the information provided by the Environment Agency on 20 October 2022, the site lies within flood zone 2, see figure-1 below. However, in the inset, the location of the site is shown as 30 Bankside Rd. The property in question is No.14, which is further north.

Fig-1



As stated above, according to the information provided by the Environment Agency on 20 October 2022, the site lies within flood zone 2, an area with a medium probability of flooding. The figure-2 below shows the flood zones and flood defences within the proximity of the site.
The environment Agency undertook various flood defence schemes in the area from 2005 onwards, which has helped to mitigate the impact of flooding in the area.

Fig-2



© Environment Agency copyright and / or database rights 2021. All rights reserved. © Crown Copyright and database right 2021. Ordnance Survey licence number 100024198.

As per the information available on the Environment Agency's website, the site is at a risk of very low flooding from the surface water, see figure-3 below. However, as stated above the actual site is further North than the marker indicated by the Environment Agency's website. The actual position is shown by a red circle and as stated above, it is at very low risk of flooding from the surface water.

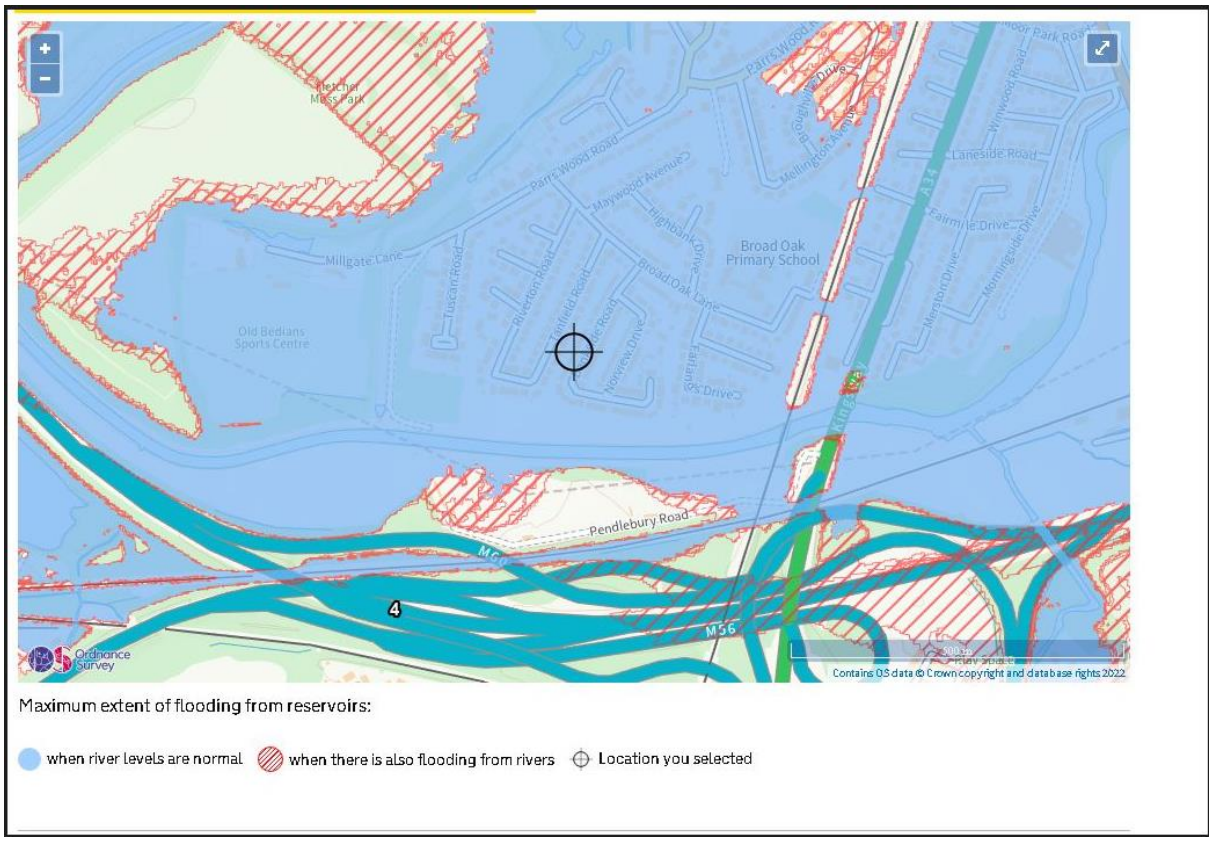
Fig-3

Extent of flooding from surface water

High Medium Low Very low Location you selected

As per the information available on the Environment Agency's website, the site may be impacted by flooding from reservoirs when the river levels are normal, see figure-4 below.

Fig-4



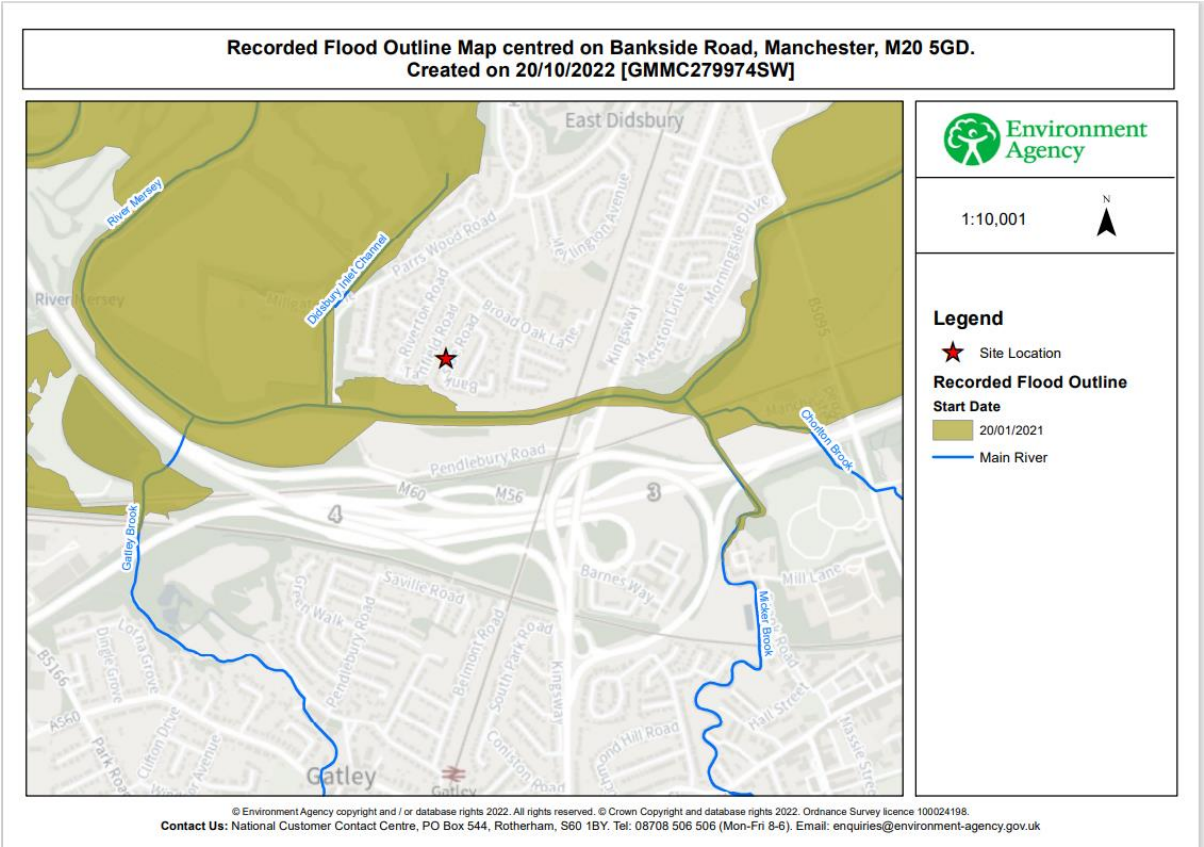
Maximum extent of flooding from reservoirs:

when river levels are normal when there is also flooding from rivers Location you selected

5. Flood Zone Maps and Flood Defence Data:

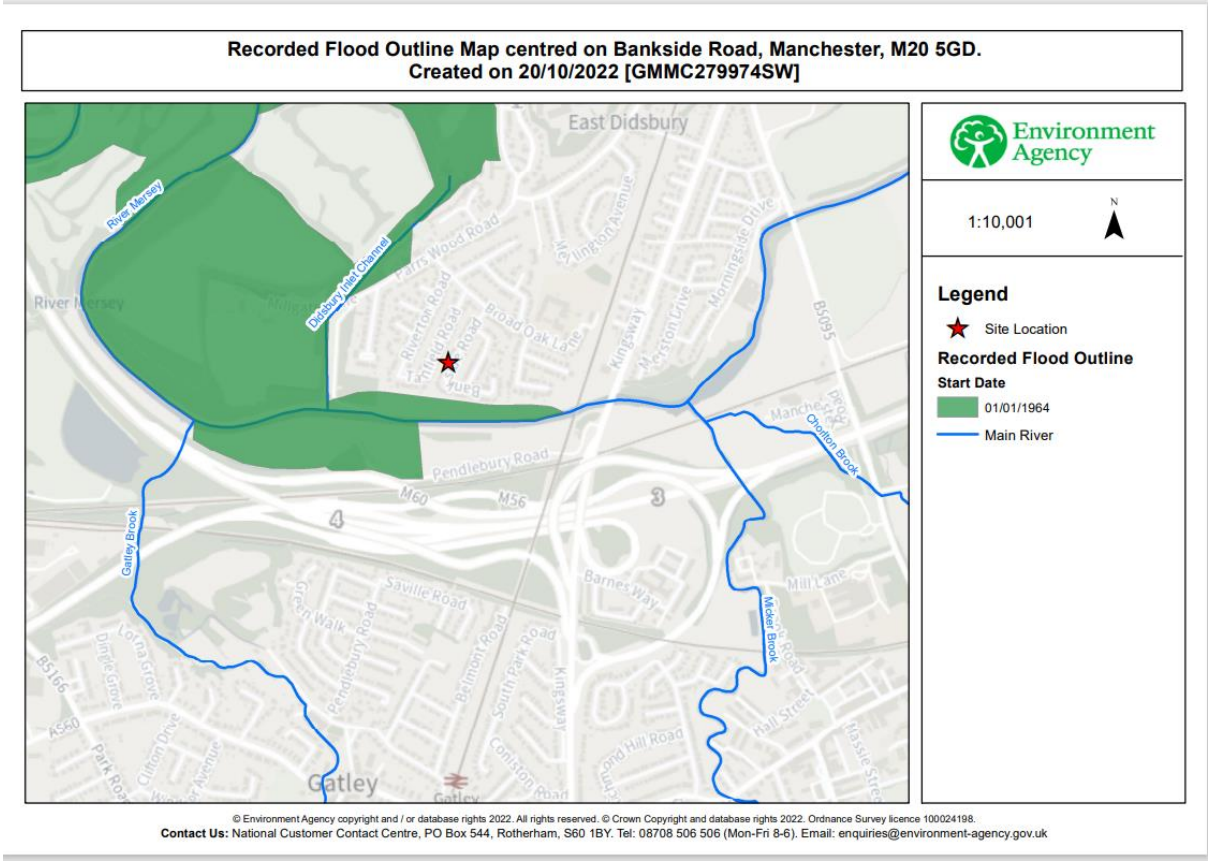
The Figure-5 below provided by the Environment Agency on 20 October 2022, indicates the recorded flood outline since January 2021. This shows that whilst the site is classed as within flood zone-2, the site actually is at very low risk of flooding.
The figures 5 & 6 below confirm that the site doesn't have any history of flooding.
It further confirms that as the area has benefitted from the flood defence measures, the site has not been impacted by the floods since January 2021.

Fig-5



The Fig-6 below provided by the Environment Agency on 20 October 2022, indicates the recorded flood outline since January 1964. This demonstrates that the site has not been impacted by the floods since January 1964.

Fig-6



Source of Flooding	Risk of Flooding:
Rivers	Low
Sea	Very Low
Groundwater	Not known
Surface Water	Very Low
Other sources	No other sources of flood risk known

6. Flood History of the Property:

The Figures 5 & 6 above shows the flood history of the property. The property itself has not suffered from flooding.
However, in January 2021, when due to exceptionally wet weather, there was a danger that River Mersey may breach the flood defences, the residents of Bankside Road and the surrounding area were asked to vacate their properties. Some residents of the area did vacate their properties whilst others didn't and remained in their houses. Forutnately, the River Mersey didn't breach the flood defences and the properties remained unaffected by the flooding. This is clearly demonstrated by Fig-5 above.

7. Conclusion:

The information provided by the Environment Agency clearly demonstrates that the site is at very low risk of flooding.
The threshold level of the property is 32.705m AOD.
The tables provided by the Environment Agency, attached as Appendix A, show that for node 5, which is the closest to the property in question, at 1 in 100 years return period with 35% increase in flow and at 1% Annual Exceedance Probability (undefended), the flood water level at the site would be 32.60m AOD. At this level the flood water will not impact the property.
Similarly, at 1 in 100 years return period with 35% increase in flow and at 1% Annual Exceedance Probability (defended), the flood water level at the site would be 32.63m AOD. Again at this level the flood water will not impact the property.
The property is likely to be impacted at 0.1% Annual Exceedance Probability (1 in 1000 years) both, in undefended and defended situation where the flood water levels would be 32.71m and 32.80m respectively.
The data from the Environment Agency which shows the Flood Zones, together with the history of flooding in the area, clearly demonstrates that there is very low probability of flooding. Therefore, it is considered that flood resilient measures are not necessary at this stage.

8. Flood Risk Management/Resilience:

The property is located in Flood Zone 2, therefore, it should be noted that the risk of flooding to the property is generally considered to be low to moderate. However, the following mitigation measures are recommended to be incorporated into the proposed development;

i. The Government's guidance stipulates that if the proposed floor levels are not raised by 300mm above the estimated flood level, then the application will need extra flood resistance and resilience measures.
   It would be impractical to raise the floor level of the proposed extension by 300mm. The finished floor levels of the proposed extension should be set no lower than existing floor levels.

Therefore, the following flood resilience measures are proposed.

ii. The construction of proposed ground floor is shown on the drawings to be of concrete, to facilitate cleaning & drying.

iii. Any existing airbricks should be fitted with manually operated removable covers.

iv. Any new airbricks should be anti-flood airbricks

v. Sealant should be applied around all pipe/cable/Services entry points to block any gaps.

vi. Any new sockets in the new extension to be located 450mm above the floor level.

vii. Any new electrical sockets should be fitted 600mm above the finished floor level.

viii. The property owner and residents should sign up to the EA Flood Warning/Alert Service and have an evacuation plan.

The above measure will provide protection to the property against the probability of flooding from rivers at 0.1% AEP (1 in 1000 year event) in the defended and undefended situation.
The proposed measures will also protect in the event of 1.0% AEP (1 in 100 year event) plus 35% for climate change when defences are removed.

Appendix A:

					Undefended														Defended													
Map Reference	Model Node Reference	Easting	Northing	Data	50 % AEP (1 in 2 year)	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	5 % AEP (1 in 20 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	0.1 % AEP (1 in 1000 year) + 30% increase in flow	50 % AEP (1 in 2 year)	20 % AEP (1 in 5 year)	10 % AEP (1 in 10 year)	5 % AEP (1 in 20 year)	4 % AEP (1 in 25 year)	2 % AEP (1 in 50 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year)	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.5 % AEP (1 in 200 year)	0.1 % AEP (1 in 1000 year)	0.1 % AEP (1 in 1000 year) + 30% increase in flow
1	ea013_0243_MERS04_4222u	385057	389395	Modelled Water Level (m asdh)	31.70	32.05	32.27	32.43	32.47	32.66	32.77	32.85	33.38	33.46	33.65	33.06	33.93	34.50	31.88	32.42	32.63	32.97	33.07	33.34	33.45	33.54	34.04	34.12	34.43	33.69	34.51	34.96
				Modelled Flow (cumecs)	184.18	232.93	270.02	300.28	309.40	348.20	371.84	389.64	504.58	521.49	602.82	436.68	618.73	753.99	183.88	242.98	271.52	310.09	321.94	361.45	382.71	397.20	478.45	499.11	568.00	421.62	586.99	708.62
2	ea013_0243_MERS04_4089	384924	389357	Modelled Water Level (m asdh)	31.54	31.84	31.99	32.10	32.13	32.25	32.32	32.37	32.87	32.73	33.02	32.50	33.08	33.52	31.75	32.25	32.42	32.73	32.82	33.06	33.17	33.24	33.65	33.69	33.89	33.38	33.94	34.21
				Modelled Flow (cumecs)	184.17	232.79	270.09	299.93	308.71	346.30	368.75	385.86	494.96	510.96	589.49	431.33	605.67	729.39	183.88	242.55	271.71	311.04	323.33	362.59	381.35	397.52	488.38	508.38	589.73	423.07	611.88	744.02
3	ea013_0243_MERS04_3784	384619	389363	Modelled Water Level (m asdh)	31.30	31.61	31.75	31.84	31.87	31.96	32.03	32.06	32.31	32.28	32.71	32.16	32.78	33.30	31.54	32.04	32.18	32.49	32.58	32.81	32.90	32.96	33.34	33.37	33.49	33.13	33.53	33.69
				Modelled Flow (cumecs)	179.49	217.98	249.39	274.86	282.73	315.90	334.46	349.86	443.71	456.89	525.88	389.98	540.08	644.09	183.80	243.42	271.50	309.74	322.76	362.47	382.56	397.46	488.72	508.09	589.21	422.90	611.61	738.06
4	ea013_0243_MERS04_3613	384454	389395	Modelled Water Level (m asdh)	31.19	31.54	31.71	31.81	31.84	31.95	32.01	32.05	32.33	32.39	32.70	32.16	32.76	33.28	31.40	31.90	32.02	32.33	32.42	32.64	32.73	32.79	33.19	33.23	33.40	32.98	33.43	33.61
				Modelled Flow (cumecs)	170.55	197.57	220.88	241.33	247.32	273.72	293.26	305.66	387.75	400.88	469.65	338.62	483.94	586.05	183.87	243.06	271.72	310.98	323.25	362.53	381.46	397.44	477.18	493.36	557.24	423.22	576.64	689.95

					Undefended					Defended			
Map Reference	Model Node Reference	Easting	Northing	Data	1 % AEP (1 in 100 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.1 % AEP (1 in 1000 year)	0.1 % AEP (1 in 1000 year) + 30% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 70% increase in flow	0.1 % AEP (1 in 1000 year)	0.1 % AEP (1 in 1000 year) + 30% increase in flow
5	2D Level	384723	389509	Modelled Water Level (m asdh)	32.54	32.60	32.78	32.87	33.30	32.63	32.80	32.83	33.19

Model data taken from Upper Mersey 2017

AEP - Annual Exceedence Probability

m asdh - metres above ordnance datum Newlyn

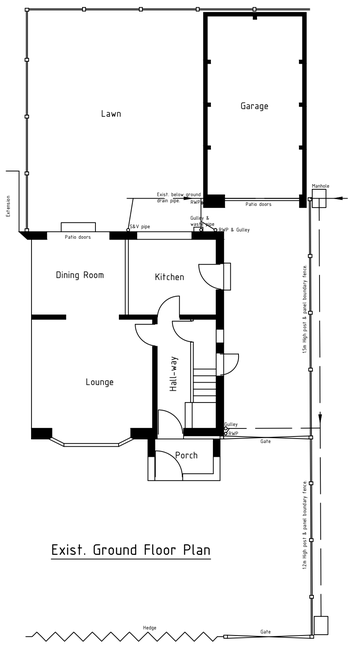
cumecs - cubic metres per second

Notes: *Climate Change Scenario -30%, 35% and 70% increases in flow calculated for the 2080's (2070 -2115). Please see https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances for more information regarding the new climate change guidance. The location of the site and the type (vulnerability) of development determine the climate change allowances to consider in any flood risk assessment.

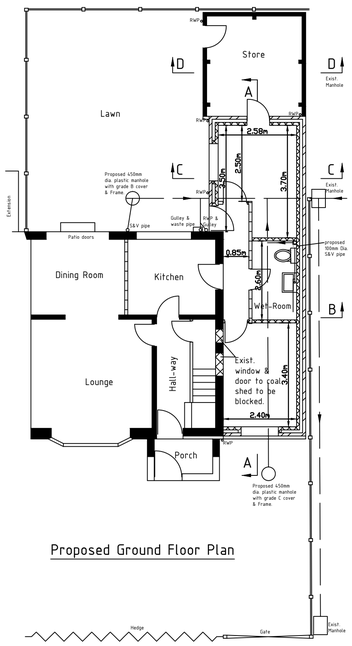
Recorded Flood Outlines

Flood Event Code	Name	Start Date	End Date	Source of Flooding	Cause of Flooding
18122	Mers	01/01/1964	02/01/1964	Unknown	Other
87092	Didsbury	25/01/2021	25/01/2021	Main River	Unknown

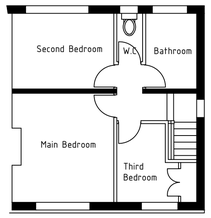
Appendix B: Existing and Proposed Plans and Elevations (P2)



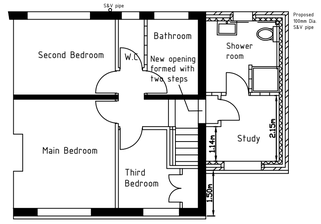
Exist. Ground Floor Plan



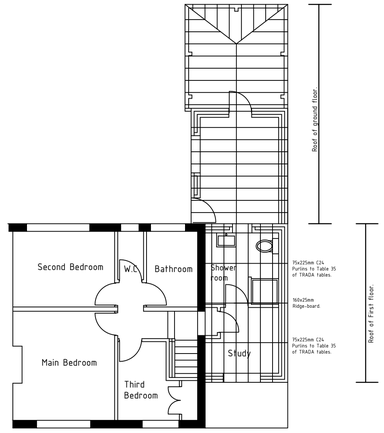
Proposed Ground Floor Plan



Exist. First Floor Plan



Proposed First Floor Plan



Proposed Roof Plan

Legend

Brickwork

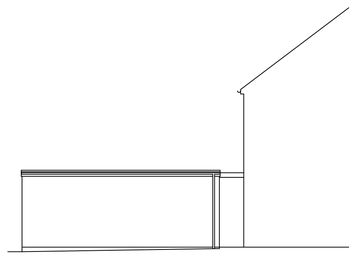
Blockwork

Stud Partition

Exist. Front Elevation

Exist. Rear Elevation

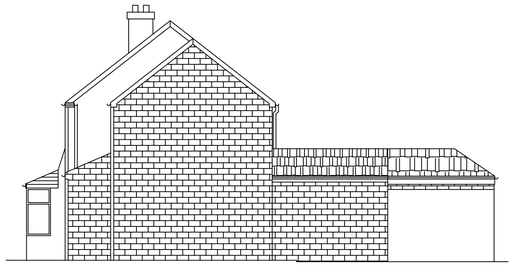
Exist. South Elevation



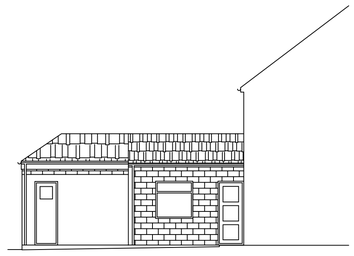
Exist. North Elevation

Proposed Front Elevation

Proposed Rear Elevation



Proposed South Elevation



Proposed North Elevation

NOTES

1. Do not scale from this drawing.
2. The Contractor must check all dimensions on site prior to starting any works.
3. The Contractor must comply with all current Health & Safety legislation.
4. All new brickwork to match and bond into existing. The proposed walls to achieve "U" value of 0.28W/m2K.
5. New external walls to be 300mm thick, consisting of 100mm thick thermolite or similar blocks to outer and inner leaf , 100mm cavity with drytherm or similar insulation.
6. Brickwork to outer-leaf to DPC level only.
7. Internal face of inner leaf to have 12.5mm plasterboard & skim.
8. All internal dimensions shown are brickwork to brickwork.
9. Stainless steel double trinangular wall ties at 750mm horizontal & 450mm vertical centres. Ties at reveals to be at 300mm centres.
10. All new cavities to be suitably closed and protected by DPC.
11. Catnic or similar lintols to be provided over the new door & window openings.
12. Minimum bearing to any beam or lintol to be 150mm.
13. All exposed steelwork to be protected by 2 layers of 12.5mm plasterboard & skimmed to provide 30minutes fire resistance.
14. 6mm M.S. straps to span 3 joists to be used to fix the roof to the walls.
15. All electrical work to be undertaken by a competent person and a completion certificate must be produced to the Local Authority Building Inspector.
16. All gas works to be undertaken by a trained person on "Safe Gas Register".
17. All new heating appliances to be fitted with independent thermostatic control valves.
18. New window assemblies to achieve "U" value of 1.8W/m2K and have argon gas filled cavities.
19. The windows to both of the new rooms on ground floor shall be each 1.225x1.225m (1/20th floor area to open).
20. The window to the study 1.225x1.225m (/20th floor area to open).
21. The window to new shower-room on first floor shall be 0.641m wide x 1.073m high with obscure glazing.
22. The proposed external drainage pipe below ground shall be 100mm diameter of clay or plastic.

Notes continued on sheet 2 of 2

No	DATE	DRAWN	CHK'D	AMENDMENT
P3	24.01.23	AUH	AUH	Titles of existing and proposed first floor plans amended.
P2	20.01.23	AUH	AUH	Proposed plans and elevations amended. The first floor extension beyond the rear main wall of the house removed as per the instructions of the Planning Officer. Also, note 21 altered.
P1	15.12.22	AUH	AUH	Proposed plans and elevations amended following discussions with the Planning Officer.

DRAWING STATUS
Planning

CLIENT
Mr M. Shafique

PROJECT
14 Bankside Road, Didsbury,
Manchester M20 5GD

DRAWN A. Ul-Haq | CHKD AUH

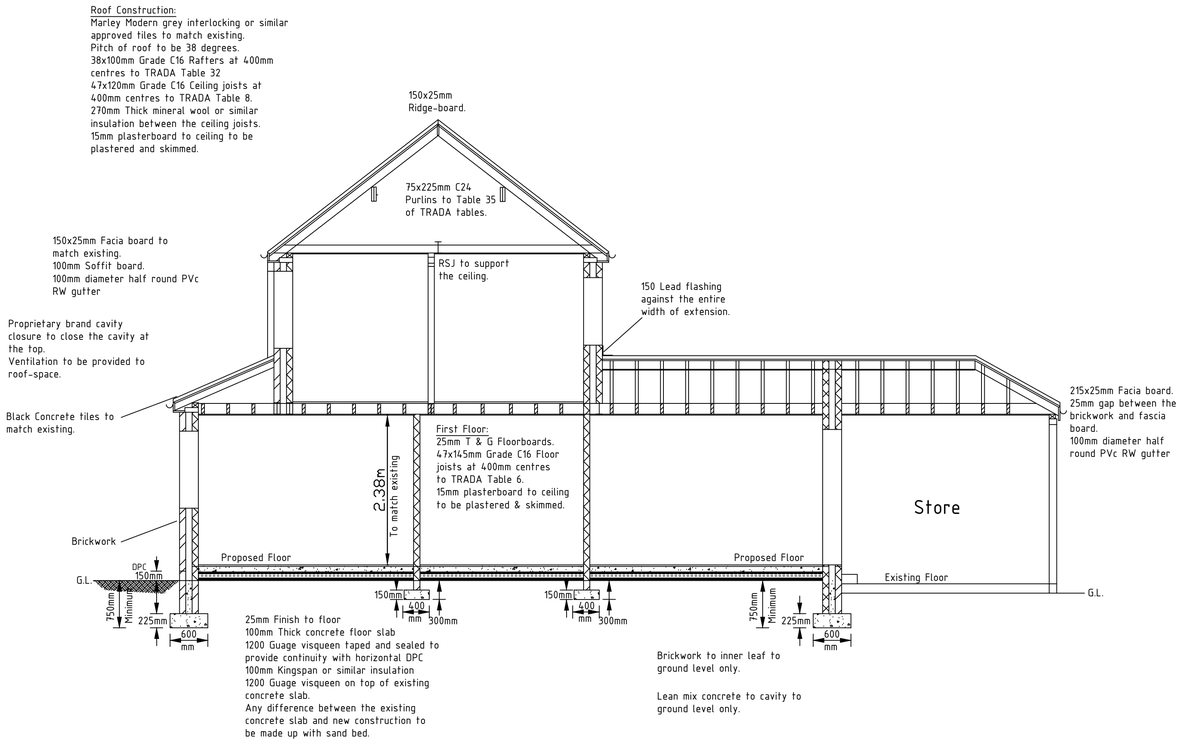
TITLE
Proposed Double Storey Side Extension

Existing & Proposed Plans and Elevations
Sheet 1 of 2

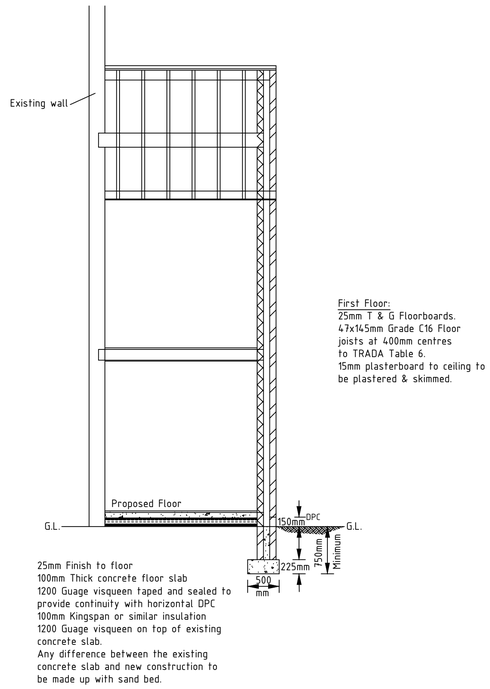
SCALE	DRAWING No	DATE	AMDT
1:100	2022/02/01	Aug 2022	P3

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm
FULL SIZE ON ORIGINAL
A1

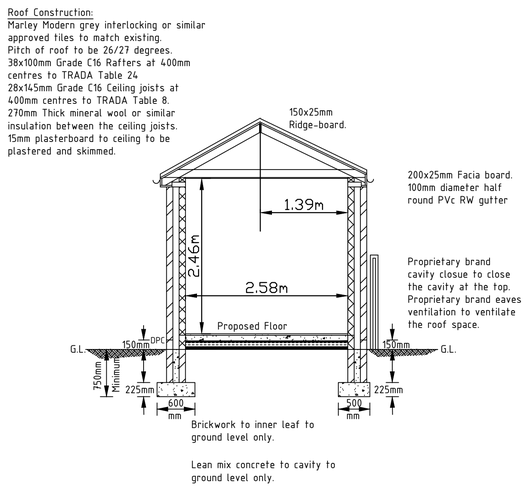
Appendix C: Sections (P2)



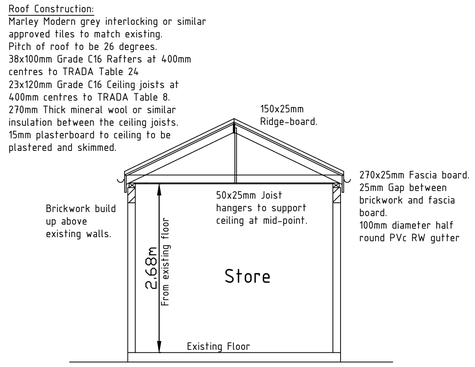
Section A-A



Section B-B



Section C-C



Section D-D

NOTES

Notes continued from sheet 1 of 2

23. Where stud partition walls are running parallel to the floor joists, these should be supported on double joists.
24. The WC waste to shower rooms on the ground to discharge to new below ground drain pipe.
25. The new soil pipe shall terminate 900mm above any window opening on that elevation.
26. For the both shower room on ground and first floors, the 38mm dia. shower waste and 32mm dia. WHB wastes, on ground floor, shall combine to 50mm dia. before discharging to new 100mm dia. Soil & vent pipe. The S&V pipe then to discharge to new drain pipe below ground.
27. Foundations within 1.0 metre of drain pipe shall be taken down to invert level.
28. Any drains within the proposed walls shall be protected by concrete lintol.
29. Any drain within the proposed building shall be protected by 150mm concrete.
30. First floor hall and landing area shall be fitted with smoke detection, to be hardwired and interlinked with battery back up. Smoke detection should be located no more than 7.5m from habitable rooms.

No	DATE	DRAWN	CHK'D	AMENDMENT
P2	20.01.23	AUH	AUH	Sections amended and Section D-D added. Also, notes from No.26 onwards changed.
P1	15.12.22	AUH	AUH	Sections amended.

DRAWING STATUS
Planning

CLIENT Mr M. Shafique

PROJECT
14 Bankside Road, Didsbury,
Manchester M20 5GD

DRAWN A.Ul-Haq | CHKD AUH

TITLE
Proposed Double Storey Side Extension

Proposed Sections
Sheet 2 of 2

SCALE	DRAWING No	DATE	AMDT
1:50	2022/02/02	Aug 2022	P2

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 cm
FULL SIZE ON ORIGINAL
A1