

Flood Risk Assessment

Project: **Single storey extension to side and rear.**

Location: **4 Lynton Drive, Burnage, Manchester, M19 2LQ**

Date: **April 2023**

Site Analysis

The proposal site is a semi-detached dwelling located in a cul-de-sac just off Grangethorpe Drive, which connect to the A34 to the West and Burnage Lane to the East.

The property is a 2-storey rendered building, with a pitched roof. There is also a detached garage to the rear garden of the property, this is accessed from Connaught Avenue, which is at the rear of the proposal site. There is also a large lawn to the rear of the property, which provided natural drainage, this will be reduced by 3 metres following the proposed rear extension, keeping most of the lawn unaffected. The runoff from the roof and hard standing area, discharges into the main sewer.

The property is located approximately 320 metres south of Cringle Brook, which is an active water course running East to West, a substantial distance North of the property. As you will see from the Flood Map, provided by Environment Agency, the property is shown to be in a Flood Zone 2, although after consulting the Environment Agency and having ascertained their flood data, the property has been flooded.

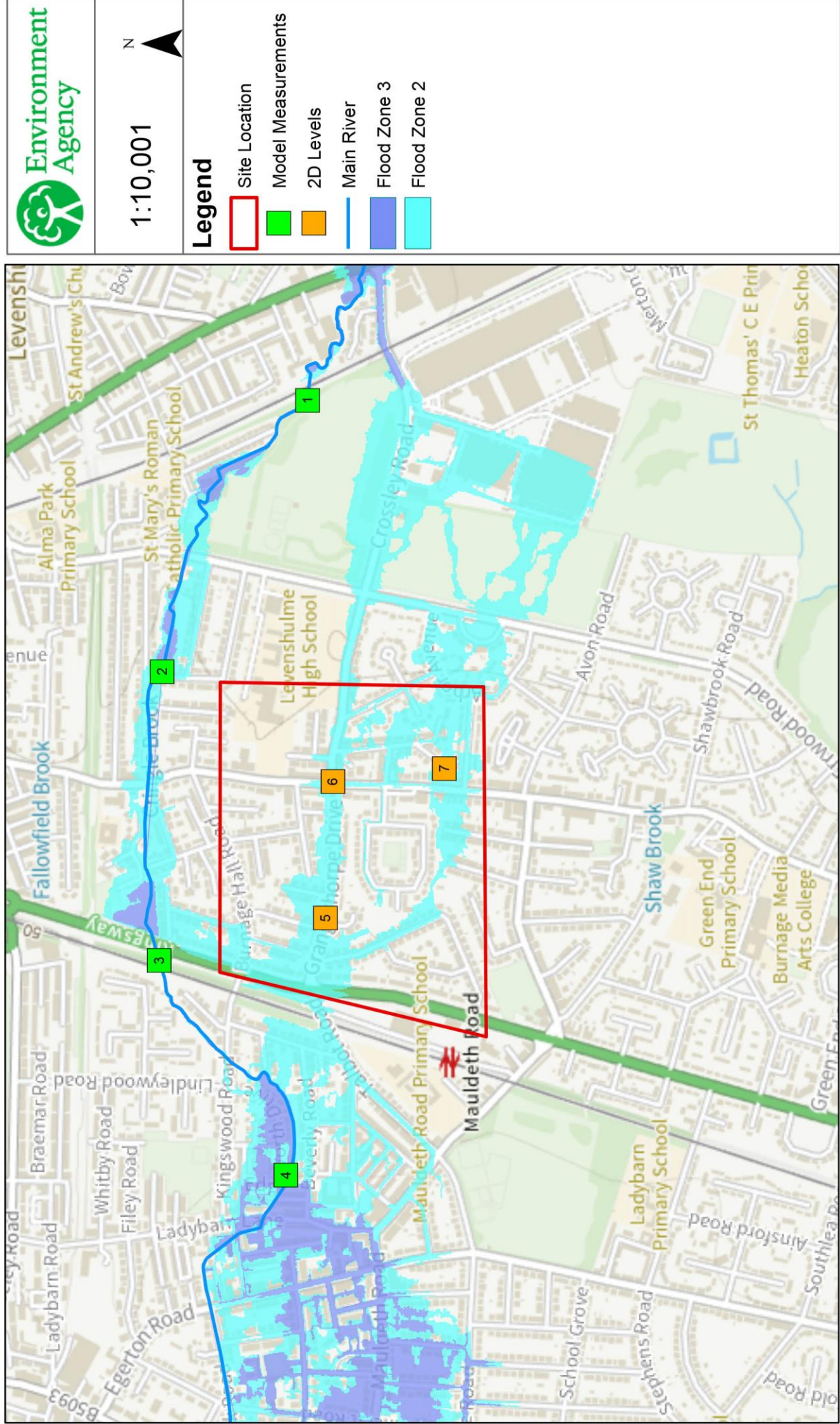
Statement:

- i. The site is located within Flood Zone 2 – Grid Reference is 386638 / 393235– as identified on Environment Agency's Flood Map. (See Appendix 1)
- ii. There are some flood defences in place adjacent to Cringle Brook, please see Environment Agency's Flood Defences Map. (See Appendix 1)
- iii. The 100 Year flood level is 43.45 AOD – And the 1000 Year flood Level is slightly higher at 43.53; obtained from Environment Agency's Data (See Appendix 2). The existing level of the proposal site is on average 44.20, this is higher than the 1000-year flood level.
- iv. Existing minimum ground level is above the expected flooding level.
- v. The Environment Agency has no record of the site being flooded.
- vi. The proposed extension to the existing dwelling will not affect the chance of flooding in the proposal site.

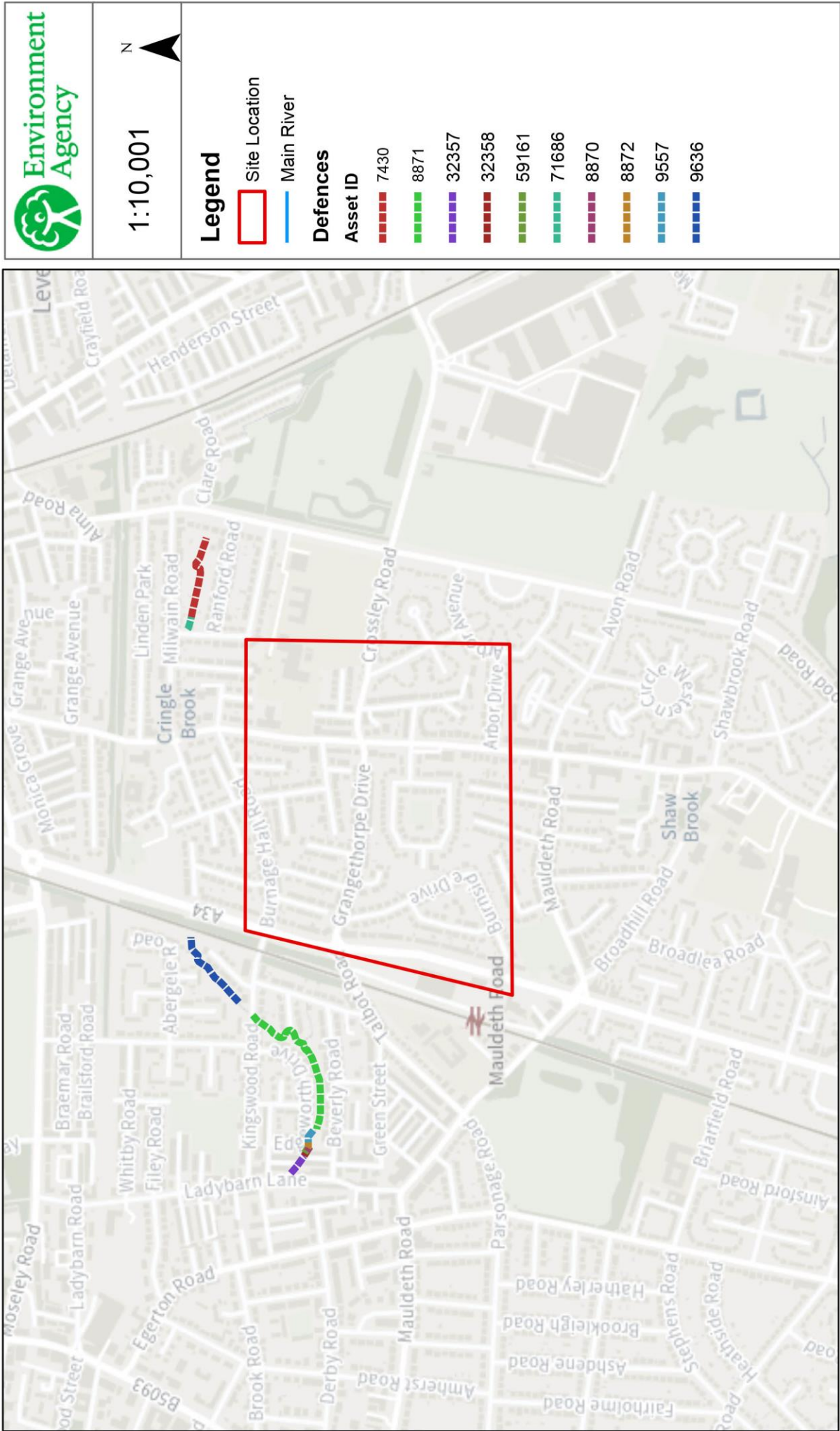
APPENDIX 1

ENVIRONMENT AGENCY'S FLOOD MAP
&
ENVIRONMENT AGENCY'S FLOOD DEFENCES MAP

Detailed Flood Map Centred on Grangethorpe Drive, Manchester, M19 2LR. Created 29/03/2023 [GMMC304413SW]



Flood Defence Map Centred on Grangethorpe Drive, Manchester, M19 2LR.
Created 29/03/2023 [GMMC304413SW]



APPENDIX 2

ENVIRONMENT AGENCY DETAILED FLOOD DATA

29/03/2023

Map Reference	Model Name Reference	Existing	Fortifying	Date	10 % AEP (1 in 10 year)	20 % AEP (1 in 20 year)	50 % AEP (1 in 2 year)	1 % AEP (1 in 100 year)	1.33 % AEP (1 in 75 year)	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 10% increase in flow	1 % AEP (1 in 100 year) + 35% increase in flow	1 % AEP (1 in 100 year) + 75% increase in flow	0.5 % AEP (1 in 200 year)
1	es013_0238_CRRN01_3804d	387566	393441	Modelled Water Level (m aodN)	52.03	52.03	52.03	52.43	52.43	52.46	52.41	52.62	52.72	52.68
2	es013_0238_CRRN01_3074u	387021	393635	Modelled Floor (cornices)	1.07	2.18	2.64	3.00	3.15	3.90	3.60	5.02	5.74	4.58
3	es013_0238_CRRN01_3477u	386435	393638	Modelled Water Level (m aodN)	42.19	42.32	42.53	42.64	42.66	42.66	42.60	43.11	43.19	43.01
4	es013_0238_CRRN01_1884	385989	393377	Modelled Floor (cornices)	39.27	39.41	39.73	39.76	39.77	39.81	39.84	39.84	39.85	39.83
				Modelled Water Level (m aodN)	3.03	3.09	3.09	4.57	5.04	5.61	5.97	6.80	7.65	6.43

Extrapolated

0.1 % AEP (1 in 1000 year)	0.1 % AEP (1 in 1000 year) + 30% increase in flow	10 % AEP (1 in 10 year)	20 % AEP (1 in 20 year)	50 % AEP (1 in 2 year)	1 % AEP (1 in 100 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) + 35% increase in flow	1 % AEP (1 in 100 year) + 10% 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
52.78	52.90	52.03	52.14	52.32	52.45	52.45	52.48	52.61	52.62	52.62	52.72	52.68	52.78	52.90
6.15	7.13	1.67	2.18	3.15	3.00	3.00	4.08	4.90	5.02	5.02	5.74	4.58	6.15	7.13
48.55	48.69	47.10	47.29	47.50	47.64	47.64	48.06	48.30	48.32	48.32	48.41	48.23	48.55	48.69
5.12	5.16	1.87	2.41	3.50	3.41	3.41	4.36	4.64	4.68	4.68	5.03	4.70	5.12	5.16
43.25	43.29	42.19	42.32	42.53	42.64	42.64	42.90	43.08	43.11	43.11	43.19	43.01	43.25	43.29
4.87	4.98	2.01	2.56	3.62	3.54	3.54	4.16	4.53	4.58	4.58	4.77	4.37	4.87	4.98
39.89	39.91	39.27	39.41	39.73	39.76	39.76	39.81	39.84	39.84	39.84	39.85	39.83	39.86	39.91
9.67	10.93	3.03	3.69	5.13	5.04	5.04	5.87	6.70	6.80	6.80	7.65	6.43	9.67	10.93

Map Reference	Model Name Reference	Existing	Fortifying	Date	1 % AEP (1 in 100 year) + 30% 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	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
5	20 Levels	386522	390268	Modelled Water Level (m aodN)	43.45	43.47	43.47	43.51	43.51	43.54	43.54	43.55
6		386799	390264	Modelled Water Level (m aodN)	47.04	47.04	46.98	47.17	47.04	47.05	47.08	47.19
7		386828	390056	Modelled Water Level (m aodN)	47.22	47.24	46.79	47.43	47.45	47.24	47.32	47.43

Model data taken from Craggle Brook 2017

AEP - Annual Exceedence Probability

m aodN - metres above ordnance datum Newlyn

cornices - cubic metres per second

Notes: Climate Change Scenario - 30%, 35% and 70% increase in flow calculated for the 2050s (2070 - 2115). Please see <https://www.gov.uk/guidance/road-risk-assessments-climate-change-allowances> for more information regarding the new climate change guidance. The location of the site and the New Exceedence Probability of development returning to climate change allowance is provided in any flood risk assessment.

Flood Defence

Start Date	Asset Type	Asset ID	Standard of Protection	Upstream Actual Crest Level (m aod)	Downstream Actual Crest Level (m aod)
01/01/2004	Natural High Ground	7430	100	47.83	50.40
01/01/2004	Natural High Ground	8871	100	41.17	39.56
01/01/2004	Wall	32357	100	40.97	40.67
01/01/2004	Wall	32358	100	40.71	40.72
01/01/2004	Wall	59161	100	40.13	40.13
01/01/2004	Engineered High Ground	71686	100	46.71	39.84
01/01/2004	Wall	8870	100	39.83	39.78
01/01/2004	Embankment	8872	100	39.77	39.84
01/01/2004	Engineered High Ground	9557	100	39.89	39.86
01/01/2004	Engineered High Ground	6036	100	41.26	43.83

APPENDIX 3

SITE LOCATION PLAN

