

FLOOD RISK ASSESSMENT

PROPOSED COMMERCIAL DEVELOPMENT

8 South Parade

Rochdale

OL16 1LR

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0	Dec 2023	Original to support planning application.

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1 FRA Introduction.

Purpose of Flood Risk Assessment:

The purpose of the assessment is to inform & accompany a planning application for the redevelopment of an existing commercial building in Rochdale Town Centre.

The proposal is for a change of use from a former public house to a dine in/take away fast food restaurant at ground floor level, and residential apartments at first & second floor level.

Reference:

National Planning Policy Framework and the Planning Practice Guidance (flood risk & coastal change notes).

EA mapping data identifies the Application Site as being in flood zone 3, refer to EA flood map in the Appendix. Flood zone 2 is defined as land assessed as having between a 1:100 & 1:1000 or greater annual probability of river flooding (0.1-1%) in any year (land shown in light blue on the EA flood map). Flood zone 3 is defined as land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) in any year (land shown in dark blue on the EA flood map).

The Planning Practice Guidance indicates the flood risk vulnerability classification (Table 3) for the commercial end use to be 'less vulnerable', and residential uses classified as 'more vulnerable'. However, the more vulnerable residential part of the development is on the upper floors of the building (1st – 2nd floors), and so is raised out of the flood zone. In addition, the residential part of the building is temporary (ie tied to the commercial ownership of the building), and longevity with regard to climate change effects is therefore shorter than for standard residential housing stock.

The flood risk 'vulnerability' and flood zone 'compatibility' matrix (Table 3) indicates that 'less vulnerable' development is acceptable in flood zones 2 & 3.

Preliminary or Full Flood Risk Assessment:

Full to support planning application.

1.1 Plans.

1.1.1 Location plan.

See Location Plan in Appendix showing the area features.

The Application Site is an existing historic building within Rochdale Town Centre, located on South Parade which is the main road through the centre, adjacent to the River Roch.

The local area is well developed and predominantly comprises commercial premises such as financial institutions, retail shops, local government buildings and public houses etc. Most have either apartments or office space to the upper floors.

The River Roch is located nominally 70m north and was historically culverted beneath the Town Centre. It has recently been partially de-culverted local to the Application Site.

1.1.2 Site plan.

Refer to Proposed Plans in the appendix.

The Application Site comprises an existing 4 storey building (basement to 2FL), which has most recently been used as a commercial public house.

The change of use proposal is to retain the commercial usage of the ground floor & basement. The basement is proposed as a storage area, and ground floor level is proposed for kitchens/storage/front of house seating. Access is via a dedicated entrance to the front and rear of the property.

The upper floors (1FL & 2FL) are proposed as a residential end use. The proposal will create 2No. 1 bedroom apartments on the first floor level, and 1No. 2 bedroom apartment on the second floor level. Access/egress to the front first floor and second floor apartment will be onto South Parade. Access & egress to the second floor apartment will be to the rear onto Fleece Street.

1.2 Derivation of Data, Surveys and Models.

1.2.1 Existing and proposed topography.

Historically a topographic survey of the local area was undertaken for redevelopment of the local area and de-culverting of the River Roch. The survey included levels up to the front of the Application Site.

The ground floor of the building appears to be stepped throughout, higher at the rear than at the front. The ground floor at its lowest level is approximately 450mm above the South Parade pavement.

Associated levels are noted below:

Pavement level in front of Site	119.13m aOD.
Basement level approx.	level not known.
GFL approx.	119.58-119.89m aOD.
1FL approx.	122.50 m aOD.
2FL approx.	125.21 m aOD.

1.3 Assessments.

1.3.1 Existing fluvial & surface water system.

Locally, the Roch is culverted below the town centre. The Smith Street Bridge which forms the start of the culvert has in the past been the throttle point of the river, and thus flooding in the town centre has usually resulted from overtopping of the banks in this location. Flood water has then moved down to the lowest point in the town centre which is to the north side of South Parade at the bottom of The Butts which is nominally 1m lower than the pavement level at the front of the Application Site.

Part of the Roch culvert has been opened local to the Application Site in recent years, which will enable flood water to escape back in to the river, lowering flood risk locally.

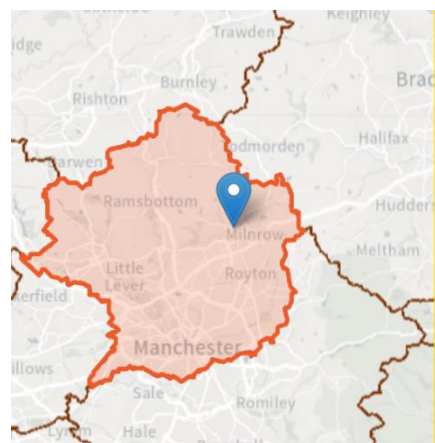
1.3.2 Proposed fluvial & surface water system.

The proposed construction will not affect the fluvial surface water system.

1.3.3 Climate change impacts.

As identified in Section 1, the vulnerability of the development is 'less vulnerable'.

Current flood maps designate the Application Site as being within flood zone 3. EA guidance specifies climate change allowances by management catchment areas; specific to the catchment the Application Site is within. Peak flow river maps have been produced which specify the climate change allowances to be used in a flood risk assessment.



Irwell Management Catchment peak river flow allowances

	Central	Higher	Upper
2020s	12%	15%	24%
2050s	19%	26%	43%
2080s	35%	46%	75%

The EA guidance indicates the peak flow rates that should be used for the vulnerability classification:

- essential infrastructure – use the higher central allowance.

- highly vulnerable – use central allowance (development should not be permitted in flood zone 3a).
- more vulnerable – use the central allowance.
- less vulnerable – use the central allowance.
- water compatible – use the central allowance.

Given the less vulnerable risk category is to be used as the basis for assessment, the central allowance climate change multiplier should be used. Commercial development has a relatively shorter lifetime than residential; and the '2050s' timeline is appropriate for assessing climate change allowances.

Comparing the '2050s' timeline with the central allowance from the peak river flow allowances above, suggests a 19% climate change allowance for the Site.

1.3.4 Fluvial morphological impacts.

The proposed development will not impact or change fluvial morphology.

1.3.5 Potential sources of flooding.

- Fluvial flooding from main rivers.

The main source of flooding in the town centre local to the Application Site is from the River Roch.

The Environment Agency were contacted with regard to flood risk in the local area, and Product 4 Flood Data was obtained. However, the model is considered outdated.

Until 2016, in times of extreme flood, the river would have overwhelmed the entrance to the town centre culvert at the Smith Street Bridge adjacent to what is now No.1 Riverside, and flood waters would overtop the banks, resulting in overland flow through the town centre, settling in a low point which is centred around The Butts 70m north of the Application Site.

The current EA flood data for the local area is based upon this scenario, and data for the Application Site appears to mirror flood levels from the upstream culvert entrance, which is approximately 190m northeast, and at higher level, tabulated below:

Node positions	Undefended model levels (m aod)		Defended model levels (m aod)
	100yr	100yr+35%	100yr+35%
Upstream Node 2 - Smith Street Bridge at No.1 Riverside	120.39	121.51	121.56
APPLICATION SITE	120.42	121.41	n/a

However, in this model, flood water gets trapped locally by higher surrounding ground levels which is the primary cause of flooding. One flooding occurs, the approximate level at which water would have been able to flow back into the Roch further downstream would have been around 120.60m aOD. Above this water could escape via other overland routes, suggesting this is approximately the maximum flood level that could historically have been achieved locally.

The estimated flood level for the 2015 Boxing Day Flood is estimated at around 119.90m aOD (from photographic evidence & topographic data), and which was considered to be a 200yr+ return period event. The corresponding flood level for a 200yr event locally is estimated by the EA flood model to be 121.08m aOD at the Smith Street Bridge.

More recently (c2016), a portion of the Roch culvert was permanently opened between The Butts & the Application Site, effectively acting as a flood alleviation scheme and allowing flood water to escape the area by re-entry into the culvert, with the cill opening at approximately 119.30m aOD, rather than overland flow at 120.60m AOD.

Estimating a nominal freeboard of 0.5m above the culvert opening with a cill level at 119.30m + 0.5m gives a maximum flood level of 119.80m aOD. However, the 120.60m aOD level would remain the maximum theoretical in case of extreme flows when the newly opened culvert is not able to convey additional flows returning into it.

With an estimated maximum flood level then of between 119.80-120.60m aOD, the maximum depth of flooding at the Site is considered to be as follows:

Flood Level (m aOD)	Basement Flood Depth (m)	Ground Floor Flood Depth (m)	First Floor Flood Depth (m)	Second Floor Flood Depth (m)
119.80	Totally inundated	0.22	0	0
120.60	Totally inundated	1.02	0	0

These estimated levels should be used as the basis for design.

b. Surface Water Risk.

Surface Water Risk is dominated & controlled by the fluvial system in the local area, and therefore does not present an individual risk to the Site.

c. Fluvial flooding from minor watercourses / drainage channels.

None noted.

d. Artificial Watercourse/Canals.

None locally.

e. Loss of overland flow.

No watercourse overland flow routes will not be affected as part of the development.

f. Loss of Floodplain.

Loss of floodplain will not decrease as part of the development.

g. Springs and high groundwater levels.

None noted.

h. Surcharging of local drainage & sewerage systems.

No evidence of sewer surcharging in the local area except that caused by fluvial flooding events.

i. Reservoirs.

There is a risk of reservoir flooding in this area, however, the Environment Agency indicates the risk from of flooding is highly unlikely. In addition, flooding from reservoirs is thought to be a much lower risk than that from other sources described in detail above.

1.4 Design.

Design levels should be as follows:

Resilient Design: up to a minimum of 121.41m aOD.

A more reasonable flood design level should be used for service meters etc, which is suggested to be 120.60m aOD (ie, not less than 1m high at ground floor level.

1.4.1 Resilient Design.

Resilient design should be utilised in proposed development below 121.41m aOD. "BS 85500:2015 - Flood resistant and resilient construction. Guide to improving the flood performance of buildings" gives further details & specifications for designers.

Design should include details such as the following:

1.4.2 Construction.

- solid flooring such as tiling, stone slabs, concrete screed etc;
- solid masonry partition walls (if required), OR steel studding & cement board;
- sand/cement render in place of plaster if required;
- flood resilient upvc or hardwood doors.
- closed cell insulation.

1.4.3 Internal fixings & finishes.

- all internal finishes and fixings to the cellar level should comprise resilient materials such as hardwood/upvc/vinyl/plastics to skirts & frames, with water resistant paints to walls etc.

1.4.3.1 Services.

- Where possible, all mains service meters such as the water meters, electrical fuse box, gas meter & boilers etc; should be installed (or repositioned) above the identified flood level which is 120.60m aOD. These services may then be routed down from these points to the required access level.

2 Emergency Evacuation Plan

2.1 Section 1-4. Scope, Location, Risk & Mitigation

The Adept/Environment Agency guidelines indicate the requirements for flood risk emergency plans (EP) for new development. An EP would generally contain the following sub-sections:

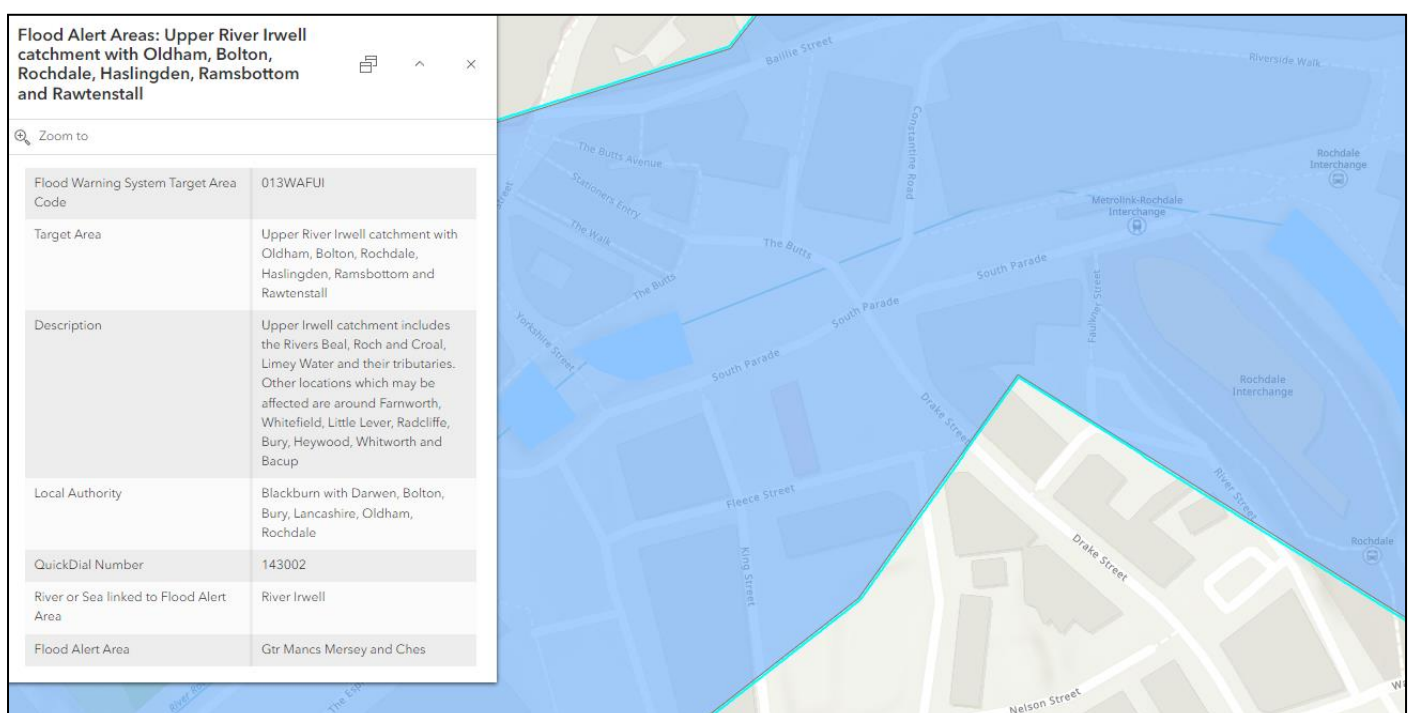
- Section 1. Scope, Objectives and Background.
- Section 2. Location and Proposal.
- Section 3. Risk Summary.
- Section 4. Mitigation Measures.
- Section 5. Flood Warnings and Associated Actions.
- Section 6. Safe Access and Escape.
- Section 7. Temporary Refuge.
- Section 8. After the Flood.
- Section 9. List of Roles.
- Section 10. Plan Upkeep and Awareness.

The previous sections of this report have covered the information required for sub-sections 1-4 noted above required for an EP, and thus this EP section shall start at subsection 5 – Flood Warnings & Associated Actions.

Fluvial flooding risk is considered high in the local area, and therefore, a flood evacuation plan shall be presented.

2.2 Section 5. Flood Warnings and Associated Actions

The Site is within a flood warning area, refer to associated Flood Warning Map below:



FLOOD INFORMATION SERVICE

Dwellings or businesses in England can sign up for the Environment Agency free flood alert service by phone, email or text message, if either homes or businesses are at risk of flooding.

The Site is within the Environment Agency Flood Warning Area and it is strongly advised that the Owner/Tenant, must sign up to receive flood warnings via the Environment Agency Flood Information Service.

The current & simple flood alert/warnings guidance used by the Environment Agency, including an easy to understand statement of the following:

- PREPARE.
- ACT.
- SURVIVE.

The Flood Information Service can be found on the internet using the following URL: <https://flood-warning-information.service.gov.uk/warnings>.

See inset graphic below for additional general details what is required for each warning stage.

Flood alert - Prepare



- prepare a bag that includes medicines and insurance documents
- check flood warnings

Flood warning - Act



- turn off gas, water and electricity
- move things upstairs or to safety
- move family, pets and car to safety

Severe flood warning - Survive



- call 999 if in immediate danger
- follow advice from emergency services
- keep yourself and your family safe

FLOODLINE

Alternatively, people at risk from flooding and without access to the internet can register for flood alert warnings & get in touch by calling Floodline on telephone: 0345 988 1188 OR Type talk: 0345 602 6340 (for the hard of hearing), which is a 24hr service.

For flood alerts/warnings, people will need to provide the following information:

- the address to be registered.
- a phone number for the person or people requesting the service can be contacted on 24hrs a day.
- an email address for the person or people requesting the service.

FLOOD WARDENS

Flood Wardens operate in some areas to provide alerts to the local community when flood warnings are issued. Contact Floodline on 0845 988 1188 to find out if this service is available in the area.

SIRENS/LOUDHAILERS

Sirens/loudhailers operate in some areas at risk from extreme flooding to alert residents that a flood warning is in force. Contact Floodline on 0845 988 1188 to find out if this service is available in the area.

GENERAL MEDIA

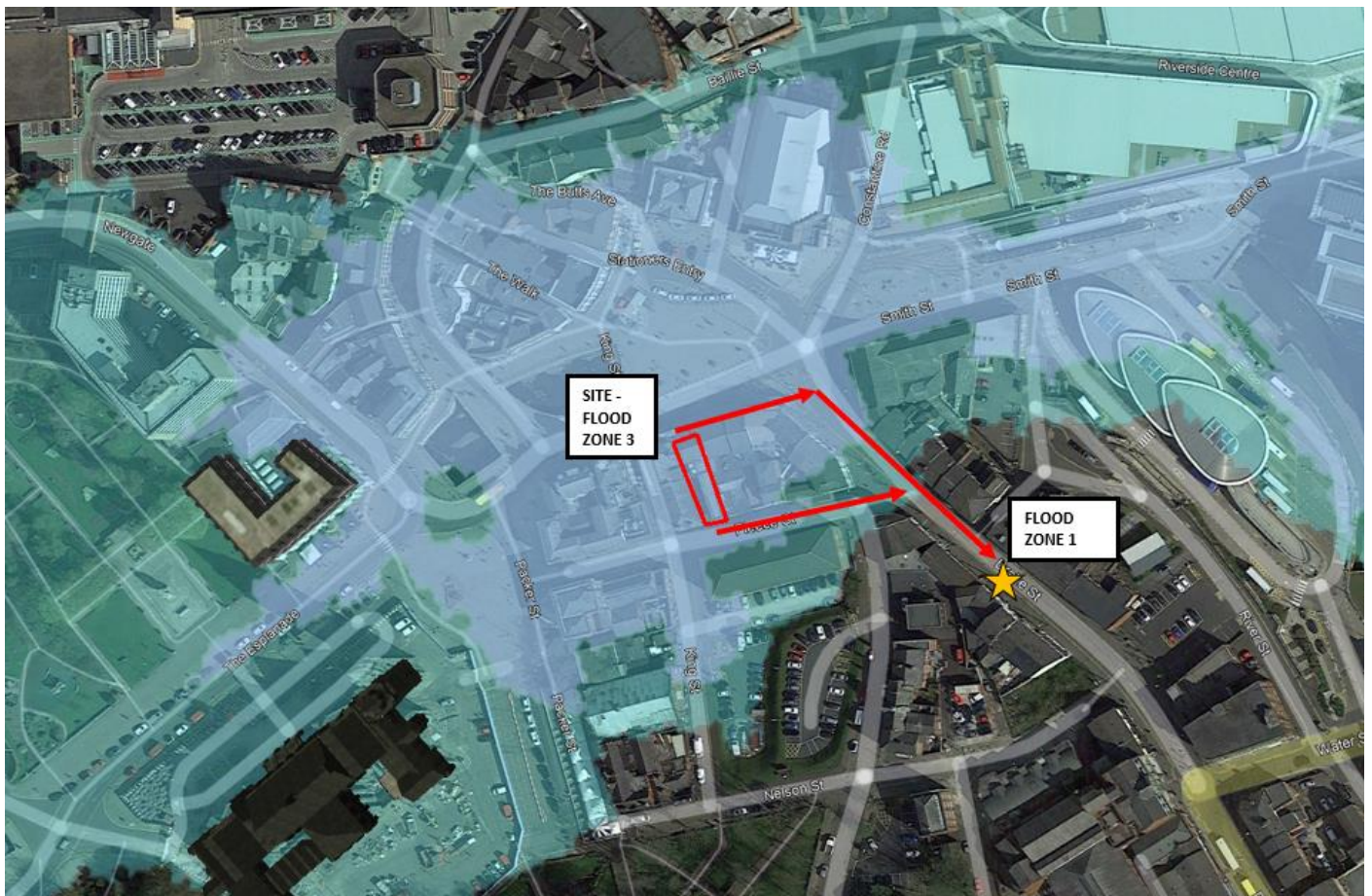
Media such as the Flood Information Service website details maps and current (up-to-date) area specific advice for all areas of England, including the type of flooding and flood alert/warning level in force for those areas. Other websites such as the Met Office have their own flood alert service. TV & radio news channels give warnings.

2.3 Section 6. Safe Access and Escape

In flood risk areas, safe access and egress from new developments should be in accordance with the Adept EP guidance, and that of the referenced background documentation Defra/EA R&D Technical Report FD2320/TR2; and should be in the following order of preference:

- Safe dry route for people and vehicles.
- Safe dry route for people.
- If a dry route for people is not possible, a route for people where the flood hazard (in terms of depth and velocity of flooding) is low and should not cause a risk to people.
- If a dry route for vehicles is not possible, a route for vehicles where the flood hazard (in terms of depth and velocity of flooding) is low to permit access for emergency vehicles. However, the public should not drive vehicles in floodwater.

The Site is within flood zones 2 & 3. Access & egress to/from the Site can be considered as a safe dry route for people by following the evacuation plan below:



The Environment Agency guidance is clear: when a flood alert to PREPARE is issued, preparations should be enacted in case a further flood warning to ACT is given, and business owners should be ready for this scenario.

When a flood warning to ACT is issued, people should follow instructions to evacuate as per the above Emergency Evacuation Route Plan— assuming a flood event could be imminent.

This route provides the simplest path for pedestrians, users with specific needs such as wheelchair users or those with pushchairs as well as vehicular users prior to surface flooding.

HOWEVER - DRIVING OR PEDESTRIAN MOVEMENTS SHOULD NOT BE ATTEMPTED THOROUGH FLOOD WATERS.

2.4 Section 7. Temporary Refuge

Temporary refuge is not likely to be required as the residential areas are above the flood zone.

However, if it is required in an emergency or due to lack of services in the local area (electric or gas etc) then the Environment Agency has specially trained Flood Support Officers who provide information and advice during and after floods. Call Floodline (24-hour service) on 0345 988 1188 or type-talk (for the hard of hearing) on 0345 602 6340.

2.5 Section 8. After the Flood

Clean-up will be required following an extreme storm event, and the following procedures should be followed:

- Contact your insurance company.
- Cleaning and repairing the property.

Specialist advice will likely be required and may need to be undertaken in accordance with insurance company requirements.

Photographs to document damage and record the flood water height.

Flood water can be hazardous and contain sewage, chemicals, and animal waste. Care should be taken with personal protective equipment.

Contact the local council about disposing of large flood damaged items.

- Stay healthy – ensure services are running properly and potable water does not have a change in colour, taste or smell. Ensure food touched by flood water is disposed of.
- Get help via Floodline if required.
- Get emotional support if required from family, friends, GP, or charity organisations.
- Apply for financial aid if required. Apply to the local council for eligibility.

2.6 Section 9. List of Roles

It is the Site owner's responsibility to make any tenants aware of this flood risk assessment and evacuation plan.

It is the tenant's responsibility to sign up for flood warning, and to keep up with current flood advice and warnings.

2.7 Section 10. Plan Upkeep and Awareness

Should any subsequent development or change of use occur at the property, the evacuation plan should be updated with current advice.

3 Conclusion & Residual risks.

No residual risks.

Signed.....



D.S. Slattery BSc (Hons).

T J Booth Associates.

Authorised...

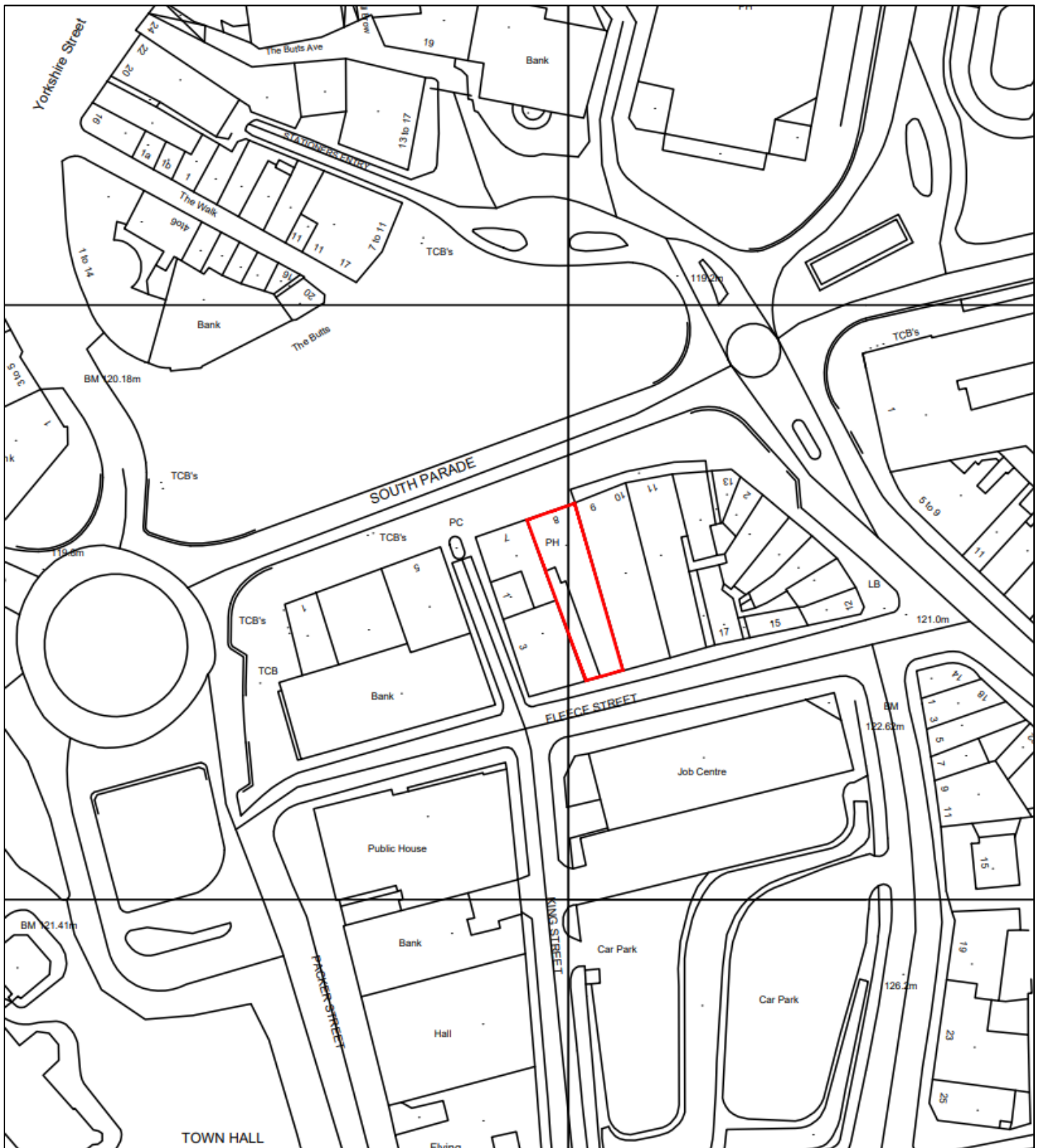


T J Booth BSc (Hons), C. Eng. C. Env. MICE.

T J Booth Associates.

4 Appendix.

4.1 Location Plan.

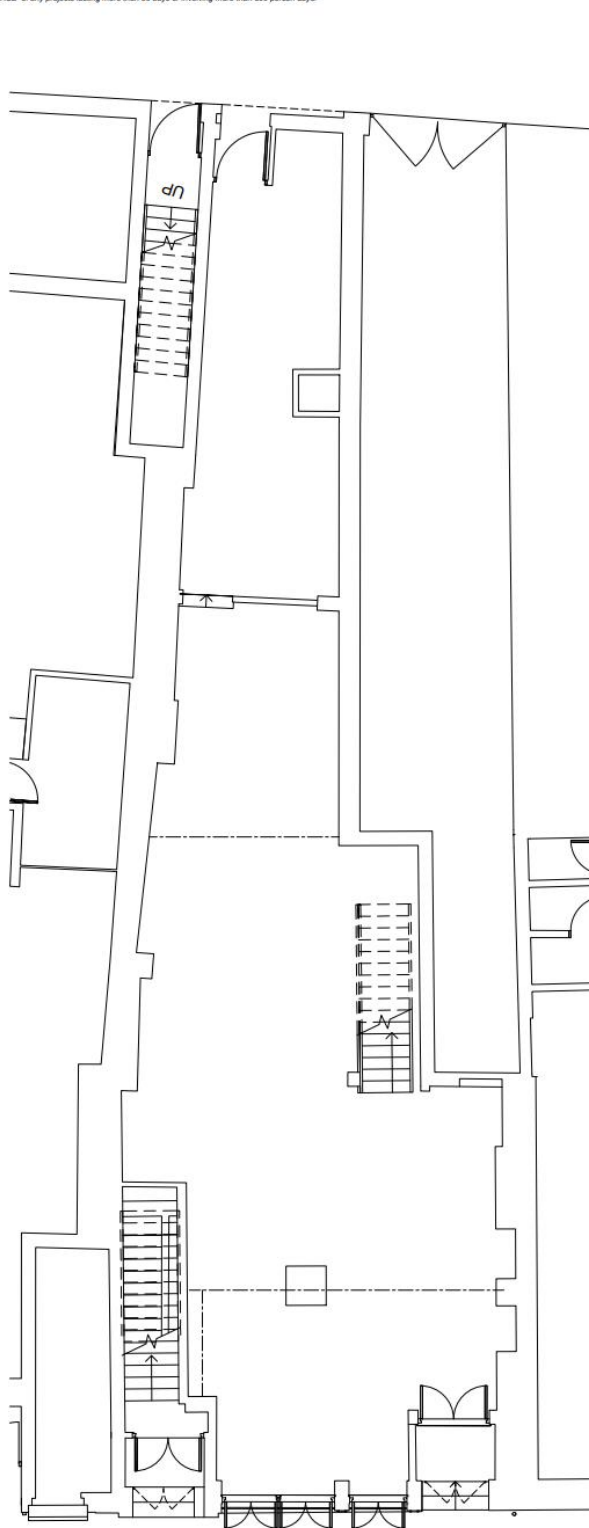


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4.3 Existing Plans.

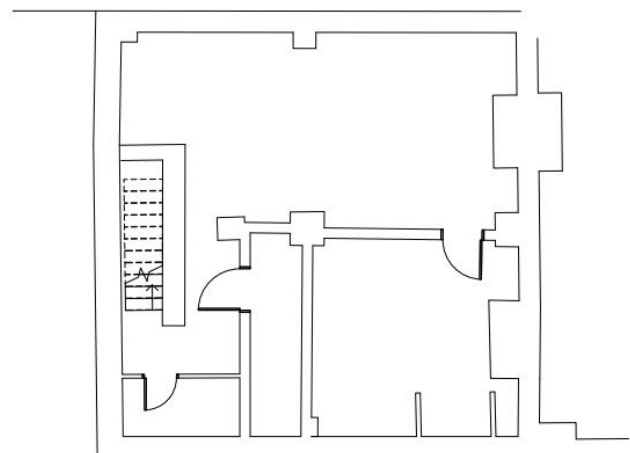
Note: for any project lasting more than six days or involving more than two person days.



GROUND FLOOR PLAN
scale 1:50

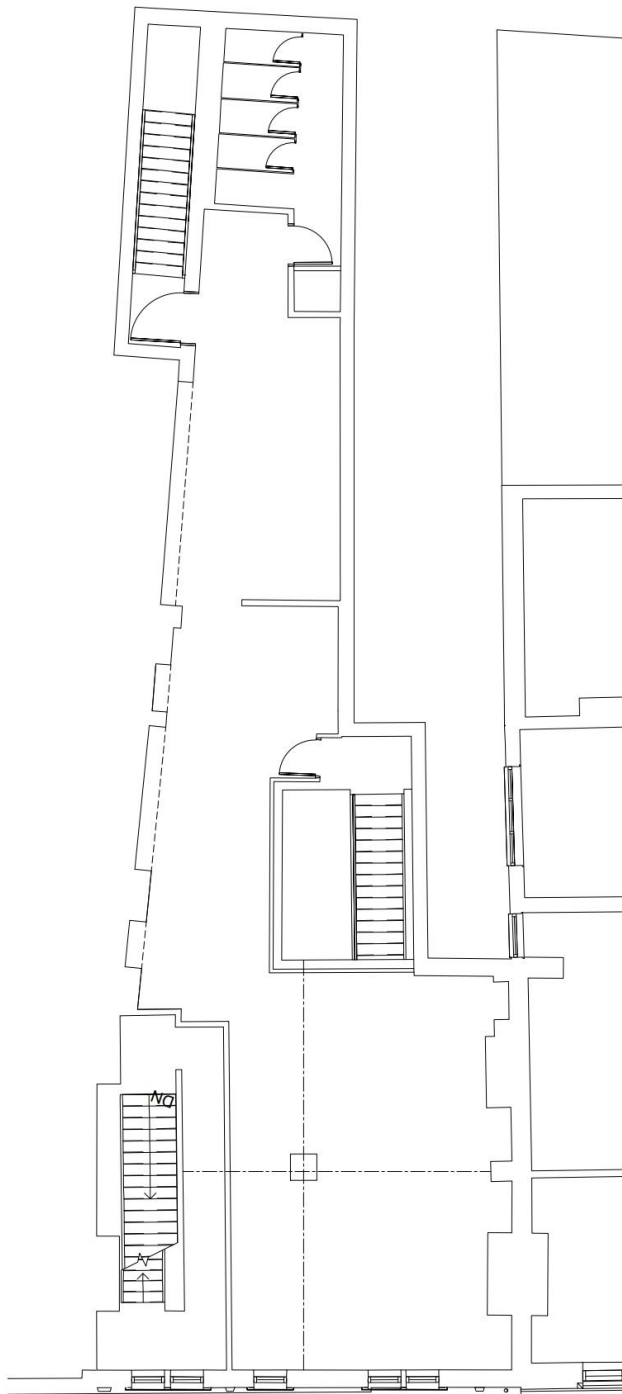


FRONT ELEVATION
scale 1:50

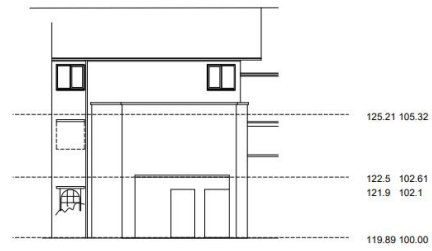


BASEMENT
scale 1:50

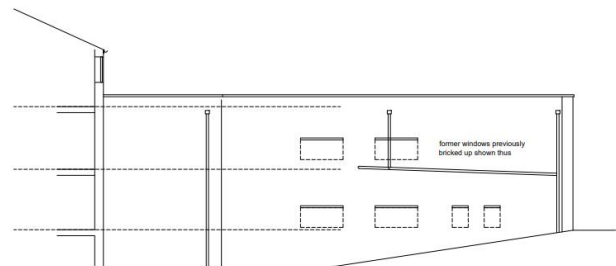
rev	date	description
 AJ COCKER ASSOCIATES CONSULTING BUILDING SURVEYORS New Century House 176 Drake Street Rochdale OL16 1UP Tel: 01706 764880 Fax: 01706 764881 www.ajcockerassociates.co.uk mail@ajcockerassociates.co.uk  RICS the mark of property professionalism worldwide		
Project: 8 South Parade Rochdale EXISTING LAYOUTS		
Client: KK Security		
scale: as noted @ A1 date: October 2023 drawn: IS		Dwg. Nr. K234-01



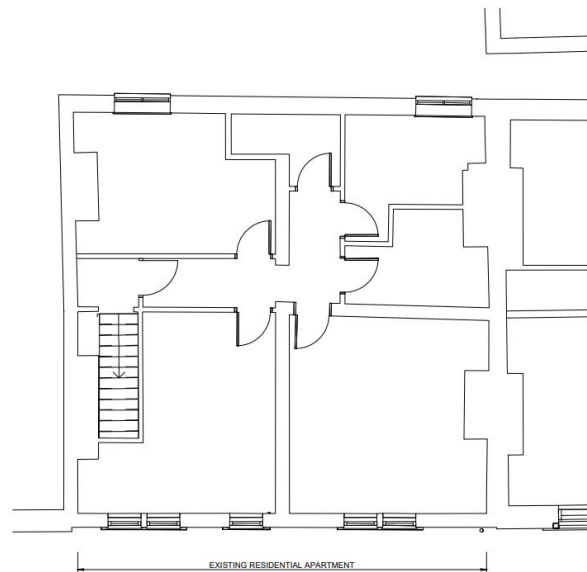
FIRST FLOOR PLAN
scale 1:50



REAR ELEVATION
scale 1:100



RETURN ELEVATION
scale 1:100



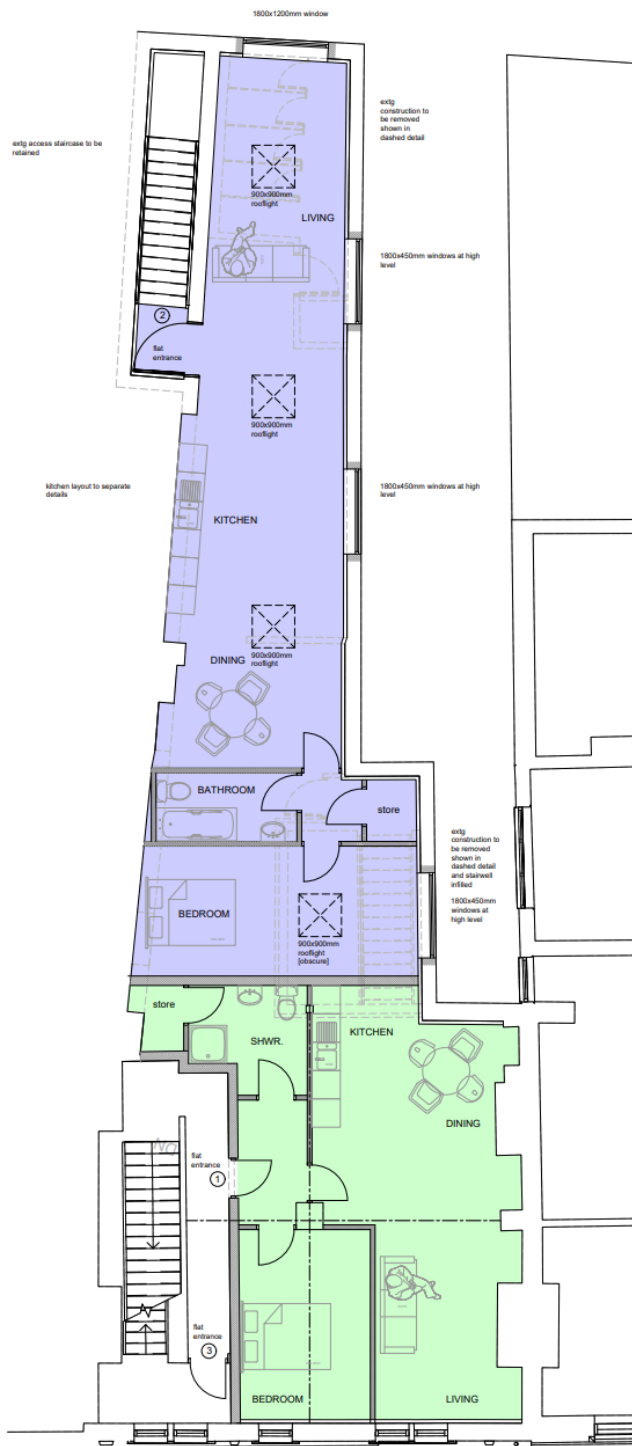
SECOND FLOOR PLAN
scale 1:50

 AJ COCKER ASSOCIATES CHARTERED BUILDING SURVEYORS	New Century House 176 Drake Street Rochdale OL16 1UP Tel: 01706 764880 Fax: 01706 764881 www.ajcockerassociates.co.uk mail@ajcockerassociates.co.uk	 RICS the mark of property professionalism worldwide
Project: 8 South Parade Rochdale EXISTING LAYOUTS		scale: as noted @ A1 date: October 2023 drawn: IS
Client: KK Security		Dwg. Nr: K234-02

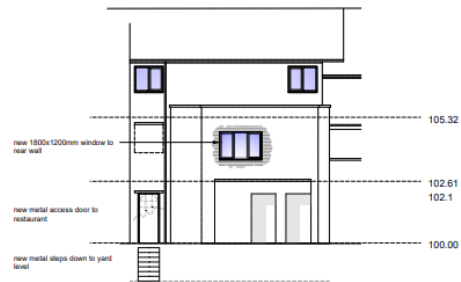
4.4 Proposed Plans.



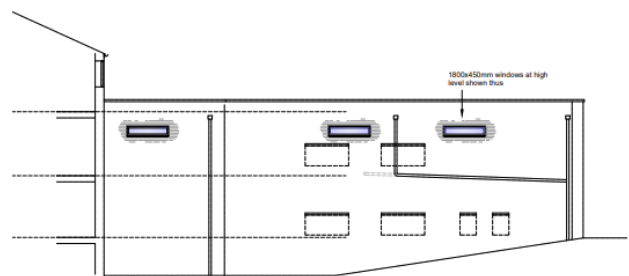
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CDM: Clients and contractors must fulfil their duties under the CDM regulations 2015. The client is required to notify the HSE of any projects lasting more than 30 days or involving more than 500 person days.



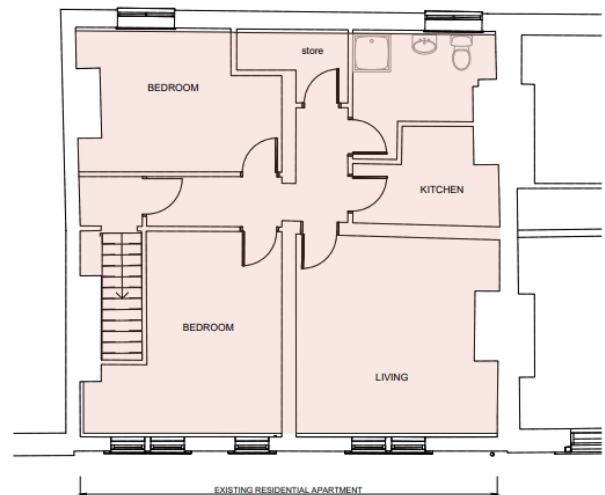
FIRST FLOOR PLAN
scale 1-50



REAR ELEVATION
scale 1-100



RETURN ELEVATION
scale 1-100

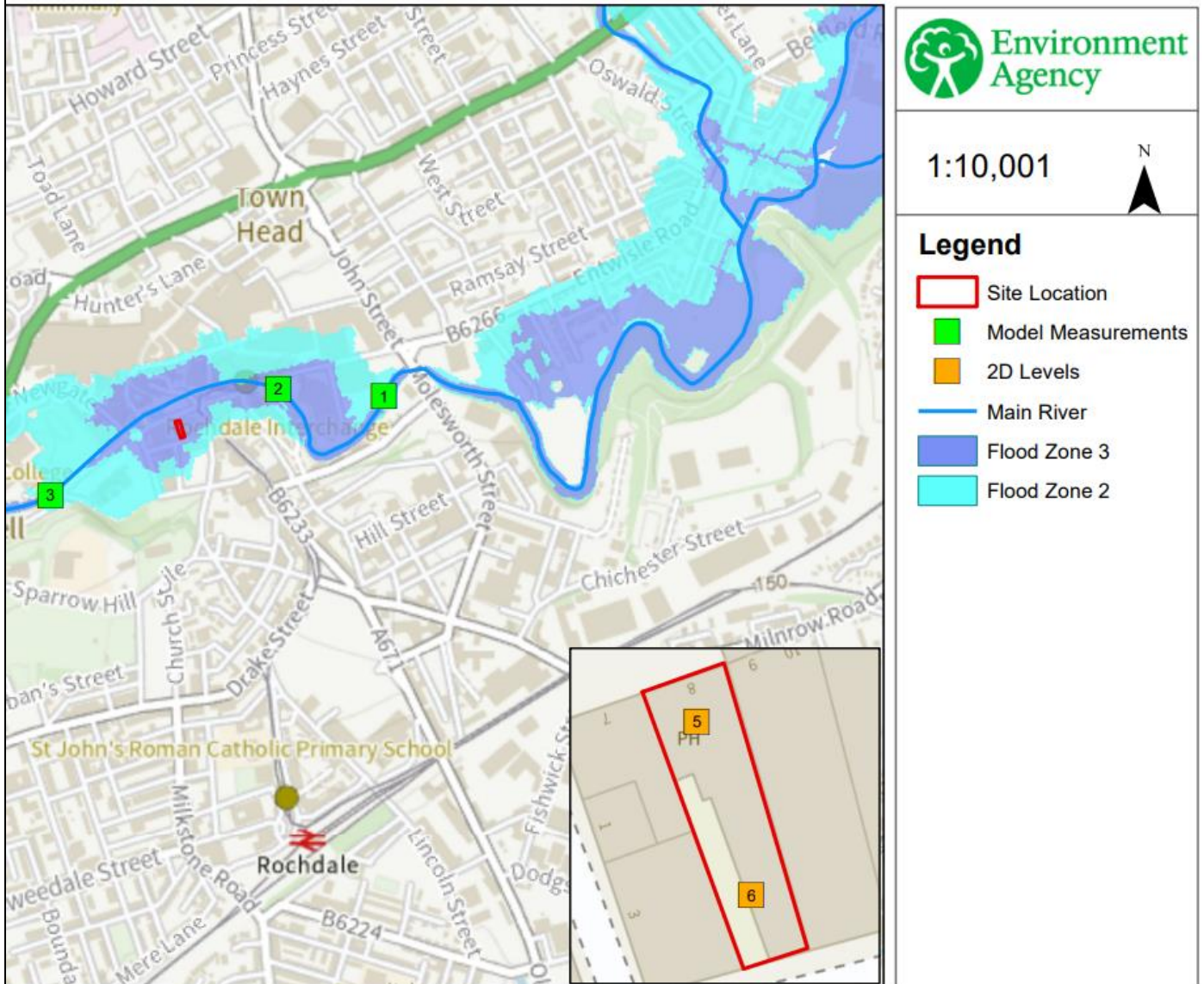


SECOND FLOOR PLAN
scale 1-50

no	date	description
 AJ COCKER ASSOCIATES CHARTERED BUILDING SURVEYORS		New Century House 176 Drake Street Rochdale OL16 1UP Tel: 01706 764880 Fax: 01706 764881 www.ajcockerassociates.co.uk mail@ajcockerassociates.co.uk
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Project: 8 South Parade Rochdale EXISTING LAYOUTS		scale: as noted @ A1 date: October 2023 drawn: IS
Client: KK Security		Dwg. Nr. K234-04

4.5 Environment Agency Flood Zone Map (Planning).

Map Centred on South Parade, Rochdale, OL16 1LR. Created 20/11/2023 [GMMC334996SW]

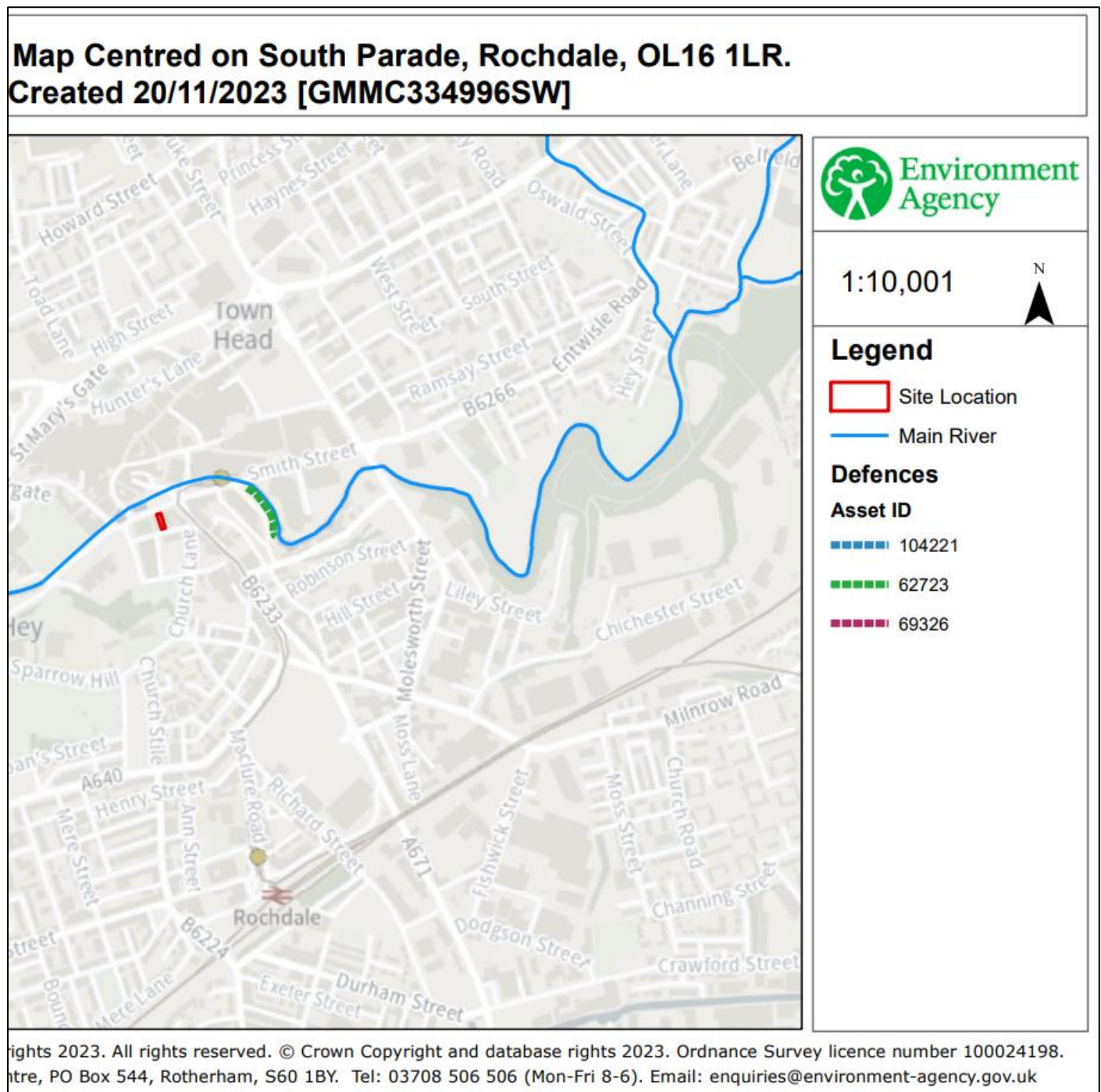


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ntre, PO Box 544, Rotherham, S60 1BY. Tel: 03708 506 506 (Mon-Fri 8-6). Email: enquiries@environment-agency.gov.uk

4.6 Environment Agency Flood Flow & Stage Data Table.

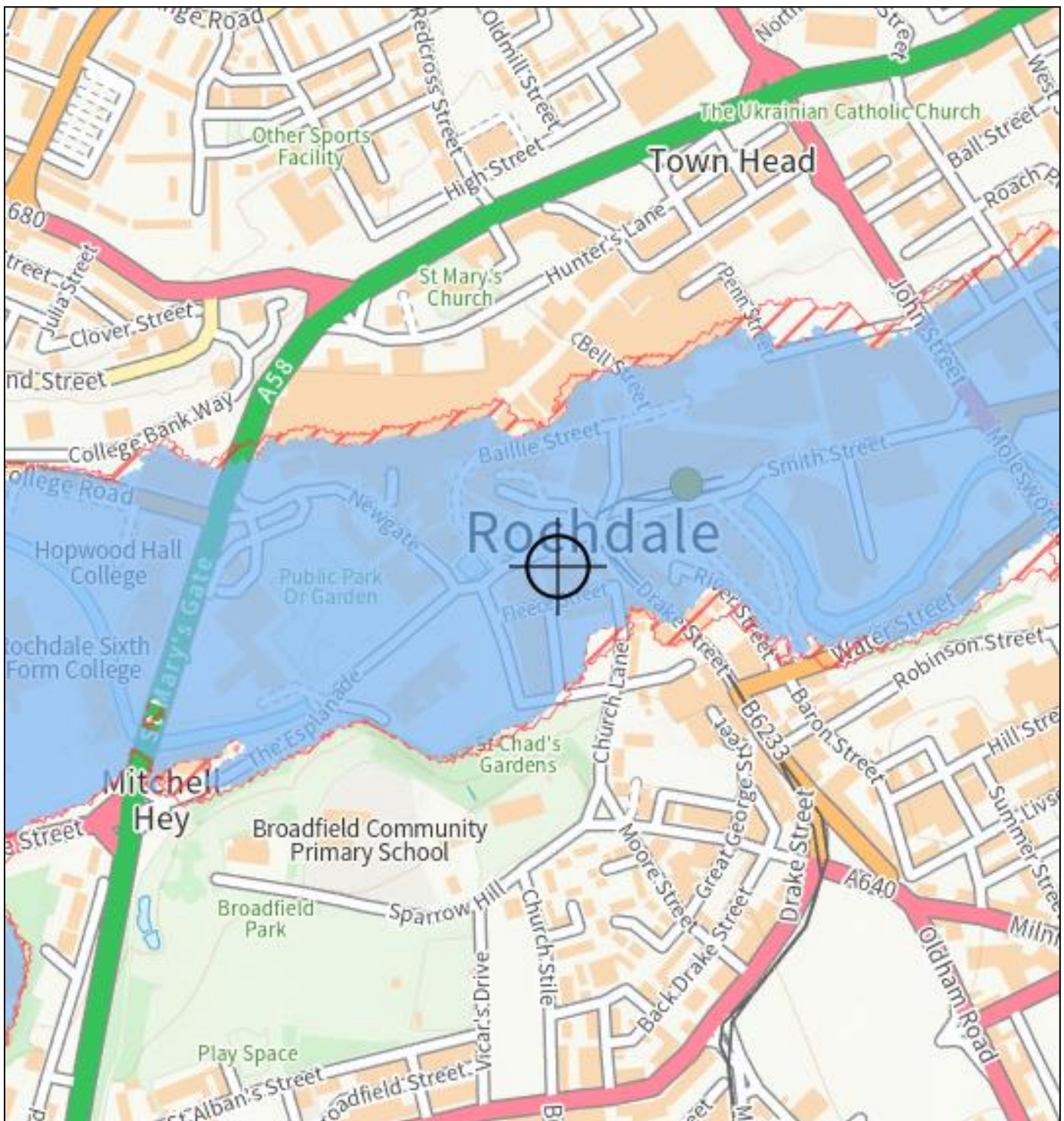
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4.7 Environment Agency Flood Defence Map.



4.8 Environment Agency Surface Water Flood Map (Medium Risk Outline Depth 30-100yr).

4.9 Environment Agency Surface Water Flood Map (Low Risk outline Depth 100-1000yr).

4.10 Environment Agency Reservoir Flood Map.**4.11 United Utilities Sewer Plans.**

N/A – not required.

4.12 NPPF Planning Practice Guidance Table 1.

Table 1: Flood Zones

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's [Flood Map for Planning \(Rivers and Sea\)](#), available on the Environment Agency's web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

4.13 NPPF Planning Practice Guidance Table 2.

More vulnerable

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

4.14 NPPF Planning Practice Guidance Table 3.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	✗	✗	✗	✓*

Key:

✓ Development is appropriate

✗ Development should not be permitted.

Notes to table 3:

- This table does not show the application of the **Sequential Test** which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and **Exception Tests** do not need to be applied to **minor developments** and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

4.15 Environment Agency Climate Change Allowances.

Table 1 peak river flow allowances by river basin district (use 1961 to 1990 baseline)

River basin district	Allowance category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
North West	Upper end	20%	35%	70%
	Higher central	20%	30%	35%
	Central	15%	25%	30%

In flood zone 2

- essential infrastructure – use the higher central and upper end to assess a range of allowances
- highly vulnerable – use the higher central and upper end to assess a range of allowances
- more vulnerable – use the central and higher central to assess a range of allowances
- less vulnerable – use the central allowance
- water compatible – use none of the allowances

In flood zone 3a

- essential infrastructure – use the upper end allowance
- highly vulnerable – development should not be permitted
- more vulnerable – use the higher central and upper end to assess a range of allowances
- less vulnerable – use the central and higher central to assess a range of allowances
- water compatible – use the central allowance