

Manchester Street, Rochdale

Reference: 0161 - FRA- 002

Nov-20

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FLOOD RISK ASSESSMENT

Purpose of this report

- 1.1 RIDA Reports Ltd has been appointed by The Mr Byrne to undertake a Level 1 Screening Flood Risk Assessment for a development located at OL10 1NX.

Objectives

- 1.2 The objectives of this FRA are to demonstrate the following:
- * Whether the proposed development is likely to be affected by current or future flooding.
 - * Whether the proposed development will increase flood risk elsewhere.
 - * Whether the flood risks associated with the proposed development can be satisfactorily managed.
 - * Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

- 1.3 To achieve these objectives the following documents have been consulted and/or referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage— Good practice'



Development Site and Location

- 2.1 The site is located at Manchester Street, Rochdale. The nearest post code is OL10 1NX. Refer to appendix A for site location plan.
- 2.2 The current use of the site is a parcel of which is currently undeveloped. The site is adjacent an existing commercial building. The current use vulnerability clasification of the site is Less vulnerable . The site is located in the River Flood Zone 1. Refer to Appendix B for more details.

Development Proposals

- 2.3 The proposed development includes the construction of a block of flats. Refer to Appendix B for layout of the proposed development.
- 2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

- Surface Water 2.5 The tributary of the river Roch is approximately 250 m away from the development.
- Aquifer 2.6 The development is located within a secondary aquifer type A. Aquifers type A consist of permeable layers capable of supporting water supplies at a local rather than strategic scale. They are generally aquifers formerly classified as minor aquifers.
- Source Protection Zone 2.7 The site is not located within a Source Protection Zone.
- Ground Water Levels 2.8 The ground water levels for this site are unknown. However it is likely that the water table is likely to be low.

Site Geology

- Bedrock 2.9 The British Geological Society records of the site show that it is located within the Silt stone and Sanstone.
- Superficial Deposits 2.10 The British Geological Society records show that the superficial deposits are Till diamicton.
- Contaminated Land 2.11 The contaminated land register has not been consulted. The owner suggested that the site is not contaminated



National Planning Policy Framework (NPPF)

- 3.1 The NPPF and its technical guidance is a set of planning policies with the key objective to contribute to the achievement of sustainable development. As part of it, they ensure that flood risk and sustainability are taken into account during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining the suitability of land for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the layout of the development and the application of Sustainable Drainage Systems (SuDS). Adoption of these principles at early stages of the project can ensure that the developments take into account appropriate mitigation which is included within the detailed design of the schemes.

The Flood and Water Management Act (2010)

- 3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides a robust management of flood risk for people, homes and businesses and also encourages the use of SuDS for developments. A robust SuDS strategy should take into account the recommendations given in this Flood Risk Assessment. The drainage strategy should incorporate SuDS within the design and also attenuate all flows to either the greenfield or brownfield run off and take into account the risk from other sources as necessary.

Level 1 Strategic Flood Risk Assessment (SFRA)

- 3.3 The SFRA Level 1 identifies flood risk constraints in the local Area. It gives procedures that should be followed in planning to tackle flood risk during any development.

Level 2 Strategic Flood Risk Assessment (SFRA)

- 3.4 The SFRA Level 2 provides more information on the area identified in the SFRA Level 1, in order to show whether the Exception Test can be passed.



- 4.1 The flood risks were determined by identifying the sources of flooding and assessing their possible impact and likelihood to the development.

Fluvial Flood Risk - Assessment

- 4.2 Fluvial flood risk was assessed using the Environment Agency Flood Zone Maps and the sequential risk-based approach recommended in the NPPF. The sequential test takes into account the flood risk vulnerability of land uses in relation to the flood zone categorisation. These parameters are assessed in order to determine whether the development is appropriate. Under certain circumstances the exception test is applicable.

Sequential Test

- Step 1** 4.3 The proposed development is less than 1Ha and falls within the Environment Agency Flood Zone 1. Therefore, this Flood Risk Assessment Level 1- Screening report should be sufficient under the NPPF. The Flood Zone 1 is considered to have a low probability of flooding with an annual probability of flooding of <0.1%. The chance of flooding is 1 in 1000 years or greater.
- Flood Zone categorisation

- Step 2** 4.4 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable'.
- Flood risk vulnerability

- Step 3** 4.5 The Flood Risk vulnerability and Flood Zone Compatibility table of the NPPF Planning Practice Guide states that More vulnerable developments are appropriate in this area.
- Sequential Test Results

The Exception Test

- 4.6 The exception test is not required.

Fluvial Flood Risk - Mitigation

4.7 Fluvial mitigation is not required for this site.

Fluvial Flood Risk - Surface Water Management

4.8 The surface water run-off will be disposed using SuDS techniques. The aim is to provide a sustainable design that accommodates the proposed attenuation volume and replicated the existing drainage regime using the SuDS hierarchy is shown in the figure 4 below.

4.9 The SuDS techniques highlighted in red below can be used on site. This assessment is based on the ground conditions and the potential discharge points available.

Figure 4: The SuDS Hierarchy (Source:EA Thames region, SuDS a practical guide)

<i>Most Sustainable</i>	<i>SUDS technique</i>	<i>Flood Reduction</i>	<i>Pollution Reduction</i>	<i>Landscape & Wildlife Benefit</i>
	Living roofs	✓	✓	✓
	Basins and ponds - Constructed wetlands - Balancing ponds - Detention basins - Retention ponds	✓	✓	✓
	Filter strips and swales	✓	✓	✓
	Infiltration devices - soakaways - infiltration trenches and basins	✓	✓	✓
	Permeable surfaces and filter drains - gravelled areas - solid paving blocks - porous paviers	✓	✓	
Least Sustainable	Tanked systems - over-sized pipes/tanks - storms cells	✓		

4.10 These SuDS techniques should be implemented and sized during the detailed design of the project.

Surface water (overland flows) flood risk

- 4.11 The Environment Agency maps show that the flood risk from surface water is very low. A residual risk of localised ponding remains unlikely.

Flooding from drainage systems in adjacent areas

- 4.12 The location of the public sewers is unknown. The DG5 flood risk register from the local water company has not been assessed as part of this report. It is recommended that the sewer records and registers are reviewed during the design development of the scheme.

Reservoirs Risks

- 4.13 The Reservoir Flood Map (RFM) produced by the Environment Agency do not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes and can be used to help reservoir owners produce on-site plans and the Local Resilience Forum produce off-site plans, and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be within the possible dam breach flooding path. It is recommended that the Local Resilience Forum is contacted during detailed design. See Appendix C.

Groundwater flood risk

- 4.14 The risk from ground water is considered low as the development is located in an area of soil with clay content.

- 5.1 The EA mapping confirms the proposed site is within flood zone 1 and due to its classification and in accordance with the technical guidance to the NPPF this type is deemed as appropriate and should be allowed.
- 5.2 The development fully complies with the NPPF as it has been designed to not impede water flows or increase flood risk elsewhere and be safe for use.

Appendix A



PROPOSED SITE PLAN Scale 1:200

GENERAL NOTES

1. FOUNDATIONS 225mm min thickness, strip foundations to project 150mm min either side of supported wall. Provide 150mm min cover to foundations. Foundations to be min 800mm to bottom of strip footing and taken down to level below invert of any drains passing under or immediately adjacent to the building. Although strip foundations have been shown on the drawing, these may not be appropriate and are for illustrative purposes only. Foundations to suit conditions to the satisfaction of the Local Authority once the Shuck has been dug. Alternative Foundations to be designed by Structural Engineer. Concrete mixes to be in accordance with BS 8500 - 1.

CONDITIONS RELATING TO THE GROUND

There should not be:

- a. non-engineered fill (as described in BRE Digest 427) or wide variation in ground conditions within the loaded area, nor
- a. weaker or more compressible ground at such a depth below the foundation as could impair the stability of the structure.

2. Where new foundations arise in vicinity of old foundations, existing should be fully grubbed up and new foundations laid at least the same depth.

3. All exposed timbers to be treated with a suitable preservative to BS 1292:1915.

4. All new cavities to be closed with 9mm sapwood, all new cavities to be linked with existing.

5. All new drains to be Hepworth superstore and to be bedded and surrounded in min. 150mm pea gravel. 100mm diameter drains to fall 1 in 40. 150mm diameter drains to fall 1 in 60. New drains to be encased in min 150mm concrete where they pass under new buildings. All existing drains found not to be in use to be capped and sealed in concrete. 150mm pre-cast concrete limbs inserted where new drains pass through external walls. Soil and vent pipes to be 100mm U.P.V.C. 40mm diameter U.P.V.C. waste pipes to showers, sinks and baths with 40mm diameter to basins. S.V.P. to be taken up to a ridge terminal or roof vent the outlet or otherwise as noted on the plans. Provide rodding eyes or removable traps to give access to all runs of the soil system. All traps are to be 75mm deep sealed anti-vac traps. All the plumbing installations are in comply with BS 5517. All boring in or concealed service pipes should be sealed at floor and ceiling levels, and service pipes which penetrate or project into hollow constructions or voids. (Refer to item D of diagram 4 of the Approved Document L1. Deep floor gutters and 64 / 75 mm diameter P.V.C. rainwater pipes.

6. Insulated D.p.c's inserted to all head, joints and cills of new external openings or thermas doors.

7. All disturbed surfaces to be made good.

8. All new rain water pipes to trapped gullies.

9. 75 x 100mm wallplate to strapped to wall at 2m centres with 38 x 6mm mild steel straps.

10. Opening lights to be min 120mm total floor plan area.

11. All glazing in critical zones to be toughened or laminated to BS 6206. i.e glass to doors within 1500mm of finished floor level and within 300mm of either side of doors and where greater than 250mm wide max 0.5sqm of doors, and to covered windows within 800mm of finished floor level.

12. Steelwork as noted on plan to comply with BS 4449, BS 5950 & be encased in 2 layers of 12.5mm plasterboard with angle brads and 3mm plaster coat to give 1/2 hour fire resistance. To have minimum 150mm end bearings at each end or as specified by Structural Engineer or steel manufacturer. Carefully tie to be fixed in limbs within external wall with top ends and websides at each end and @ 900mm c/s. Loadbearing internal walls to be 100mm concrete blockwork.

13. D.p.c's to be laid to be min 150mm above ground level and at slab/door level to inner leaf.

14. Facing brickwork/stonework to extend min 2 courses below ground level.

15. New concrete limits over new openings to BS 5977 Part 2 1986 (150mm or 225mm) deep where shown.

16. Stainless steel wall ties to be spaced at 750mm centres horizontally staggered and 450mm centres vertically. Wall ties to comply with BS 1234:1978 and to have proprietary Upvc retaining clips to secure the insulation to the inner leaf. Joints to be built solid by p.c. Provide additional wall ties at 225mm vertical centres around door / window openings and to movement joints. Cavities be closed at eaves level to comply with Building Regulations.

17. Notches and holes to timber joists to be within the following limits, notches - no deeper than 0.25 times depth of joist and not cut closer than 0.17 of the span, nor further away than 0.25 times the span. Holes - should be no greater diameter than 0.25 times the depth of joist should be drilled at the nearest axis, and should be not less than 3 diameters c/c to centre apart, and be located between 0.25 and 0.4 times span from the support. No notches or holes to be cut in roof rafters, other than supports where the rafter may be substituted to a depth not exceeding 0.33 the rafter depth.

18. All pipework incorporated in the water / heating system, that is situated in an untreated space is to be surrounded in 40mm of insulating material (min conductivity 0.045W/mK).

19. All masonry work to comply with BS 5626: P3.

20. Mortar: Selection of mortar used below dpc to be in accordance with BS 5626: Part 3.

21. Sulphate-resisting cement to be used where recommended by brick manufacturer and where sulphates are present in the ground.

22. SPM below slab to BS 6515 where the membrane is located below the slab a blinding layer of sand should be provided. The continuity of the membrane as follows: laps in polyethylene should be 300mm and joints sealed, where necessary, membranes beneath slab should link with wall dpc's.

23. STAIRCASE Equal riser (Min rise 220mm) Equal treads (Min going 220mm) Min Going to Tapered treads of 50mm. 2000mm headroom to stair measured along pitch line. Max pitch of stair 42 degrees. Handrail between 900mm and 1000mm above pitch line. No gap in balustrading to allow the passage of 100 diameter sphere.

24. Chases: Vertical chases should not be deeper than 1/3 of the wall thickness or, in cavity walls, 1/5 of the thickness of the leaf. Horizontal chases should not be deeper than 1/6 of the thickness of the leaf or wall. Chases should not be so positioned as to impair the stability of the wall, particularly where hollow blocks are used.

25. All workmanship and materials to comply with Building Regulations, British Standards, Codes of Practice requirements. All materials to be fixed, applied or mixed in accordance with manufacturers instructions or specifications. All materials shall be suitable for their purpose. The contractor shall take into account everything necessary for the proper execution of the works, to the satisfaction of the "Inspector" whether or not indicated on the drawing. Sample of external materials to be submitted to Local Authority for approval.

26. The Builder is entirely responsible for all temporary works and for maintaining stability of the new and existing structures during work.

27. Contractor to visit site prior to commencement of work and check all dimensions and familiarise himself with the site conditions. This drawing must then be checked and verified by the contractor prior to work commencing on site. No Encroachment by the building over the neighbouring boundary line. Client to obtain written permission from relevant bodies for any encroachment whatsoever if unavoidable.

28. Tackle Ventilation Replacement windows, background ventilators to be provided as follows: Habitable rooms - 5000mm² equivalent area Kitchen, Utility room and bathroom - 2500mm² equivalent area Addition of a habitable room (not including a conservatory) to an existing building. Background ventilators to be provided to new windows as follows: If the Additional room is connected to an existing room that has no window openings to external air, the room can be ventilated through another room or conservatory if background ventilation is provided with ventilators - 8000mm² equivalent area to opening between rooms and to new windows, and Purge ventilation is provided comprising of 1 or more openings with min total floor area as follows: Windows - hinged or pivot window that opens 30° or more, or the Height x width of the opening part should be at least 400 of the room floor area. For a hinged or pivot window that opens less than 30° opening part should be at least 400 of the room floor area. External doors the Height x width of opening part should be at least 400 of the room floor area. If the room contains a combination of at least 1 external door and at least 1 external window, the opening parts may be added to achieve at least 400 of the room floor area. Note: Background ventilation should be located at least 1700mm above floor level and need not be within the door frame. Openings between habitable rooms and conservatories must be closable.

29. Unsuitable material Vegetable matter such as turf and roots should be removed from the ground to 100mm below the building or at least to a depth to prevent later growth. The effects of roots close to the building also need to be assessed. Where mature trees are present on sites with shrinkable clays the potential damage arising from ground heave to services and floor slabs and overalls concrete should be assessed. Reference should be made to BRE Digest 2822. Where soils and vegetation type would require significant quantities of soil to be removed, reference should be made to BRE Digests 24123 and 24234, and to the BRE (Foundation for the Built Environment) reports.

30. Construction Design And Management Regulations 1994 (CDM REGULATIONS) And Health and Safety at Work etc. Act 1974 Designer CDM Statement The Client is respectfully reminded of his or her duties under the above act and referred to the Health and Safety Executive's Guidance note 39 "The Role of the Client". The Designers uncompossed on this drawing are classed as simple construction using traditional methods and materials available to general builders. As such they do not present any unusual circumstances in their execution or risks which a competent builder could not be reasonably expected to know. For alteration work requiring new openings in walls or the removal of existing walls, the builder is to follow the guidance in the Building Research Establishment Good Building Guides Nos 15 & 16 providing temporary support during work on openings in external walls and removing internal load bearing walls in older dwellings.

31. The Contractor shall ensure that he and all visitors to the site are fully aware of these regulations and ensure full compliance with same and shall include for all necessary documentation.

32. Contractor to provide all necessary scaffolding with edge protection to prevent persons falling or falling debris. Also to provide protection to adjoining properties along site boundary.

33. All necessary safety precautions to be taken when working at high level. i.e using safety harness.

34. Contractor to investigate possible live or redundant services within the site and any hazardous material that may be present. Refer to Building Danger from underground services, HSG 47, Control of Asbestos at Work Regulations 2002, Control of Substance Hazardous to Health Regulations 2002 and Dangerous Substances and Explosive Atmospheres Regulations 2002.

35. All persons entering site to have all necessary protective clothing and head protection compliant with health and safety. Refer to Personal Protective Equipment at Work Regulations 1992 (as amended).

36. Cleaning of windows to be accessible from inside if they are unable to be accessed from exterior.

37. All necessary propping and support required for excavation of trenches, retaining walls and underpinning to be installed in accordance with a structural engineers details and specification.

38. Contractor to provide all necessary support to maintain stability of existing or neighbouring structures.

39. Danger of collapse to trenches caused by heavy machinery, working above or near.

40. Danger of persons falling into trenches.

41. Use of power tools and equipment. Refer to Provision and Use of Work Equipment Regulations 1998 and Electricity at Work Regulations 1989.

42. Electricity Safety, Quality and Continuity Regulations 2002.

43. Avoid climbing of walls for services.

44. Risk of working with glass. Risks of working at height and from falling objects.

45. Risks of working with dust (cement) - protective gear/breathing protection to be used. Refer to Control of Substance Hazardous to Health Regulations 2002.

46. Prescautions to be taken when lifting heavy materials Adjoints and beams into position above 20kg - use Adequate lifting machinery. Refer to Lifting Operations and Lifting Equipment Regulations 1998, Manual Handling Operations Regulations 1992.

47. All work to be carried out with due regard to health and safety regulations.

48. Risk of overhead power cables within and around the site.

49. Isolation and use of flammable materials. Refer to Fire Precautions (Workplace) Regulations 1997.

50. Access into and out of site - traffic management into and out of site. Refer to Working Safely, Managing work-related road safety, HSG 202.

51. Prescautions to be taken when working in confined spaces. Refer to Confined Spaces Regulations 1997 And Safe work in confined spaces, Approved Code of Practice, Regulations and Guidance, L 110.

52. THE CONTRACTOR IS ADVISED OF THE FOLLOWING REGULATIONS APPLICABLE.

53. New Roads and Street Works Act 1991.

54. Construction Health, Safety and Welfare Regulations 1996.

55. Health & Safety (First Aid) Regulations 1981.

56. Health and Safety (Young Persons) Regulations 1997.

57. Factories Safety Regulations 1996.

58. Pressure Systems Safety Regulations 2000.

59. Reporting of Injuries Diseases and Dangerous Occurrences Regulations 1995.

60. Supply of Machinery (Safety) Regulations 1992 (as amended).

61. Workplace (Health, Safety and Welfare) Regulations 1992.

62. Managing Health and Safety in Construction, Approved Code of Practice and Guidance, HSG 224.

63. Successful health and safety management, HSG 65.

64. Vibration Solutions, HSG 170.

What does the Part wall Act say if I want to build up against or astride the boundary line?

If you plan to build a party wall or party fence wall outside the boundary line, you must inform the Adjoining Owner by serving a notice. You must also inform the Adjoining Owner by serving a notice if you plan to build a wall wholly on your own land but up against the boundary line.

The Act contains no enforcement procedures for failure to serve a notice. However, if you start work without having first given notice in the proper way, Adjoining Owners may seek to stop your work through a court injunction or seek other legal redress.

How long in advance do I have to serve the notice?

At least one month before the planned starting date for building the wall. The notice is only valid for a year, so do not serve it too long before you wish to start.

What happens after I serve notice about building astride the boundary line?

If the Adjoining Owner agrees within 14 days to the building of a new wall outside the boundary line, the work (as agreed) may go ahead. The expense of building the wall may be shared between the owners where the benefits and use of that wall will be shared. The agreement must be in writing and should record details of the location of the wall, the allocation of costs and any other agreed conditions. If the Adjoining Owner does not agree, it will, within 14 days, to the proposed new wall outside the boundary line, you must build the wall wholly on your own land, and wholly at your own expense. However, you have a right to place necessary footing for the new wall under your neighbour's land subject to compensating for any damage caused by building the wall or laying the foundations. There is no right to place reinforced concrete under your neighbour's land without their express written consent.

You may start work one month after your notice was served. What does the Act say if I want to excavate near neighbouring buildings?

If you plan to excavate, or excavate and construct foundations for a new building or structure, within 3 metres of a neighbouring owner's building or structure, where that work will cut a line down downwards at 45° from the bottom of the neighbour's foundations, you must inform the Adjoining Owner or owners by serving a notice. "Adjoining Owners" may include your next-but-one neighbour if they have foundations within 6 metres. The notice must state whether you propose to strengthen or safeguard the foundations of the building or structure belonging to the Adjoining Owner. Plans and sections showing the location and depth of the proposed excavation or foundation and the location of any proposed building must also accompany the notice.

The Act contains no enforcement procedures for failure to serve a notice. However, if you start work without having first given notice in the proper way, Adjoining Owners may seek to stop your work through a court injunction or seek other legal redress.

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NOTE THE CLIENT IS ADVISED TO READ THE PARTY WALL ACT 1996 FULLY FOR EXAMPLES OF NOTICES SERVED AND FOR FURTHER INFORMATION WITH REGARDS TO THE ABOVE.

Approved Document P (Electrical Safety)

All Electrical Work to which the Requirements of Part P (Electrical Safety) apply, will be designed, installed, inspected and tested by a person competent to do so. Prior to completion of works the Local Authority must be satisfied that either: An Electrical Installation certificate issued under a "Competent Persons" scheme has been issued or Appropriate certificates and forms defined in BS 77136 (as amended) have been submitted that confirm that the work has been inspected and tested by a "competent person". A "competent person" will have a sound knowledge and suitable experience relevant to the nature of the work undertaken and to the technical standards set out in BS 7671, be fully versed in the inspection and testing procedures contained in the regulations and employ adequate testing equipment.

NOTE: THE ELECTRICAL LAYOUT SHOWN IS FOR BUILDING REGULATIONS SUBMISSION ONLY.

THE BUILDING INSPECTOR MUST BE INFORMED OF ANY CHANGES TO THE LAYOUT PRIOR TO WORKS COMMENCING AND WORKS TO BE CARRIED OUT BY A COMPETENT PERSON AS DESCRIBED ABOVE.

CONTRACTOR TO AGREE POSITION OF ELECTRICAL ITEMS AND RADIATORS WITH CLIENT PRIOR TO WORK COMMENCING.

This drawing is Produced for submission to the Local Authority for Approvals under the Building Regulations and Town and Country Planning Acts only and this drawing is the copyright of T.D.M ARCHITECTURAL LTD and any reproduction in whole or part is strictly forbidden. All dimensions shown on drawing are approx and do not allow for Building tolerance and must be checked on site prior to work commencing.



ARCHITECTURAL LTD
Mob: 07805560652
Mob: 07707103501
e-mail: tdmdesign@live.co.uk
Web site www.tdmarch.co.uk

Client:	MR SIMON BYRNE
Address:	LAND AT MANCHESTER STREET, HEYWOOD, ROCHDALE
Project:	PROPOSED APARTMENT DEVELOPMENT
Dwg Title:	PLANNING: PROPOSED SITE PLAN
Date:	MARCH 2020
Job No:	03.20.390
Drawn:	D.L
Scale:	@ A1 1: 200
Dwg No:	PL06
Checked:	D.L

Appendix B



PROPOSED SITE PLAN scale 1:100

GENERAL NOTES

1. FOUNDATIONS 225mm min thickness, strip foundations to project 150mm min either side of supported wall. Provide 150mm min cover to foundations. Foundations to be min 800mm to bottom of strip footing and taken down to level below invert of any drains passing under or immediately adjacent to the building. Although strip foundations have been shown on the drawing, these may not be appropriate and are for illustrative purposes only. Foundations to suit conditions to the satisfaction of the Local Authority once the Shuck has been dug - Alternative Foundations to be designed by Structural Engineer

CONCRETE MIXES TO BE IN ACCORDANCE WITH BS 8500 - 1.

CONDITIONS RELATING TO THE GROUND

There should not be:

- a. non-engineered fill (as described in BRE Digest 427) or wide variation in ground conditions within the loaded area, nor
- a. weaker or more compressible ground at such a depth below the foundation as could impair the stability of the structure.

2. Where new foundations arise in vicinity of old foundations, existing should be fully grubbed up and new foundations laid at least the same depth.

3. All exposed timbers to be treated with a suitable preservative to BS 1292:1915.

4. All new cavities to be closed with 9mm supalux, all new cavities to be linked with existing.

5. All new drains to be Hespworth superseal and to be bedded and surrounded in min. 150mm pea gravel. 100mm diameter drains to fall 1 in 40. 150mm diameter drains to fall 1 in 60. New drains to be encased in min 150mm concrete where they pass under new buildings. All existing drains found not to be in use to be capped and sealed in concrete. 150mm pre-cast concrete linings inserted where new drains pass through external walls. Soil and vent pipes to be 100mm U.P.V.C. 40mm diameter U.P.V.C. waste pipes to showers, sinks and baths with 40mm diameter to basins. S.V.P. to be taken up to a ridge terminal or roof vent the outlet or otherwise as noted on the plans. Provide rodding eyes or removable traps to give access to all runs of the soil system. All traps are to be 75mm deep sealed anti-vac traps. All the plumbing installations are to comply with BS 5512. All boring in the concealed service pipes shall be sealed at floor and ceiling levels, and service pipes which penetrate or project into hollow constructions or voids. (Refer to item D of diagram 4 of the Approved Document L1. Deep floor gutters and 64 / 75 mm diameter P.V.C. rainwater pipes.

6. Insulated D.p.c's inserted to all head, joints and cills of new external openings or thermascreens.

7. All disturbed surfaces to be made good.

8. All new rain water pipes to trapped gullies.

9. 75 x 100mm wallplate to strapped to wall at 2m centres with 38 x 6mm mild steel straps.

10. Opening lights to be min 1200mm total floor plan area.

11. All glazing in critical zones to be toughened or laminated to BS 6206. i.e glass to doors within 1500mm of finished floor level and within 300mm of either side of doors and where greater than 250mm wide max 0.5mm doors, and to external windows within 800mm of finished floor level.

12. Steelwork as noted on plan to comply with BS449, BS5950 & be encased in 2 layers of 12.5mm plasterboard with angle beads and 3mm plaster coat to give 1/2 hour fire resistance. (Refer to item D of diagram 4 of the Approved Document L1. Deep floor gutters and 64 / 75 mm diameter P.V.C. rainwater pipes.

13. D.p.c's to be fixed to timber within external wall with stop ends and weepholes at each end and @ 900mm c/s. Loadbearing internal walls to be 100mm concrete blockwork.

14. Facing brickwork/stonework to extend min 2 courses below ground level.

15. New concrete limits over new openings to BS5977 Part 2 1986 (150mm or 225mm) deep where shown.

16. Staircases steel wall ties to be spaced at 750mm centres horizontally staggered and 450mm centres vertically. Wall ties to comply with BS1234:1978 and to have proprietary Upoc retaining clips to secure the insulation to the inner leaf. Joints to be built up by 2 courses of bricks. Provide additional wall ties at 250mm vertical centres around door / window openings and to movement joints. Cavities be closed at eaves level to comply with Building Regulations.

17. Notches and holes to timber joists to be within the following limits. Notches - no deeper than 0.225 times depth of joist and not cut closer than 1/10 of the span, nor further away than 0.25 times the span. Holes - should be no greater diameter than 0.25 times the depth of joist should be drilled at the nearest axis, and should be not less than 3 diameters' centre to centre apart, and be located between 1/10 and 0.4 times span from the support.

No notches or holes to be cut in roof rafters, other than supports where the rafter may be substituted to a depth not exceeding 0.33 the rafter depth.

18. All pipework incorporated in the water / heating system, that is situated in an untreated space is to be surrounded in 40mm of insulating material (min conductivity 0.045W/mK).

19. All masonry work to comply with BS 5626: P3.

20. Mortar: Selection of mortar used below dpc to be in accordance with BS5626: Part 3.

21. Sulphate-resisting cement to be used where recommended by brick manufacturer and where sulphates are present in the ground.

22. SPM below slab to BS 6535: when the membrane is located below the slab a blinding layer of sand should be provided. The continuity of the membrane as follows:

laps in polythene should be 300mm and joints sealed, where necessary, membranes beneath slab should link with wall dpc's

23. STAIRCASE Equal risers (Max rise 220mm) Equal treads (Min going 220mm) Min Going to Tapered treads of 50mm. 2000mm headroom to stair measured along pitch line. Max pitch of stair 42 degrees. Handrail between 900mm and 1000mm above pitch line. No gap in balustrading to allow the passage of 100 diameter sphere.

24. Chases:

Vertical chases should not be deeper than 1/3 of the wall thickness or, in cavity walls, 1/5 of the thickness of the leaf.

Horizontal chases should not be deeper than 1/6 of the thickness of the leaf of the wall.

Chases should not be so positioned as to impair the stability of the wall, particularly where hollow blocks are used.

25. All workmanship and materials to comply with Building Regulations, British Standards, Codes of Practice requirements. All materials to be fixed, applied or mixed in accordance with manufacturers instructions or specifications. All materials shall be suitable for their purpose. The contractor shall take into account everything necessary for the proper execution of the works, to the satisfaction of the "Inspector" whether or not indicated on the drawing. Sample of external materials to be submitted to Local Authority for approval.

26. The Builder is entirely responsible for all temporary works and for maintaining stability of the new and existing structures during work.

27. Contractor to visit site prior to commencement of work and check all dimensions and familiarise himself with the site conditions. This drawing must then be checked and verified by the contractor prior to work commencing on site. No Encroachment by the building over the neighbouring boundary line. Client to obtain written permission from relevant bodies for any encroachment whatsoever if unavoidable.

28. Trade Ventilation

Replacement windows, background ventilators to be provided as follows:

Habitable rooms - 5000mm² equivalent area

Kitchen, Utility room and bathroom - 2500mm² equivalent area

Addition of a habitable room (not including a conservatory) to an existing building.

Background ventilators to be provided to new windows as follows:

If the Additional room is connected to an existing room that has no window openings to external air, the room can be ventilated through another room or conservatory if background ventilation is provided with ventilators - 8000mm² equivalent area to opening between rooms and to new windows, and Purge ventilation is provided comprising of 1 or more openings with min total floor area as follows:

Windows - hinged or pivot window that opens 30° or more, or the Height x width of the opening part should be at least 1/10 of the room floor area.

For a hinged or pivot window that opens less than 30° opening part should be at least 1/10 of the room floor area.

External doors the Height x width of opening part should be at least 1/10 of the room floor area.

If the room contains a combination of at least 1 external door and at least 1 external window, the opening parts may be added to achieve at least 1/10 of the room floor area.

Note: Background ventilation should be located at least 1700mm above floor level and need not be within the door frame.

Openings between habitable rooms and conservatories must be closable.

29. Unusable material

Vegetable matter such as turf and roots should be removed from the ground to be covered by the building at least to a depth to prevent later growth. The effects of roots close to the building also need to be assessed. Where mature trees are present on sites with shrinkable clays the potential damage arising from ground heave to services and floor slabs and overalls concrete should be assessed. Reference should be made to BRE Digest 29822. Where soils and vegetation type would require significant quantities of soil to be removed, reference should be made to BRE Digests 24123 and 24234, and to the BRE (Foundation for the Built Environment) report25.

Construction Design And Management Regulations 1994 (CDM REGULATIONS) And Health and Safety at Work etc. Act 1974

Designers CDM Statement

The Client is respectfully reminded of his or her duties under the above act and referred to the Health and Safety Executive's Guidance note 39 "The Role of the Client".

The Designers uncompromised on this drawing are classed as simple construction using traditional methods and materials available to general builders. As such they do not present any unusual circumstances in their execution or risks which a competent builder could not be reasonably expected to know.

For alteration work requiring new openings in walls or the removal of existing walls, the builder is to follow the guidance in the Building Research Establishment Good Building Guides Nos 5 & 8 providing temporary support during work on openings in external walls and removing internal load bearing walls in older dwellings.

1. The Contractor shall ensure that he and all visitors to the site are fully aware of these regulations and ensure full compliance with same and shall include for all necessary documentation.

2. Contractor to provide all necessary scaffolding with edge protection to prevent persons falling or falling debris. Also to provide protection to adjoining properties along site boundary.

3. All necessary safety precautions to be taken when working at high level. i.e. using safety harness.

4. Contractor to investigate possible live or redundant services within the site and any hazardous material that may be present. Refer to Building Danger from underground services, HSE 47, Control of Asbestos at Work Regulations 2002, Control of Substance Hazardous to Health Regulations 2002 and Dangerous Substances and Explosive Atmospheres Regulations 2002.

5. All persons entering site to have all necessary protective clothing and head protection compliant with health and safety. Refer to Personal Protective Equipment at Work Regulations 1992 (as amended).

6. Clearing of windows to be accessible from inside if they are unable to be accessed from exterior.

7. All necessary propping and support required for excavation of trenches, retaining walls and underpinning to be installed in accordance with a structural engineers details and specification.

8. Contractor to provide all necessary support to maintain stability of existing or neighbouring structures.

9. Danger of collapse to trenches caused by heavy machinery, working above or near.

10. Danger of persons falling into trenches.

11. Use of power tools and equipment. Refer to Provision and Use of Work Equipment Regulations 1998 and Electricity at Work Regulations 1989.

12. Avoid chipping walls for services.

13. Risk of working with glass. Risks of working at height and from falling objects.

14. Risks of working with dust (cement) - protective gear/breathing protection to be used. Refer to Control of Substance Hazardous to Health Regulations 2002.

15. Precautions to be taken when lifting heavy materials. Objects and beams into position above 20kg - use Adequate Lifting machinery. Refer to Lifting Operations and Lifting Equipment Regulations 1998, Manual Handling Operations Regulations 1992.

16. Covering of roofs. All work to be carried out with due regard to health and safety regulations.

17. Risk of overhead power cables within and around the site.

18. Installation and use of flammable materials. Refer to Fire Precautions (Workplace) Regulations 1997.

19. Access into and out of site - traffic management into and out of site. Refer to Access to Work - Managing work-related road safety, HSE 382.

20. Precautions to be taken when working in confined spaces. Refer to Confined Spaces Regulations 1997 and Safe work in confined spaces, Approved Code of Practice, Regulations and Guidance, L 101.

THE CONTRACTOR IS ADVISED OF THE FOLLOWING REGULATIONS APPLICABLE.

21. New Roads and Street Works Act 1991

22. Construction Health, Safety and Welfare Regulations 1996

23. Health & Safety (First Aid) Regulations 1981

24. Health and Safety (Young Persons) Regulations 1997

25. Inspection Regulations 1999

26. Management of Health and Safety at Work Regulations 1999

27. Noise at Work Regulations 1989

28. Pressure Systems Regulations 1999

29. Pressure Systems Safety Regulations 2000

30. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

31. Supply of Machinery (Safety) Regulations 1992 (as amended)

32. Workplace (Health, Safety and Welfare) Regulations 1992

33. Managing Health and Safety in Construction, Approved Code of Practice and Guidance, HSE 224

34. Successful health and safety management, HSE 65

Vibration Solutions, HSE 170

What does the Party wall Act say if I want to build up against or astride the boundary line?

If you plan to build a party wall or party fence wall astride the boundary line, you must inform the Adjoining Owner by serving a notice. You must also inform the Adjoining Owner by serving a notice if you plan to build a wall wholly on your own land but up against the boundary line.

The Act contains no enforcement procedures for failure to serve a notice. However, if you start work without having first given notice in the proper way, Adjoining Owners may seek to stop your work through a court injunction or seek other legal redress.

How long in advance do I have to serve the notice?

At least one month before the planned starting date for building the wall. The notice is only valid for one year, so do not serve it too long before you wish to start.

What happens after I serve notice about building astride the boundary line?

If the Adjoining Owner agrees within 14 days to the building of a new wall astride the boundary line, the work (as agreed) may go ahead. The expense of building the wall may be shared between the owners where the benefits and use of that wall will be shared. The agreement must be in writing and should record details of the location of the wall, the allocation of costs and any other agreed conditions. If the Adjoining Owner does not agree, it will, within 14 days, to the proposed new wall astride the boundary line, you must build the wall wholly on your own land, and wholly at your own expense. However, you have a right to place necessary footings for the new wall under your neighbour's land subject to compensating for any damage caused by building the wall or laying the foundations. There is no right to place reinforced concrete under your neighbour's land without their express written consent.

You may start work one month after your notice was served. What does the Act say if I want to excavate near neighbouring buildings?

If you plan to excavate, or excavate and construct foundations for a new building or structure, within 3 metres of a neighbouring owner's building or structure, where that work will go deeper than the neighbour's foundations, or excavate, or excavate for and construct foundations for a new building or structure, within 6 metres of a neighbouring owner's building or structure, where that work will cut a line down downwards at 45° from the bottom of the neighbour's foundations, you must inform the Adjoining Owner or owners by serving a notice. "Adjoining Owners" may include your next-but-one neighbour if they have foundations within 6 metres. The notice must state whether you propose to strengthen or safeguard the foundations of the building or structure belonging to the Adjoining Owner. Plans and sections showing the location and depth of the proposed excavation or foundation and the location of any proposed building must also accompany the notice.

The Act contains no enforcement procedures for failure to serve a notice. However, if you start work without having first given notice in the proper way, Adjoining Owners may seek to stop your work through a court injunction or seek other legal redress.

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NOTE: THE CLIENT IS ADVISED TO READ THE PARTY WALL ACT 1996 FULLY FOR EXAMPLES OF NOTICES SERVED AND FOR FURTHER INFORMATION WITH REGARDS TO THE ABOVE.

Approved Document P (Electrical Safety)

All Electrical Work to which the Requirements of Part P (Electrical Safety) apply, will be designed, installed, inspected and tested by a person competent to do so. Prior to completion of work the Local Authority must be satisfied that either: An Electrical Installation certificate issued under a "Competent Persons" scheme has been issued or Appropriate certificates and forms defined in BS 7716 (as amended) have been submitted that confirm that the work has been inspected and tested by a "competent person". A "competent person" will have a sound knowledge and suitable experience relevant to the nature of the work undertaken and to the technical standards set out in BS 7671, be fully versed in the inspection and testing procedures contained in the regulations and employ adequate testing equipment.

NOTE: THE ELECTRICAL LAYOUT SHOWN IS FOR BUILDING REGULATIONS SUBMISSION ONLY.

THE BUILDING INSPECTOR MUST BE INFORMED OF ANY CHANGES TO THE LAYOUT PRIOR TO WORKS COMMENCING AND WORKS TO BE CARRIED OUT BY A COMPETENT PERSON AS DESCRIBED ABOVE.

CONTRACTOR TO AGREE POSITION OF ELECTRICAL ITEMS AND RADIATORS WITH CLIENT PRIOR TO WORK COMMENCING

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ARCHITECTURAL LTD
Mob: 07895560652
Mob: 07707100301
e-mail: tdmdesign@live.co.uk
Web site: www.tdmarch.co.uk

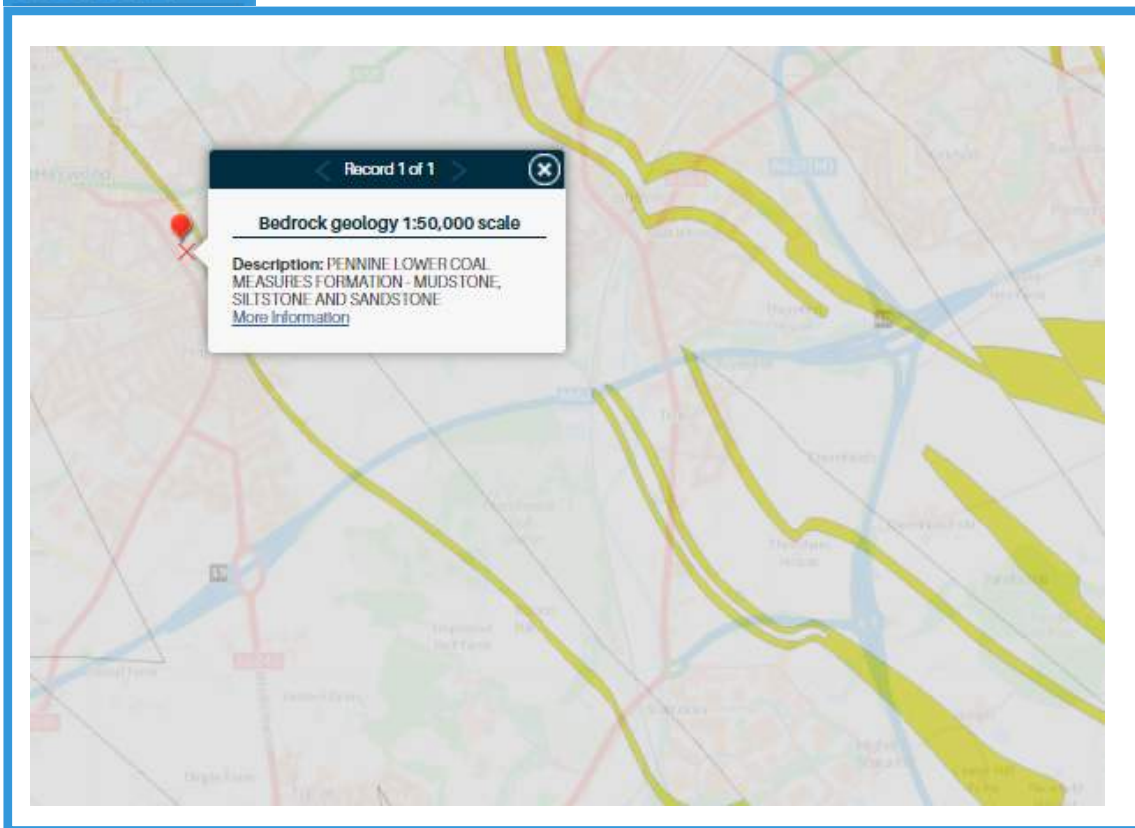
Client:	MR SIMON BYRNE
Address:	LAND AT MANCHESTER STREET, HEYWOOD, ROCHDALE
Project:	PROPOSED APARTMENT DEVELOPMENT
Dwg Title:	PLANNING: PROPOSED SITE PLAN
Date:	MARCH 2020
Job No:	03.20.390
Drawn:	D.L
Scale:	1: 100
Dwg No:	PL05
Checked:	D.L



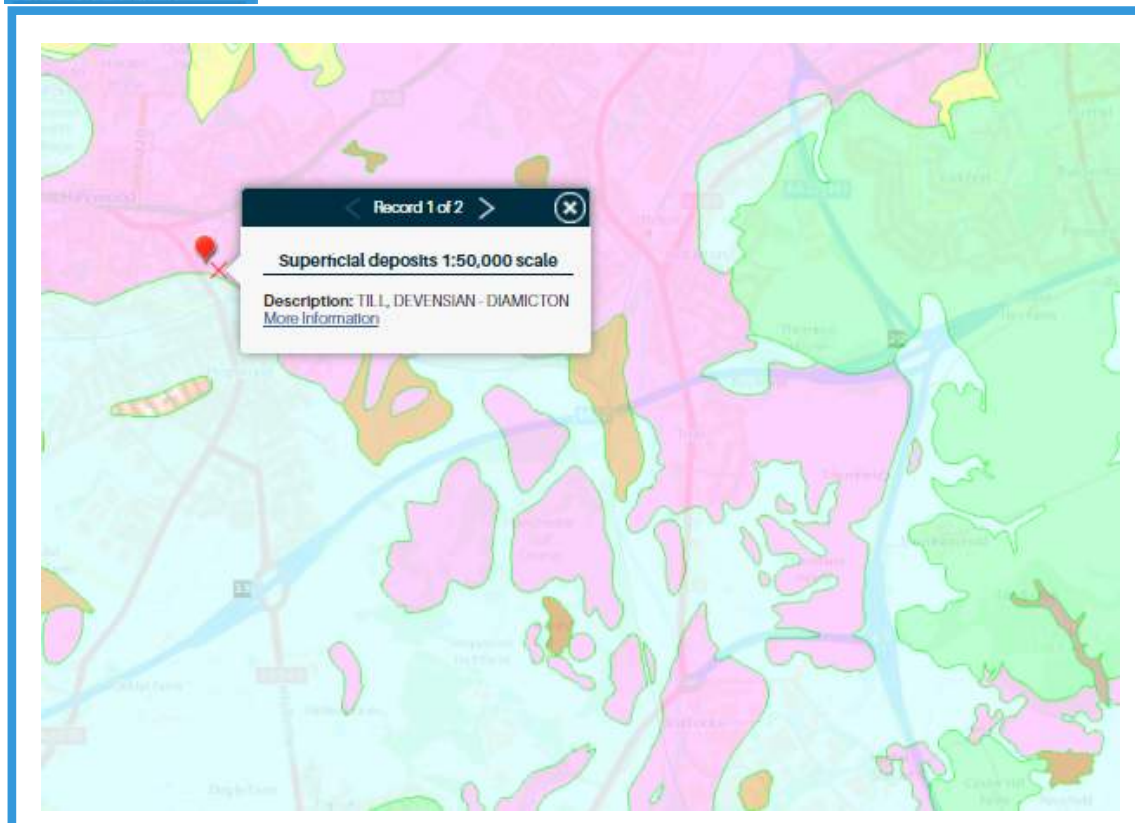
Appendix C



GEOLOGY - BEDROCK - SILT STONE AND SANDSTONE



GEOLOGY - SUPERFICIAL DEPOSITS - TILL DIAMICTON





Main River Map



SITE FLOOD RISK

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.



Flood risk from surface water



Extent of flooding



Flood risk



High



Medium



Low



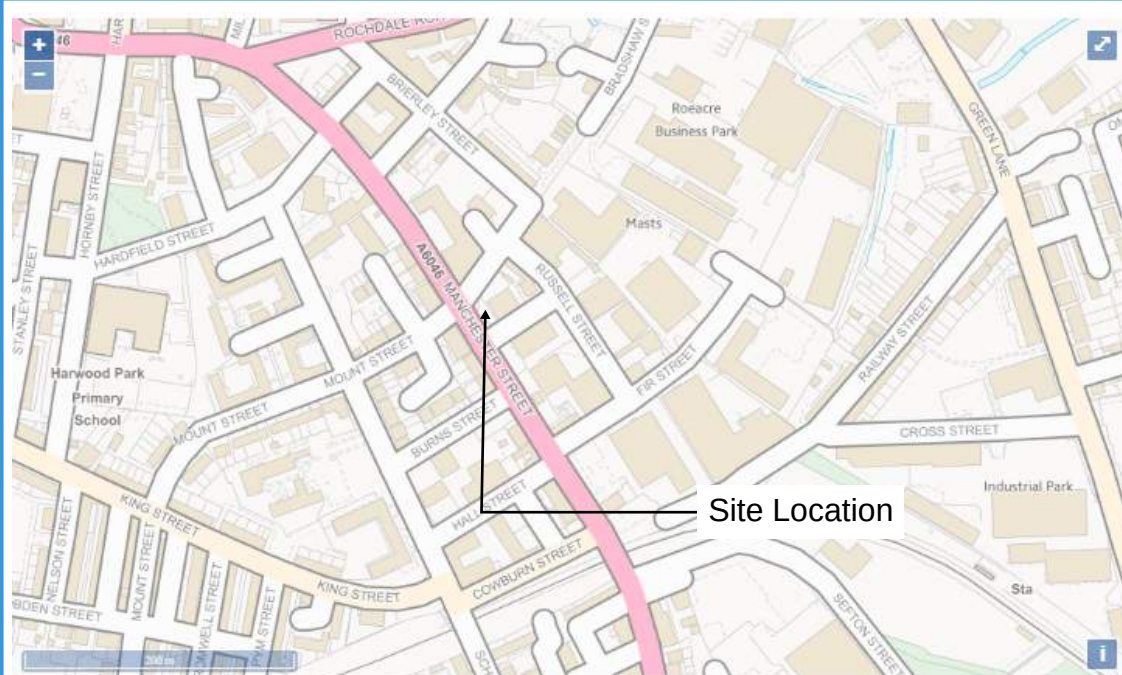
Very low



Flood risk from reservoirs



Extent of flooding



Flood risk



Maximum extent of flooding

Flood map for planning

Your reference
Manchester St

Location (easting/northing)
386027/410483

Created
17 Nov 2020 22:40

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

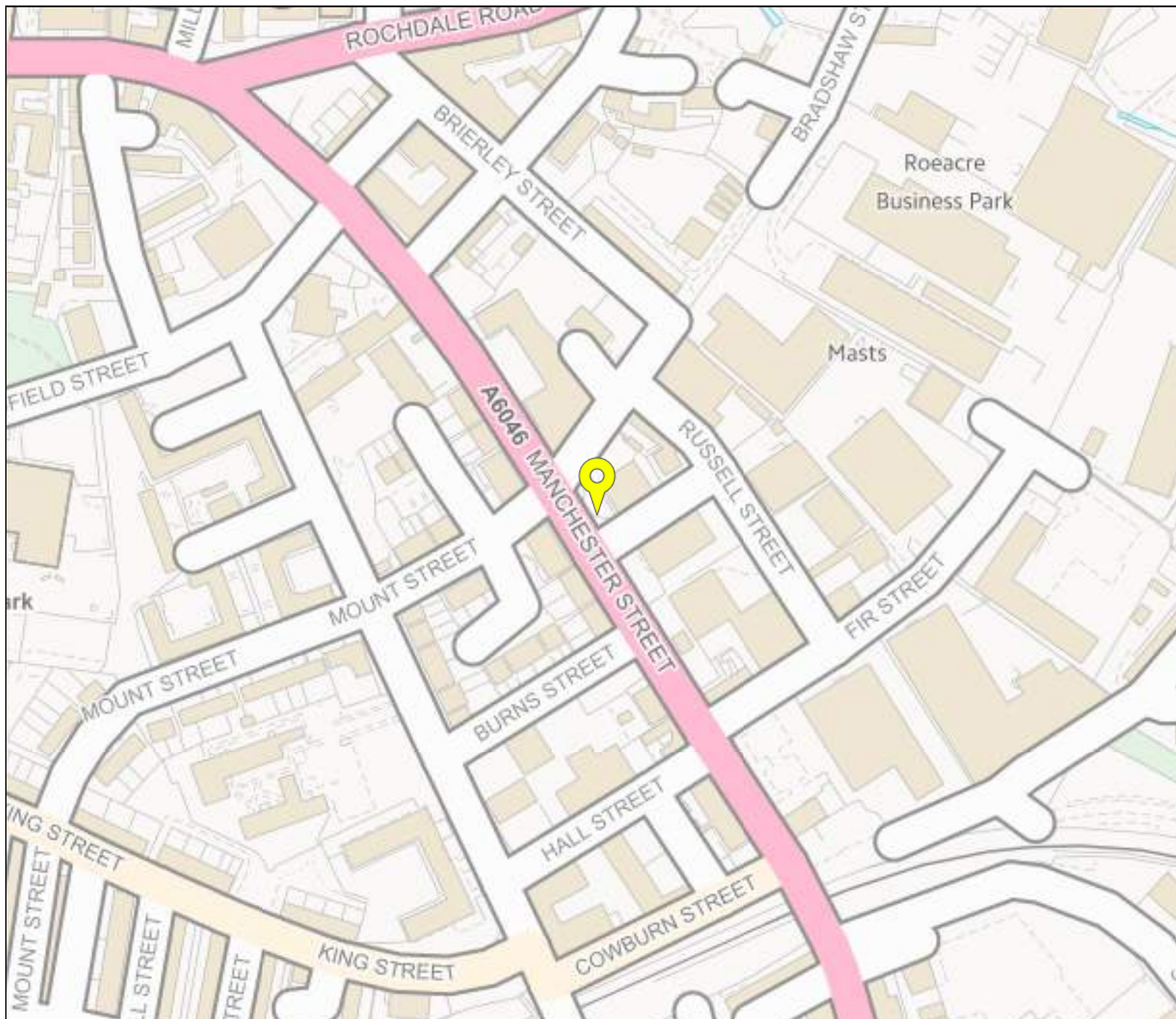
- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

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.

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



Flood map for planning

Your reference
Manchester St

Location (easting/northing)
386027/410483

Scale
1:2500

Created
17 Nov 2020 22:40

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefitting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m