Flood Risk Assessment for Planning

August 2025

Prepared for:

Mr Akhtar Nafees

Location:

171

Great Ducie Street

Manchester

M3 1FF

Our reference:

95620-Jagafa-GreatDucieSt



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Document Issue Record

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Location:	171 Great Ducie Street, Manchester, M3 1FF
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1. Key Facts

Flood Risk Posed:

- Site is located within Flood Zone 2 and partially within Flood Zone 3 according to the EA Flood Map for planning (Rivers and the Sea). Risk would appear to be fluvial and originates from the River Irwell located approximately 210m south west of the site boundary.
- The information provided was taken from the Lower River Irwell, completed in 2018 by JBA.
- Comparison of the modelled undefended flood level for the 1:100 year plus 35% climate change event (28.56mAOD) with approximate topographic site levels (27.60mAOD to 28.00mAOD) shows the site to be up to 0.96m below the flood level for this event.
- No Flood Storage Areas located in close proximity to the site.
- The site is defended by EA maintained flood defences.
- The EA Risk of Flooding from Surface Water Map suggests that there is “Very Low” to “Low” chance on site.
- The site is located within a CDA.
- According to the 2011 Level 2 Manchester City, Salford City and Trafford Councils SFRA, the site lies within an area at risk of groundwater flooding, The EA advise that flooding from groundwater is unlikely in this area.
- Risk to the site from sewer surcharge and reservoir flooding would appear to be very low. No information has been provided to suggest that the site has flooded historically from these sources.
- The EA hold records of historic flooding having affected the site in November 1866 and September 1946, attributed to the main river exceeding its channel capacity (no raised defences).

Flood Risk Mitigation:

- The proposed application is for the change of use from first and second floor offices to 2 residential apartments .
- There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors.
- Post development, the site will become “more vulnerable” (residential).
- Flood proofing of the development will be incorporated where appropriate.
- There will be no loss of fluvial floodplain storage.
- Due to the nature of development, a full Surface Water Drainage Strategy is not required at this stage of planning.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.
- Safe escape will be provided by a formal flood warning and evacuation plan which will be prepared in liaison with the Council’s Emergency Planners and tied in with the existing emergency plans for the area.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

2. Introduction

2.1. Unda Consulting Limited have been appointed by Mr Akhtar Nafees (hereinafter referred to as "the applicant") to undertake a Flood Risk Assessment for the proposed development at 171 Great Ducie Street, Manchester, M3 1FF (hereinafter referred to as "the site"). The purpose of the study is to support a planning application for the proposed development.

2.2. This report presents our findings based on the readily available information and data relating to the site and surrounding drainage area.

2.3. The site appears to be located within Flood Zones 2 and 3 as defined by the Environment Agency (EA) on their Flood Map for Planning. Under the National Planning Policy Framework (NPPF), a FRA is required if a proposed development:

- Includes building or engineering works in Flood Zone 2 or 3;
- Includes building or engineering works on land classified by the Environment Agency as having critical drainage problem;
- Changes the use of land or buildings in a location at risk of flooding from rivers or the sea, or with critical drainage problems;
- Changes the use of land or buildings in a way that increases the flood vulnerability of the development where it may be subject to other sources of flooding;
- Is larger than 1 hectare.

2.4. The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development's lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.

- Whether the proposed development is likely to be affected by current or future flooding from any source;
- Whether it will increase flood risk elsewhere;
- Whether the measures proposed to deal with these effects and risks are appropriate.

3. Existing Site

3.1. The site comprises a two storey commercial property.

3.2. The site is understood to have lawful planning permission for commercial use.

3.3. The surrounding area is characterised by commercial properties.

3.4. Existing plans are provided in the report Appendix.



Figure 1: Aerial imagery of site and surrounding area (Source: Google Earth)



Figure 2: Site location plan (Source: Mason and Marlowe)



Figure 3: Existing first and second floor plan (Source: Mason and Marlowe)

Site Topography:

3.5. Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LiDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LiDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +/-5cm to 15cm with

spatial resolutions ranging from 25cm to 2 metres. This dataset is derived from a combination of the full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital Surface Model (DSM) produced from the signal returned to the LiDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model. 1.0m horizontal resolution DTM LiDAR data has been used for the purposes of this study.

3.6. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 27.60mAOD to 28.00mAOD.

Existing Ground Conditions:

3.7. The 1:50,000 BGS map shows that the bedrock underlying the site is Chester formation- sandstone.

3.8. The BGS mapping shows superficial deposits of Alluvium – clay, silt, sand and gravel underlying the site.

3.9. The soil type taken from the UKSO Soil Map Viewer, shows the site to be located upon relatively deep soils of glaciofluvial deposit parent material with a soil texture of sand to sandy loam.

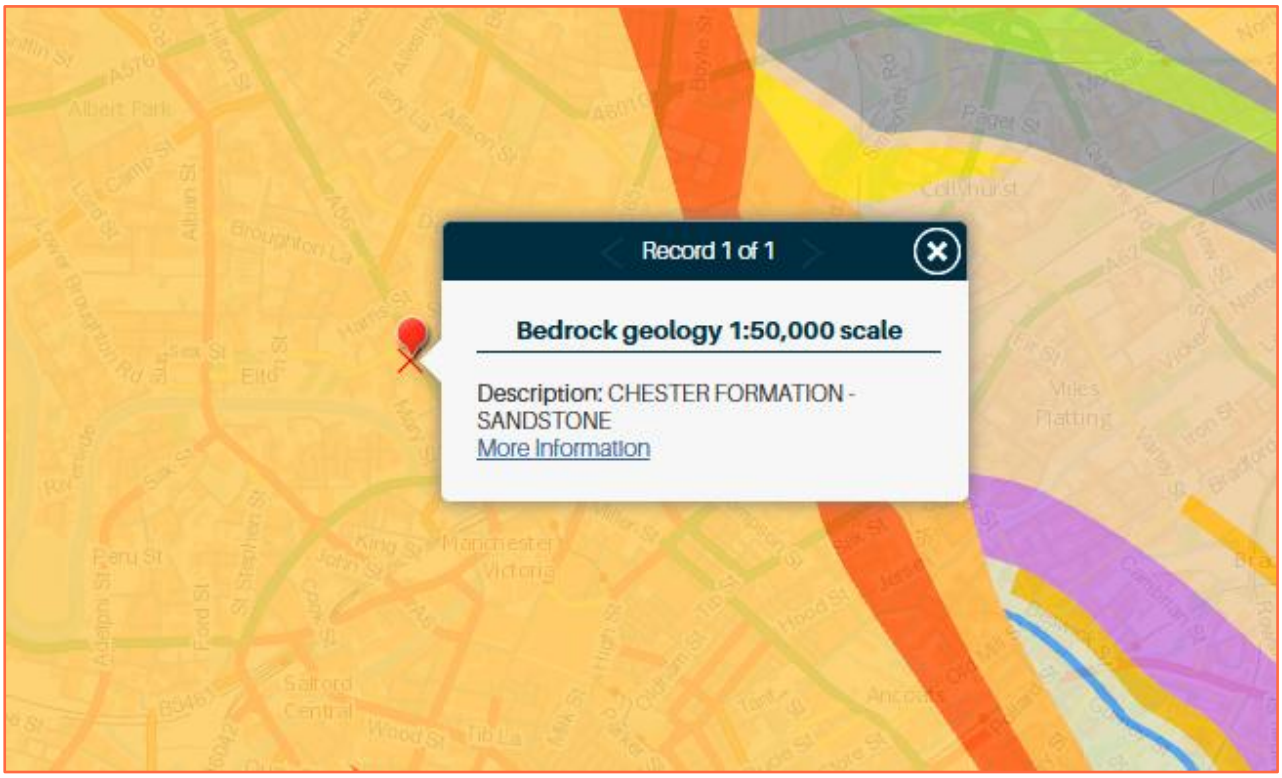


Figure 3: BGS Bedrock Geology (Source: BGS)



Figure 4: BGS superficial deposits (Source: BGS)

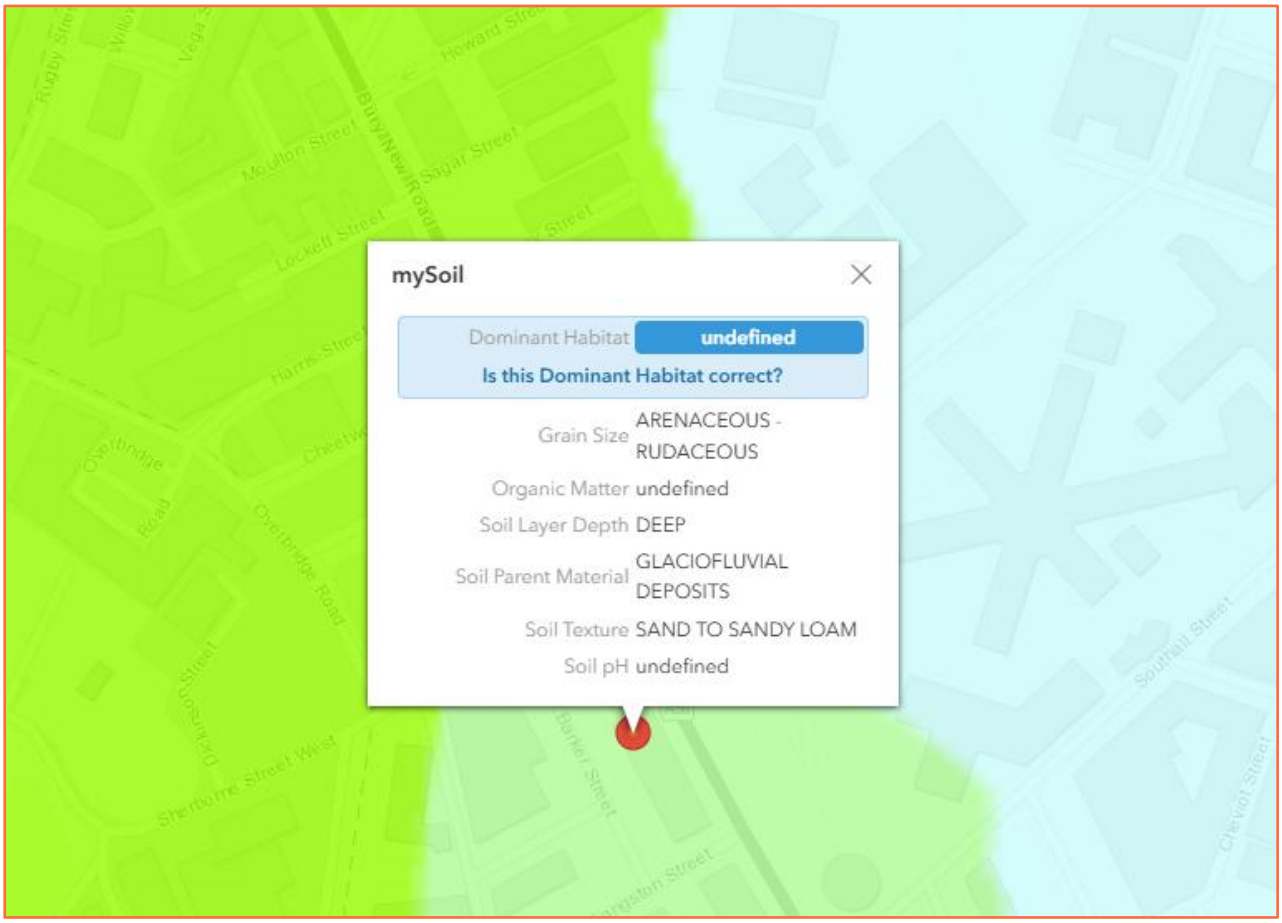


Figure 5: Soil map (Source: UK Soils, BGS)

Nearby Watercourses / Drainage Features:

3.10. The nearest watercourse to the site is the River Irwell located approximately 210m south west.

4. Development Proposal

4.1. The proposed application is for the change of use from first and second floor offices to 2 residential apartments.

4.2. There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors.

4.3. Proposed plans are provided in the report Appendix.

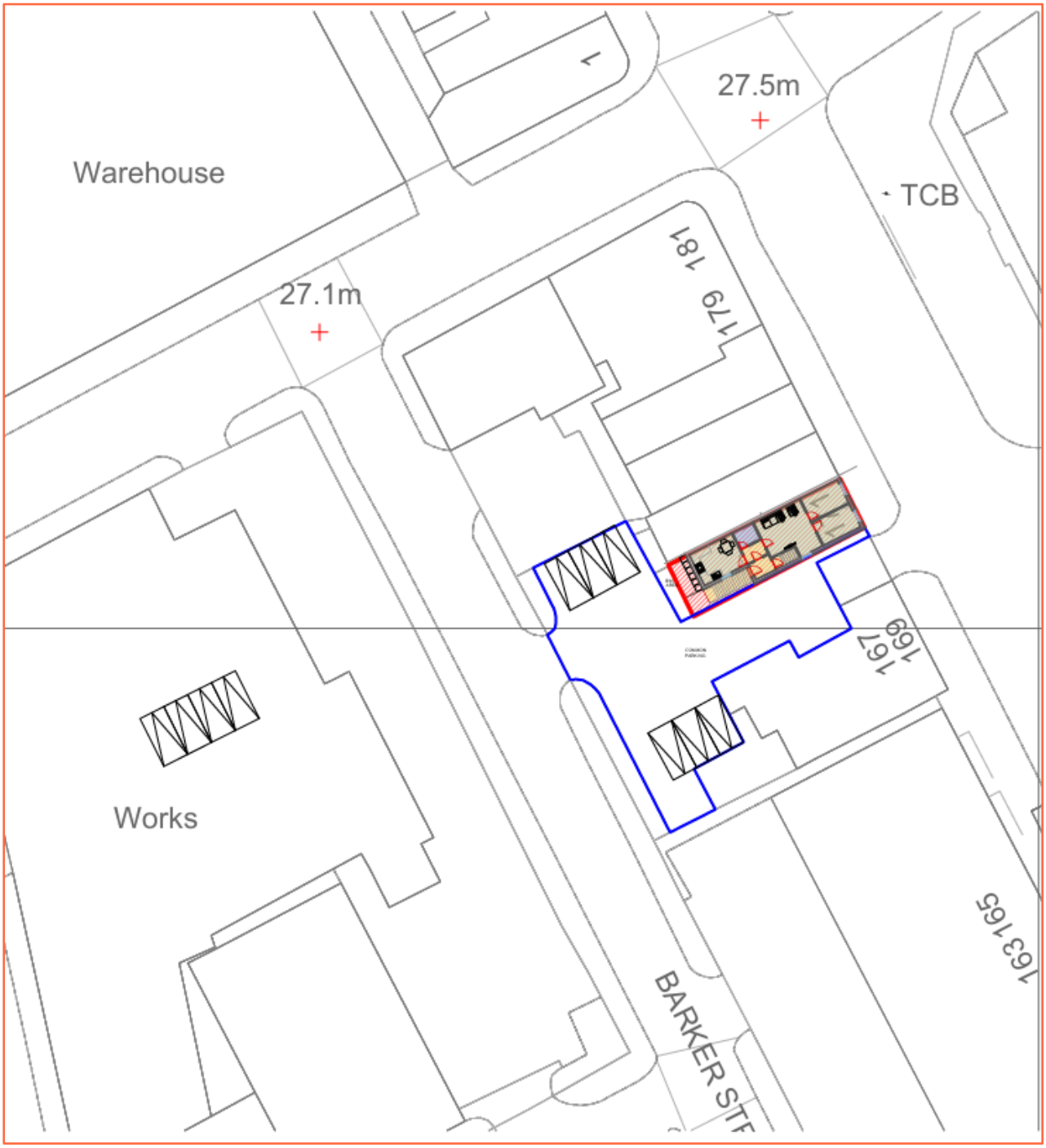


Figure 6: Proposed site plan (Source: Mason and Marlowe)



Figure 7: Proposed first and second floor plan (Source: Mason and Marlowe)

5. Flood Risk Assessment

EA Flood Zones:

5.1. Within planning, 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 website.

Flood Zone	Definition
Zone 1 **Low Probability**	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 **Medium Probability**	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a **High Probability**	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% 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 from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). 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)

Table 1: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.2. The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.



Figure 8: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

5.3. The site is located within Flood Zone 2 (Medium Probability), defined as 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 and partially within Flood Zone 3 (High Probability), defined as 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.

5.4. The risk would appear to be fluvial and originates from the River Irwell located approximately 210m south west of the site boundary.

Fluvial (River Irwell):

5.5. The River Irwell is a tributary of the River Mersey in north west England. From its source to the confluence with the River Mersey the Irwell is about 63 km long. Rising on the moors above Cliviger, it flows south through Bacup, Rawtenstall, Ramsbottom and Bury before merging with the River Roch near Radcliffe. Turning west, it joins the River Croal near Farnworth before turning southeast through Kearsley, Clifton and the Agecroft area of Pendlebury. It then meanders around Lower Kersal and Lower Broughton. It bisects Salford and Manchester, joining the rivers Irk and Medlock, and then turns west toward Irlam, as part of the Manchester Ship Canal. Its course ends just east of Irlam, where it empties into the Mersey.

5.6. The River Irwell is classified as a Main River by the Environment Agency.

Detailed Flood Modelling:

5.7. Modelled flood levels and extents have been requested from the Environment Agency.

5.8. The information provided was taken from the Lower River Irwell, completed in 2018 by JBA.

5.9. Both undefended and defended modelled flood levels have been provided for a variety of return periods.

5.10. The development is classified as “More Vulnerable” and is located within Flood Zones 2 and 3. The Flood Risk Assessments: climate change allowances guidance states that for “More Vulnerable” development in Flood Zones 2 and 3, the Central allowance should be used. The site falls within the Irwell Management Catchment, where Central allowance is a 35% increase in flows.

5.11. The data provided by the EA includes climate change allowances of 30%, 35% and 70%. Therefore, the most suitable allowance is the 35% increase in river flows, which will be used for this assessment.

5.12. LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from approximately 27.60mAOD to 28.00mAOD.

Return Period	Defended (mAOD)	Undefended (mAOD)
1:25 year	N/A	N/A
1:100 year	N/A	27.49
1:100 year + 35%	27.95	28.56
1:1000 year	27.95	30.60

Table 2: Maximum modelled flood levels on site (Source: Lower River Irwell, 2018)

5.13. Comparison of the modelled defended flood level for the 1:100 year plus 35% climate change event (27.95mAOD) with approximate topographic site levels (27.60mAOD to 28.00mAOD) shows the site to be up to 0.35m below and 0.05m above the flood level for this event.

5.14. Comparison of the modelled undefended flood level for the 1:100 year plus 35% climate change event (28.56mAOD) with approximate topographic site levels (27.60mAOD to 28.00mAOD) shows the site to be up to 0.96m below the flood level for this event.

5.15. The site is currently defended by EA flood defences and as such, defended flood levels will be utilised within this assessment.

Flood Storage Areas:

5.16. Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.

5.17. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

Flood Defences:

5.18. Flood defences are typically raised structures that alter natural flow patterns and prevent floodwater from entering property in times of flooding. They are generally categorised as either 'formal' or 'informal' defences. A 'formal' flood defence is a structure that was built specifically for the purpose of flood defence, and is maintained by its respective owner, which could be the EA, Local Authority, or an individual. An 'informal' flood defence is a structure that has not been specifically built to retain floodwater, and is not maintained for this specific purpose, but may afford some protection against flooding.

5.19. Asset inspections are undertaken on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings. It is unclear when both assets were last inspected.

5.20. Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.

5.21. The River Irwell is flanked by natural high ground and flood wall in the area of the site. These have a 75 year standard of protection and current condition of 3 - "Fair". Both assets are owned and maintained by the Environment Agency.

Residual Risk (breach or overtopping of flood defences):

5.22. Breaching of flood defences can cause rapid inundation of areas behind flood defences as flow in the river channel discharges through the breach. A breach can occur with little or no warning, although they are much more likely to occur with extreme river levels or tides when the stresses on flood defences are highest. Flood water flowing through a breach will normally discharge at a high velocity, rapidly filling up the areas behind the defences, resulting in significant damage to buildings and a high risk of loss of life. Breaches are most likely to occur in soft defences such as earth embankments although poorly maintained hard defences can also be a potential source of breach.

5.23. Overtopping of flood defences occurs when water levels exceed the protection level of raised flood defences. The worst case occurs when the fluvial or tidal levels exceed the defence level as this can lead to prolonged flooding. Less severe overtopping can occur when flood levels are below defence levels, but wave action causes cyclic overtopping, with intermittent discharge over the crest level of the defence. Flood defences are commonly designed with a freeboard to provide protection against overtopping from waves. The risk from overtopping due to exceedance of the flood defence level is much more significant than the risk posed by wave overtopping. Exceedance of the flood defence level can lead to prolonged and rapid flooding with properties immediately behind the defences at highest risk.

5.24. Flood defences act to defend the site from direct inundation, but there is residual risk from each (failure) and overtopping (exceedance) of flood defences.

Tidal Flooding:

5.25. Due to the site topography and distance to the nearest coast/tidal watercourse, the risk of tidal flooding is considered to be very low.

Pluvial (Surface Water):

5.26. Pluvial (surface water) flooding occurs when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

5.27. The mapping below shows the Risk of Flooding from Surface Water (RoFSW). Please note that the EA do not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation. This information tells you the flood risk of the land around a building, not the building itself.

5.28. The RoFSW products are an assessment of where surface water flooding may occur.

5.29. The mapping shows the following likelihood categories, for the present day risk of flooding from surface water, and the climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk.

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

5.30. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and Central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.

5.31. The EA Risk of Flooding from Surface Water Map suggests that the site is located within an area at “Very Low” to “Low” chance of flooding from surface water.

5.32. The EA Risk of Flooding from Surface Water mapping shows the site to be at “Very Low” to “Low” chance of flooding between 2040 and 2060.

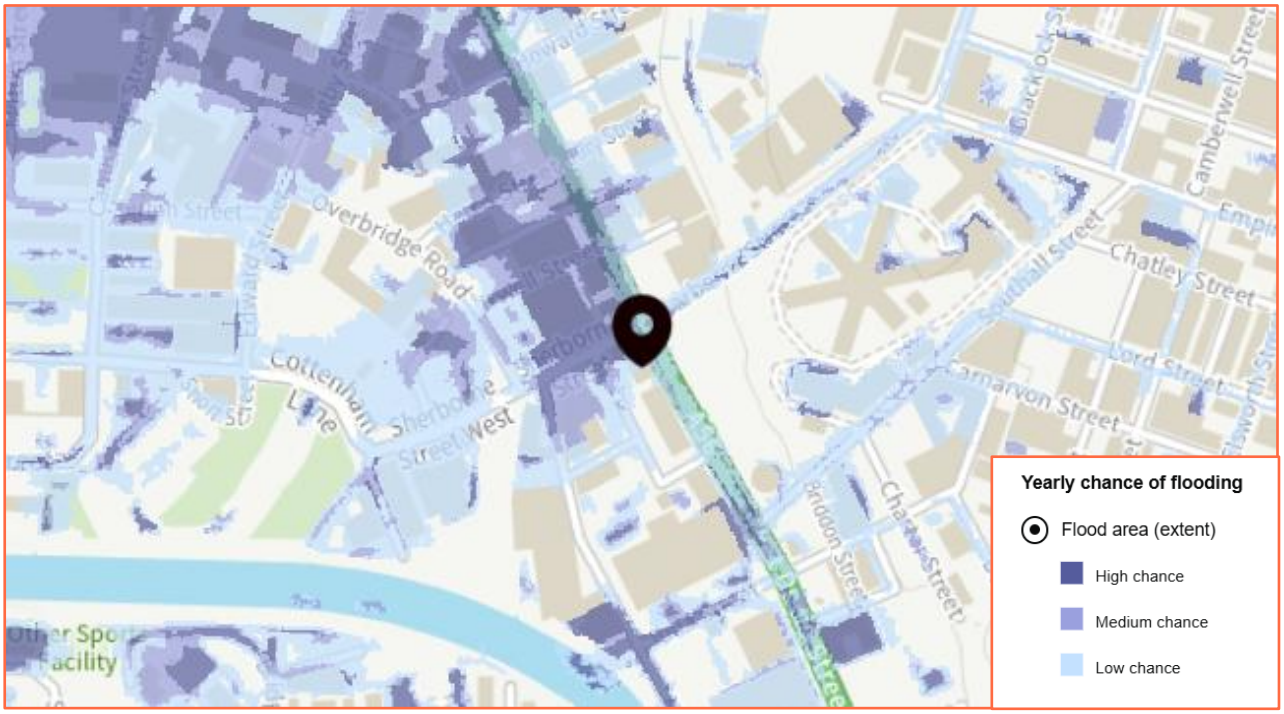


Figure 9: Extract from EA Risk of Flooding from Surface Water mapping – present day (Source: EA)

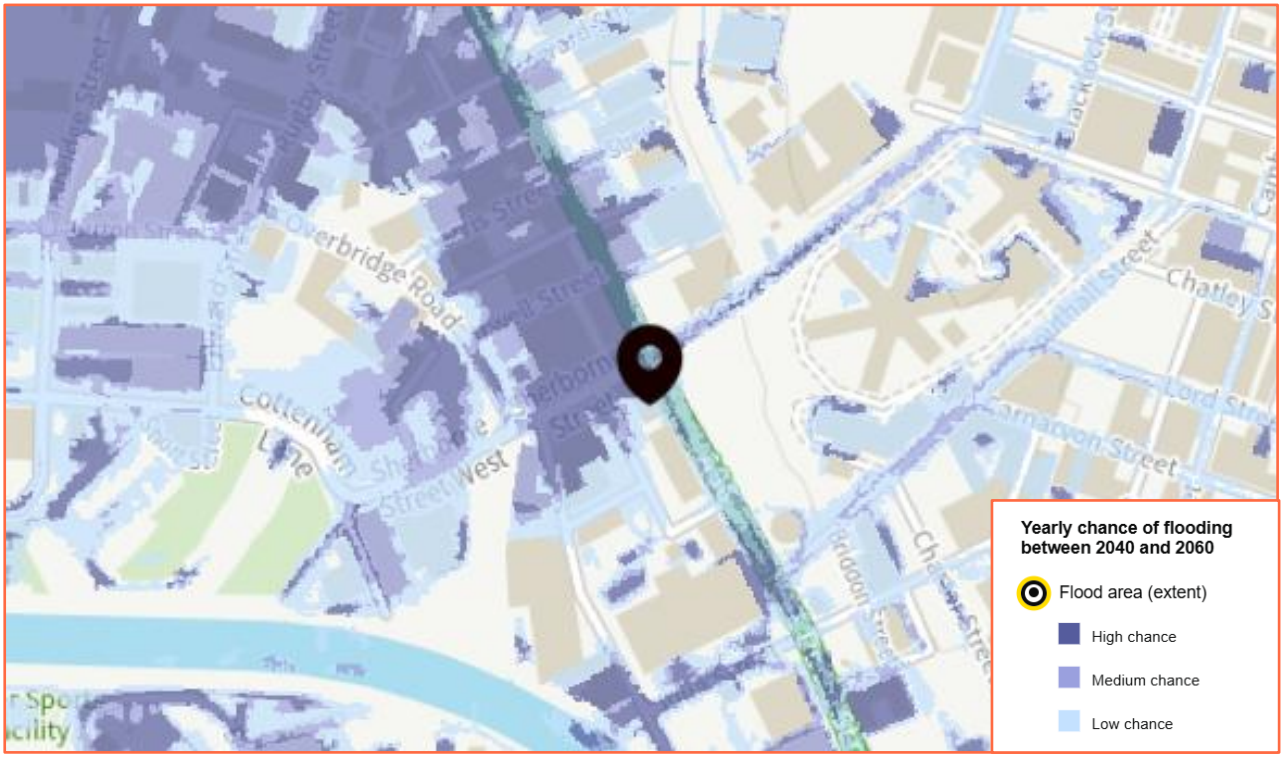


Figure 10: Extract from Environment Agency RoFSW map – between 2040 and 2060 (Source: EA)

Critical Drainage Areas:

5.33. A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF). In these locations, there is a need for surface water to be managed to a higher standard than normal to ensure any new development will contribute to a reduction in flooding risks in line with NPPF. These higher standards are determined by the Environment Agency.

5.34. According to the 2011 Level 2 Manchester City, Salford City and Trafford Councils SFRA, 5 CDA's have currently been identified.

5.35. The site is located within the Conurbation Core CDA.

Groundwater:

5.36. Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

5.37. Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

5.38. According to the 2011 Level 2 Manchester City, Salford City and Trafford Councils SFRA Council, the site lies within an area at risk of groundwater flooding,

5.39. The EA advise that flooding from groundwater is unlikely in this area.

5.40. No information has been provided to suggest that the site has flooded historically due to groundwater.

Sewer:

5.41. Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

5.42. All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

5.43. No information has been presented to suggest that the site itself has been affected by sewer flooding.

Other Sources:

5.44. Reservoirs with an impounded volume in excess of 25,000 cubic metres (measured above natural ground level) are governed by the Reservoirs Act and are listed on a register held by the Environment Agency. The site is located within the maximum inundation extent on the EA Reservoir Inundation Map when river levels are normal. The EA also advise on their website that reservoir flooding is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. In accordance with the Reservoirs Act 1975 in England, these inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating

to the potential for fluvial / tidal flooding to occur. The Environment Agency Reservoir Flood Map illustrated below, illustrates the largest area that might be flooded if the storage area were to fail and release the water it is designed to hold during a flood event.

5.45. Records of flooding from reservoirs and canals are erratic as there is no requirement for the Environment Agency to provide information on historic flooding from canals and raised reservoirs on plans. In particular, the NPPF does not require flood risk from canals and raised reservoirs to be shown on the Environment Agency flood zones.

5.46. Overflows from canals can be common as they are often fed by land drainage, and often do not have controlled overflow spillways. Occasionally, major bank breaches also occur, leading to rapid and deep flooding of adjacent land.

5.47. No information has been provided to suggest that the site is susceptible to flooding from other sources.



Figure 11: Extract from Environment Agency Reservoir Flood Map (Source: EA)

Historical Flood Events:

5.48. The EA hold records of historic flood events from rivers and the sea. The EA map flooding to land, not individual properties. Their historic flood event record outlines are an indication of the geographical extent of an observed flood event. Their historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.

5.49. The EA hold records of historic flooding having affected the site in November 1866 and September 1946, attributed to the main river exceeding its channel capacity (no raised defences).

5.50. The EA historical flood records are not comprehensive, and they advise that further enquiries locally are made with specific reference to flooding at the location.

6. Flood Risk Management

Vulnerability to Flooding:

6.1. The NPPF classifies property usage by vulnerability to flooding.

6.2. The existing site usage is classified as “less vulnerable” (offices).

6.3. Post development, the site will become “more vulnerable” (residential), as the application is for the change of use from first and second floor offices to 2 residential apartments.

6.4. There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors.

6.5. Accordingly, it is considered that the vulnerability of the site as a whole will increase post development.

EA Standing Advice for Minor Extensions:

6.6. EA Standing Advice guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250m^2. It should not be applied if an additional dwelling is being created, e.g. a self-contained annexe or additional commercial unit.

6.7. The proposed application is for the change of use from first and second floor offices to 2 residential apartments.

Physical Design Measures:

6.8. The site is located within Flood Zones 2 and 3 according to the EA Flood Map for planning (Rivers and the Sea).

6.9. The EA Risk of Flooding from Surface Water Map suggests that risk at the site ranges from “Very Low” to “Low” risk.

6.10. Bedrooms are proposed on the first and second floor, above the design defended 100 year + 35% climate change flood level (27.95mAOD).

6.11. To help protect against flooding during extreme events, the applicant has agreed to implement flood resistant design measures into the development where practical and feasible, in consultation with the Local Authority building control department. These measures can include the following:

- Solid concrete ground floor slab, with waterproof membrane;
- Closed-cell foam used in wall cavities;
- Waterproof ground floor internal render;
- Waterproof screed used on ground floors;
- Damp proof membranes;
- External walls rendered resistant to flooding to at least 600mm above ground floor level;
- Exterior ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Raised wiring and power outlets at least 600mm above ground floor level;
- Ground floor electrical main ring run from first floor level; and on separately switched circuit from first floor;
- Electrical incomer and meter situated at least 600mm above ground floor level;
- Boilers, control and water storage / immersion installed at least 600mm above ground floor level;
- Gas meter installed at least 600mm above ground floor level;
- Plumbing insulation of closed-cell design;
- Non-return valves fitted to all drain and sewer outlets;
- Manhole covers secured;

- Kitchen units of solid, water resistant material at ground floor level;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level;
- Stairs of solid hardwood construction with wood faces treated to resist water penetration at ground floor level.

6.12. It is recommended that flood proof doors and windows are installed for all external doors and windows. Demountable flood defence barriers to 600mm to defend ground level doorways and low windows could be used if flood doors are not practical or other planning constraints prevent it.

Safe Escape:

6.13. The NPPF requires a route of safe escape for all residents and users to be provided from new residential properties in Flood Zone 3. Safe escape is usually defined as being through slow moving flood water no deeper than 25cm during the 1:100 year plus allowance for climate change flood event.

6.14. It should be noted that the application is for the change of use from first and second floor offices to 2 residential apartments. No bedrooms are proposed on the ground floor.

6.15. In the case of an extreme flood event without warning, users should seek refuge on the upper floors of the building. The applicant has agreed that a permanent means of internal access be provided to the upper floors of the building, thus providing safe refuge.

6.16. Safe escape will be provided by a formal flood warning and evacuation plan which will be prepared in liaison with the Council's Emergency Planners and tied in with the existing emergency plans for the area.

6.17. Residents will follow the Flood Warning and Evacuation Plan detailed in the following section.

Flood Warning:

6.18. The EA is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.

6.19. Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.

6.20. The applicant has agreed to subscribe to the EA's flood warning service.

6.21. The EA issue flood warnings/alerts to specific areas when flooding is expected. The site lies within the River Irwell at Salford, Lower Broughton Flood Warning Area.

Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 3: EA Flood Warning Service

Flood Plan:

6.22. It is recommended that the applicant and future owners, occupiers and Landlords of the properties prepare a flood plan to protect life and property during a flood event:

	Action
Before a flood	• Prepare and keep a list of all your important contacts to hand or save them on your mobile phone. • Think about what items you can move now and what you would want to move to safety during a flood. • Know how to turn off electricity and water supplies to the site. • Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.
During a flood	• Activate the evacuation plan and evacuate the site. • Remove cars from the site if there is sufficient warning and the water levels are not rising rapidly. • Switch off water and electricity for the site. • Tune into your local radio station on a battery or wind-up radio. • Listen to the advice of the emergency service and evacuate if told to do so. • Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.
After a flood	• If you have flooded, contact your insurance company as soon as possible. • Take photographs and videos of your damaged property as a record for your insurance company. • If you don't have insurance, contact your local authority for information on grants and charities that may help you. • Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask. • Have your electrics and water checked by qualified engineers before switching them back on.

Table 4: Flood plan

Off-Site Impacts:

Fluvial Floodplain Storage:

6.23. The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

6.24. In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

6.25. For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

6.26. The site is located within Flood Zones 2 and 3. The proposed development is a change of use with no proposed increase to built footprint or impermeable areas. Therefore, there will be no loss of fluvial floodplain.

Surface Water Drainage:

6.27. The development will utilise Sustainable drainage systems (SuDS) design in accordance with the NPPF for Planning Applications and the drainage hierarchy as follows:

1. Store rainwater for later use;
2. Infiltration techniques;
3. Attenuate rainwater by storing in tanks for gradual release;
4. Discharge rainwater direct into watercourse;
5. Discharge rainwater into surface water sewer;
6. Discharge rainwater into a combined sewer.

6.28. Due to the nature of the development (change of use of existing buildings), there will be no increase to the built footprint, no change to the impermeable coverage, and therefore no increase to surface water runoff generation. The existing surface water drainage arrangements for the site will continue to be utilised.

7. Sequential and Exception Test

7.1. The Sequential Test aims to ensure that development does not take place in areas at high risk of flooding when appropriate areas of lower risk are reasonably available.

7.2. The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.

7.3. The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk.

7.4. The site is situated partially within Flood Zones 2 and 3 according to the EA Flood Map for planning (Rivers and the Sea) and within an area of "Very Low" to "Low" chance of flooding from surface water. Post development, the site will become "more vulnerable", as the application is for the change of use from first and second floor offices to 2 residential apartments .

	Flood Risk Vulnerability Classification				
Flood Zones	**Essential Infrastructure**	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	X	Exception Test required	✓	✓
Zone 3b	Exception Test required	X	X	X	✓

Table 5: Flood risk vulnerability and flood zone 'compatibility' (Source: NPPF Table 3 Technical Guidance)

7.5. Using the table above, the proposed application ("more vulnerable") is considered to be suitable within Flood Zone 3.

7.6. The Sequential Test does not need to be applied for minor developments and changes of use – this application is for the proposed application is for the change of use from first and second floor offices to 2 residential apartments – change of use.

8. Discussion and Conclusion

8.1. Unda Consulting Limited have been appointed by Mr Akhtar Nafees to undertake a Flood Risk Assessment for the proposed development at 171 Great Ducie Street, Manchester, M3 1FF. The purpose of the study is to support a planning application for the proposed development.

8.2. The site comprises of a two storey commercial property. The site is understood to have lawful planning permission for commercial use. The surrounding area is characterised by commercial properties.

8.3. The proposed application is for the change of use from first and second floor offices to 2 residential apartments.

8.4. There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors.

8.5. The existing site usage is classified as “less vulnerable” (offices). Post development, the site will become “more vulnerable” (residential), as the application is for the proposed application is for the change of use from first and second floor offices to 2 residential apartments. There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors. Accordingly, it is considered that the vulnerability of the site as a whole will increase post development.

8.6. The site is located within Flood Zone 2 (Medium Probability), defined as 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 and partially within Flood Zone 3 (High Probability), defined as 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. The risk would appear to be fluvial and originates from the River Irwell located approximately 210m south west of the site boundary.

8.7. The information provided was taken from the Lower River Irwell, completed in 2018 by JBA.

8.8. Both undefended and defended modelled flood levels have been provided for a variety of return periods.

8.9. Comparison of the modelled defended flood level for the 1:100 year plus 35% climate change event (27.95mAOD) with approximate topographic site levels (27.60mAOD to 28.00mAOD) shows the site to be up to 0.35m below and 0.05m above the flood level for this event.

8.10. Comparison of the modelled undefended flood level for the 1:100 year plus 35% climate change event (28.56mAOD) with approximate topographic site levels (27.60mAOD to 28.00mAOD) shows the site to be up to 0.96m below the flood level for this event.

8.11. The site is currently defended by EA flood defences and as such, defended flood levels will be utilised within this assessment.

8.12. According to EA data, there are no Flood Storage Areas located in close proximity to the site.

8.13. The River Irwell is flanked by natural high ground and flood wall in the area of the site. These have a 75 year standard of protection and current condition of 3 - “Fair”. Both assets are owned and maintained by the Environment Agency.

8.14. The EA Risk of Flooding from Surface Water Map suggests that there is “Very Low” to “Low” chance on site during the present day and between 2040 - 2060.

8.15. The site is located within the Conurbation Core CDA.

8.16. According to the 2011 Level 2 Manchester City, Salford City and Trafford Councils SFRA, the site lies within an area at risk of groundwater flooding, The EA advise that flooding from groundwater is unlikely in this area.

8.17. Risk to the site from sewer surcharge and reservoir flooding would appear to be very low. No information has been provided to suggest that the site has flooded historically from these sources.

8.18. The EA hold records of historic flooding having affected the site in November 1866 and September 1946, attributed to the main river exceeding its channel capacity (no raised defences).

In Summary:

- The proposed application is for the proposed application is for the change of use from first and second floor offices to 2 residential apartments.
- There will be no increase to built footprint or impermeable areas. In addition, there will be no lowering of floor levels or new basements. Bedrooms are proposed on the first and second floors.
- Post development, the site will become “more vulnerable” (residential).
- Flood proofing of the development will be incorporated where appropriate.
- There will be no loss of fluvial floodplain storage.
- Due to the nature of development, a full Surface Water Drainage Strategy is not required at this stage of planning.
- The applicant will register with the free Environment Agency Floodline Alert Direct service.
- Safe escape will be provided by a formal flood warning and evacuation plan which will be prepared in liaison with the Council’s Emergency Planners and tied in with the existing emergency plans for the area.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Unda Consulting Limited
August 2025

Appendix

A – Development Plans:

- Site location, existing and proposed plans – Mason and Marlowe.

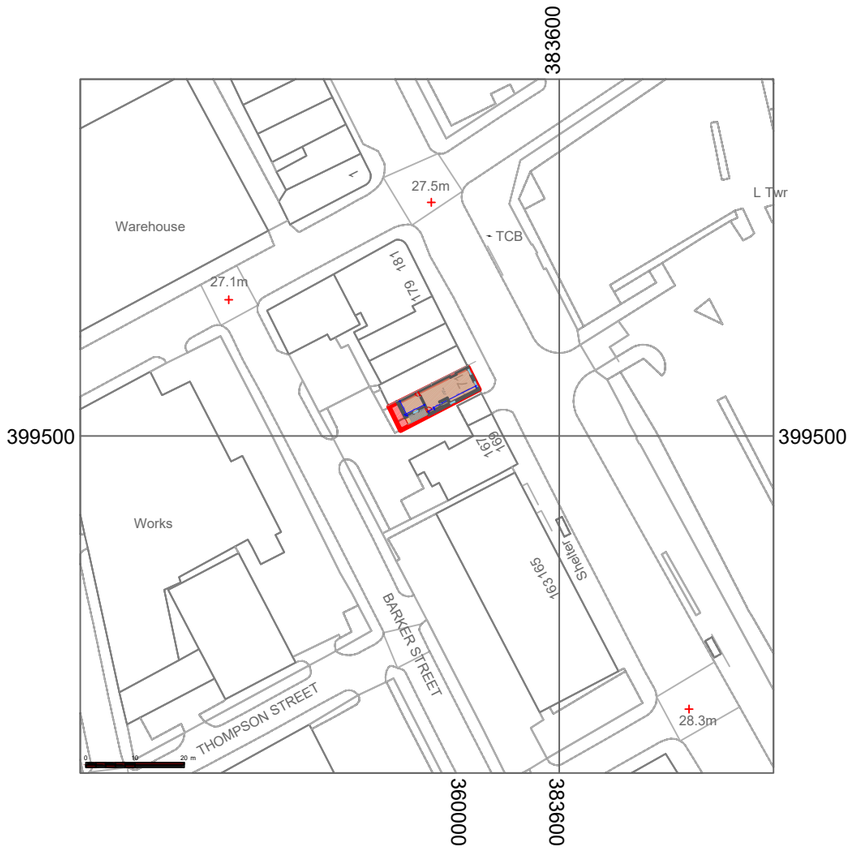
B – EA Flood Map for Planning:

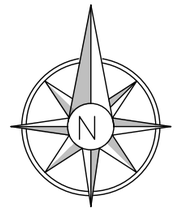
- Flood Map for Planning – Environment Agency.

C – NPPF Annex 3:

- NPPF Annex 3: Flood risk vulnerability classification table

Appendix A





0 20 40 60 80 100
metres

Existing Location Plan

General Notes

No.	Revision/Issue	Date

Firm Name and Address

Mason and Marlowe

Mason and Marlowe Ltd.
Project Managers and Quanity Surveyors

5 Picadilly Place
Manchester, M1 3BR

Project Name and Address

171 Great Ducie ST., cheetahs Hill, Manchester M3 1FF

Project	Sheet
171 Great Ducie	A3
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Existing Site Plan

General Notes

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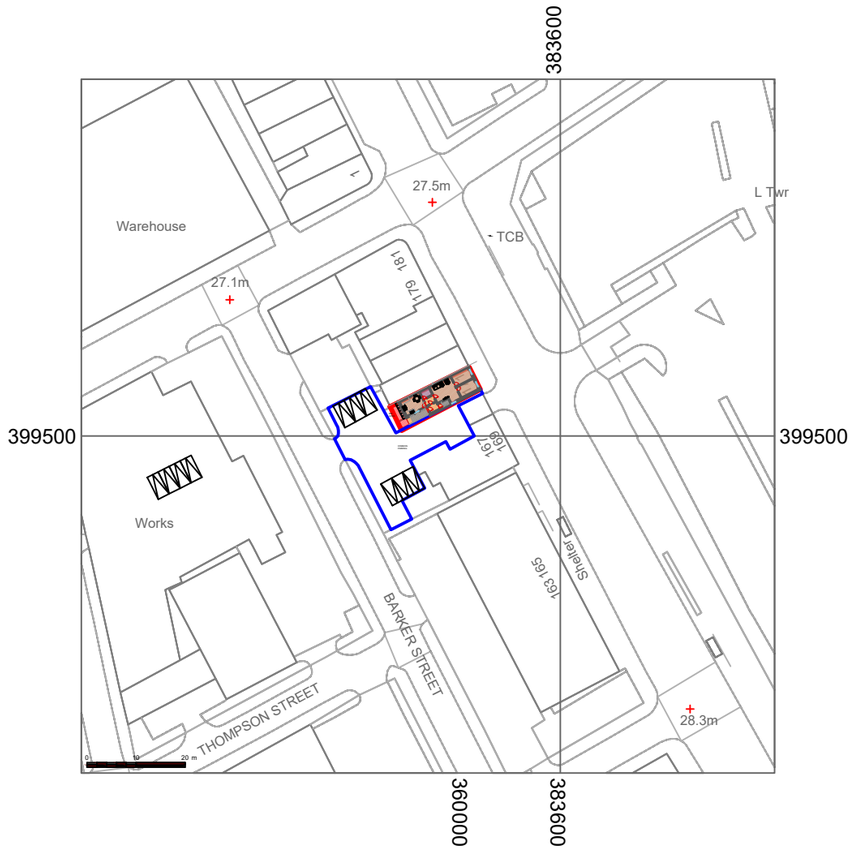
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Project Managers and Quanity Surveyors

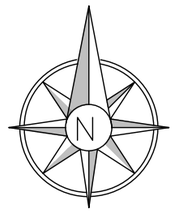
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metres

Proposed Location Plan

General Notes

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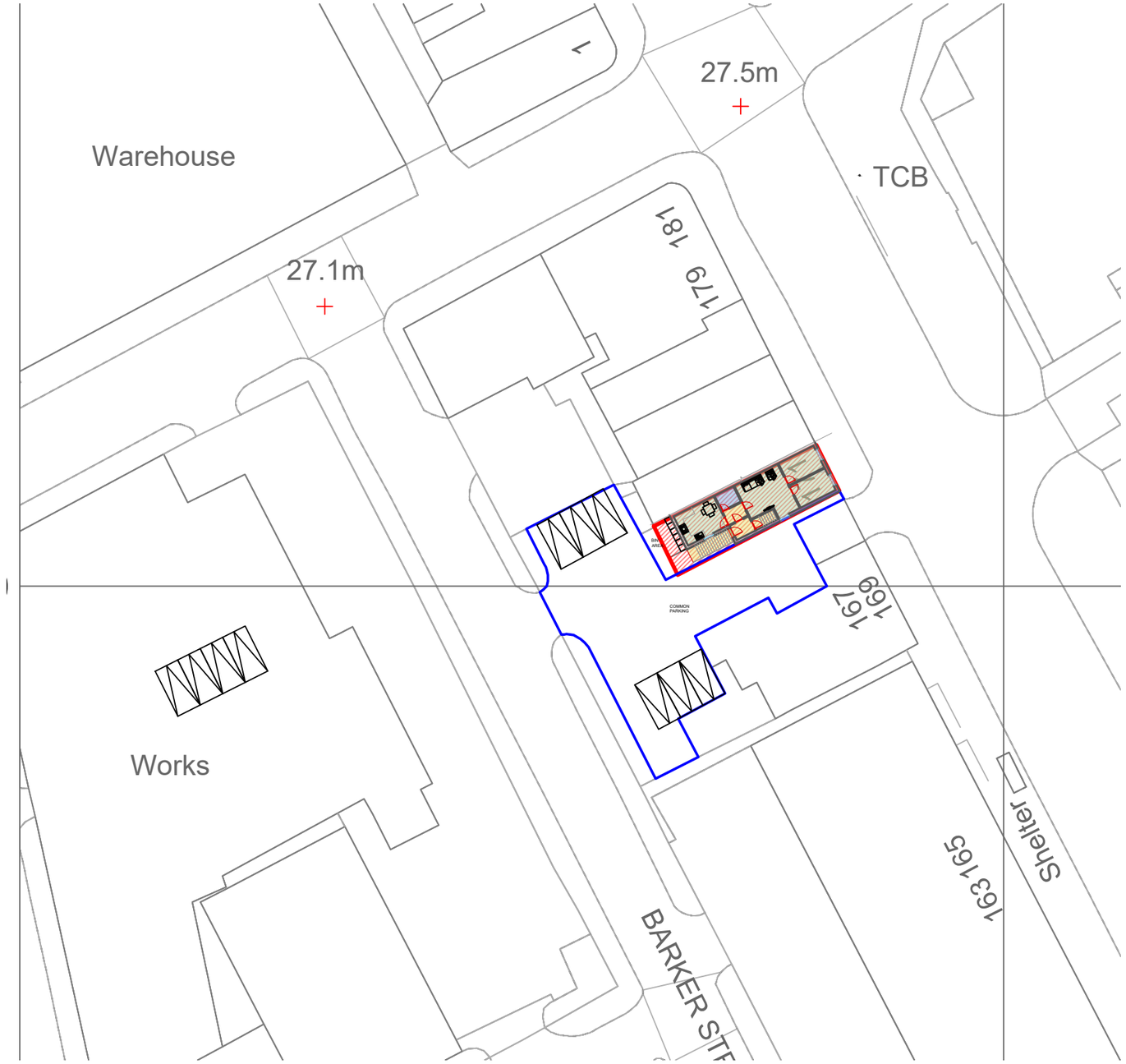
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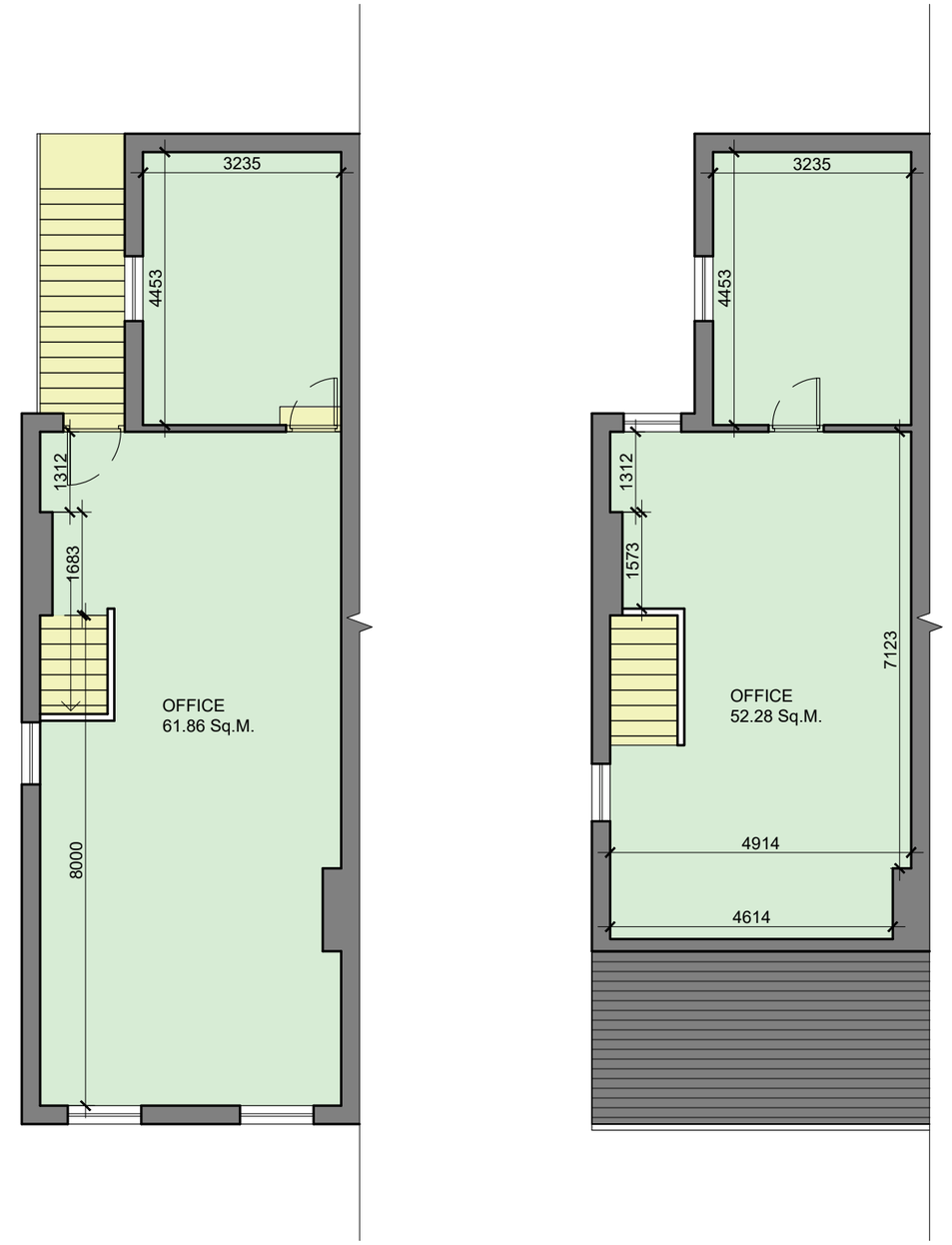
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EXISTING FIRST FLOOR PLAN

EXISTING SECOND FLOOR PLAN

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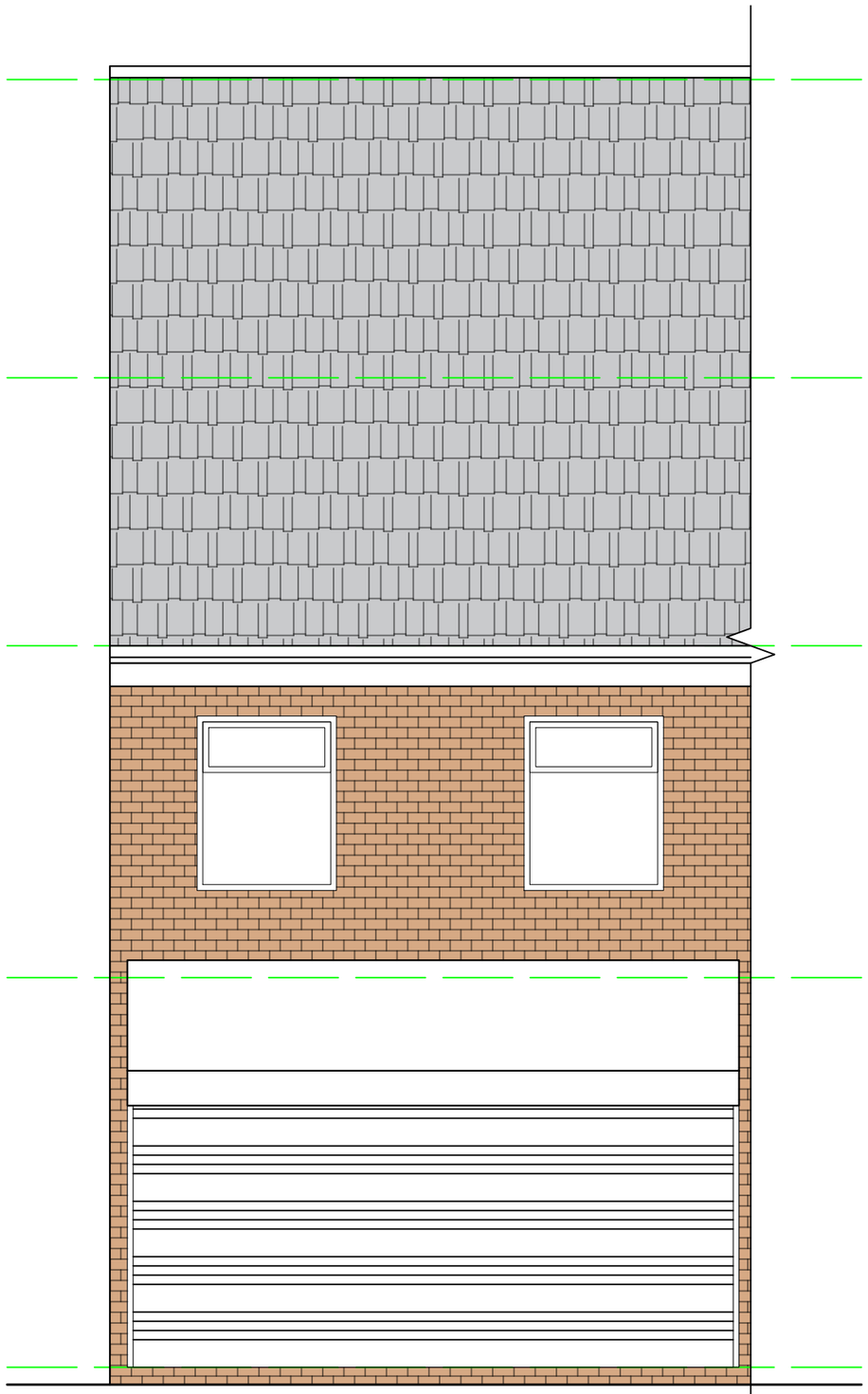
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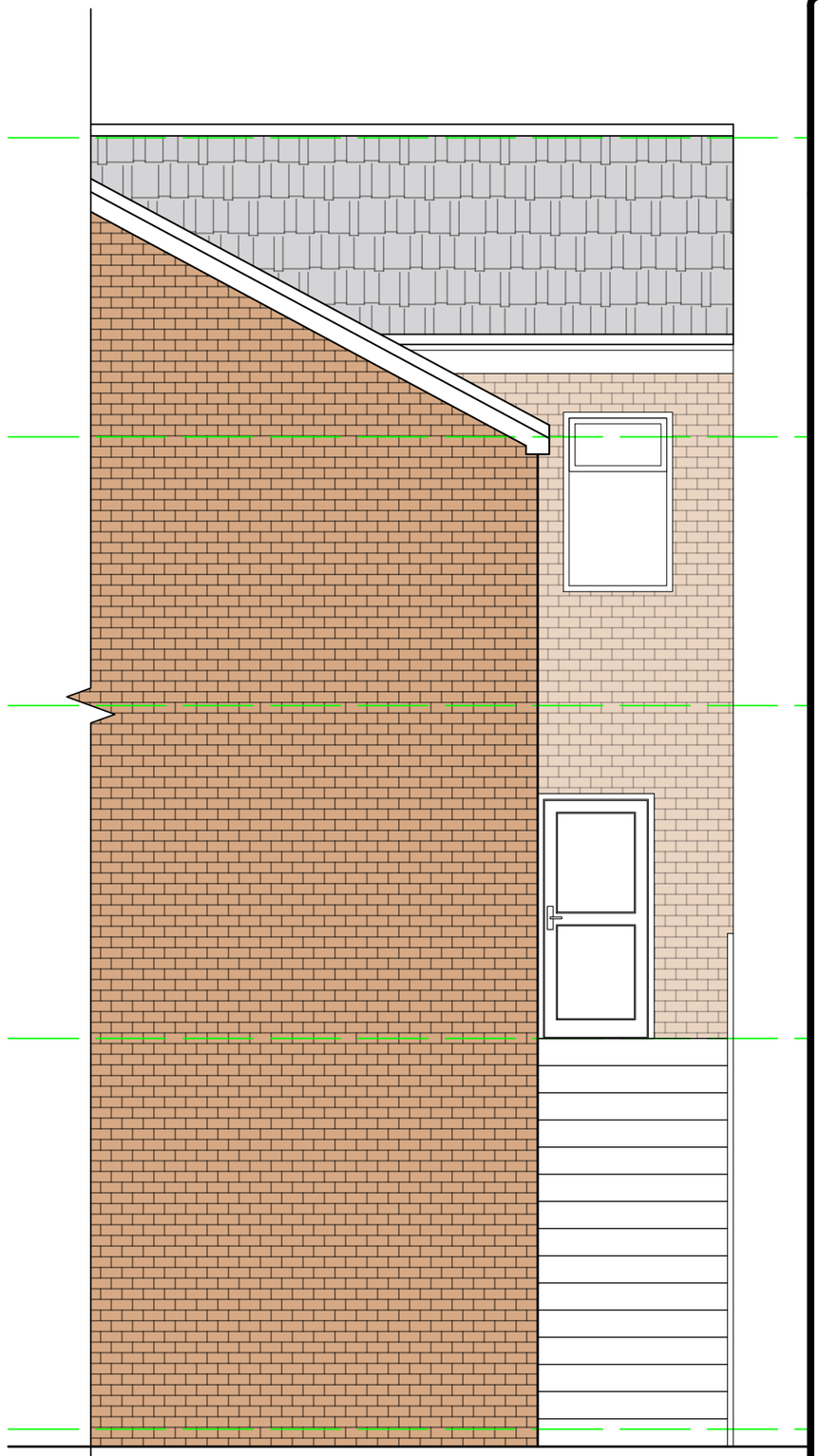
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EXISTING REAR ELEVATION

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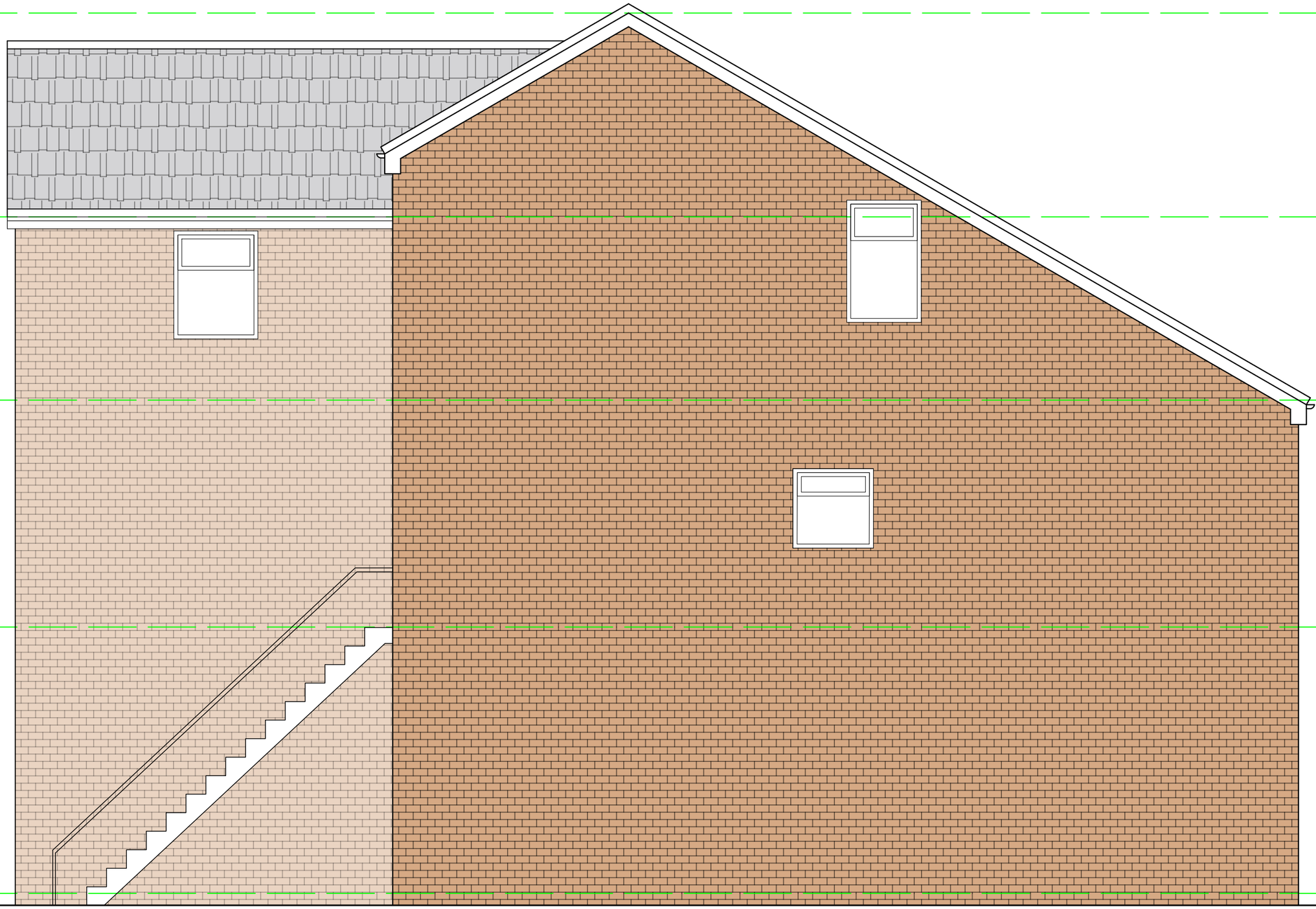
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EXISTING LEFT SIDE ELEVATION

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General Notes

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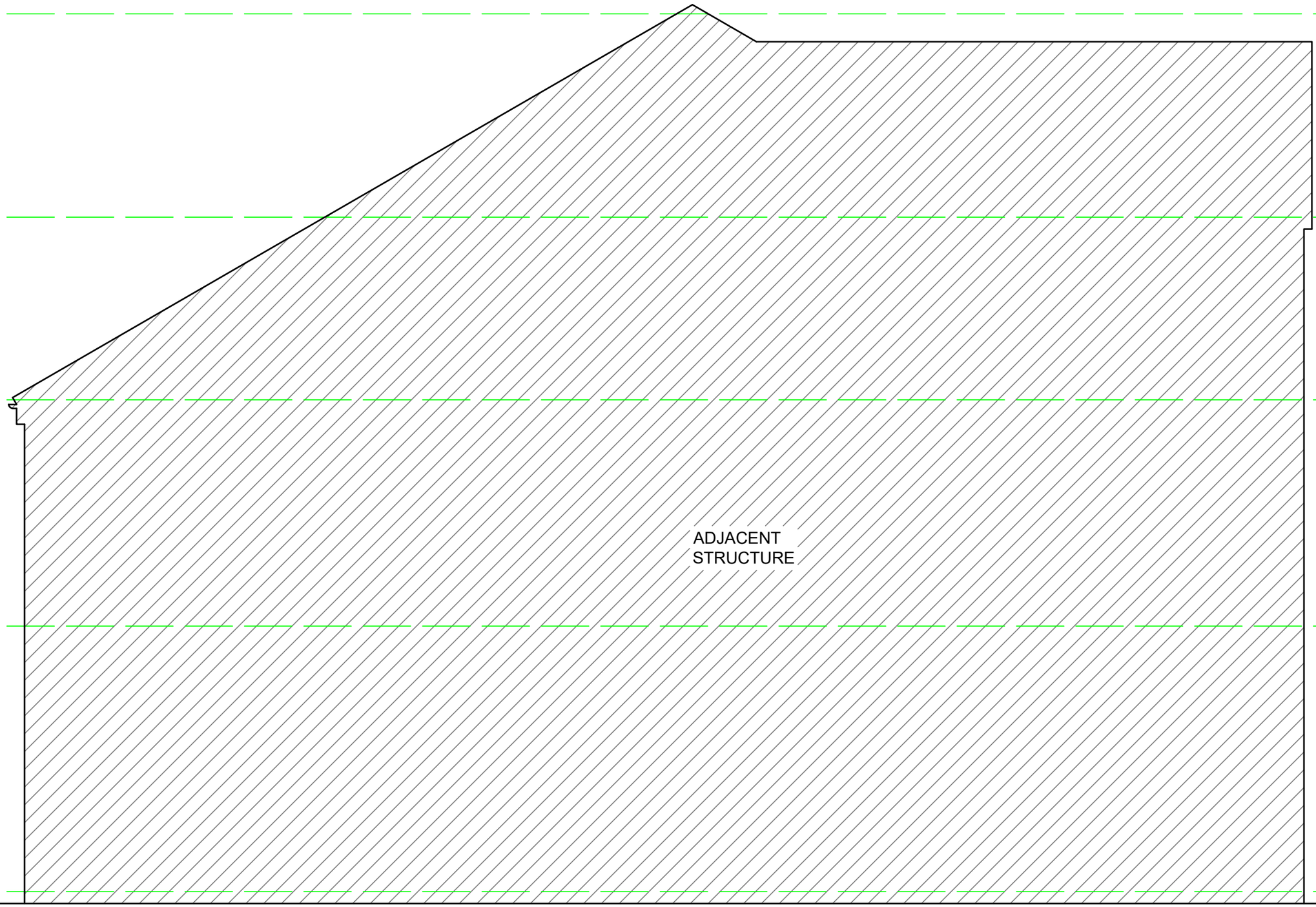
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EXISTING RIGHT SIDE ELEVATION

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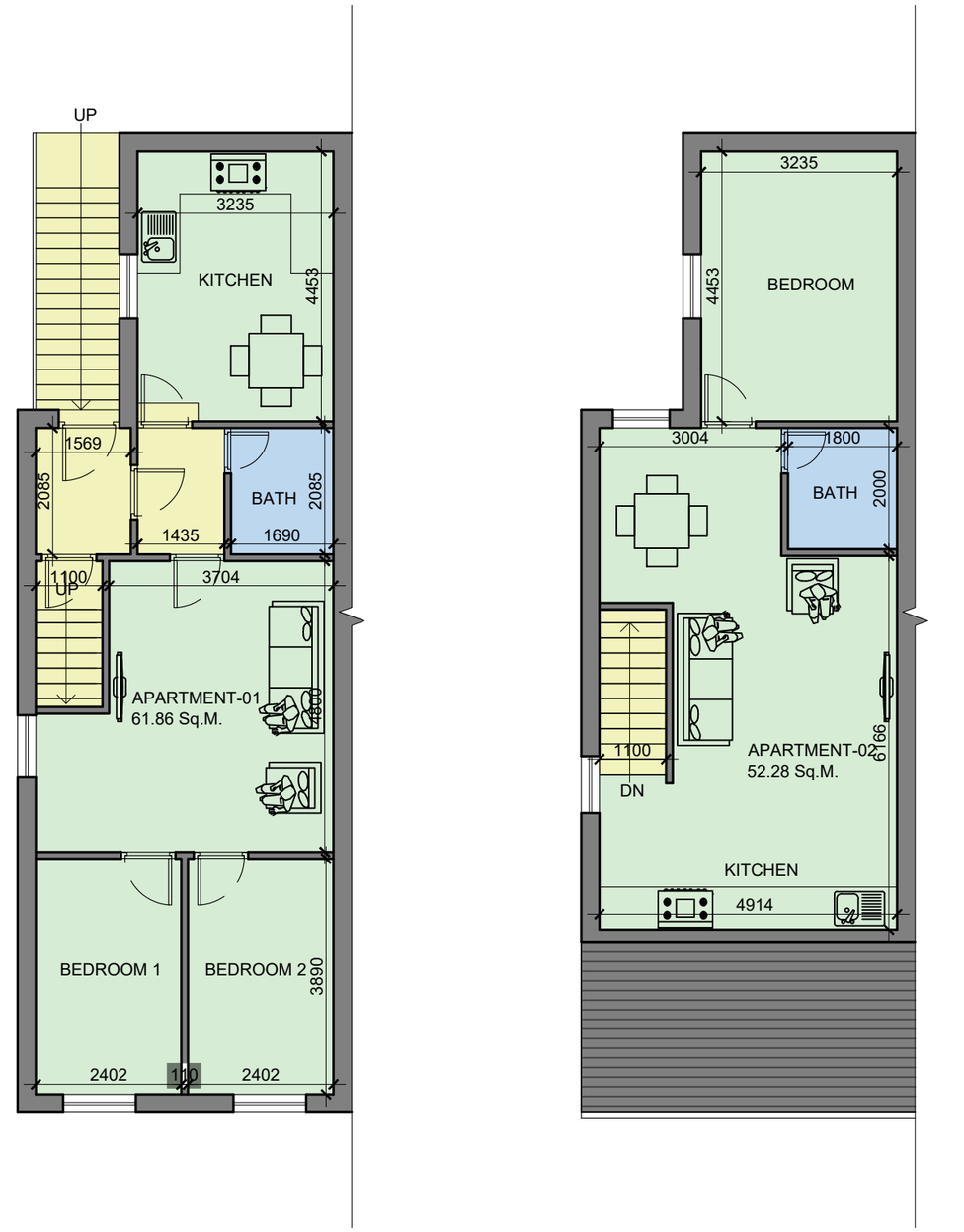
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PROPOSED FIRST FLOOR PLAN

PROPOSED SECOND FLOOR PLAN

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General Notes

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Project Managers and Quanity Surveyors

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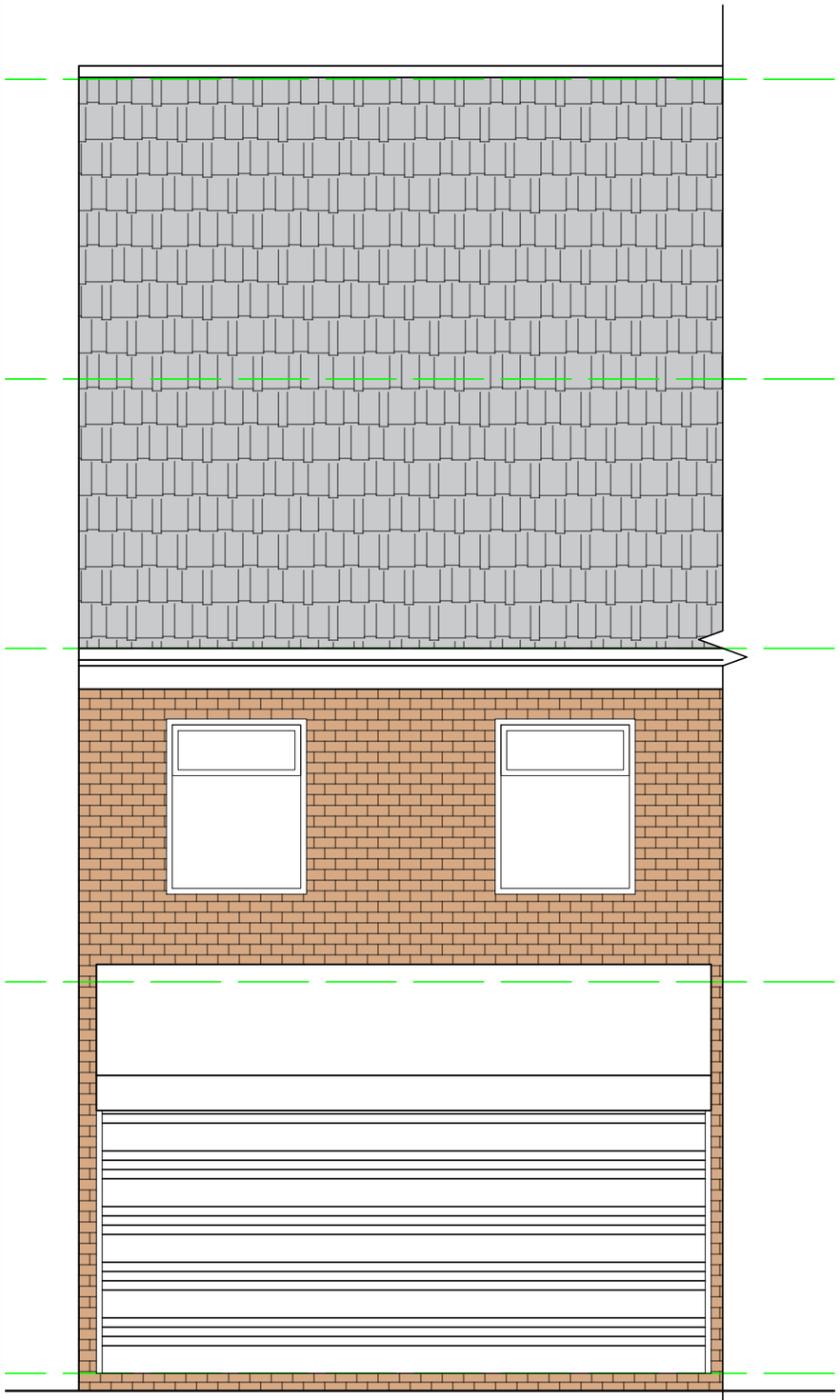
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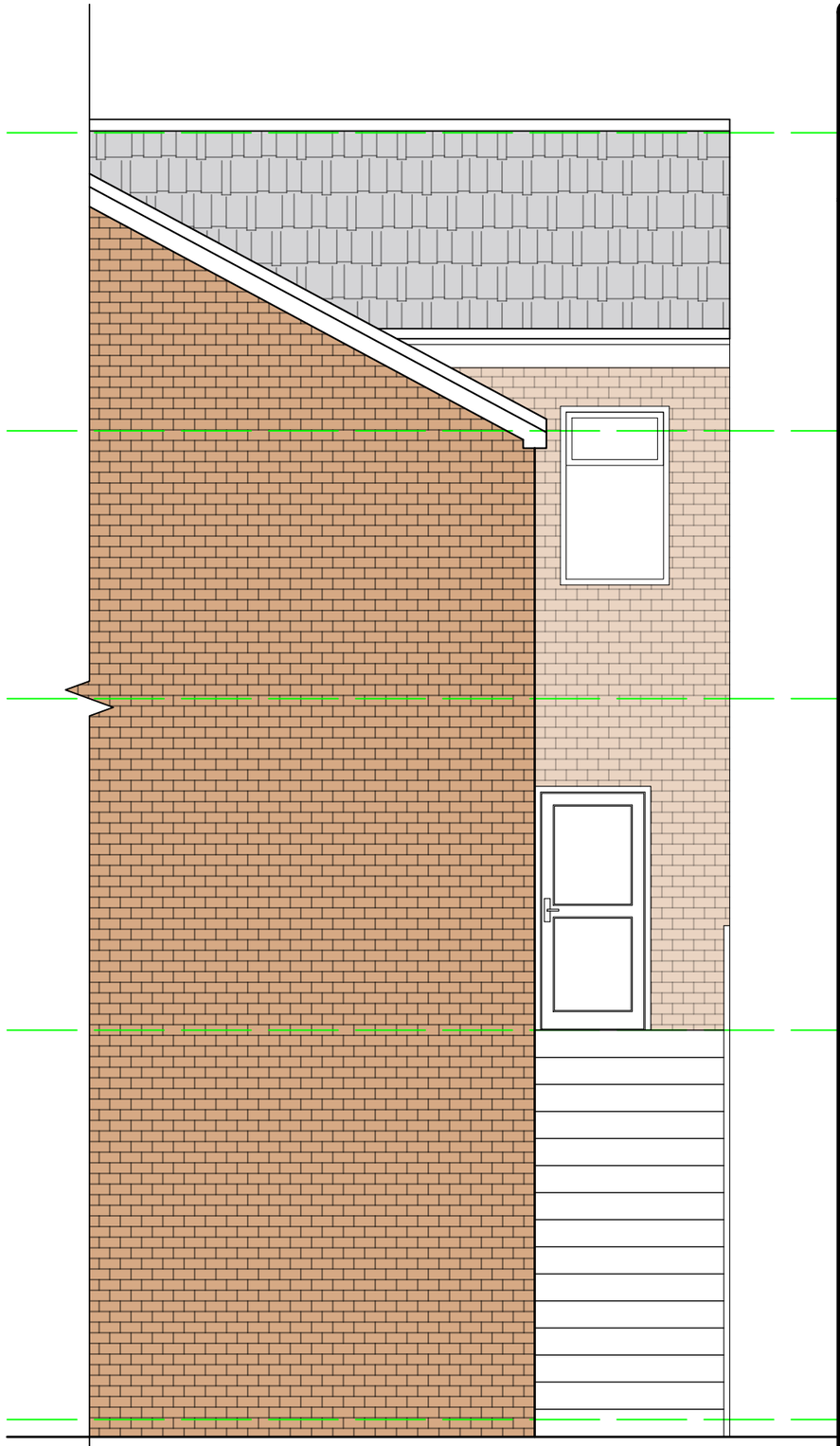
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PROPOSED FRONT ELEVATION



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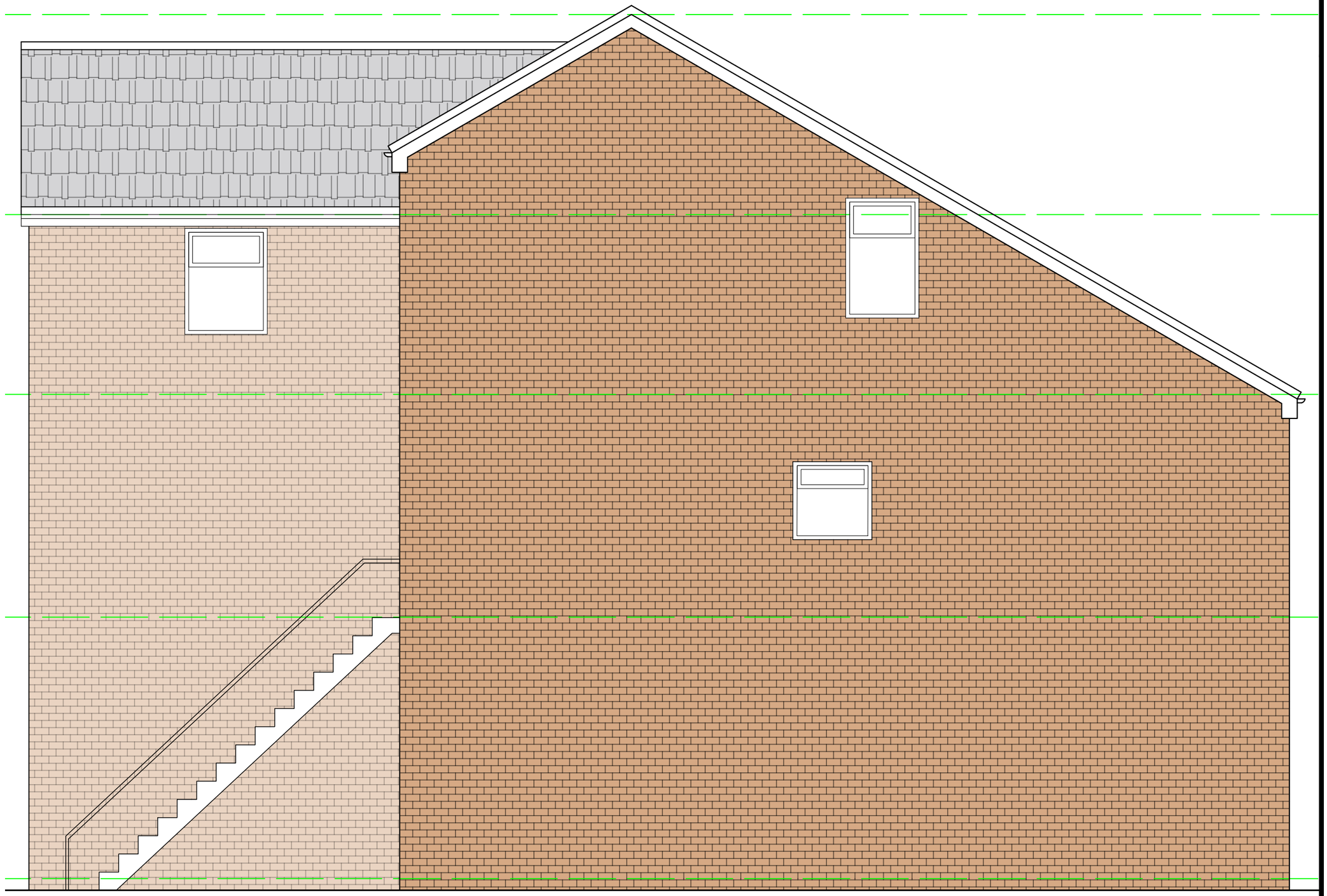
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PROPOSED LEFT SIDE ELEVATION

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General Notes

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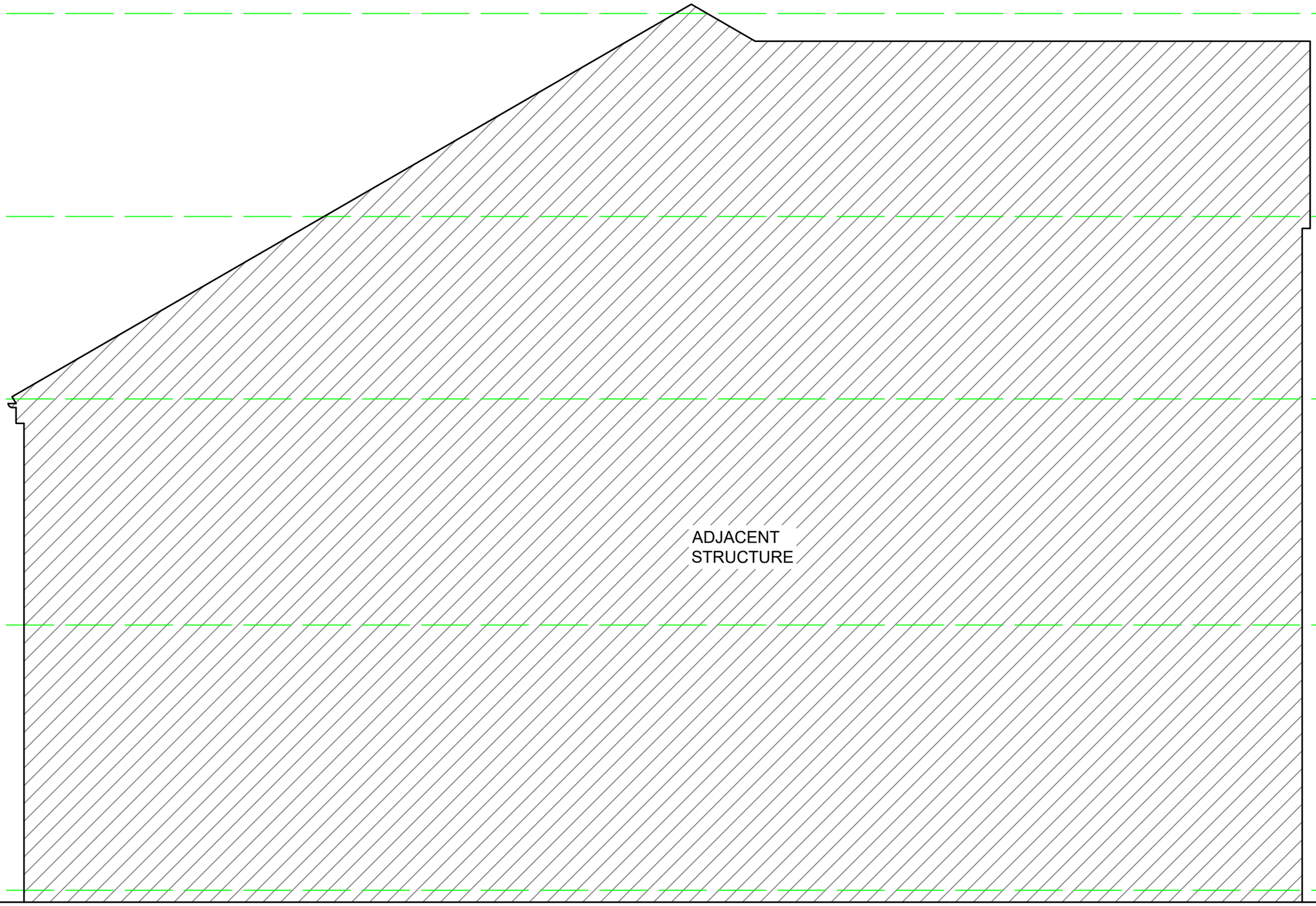
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PROPOSED RIGHT SIDE ELEVATION

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General Notes

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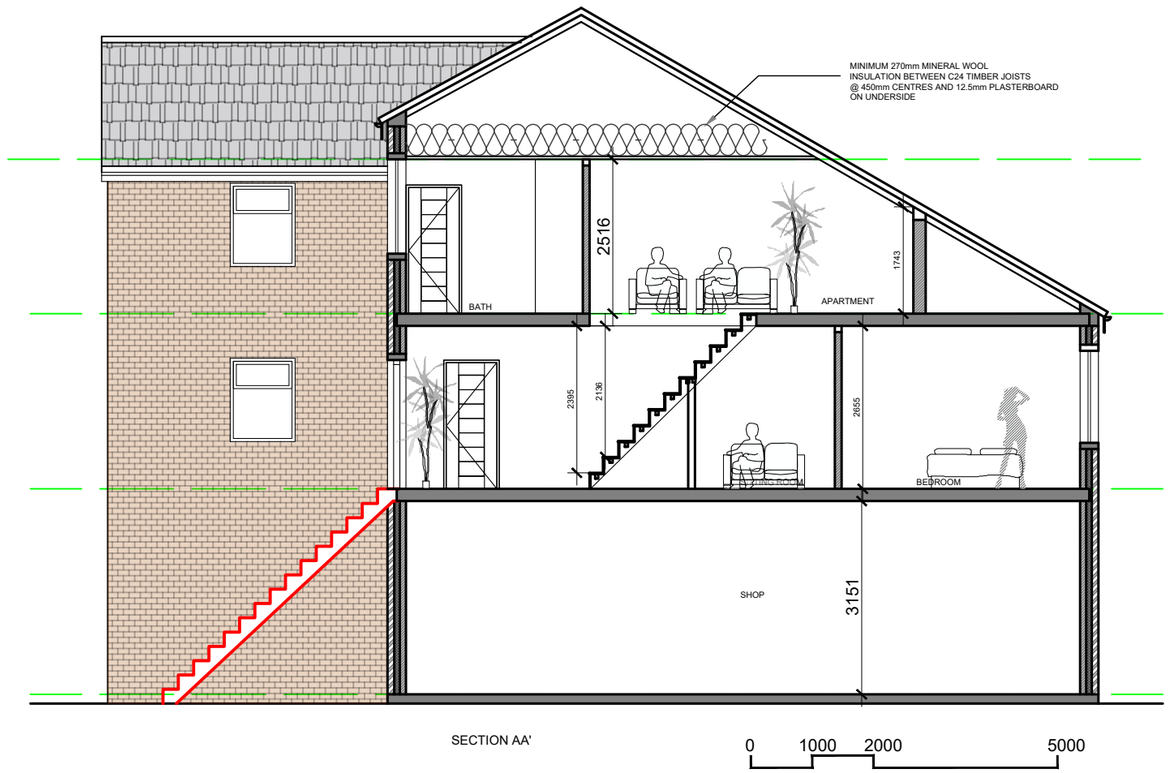
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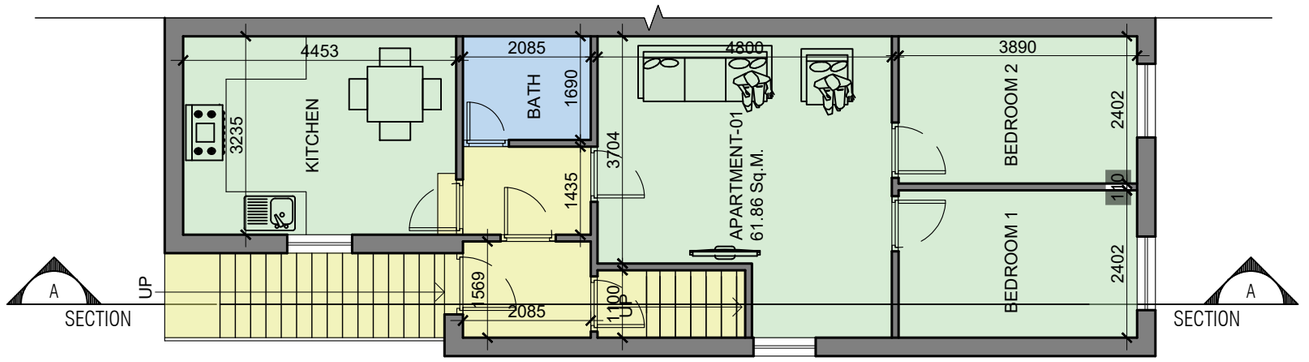
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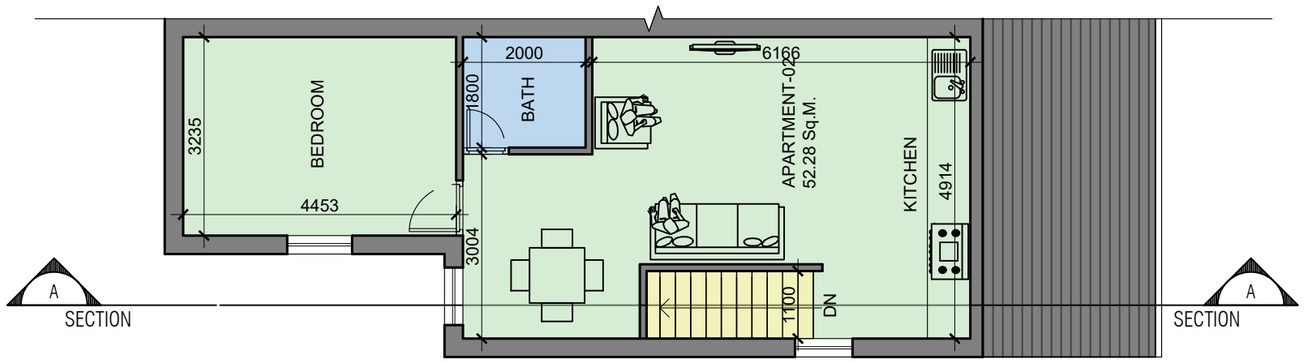
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SECTION AA'



PROPOSED FIRST FLOOR PLAN



PROPOSED SECOND FLOOR PLAN

General Notes

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Mason and Marlowe

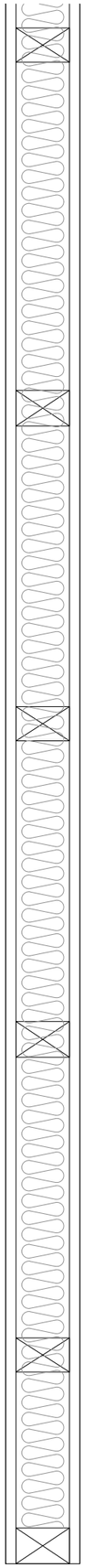
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Project Managers and Quanity Surveyors

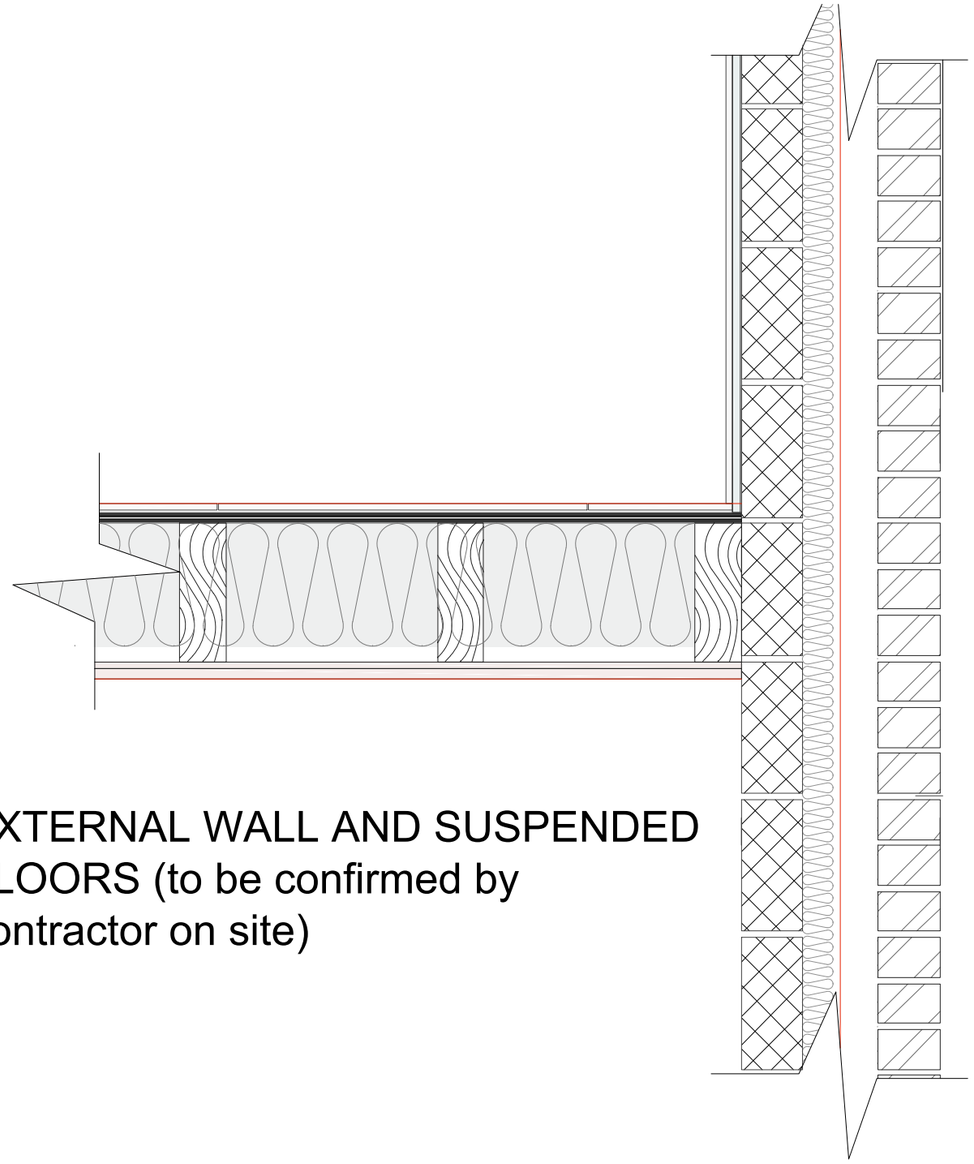
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Manchester, M1 3BR

Project Name and Address

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EXTERNAL WALL AND SUSPENDED FLOORS (to be confirmed by contractor on site)

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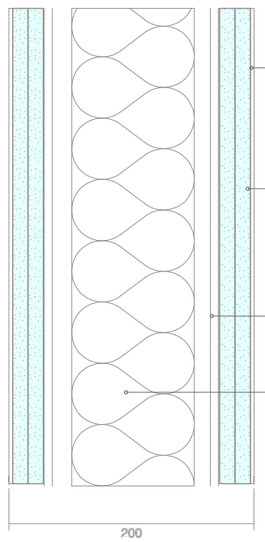
EXTERNAL WALL CONSTRUCTION (Contractor to confirm existing external wall on site)
- EXTERNAL FACE BRICK
- 50mm RESIDUAL CAVITY
- 50mm FOILBACKED RIGID INSULATION
- 100mm 7.3N DENSE PAINT GRADE BLOCK
- 69mm MDF SKIRTING -

SUSPENDED FLOOR CONSTRUCTION (Contractor to confirm existing suspended floors on site)
- HAVWOODS HW2204 PROVENCE 14mm PUREPLANK (installed as per manufacturers specification)
- 18mm WPB PLY SCREW FIXED TO JOIST
- 225x75 C24 TIMBER FLOOR JOIST @ 400 CTRS
- 200mm ROCWOOL FIBRE INSULATION
- 2x 12.5mm FIREBOARD WITH PLASTER SKIM

INTERNAL WALL CONSTRUCTION
- 12.5mm FIRELINE PLASTERBOARD AND SKIM
- 75x50mm C24 TIMBER STUD FRAMING
- 75mm ROCKWOOL INSULATION
- 69mm OAK SKIRTING - THREE COATS OF CLEAR OSMO SATIN FINISH OIL

General Notes

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Plaster skim coat with all associated plaster stop beads

2 x 12.5mm Soundbloc board (note: moisture resistant to bathroom areas

140mm mineral wool insulation between studs

Timber stud wall

INTERNAL WALL DETAIL

TIMBER STUD WALLS BETWEEN APARTMENTS

Firm Name and Address

Mason and Marlowe

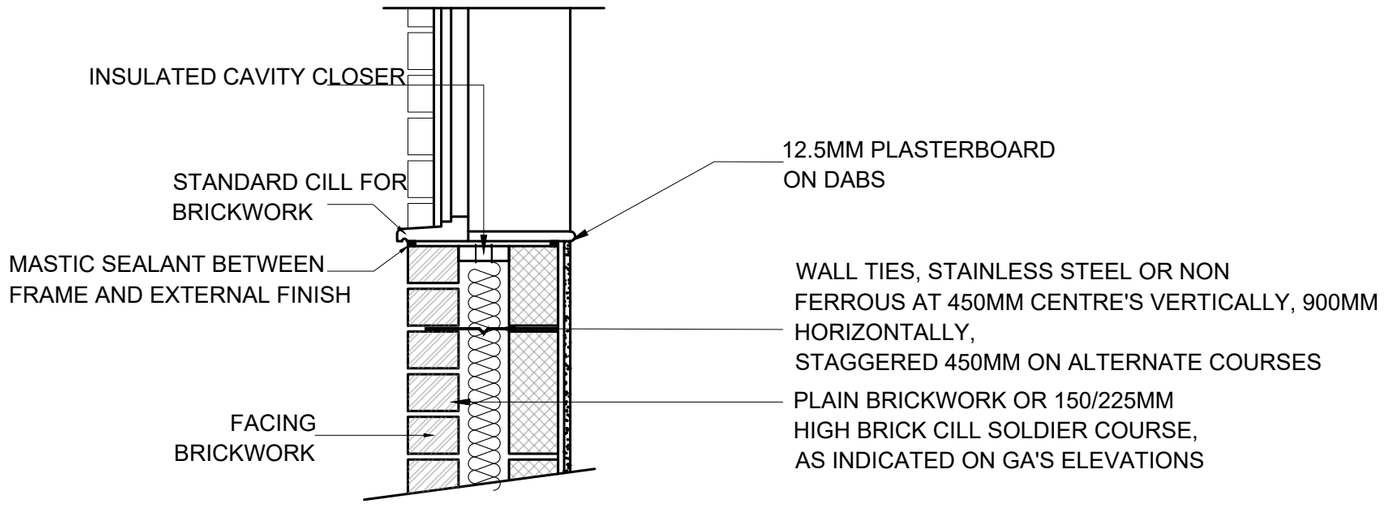
Mason and Marlowe Ltd.
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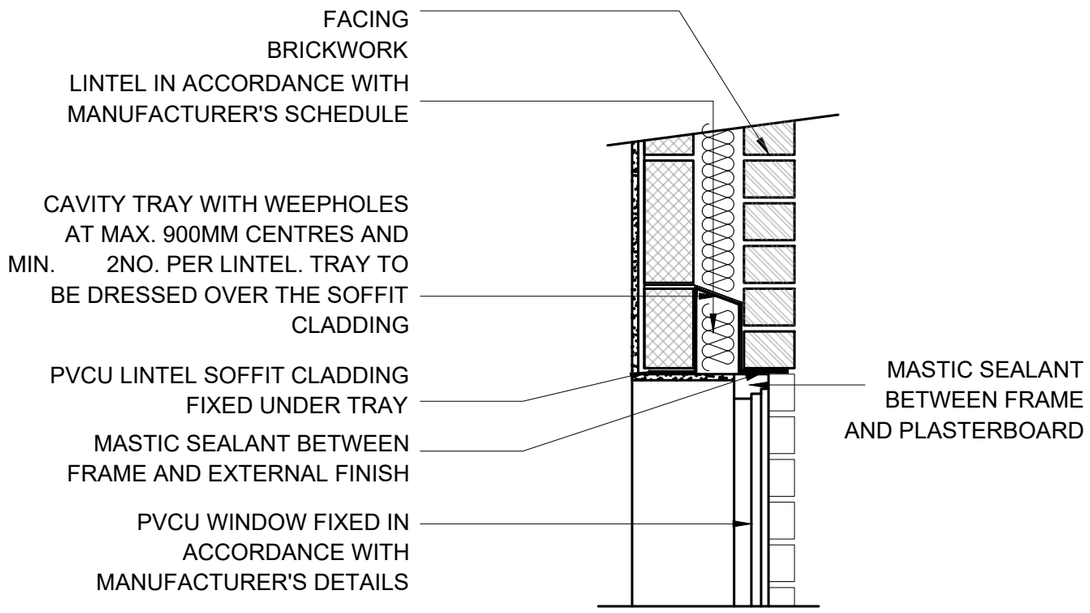
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B - TYPICAL BRICKWORK WINDOW CILL
SCALE 1:20



B - TYPICAL BRICKWORK WINDOW HEAD
SCALE 1:20

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HEALTH AND SAFETY

THE CONTRACTOR IS REMINDED OF THEIR LIABILITY TO ESURE DUE CARE, ATTENTION AND CONSIDERATION IS GIVEN IN REGARD TO SAFE PRACTICE IN COMPLIANCE WITH THE HEALTH ANS SAFETY AT WORK ACT 1974.

MATERIALS AND WORKMANSHIP

ALL WORKS ARE TO BE CARRIED OUT IN A WARKMAN LIKE MANNER. ALL MATERIALS AND WORKMANSHIP MUST COMPLY WITH REGUALTION 7 OF THE BULIDNG REGULATIONS. ALL RELEVANT BRITISH STANDARDS, EUROPEAN STANDARDS, AGREEMENT CERTIFICATES, PRODUCT CERTIFICATION OF SCHEMES (KITE MARKS) ECT. PRODCUTS CONFORMING TO A EUROPEAN TECHNICAL STANDARD OR HARMONISED EUROPEAN PRODUCT SHOULD HAVE A CE MARKING.

BEAM AND STRUCTURAL NOTE

FOR THE STRUCTURAL CALCULATION PURPOSES ALL THE MAJOR STEEL AND/OR TIMBER BEAMS WILL CARRY DEAD AND IMPOSED LOADS FROM WALLS, FLOORS AND ROOFS BASED ON THE SPANS INDICATED ON THIS PLAN OR ASSOCIATED PLANS.
IN SOME CASES ALL THE CALCS MAY SHOW A DIFFERENT OR ASSUMED SPAN FOR THE PURPOSES OF CALCULATING WORST CASE LOADING PATTERN.
DEPARTURES FROM APPROVED CALCULATIONS ARE NOT PERMITTED.

NOTE THAT WHERE A BEARING SIZE IS GIVEN THEN THIS WILL BE THE MINIMUM PERMITTED AND THAT THE CONTRACTOR SHALL WHERE SPACE IS AVAILABLE FIT A LARGER SIZE PADSTONE.
WHEN PURCHASING BEAMS THE CONTRACTOR SHALL USE SITE MEASUREMENTS FOR LENGHTS OF BEAM.
FOE THE PURPOSE OF SAFETY THE BUILDER SHALL ALREADY HAVE KNOWLEDGE OR OBTAIN KNOWLEDGE IN THE RESPECT TO THE HANDLING AND INSTALLATION OF THE VARIOUS ITEMS INVLOVED IN THE CONSTRUCTION.

COMMISSIONING OF HEATING STSTEMS.

THE SPACE HEATING AND HOT WATER SYSTEM MUST BE INSPECTED AND COMMISSIONED TO ENSURE THE RELEVANT REQUIRMENTS OF L1(b) HAVE BEEN COMPLIED WITH. UPON COMPLETION OF THE INSTALLATION THE PERSON RESPONSIBLE FOR ACHIEVING THE COMPLIANCE MUST PROVIDE THE CLIENT WITH A CERTIFICATE STSTATING THAT THE SUCCESSFULL COMMISSIONING HAS BEEN CARRIED OUT. THE PERSON GIVING THE CERTIFICATE MUST HAVE A RECOGNISED QUALIFICATION.

THE COMBUSTION INSTALLATION MUCT BE CHECKED BY QUALIFIED INSTALLER AND A REPORT DRAWN UP SHOWING THAT MATERIAL COMPONENTS AND FLUES HAVE PASSED RELEVENT TESTS. REPORT COPIES TO BE GIVEN TO CLIENT AND THE COUNCIL.

FOR THE PURPOSES OF DETERMINING THAT THE COMBUSTION APPLIANCES CAN BE SAFELY INSTALLED, WHERE A HEARTH AND FIREPLACE OR CHIMNEY IS PROVIDED OR EXTENDED A DURABLE NOTICE CONTAINING INFORMATION ON THE PERFORMANCE OF THE HEARTH FIREPLACE OR CHIMNEY MUST BE AFFIXED IN A SUITABLE PLACE WITHIN THE BUILDING.

THE OWNER/OCCUPIER OF THE BUILDING MUST BE PROVIDED WITH THE SUFFICENT INFORMATION WITH THE RELEVENT SERVICES SO THAT THE BUILDING CAN BE OPERATED AND MAINTAINED IN SUCH MANNER AS TO USE NO MORE ENERGY THAN IS REASONABLE IN THE CIRCUMSTANCES.

BALANCED FLUE BOILER DETAILS.

IN THE EVENT OF A NEED TO REPLACE OF PROVIDE A NEW BOILER. NEW REGULATIONS ARE APPLICABLE, THE BOILER GAS APPLICANCE WITH BALANCED FLUE AND A CAPACITY OG 7-14kW WILL REQUIRE CLEAR 600mm AIR SPACE AROUND THE FLUE OUTLET. OTHER TYPES OF GAS APPLIANCES ARE AFFECTED AND IT IS ADVISEABLE THAT THE MANUFACTURES SPECIFICATIONS BE ADHERED TO. ALTERNATIVELY REFER BACK TO ARCHITECT PRIOR TO INSTALLATION. ANY REPLACEMENT BOILER TO BE CONDENSING TYPE. ANY WORKS TO BOILER FLUE AND OUTLET TO BE DESIGNED,INSTALLED, TESTED AND CERTIFIED BY GAS SAFE REGISTERED CONTRACTOR.

GENERAL DRAINAGE NOTES

RIGID PIPES (VETRIFIED CLAY TO BS85) SHALL BE USED WITH WATER TIGHT FLEXIBLE JOINTS. PIPE RUNS SHOWN ON DRAWING ARE ASSUMED DIRECTIONS AND UNKNOWN DEPTHS.
NEW PIPE RUNS CLOSE TO A BUILDING MAY REQUIRE CONCRETE FILL AND THE SITE CONDITIONS WILL DETERMINE THE FILL LEVELS. EXG. PIPE RUNS CLOSE TO NEW BUILDING MAY REQUIRE RE-EXCAVATION AND/OR IDENTIFICATON TO DETERMINE CONCRETE FILL LEVELS.
ANY NEW OR EXG. DRAIN THAT WILL BE CONCRETE ENCASED & INTEGRAL WITH A SLAB, A FOUNDATION OR A WALL WILL REQUIRE FLEXIBLE JOINTS AND 600mm LONG ROCKER PIPES AT EACH SIDE OF THE INTERGRATED SOLID PIPE RUN.
DEPTHS OF COVER OF DRAINS TO BE ESTABLISHED ON SITE.
MINIMUM GRADIENT OF NEW DRAINS TO BE 1:40.
CONNECTIONS OF DRAIN TO DRAIN TO BE OBLIQUE AND IN DIRECTION OF FLOW.
DRAIN ACCESS POINTS (IC's) TO BE PROVIDED AT BENDS, CHANGES OF GRADIENTS, CHANGE OF PIPE SIZE, AND AT THE HEAD OF A LONG DRAIN RUN.
NOTE THAT IC's TO HAVE NONE ACCESSIBLE COVERS.
THE LOCATION OF ANY PUBLIC SEWER WILL NOT BE IDENTIFED ON THIS DRAWING.
BUILDING CONTROL SHALL IN CONJUNCTION WITH THE DRAINAGE AUTHORITY IDENTIFY THE LOCATION OF ANY PUBLIC SEWER THAT MAY AFFECT THE DEVELOPMENT.

FOUL DRAINAGE

ALL EXISTING FOUL WATER DRAINAGE TO BE TESTED FOR LEAKAGE, EXPOSED FOR NSPECTION (AS REQUIRED BY BCO) AND REPAIRED OR REPLACED WHERE NECESSARY.

ALL NEW ABOVE GROUND DRAINAGE AND PLUMBING TO COMPLY WITH BS EN 12056-2-2000 FOR SANITARY PIPEWORK. ALL DRAINAGE TO BE IN ACCORDANCE WITH PART H OF THE BUIDLING REGULATIONS. WASTES TO HAVE 75mm DEEP ANTI VAC BOTTLE TRAPS AD RODDING EYES TO BE PROVIDED AT CHANGES OF DIRECTION.

SIZE OF WASTE PIPES AND MAX LENGHT OF BRANCH CONNECTIONS (if lenght is exceeded then anti vaccum traps to be used)
WASH BASIN - 1.7m FOR 32mm PIPE, 4m FOR 40mm PIPE
BATH/SHOWER - 3m FOR 40mm PIPE, 4m FOR 50mm PIPE
W/C - 6m FOR 100mm PIPE FOR SINGLE WC
ALL BRANCH PIPES TO CONNECT TO 110mm SOIL AND VENT PIPE TERMINATING MIN 900mm ABOVE ANY OPENINGS WITHIN 3m.
OR TO 110mm UPVC SOIL PIPE WITH ACCESSIBLE INTERNAL AIR ADMITTANCE VALVE COMPLYING WITH prEN 12380, PLACED AT A HEIGHT SO THAT THE OUTLET IS ABOVE THE TRAP OF THE HEIGHTEST FITTING.
WASTE PIPES NOT TO CONNECT WITHIN 200mm OF THE WC CONNECTION. SUPPLY HOT AND COLD WATER TO ALL FITTINGS AS APPROPRIATE.

General Notes

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LINTEL SCHEDULE

TO BS5977: PART 2: 1983. BBA 86/1674 & BBA 85/1453.
LINTELS MUST NOT SUPPORT CONCRETE FLOOR LOADS OR POINT LOADS.
DO NOT DAMAGE LINTELS.
END BEARINGS GENERALLY NOT LESS THAN 150mm.
FOR END BEARINGS OF 100mm THE ENDS ARE TO BE FILLED WITH CONCRETE FOR A DEPTH OF 150mm.
INSIDE OF BEAMS TO BE FILLED WITH FIBREGLASS INSUL.

CAVITY SPECIFICATION

OUTER LEAF OF BWK. AN INSUALTED CAVITY AND INNER LEAF OF 100mm THICK THERMALITE TURBO BLOCK. ALONG WITH INTERNAL PLASTER FINISH.
OUTER LEAF MAY BE SUBJECT TO PLANNING CONDITIONS.
CAVITY WALL BELOW DPC TO BE O BWK. CONC. BWK.
DENSE CONC. BELOW OR 4N min. TRENCH BLOCK.
CAVITY BELOW DPC TO BE FILLED WITH CONCRETE TO 225mm BELOW DPC LEVEL.
CAVITY CLOSED AT EAVES AND VERGE.
CAVITY WALL BUILT OFF A CONCRETE FOUNDATION.
DPC TO BS743 AND AT LEAST 150mm ABOVE GROUND.

U-VALUE REQUIRED 0.18W/sqmK
FULL FILL CAVITY 105 BWK, 150 CAVITY; MINERAL WOOL, 100 TURBO.
USE 40mm CELOTEX CG4000
PARTIAL FILL CAVITY 105 BWK, 75 CAVITY, 100 SUPERBLOC
USE 40mm KINGSPAN THERMAWALL TW50
OR 50MM KINGSPAN KOOLTHERM K8

TIMBER STUD CONSTRUCTION

ALSO LOOK AT CONSPECTUS STUD WALL TYPE 1 & 2

DRG. SYMBOL

47 x 97 C16 TIMBER FRAMEWORK SET 400mm APART
AND BOTH SIDED PLATED WITH PLASTERBOARD AND WITH 5mm PLASTER FINISH.
NOTE THAT WALL SHALL HAVE A 100mm FIBERGLASS INFILL AND 15mm PLATERBOARD FOR SOUND INSUL.
PLASTER BOARD FIXINGS TO BE 50mm GALV. NAILS AT 250mm crs.
STUD WALL AT FIRST AND/OR SECOND FLOOR LEVEL TO BE BUILT ON A TRIPPLE JOIST.

STUD WALL TYPE



min 38x89 TIMBER STUDS AT
400crs (VERT. & HORIZON).
67 ROCKWOOL ACOUSTIC SLAB
13mm PLASTER BOARD EACH
SIDE WITH 3mm PLAST. SKIM

FIRE RESISTANCE = 30mins
ACOUSTIC ISOL'N = 44dB

INNER & OUTER SURFACES	=	0.18
= 0.114		
INSULATION 0.075/0.035	=	2.14
PLASTER BOARD 0.026/0.16	=	0.16
'U' VALUE = 0.38W/sqmK		2.594

ROOM VENTILATION(HABITIABLE ROOMS)

PURGE VENTILATION - VIA DOOR OR WINDOW OPENING AT LEAST 1/20tH FLOOR AREA.
WINDOWS TO OPEN MORE THEN 30deg. SEE ALSO ESCAPE WINDOW SIZES.
BACKGROUND VENTS OF MINIMUM 8000sq mm.
eg. TRICKLE VENTILATOR.

WHERE A HABITABLE ROOM EXTENS. IS ONTO ANOTHER ROOM THEN THE FLOOR AREA OF EACH OF THE AFFECTED ROOMS ARE ADDED. WHERE A CONSERVATORY IS ADDED THEN SEE NOTES ON THE FLOOR PLAN DETAIL.

ROOM VENTILATION(TOILET)

MECHANICAL EXTRACT VENTILATION FOR RAPID VENTING. AT A RATE OG 6L per sec. WITH INTERMITTENT OPERATING & 15 mins. OVERRUN.

ROOM VENTILATION(BATH/SHOWER)

MECHANICAL EXTRACT VENTILATION FOR RAPID VENTING. AT A RATE OG 6L per sec. WITH INTERMITTENT OPERATING & 15 mins. OVERRUN.

ESCAPE WINDOW SIZE

WHERE ESCAPE WINDOWS ARE NEEDED. THE OPENINGS FOR ESCAPE PURPOSES SHOULD BE EQUAL TO 0.33sqm WITH A WINDOW BOARD HEIGHT 800 to 1000 FROM FLOOR LEVEL. THE MIN. CLEAR HEIGHT TO BE 450mm OR THE MIN. CLEAR WITDH TO BE 450mm.

GLAZING REQUIRMENTS

SAFETY GLASS TO BE USED BETWEEN FINISHED FLOOR LEVEL AND 1500mm ABOVE THAT LEVEL.
'U' VALUE TO BE AT LEAST 1.6 IN UPVC WINDOWS AND/OR DOORS DOUBLE GLAZING WITH 16mm PANE GAP AND LOW 'E'
(en = 0.05) FOR PVC-U WINDOWS AND/OR DOORS.

ROOF LIGHTS

MIN 'U' VALUE OF 1.6W/m2K. ROOF LIGHTS TO BE DOUBLE GLAZED WITH 16mm ARGON GAP AND SOFT LOW-E GLASS. WINDOW ENERGY RATING TO BE BAND C OR BETTER. ROOF LIGHTS TO BE FITTED IN ACCORANCE WITH MANUFACTURES INSTRUCTIONS WITH RAFTERS DOUBLED UP TO SIDES AND SUITABLE FLASHING ECT.
WHERE NEW WINDOWS ARE TO BE PROVIDED: IF THE AREA OF OPENINGS IS MORE THAN 25%OF THE TOTAL FLOOR AREA EITHER THE AREA OF THE OPENING SHOULD BE REDUCED TO BE NOT GREATER THAN 25% OR SOME COMPENSATION FEATURE SHOULD BE PROVIDED AS DESCRIBED IN PARAGRAPH 4.15 APPROVED DOCUMENTS L1b AND AS AGREED WITH BUILDING CONTROL.

THERMAL BRIDGE LIMITATION

REVEALS TO LINTELS, JAMBS AND SILLS ARE TO BE INSULATED. BOX LINTELS TO BE FILLED WITH INSUALTION, FRAMES AND SILLS TO OVERLAP THE BLOCKWORK WHERE POSSIBLE BY 30mm MIN.
INTERNAL FACES OF STEEL LINTELS ARE TO BE COVERED WITH 20mm PLASTER BOARD AND 5mm PLASTER SKIM FINISH.
THERMAL CONDUCTIVTY OF BLOCKWORK. NOT TO EXCEED 0.16W/Mk

LIGHTING

ENERGY EFFICIENT LIGHT FITTINGS TO BE INSTALLED ON THE BASIS OF THE PER FOUR FIXED LIGHTING FITTINGS

GENERAL NOTES

1) ALL WORK TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS, WORK TO PROCEED AT THE DISCRETION OF THE BUILIDNG INSPECTOR.
2) DRAINS PASSING UNDER EXTENSION TO BE ENCASED IN 150mm CONCRETE. SEE ADDITIONAL NOTES ON DRAINAGE PLAN.
3) ANY ADDITIONAL INSPECTION CHAMBER TO BE EITHER PLASTIC MANIFOLD OR PRE-CAST CONCRETE CONSTRUCITON. NON-VENT COVER, STEP IRONS AS NEEDED & SMOOTH IMPERVIOUS BENCH'G.
4) NEW DRAINS TO BE SUPER SLEVE TYPE OF 100mm dia. 1:40min FALL. ANY NEW SOIL & VENT PIPE TO BE TAKEN UP TO AT LEAST 900mm HIGHER THAN WINDOW LEVEL.
5) REINFORCED CONCRETE LINTELS OVER AN NEW/EXG. DRAIN.
6) WASTE PIPES TO NEW SINKS, BATHS OR SHOWERS TO BE 50dia AND HAVE 75mm DEEP SEAL TRAPS.
7) HORIZONTAL AND VERTICAL DPC TO NEW OPENINGS.
8) CATNIC LINTELS TO NEW OPENINGS, 150mm END BEARINGS AND FILLED WITH FIBREGLASS INSULATION.
9) NEW WINDOWS AND GLAZED DOORS TO BE DOUBLE GLAZED.
10) EXG. FOUNDATIONS, WALLS AND LINTELS THAT TAKE INCREASED LOADS SHALL BE EXPOSED FOR INSTECTION.
11) WALL TIES ON 900crs AND STAGGERED EVERY 3rd COARSE OF BRICKWORK.
12) MILD STEEL ROOF AND FLOOR LATERAL SUPPORTS ON 1m crs.
13) NEW CAVITY WALL RETURNS GENERALLY 665mm min.
14) ALL NEW BWK/BLOCK NIBS TO BE ON A CONCRETE FOUNDATION.
15) ALL ABUTMENTS OF NEW ROOFS AND WALL ARE TO BE LEAD FLASHED (STEPPED/LINEAR) WITH CODE 4 LEAD AND WHERE NECESSARY CAVITY TRAYS INSTALLED.
16) UNLESS OTHERWISE STATED ALL BRICK AND BLOCK WORK TO BE FULLY KEYED TO EXISITNG WALLS.
17) EXPOSED TIMBERS TO BE TREATED WITH PRESERVATIVE.
18) THE CONTRACTOR SHALL CHECK ALL DIMENSIONS AND CONDITIONS PRIOR TO COMENCEMENT OF WORKS ON SITE. THE DESIGNER WILL NOT ACCEPT RESPONSIBILITY FOR ANY ANOMOLIES OR MISTAKES OCCURING DURING CONSTRUCTION STAGES. THESE DRAWINGS ARE FOR PLANNING AND BUILDINGS REGULATION PURPOSED ONLY AND WHERE NECESSARY DETAILED DESIGN & SUPERVISON WILL BE CARRIED OUT ON A SEPERATE BASIS AND AGREED WITH CUSTOMER.
19) THE CONTRACTOR SHOULD DISCUSS THE PROPOSED WORK DIRECTLY WITH BUILDING CONTROL DUIRNG ALL STAGES.
20) PERMISSION WILL BE REQUIRED FROM OWNER OF AJECENT PROPERTY OR LAND FOR ANY WORK ON OR BEYOND THE BOUNDARY.
21) PRODUCTS FROM DIFFERENT MANUFACTURERS MAY BE USED, BUT REASONABLE QUALITY PRODUCTS ARE A MINIMUM REQUIREMENT.
22) THE BUILDER IS ADVISED PRIOR TO COMMENCEMENT OF WORK AND DURING WORK IN PROGRESS TO DISCUSS WITH THE CUSTOMER ANY ASSPECTS OF WORK THAT MAY BE CONSIDERED AS 'EXTRA WORK'. THESE MATTERS MUST BE DISCUSSED, COSTED AND AGREED WITH THE CUSTOMER PROIR TO IMPLEMENTATION.

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23) ALL BWK. SHALL BE IN ACCORDANCE WITH BS5628 AND CONCRETE SHALL COMPLY WITH B58110 'STRUCUTAL USE OF CONCRETE', AND SPECIFICATION OF PRESCIRBED & DESIGNED MIXES FOLLOWS THAT PRACTICE SET OUT IN BS5328. CONCRETE SHALL BE GRADE C25 USING SULPHATE RESISITNG CEMENT TO BS4027 WITH A MINIMUM CEMENT CONTENT 330kg/cubic m UNLESS OTHERWISE SPECIFIED.

24) THE NATURE OF THE GROUND AND SAFE BEARING CAPACITY SHALL BE DETERMINED PRIOR TO COMMENCEMENT. CONTRACTOR SHALL DO THIS IN CONJUNCTION WITH BUILDING INSPECTORS.

25) ALL EXCAVATIONS SHALL WHERE NECESSARY BE TIMBERED AND STRUTTED AND SECURED TO PREVENT MOVEMENT OF THE SURROUNDING GROUND AND SAFETY OF THE BUILIDNG AND ADJACENT PROPERTIES BEFORE IT IS SUPPORTED BY PERMANENT WORK. PRECAUTIONS ARE TO BE TAKEN TO KEEP EXCAVATIONS FREE FROM WATER. THE BOTTOM OF EXCAVATIONS SHALL BE SEALED WITH CONCRETE IMMEDIATELY AFTER INSPECTION HAS SHOWN IT TO BE SATISFACTORY.

26) WITH THE ADDITION OF FANS A GAS SPILLAGE TEST SHOULD BE CARRIED OUT BY A SPECIALIST CONTRACTOR.

27) NEW REQUIREMENTS UNDER PART L OF THE BUILDING REGULATIONS WILL NOW ENCOMPASS OVERALL SYSTEM PERFORMANCE. REFER TO NOTES ON COMMISIONING OF HEATING SYSTEM.

28) ANY ADDITIONAL WORK DONE BY OTHER PARTIES IN REGARDS TO THIS PROJECT MUST BE APPROVED BY LOCAL AUTHORITY.

29) GENERALLY ANY DEPARTURES FROM THE APPROVED PLANNING REQUIRE A RE-SUBMISSION FOR BUILDING REG. OR PLANNING APPROVAL, IT IS ADVISED THAT THE WORK STOPS UNTIL ANY SUCH APPROVAL IS OBTAINED.

30) GENERALLY ALL ELEMENTS OF STRUCUTRE TO BE 1/2hr FR

31) ALL ELEMENTS OF STRUCTRE TO BE 1/2hr FIRE RESISITNG

32) IN THE EVENT THAT ROOF LIGHTS ARE BEING INSTALLED, THE BUILDER SHALL ENSURE THAT THE ROOF LIGHT SELECTED IS SUITABLE FOR THE ACHIEVED ROOF PTICH ANGLE. DIFFERENT PITCH ANGLES REQUIRE A SPECIFIC TYPE OF ROOF LIGHT, FOR PLANNING PERMISSON REQUIREMENTS THE ROOF LIGHT PROJECTION FROM THE ROOF SHALL BE LESS THAN 150mm.

33) ALLOWABLE 'U' VALUES (EXTRACTS FROM AB L1B)

PITCH TILED ROOF WITH OVER JOISTS INSULATION	0.16
PITCH TILED ROOF BETWEEN RAFTER INSULATION	0.2
BUILD UP FELT TYPE ROOF	0.2
EXPOSED PERIMETER WALLS	0.3
WINDOWS (SEE ALSO GLAZING NOTES)	1.8
DOORS WITH MORE THAN 50% GLAZING	2.2
DOORS OTHER THEN ABOVE	3.0
CONCRETE OR TIMBER GROUND FLOORS	0.22

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Appendix B

Flood map for planning

Your reference	Location (easting/northing)	Created
95620	**383573/399506**	**15 April 2025 13:47**

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see https://www.gov.uk/guidance/flood-risk-assessment-standing-advice)

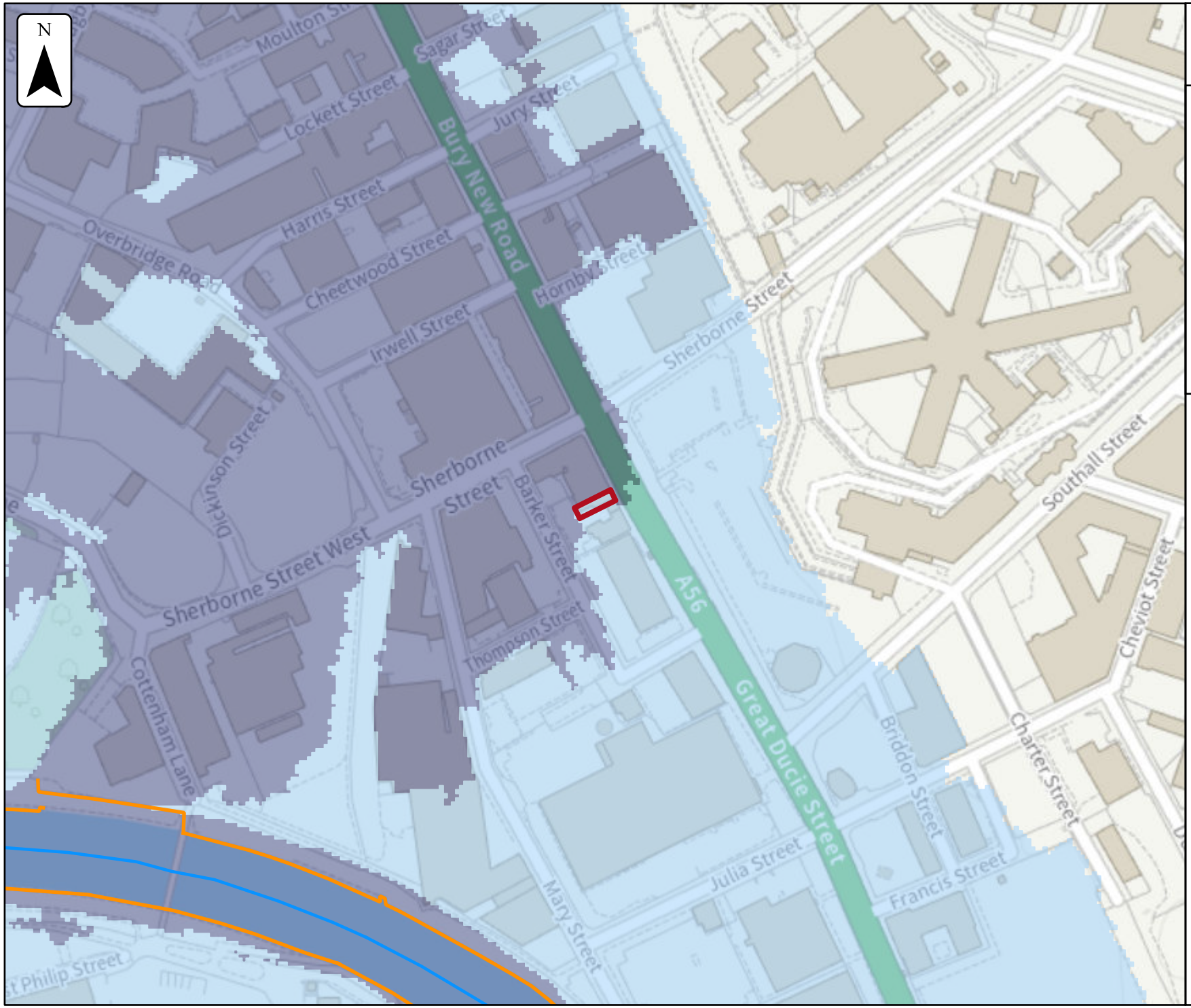
Notes

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

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

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

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Environment Agency

Flood map for planning

Your reference
95620

Location (easting/northing)
383573/399506

Scale
1:2,500

Created
15 Apr 2025 13:47

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

0 20 40 60 m

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Appendix C

Annex 3: Flood Risk Vulnerability Classification	
Essential Infrastructure:	• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood. • Wind turbines. • Solar farms.
Highly Vulnerable:	• Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)
More Vulnerable: * Landfill is as defined in Schedule 10 of the Environmental Permitting (England and Wales) Regulations 2010	• 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.
Less Vulnerable:	• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. • Car parks.
Water-Compatible Development:	• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

National Planning Policy Framework Annex 3: Flood risk vulnerability classification