



**111-113 Briton Ferry Road, Neath, SA12 2AS**

**TAN15: Flood Consequence Assessment**

**For Balbir Singh Johal**

**KRS.0524.001.R.001.A**

**February 2021**

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### 111-113 Briton Ferry Road, Neath, SA12 2AS

|             |                                         |
|-------------|-----------------------------------------|
| Project     | TAN15: Flood Risk Assessment            |
| Client      | Balbir Singh Johal                      |
| Status      | Final                                   |
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| Date        | February 2021                           |

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## EXECUTIVE SUMMARY

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The proposed development would be expected to remain dry in all but the most extreme conditions. Providing the recommendations made in this FCA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable, and the development would be in accordance with the requirements of TAN15.

This FCA demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of TAN15. The development should not therefore be precluded on the grounds of flood risk.

## 1.0 INTRODUCTION

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### 1.1 Background

This Flood Consequence Assessment (FCA) has been prepared by KRS Environmental Limited to support a planning application for the proposed development at 111-113 Briton Ferry Road, Neath, SA12 2AS.

This FCA has been carried out in accordance with guidance contained in Technical Advice Note 15 Development and Flood Risk (TAN15) and associated Development Advice Maps. This FCA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

It is recognised that developments which are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. The development design should be such that future users will not have difficulty obtaining insurance or mortgage finance, or in selling all or part of the development, as a result of flood risk issues.

### 1.2 Technical Advice Note 15 (TAN15)

One of the key aims of TAN15 is to ensure that flood risk is taken into account at all stages of the planning process; to avoid inappropriate development in areas at risk of flooding and to direct development away from areas of highest risk.

It advises that where new development is exceptionally necessary in areas of higher risk, this should be safe, without increasing flood risk elsewhere, and where possible, reduce flood risk overall. A risk-based approach is adopted at stages of the planning process, applying a source pathway receptor model to planning and flood risk. To demonstrate this, an FCA is required and should include:

- whether a proposed development is likely to be affected by current or future flooding from all sources;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate; and
- satisfy the justification test, including the acceptability of consequences.

### 1.3 Justification Test

The Justification Test sets out the details required to justify siting a new development in an area believed to be at risk of flooding and is defined in Section 6 of TAN15. The required criteria a site / development must fulfil are;

- i) its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or
- ii) its location in zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region;

and

- iii) it concurs with the aims of PPW and meets the definition of previously developed land; and,
- iv) the potential consequences of a flooding event for the particular type of development have been considered, and in terms of the criteria contained in sections 5 and 7 and appendix 1 found to be acceptable.

#### **1.4 Report Structure**

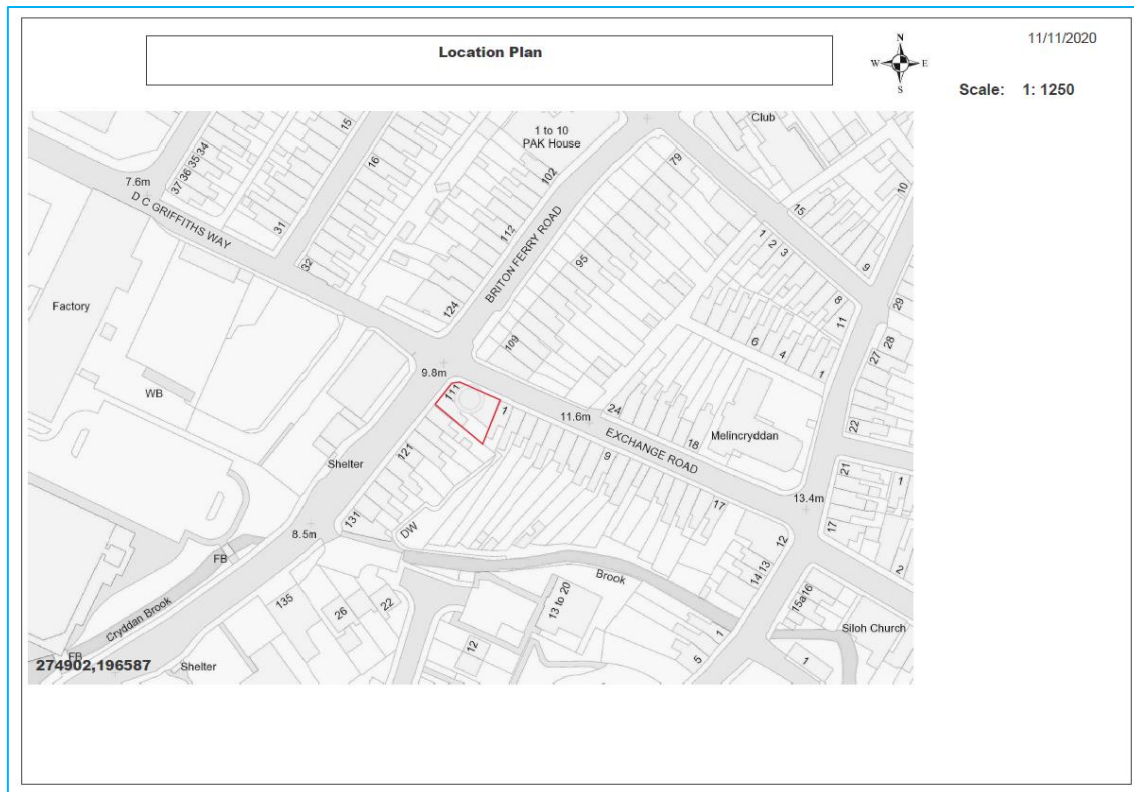
This FCA has the following report structure:

- Section 2 describes the location area and the existing and proposed development;
- Section 3 outlines the flood risk to the existing and proposed development;
- Section 4 outlines mitigation measures used to reduce the overall level of flood risk;
- Section 5 provides justification of the proposed location of the development; and
- Section 6 presents a summary and conclusions.

## 2.0 LOCATION & DEVELOPMENT DESCRIPTION

### 2.1 Site Location

The site is located at 111-113 Briton Ferry Road, Neath, SA12 2AS (see Figure 1).



**Figure 1 - Site Location**

### 2.2 Existing Development

The building is used for retail uses on the ground floor and residential uses on the first floor (see Appendix 1).

### 2.3 Proposed Development

The proposal seeks views on obtaining planning permission to separate and sub-divide the property into two units for one A3 hot food take away and to retain an A1 use in the other (see Appendix 1). To create access to the upper 4 bedroom flat from a separate door next to the entrance to the shop at 113 Briton Ferry Road. Further details with regard to the proposed development can be found in the accompanying information submitted with the planning application.

### 2.4 Ground Levels

The site ground level is 9.80 metres Above Ordnance Datum (mAOD). Ground levels rise along Exchange Road to the south east rising to 11.60mAOD and 13.60mAOD at the junction with Cryddan Road.

## **2.5 Catchment Hydrology**

The Cryddan Brook is located approximately 50m to the south of the site and the Afon Nedd (River Neath) is located approximately 500m to the west of the site.

## **2.6 Ground Conditions**

The British Geological Survey (BGS) Map indicates that the bedrock underlying the site consists of the Hughes Member - sandstone. The superficial deposits consist of Tidal Flat Deposits - clay, silt and sand.

### 3.0 FLOOD RISK

#### 3.1 Sources of Flooding

All sources of flooding have been considered, these are: fluvial (river) flooding, tidal (coastal) flooding, groundwater flooding, surface water (pluvial) flooding, sewer flooding and flooding from artificial drainage systems/infrastructure failure.

#### 3.2 Natural Resources Wales

Information regarding the current flood risk at the application site, local flood defences and flood water levels has been obtained from Natural Resources Wales.

#### 3.3 Neath Port Talbot Council

Neath Port Talbot Council is the Local Planning Authority (LPA) and the Lead Local Flood Authority (LLFA) and has responsibilities for 'local flood risk', which includes surface runoff, groundwater and ordinary watercourses. Planning guidance written by Neath Port Talbot Council regarding flood risk was consulted to assess the mitigation policies in place. In particular, the Neath Port Talbot Council Strategic Flood Consequence Assessment (SFCA) has been reviewed.

#### 3.4 Climate Change

Projections of future climate change, in the UK, indicate more frequent, short-duration, high intensity rainfall and more frequent periods of long duration rainfall. Guidance included within TAN15 recommends that the effects of climate change are incorporated into FCA. Recommended precautionary sensitivity ranges for peak rainfall intensities and peak river flows are outlined in the CL-03-16 - Climate change allowances for Planning purposes.

Table 1 show the peak river flow allowances by river basin district. There is reasonable level of certainty that the future impacts of climate change will lie somewhere between the central and upper 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 by the 2020s | Total Potential Change Anticipated by the 2050s | Total Potential Change Anticipated by the 2080s |
|----------------------|--------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| West Wales           | Upper end          | +25%                                            | +40%                                            | +75%                                            |
|                      | Central            | +15%                                            | +25%                                            | +30%                                            |
|                      | Lower end          | +5%                                             | +10%                                            | +15%                                            |

The 9th January 2014 Welsh Government letter to all Chief Planning Officers (CPO) in Wales and CL-03-16 - Climate change allowances for Planning purposes clarifies and refers to the Natural Resources Wales recommendations that the lifetime of development for residential development is 100 years, and for other development it is considered to be 75 years.

### 3.5 Historic Flooding

The Natural Resource Wales historic flood outline map shows that the site has not historically flooded. The British Hydrological Society (BHS) “Chronology of British Hydrological Events<sup>1</sup>” has no information on flooding within the vicinity of the site although it shows that Rhyl flooded in 1896; however no details as to the depth or duration are provided and furthermore it is not known whether this affected the site itself. No other historical records of flooding for the site have been recorded. Therefore, it has been concluded that the site has not recently flooded.

### 3.6 Existing and Planned Flood Defence Measures

The site is not protected against flooding by existing flood defence measures. However, a number of risk management measures to manage and reduce the overall flood risk at the site will be used these are discussed in Section 4.0.

### 3.7 Development Advice Map

The Development Advice Map (DAM) which accompanies TAN15 shows that the site is located within C2 - Areas of the floodplain without significant flood defence infrastructure (see Figure 2).

Table 2 describes the composition and use of the TAN15 zones to control and manage development. Applying the Flood Risk Vulnerability Classification in Figure 2 of TAN15, the existing development is classified as ‘highly vulnerable’ and the proposed development is classified as ‘highly vulnerable’. It should be noted that the proposed retail uses are classified as ‘less vulnerable’ and will be located on the ground floor with the ‘highly vulnerable’ residential uses being located on the first floor.

The proposed development will reduce the vulnerability of the site to flooding. The proposed development will improve the sites resilience, resistance to flooding and by using property level protection measures to protect the site from flooding the vulnerability of the site will be improved (see Section 4.0).

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<sup>1</sup> <http://www.dundee.ac.uk/geography/cbhe/>

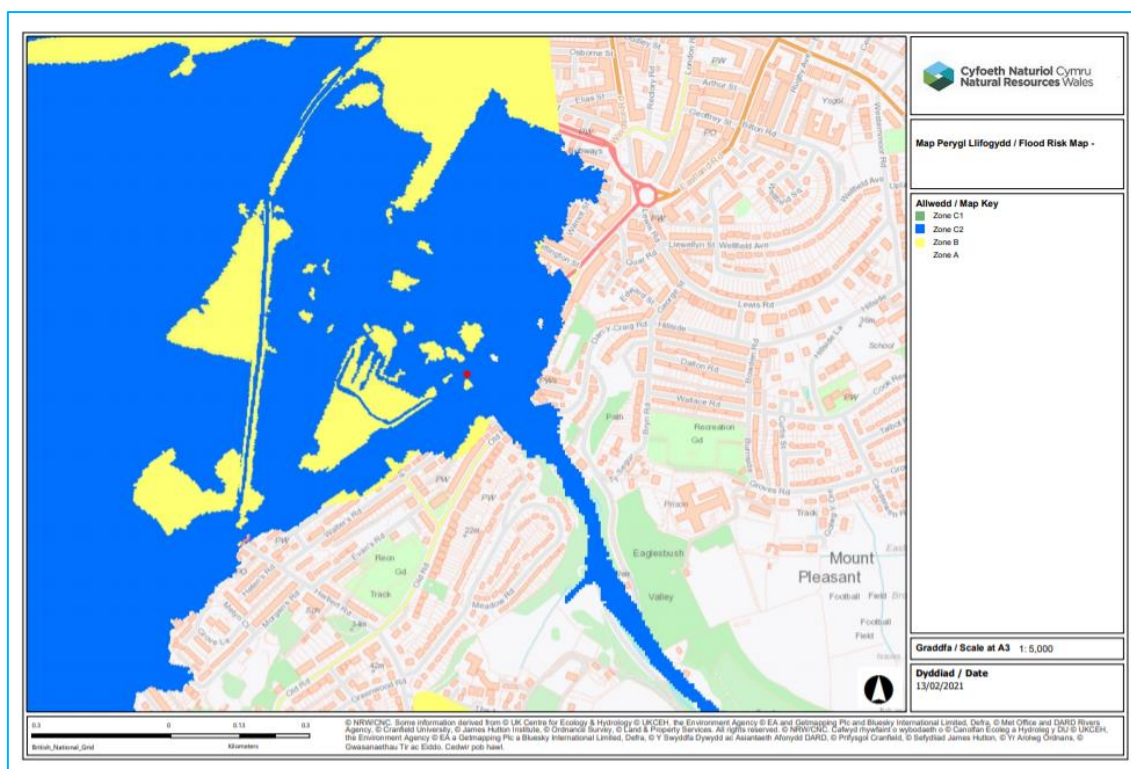


Figure 2 - Development Advice Map

Table 2 - Development Advice Map Flood Zones

| Description of Zone                                                                                             | Zone | Use within the precautionary Framework                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Considered to be at little or no risk of fluvial or tidal/coastal flooding.                                     | A    | Used to indicate that justification test is not applicable and no need to consider flood risk further.                                                                                                                                                                           |
| Areas known to have been flooded in the past evidenced by sedimentary deposits.                                 | B    | Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further. |
| Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)      | C    | Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.                                                                                             |
| Areas of the floodplain which are developed and served by significant infrastructure, including flood defences. | C1   | Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.                                                                                                                                          |
| Areas of the floodplain without significant flood defence infrastructure.                                       | C2   | Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.                                |

### 3.8 Natural Resources Wales Flood Risk Map

A review of the Natural Resources Wales Flood Risk Map indicates that the site is located within the medium fluvial flood risk zone with a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%) years (see Figure 3).

The Flood Risk Map is the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. The Natural Resources Wales flood zones show the worst-case scenario.

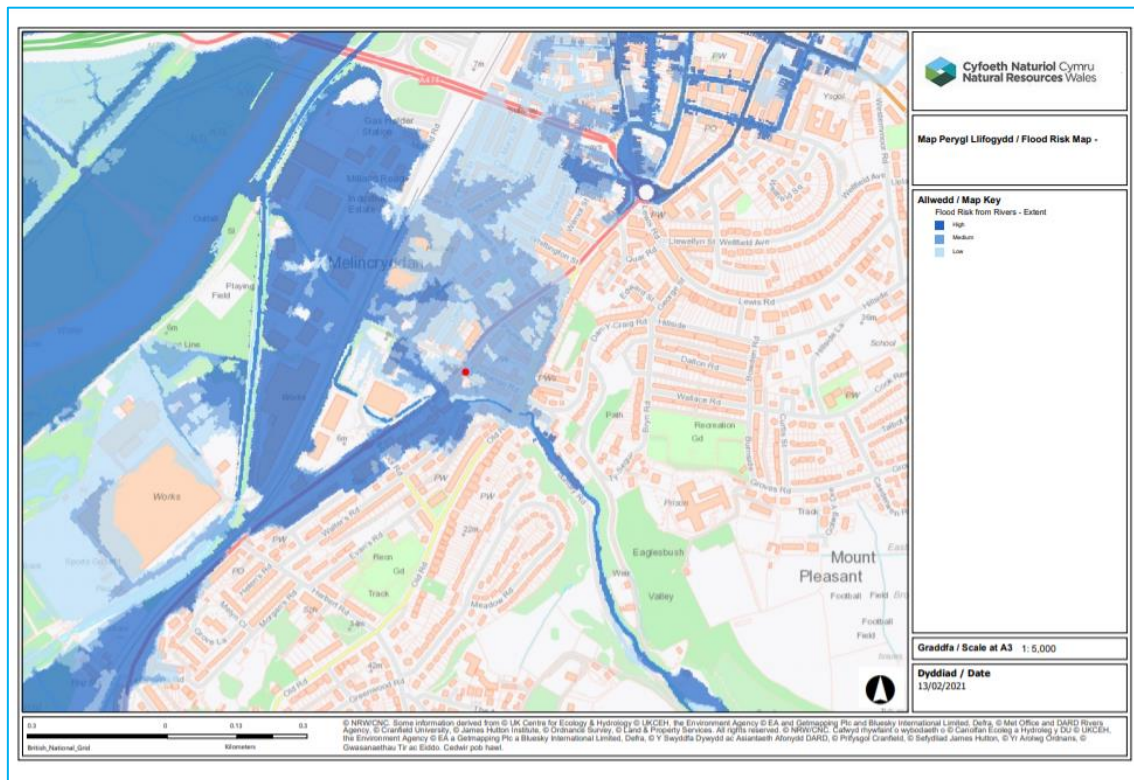
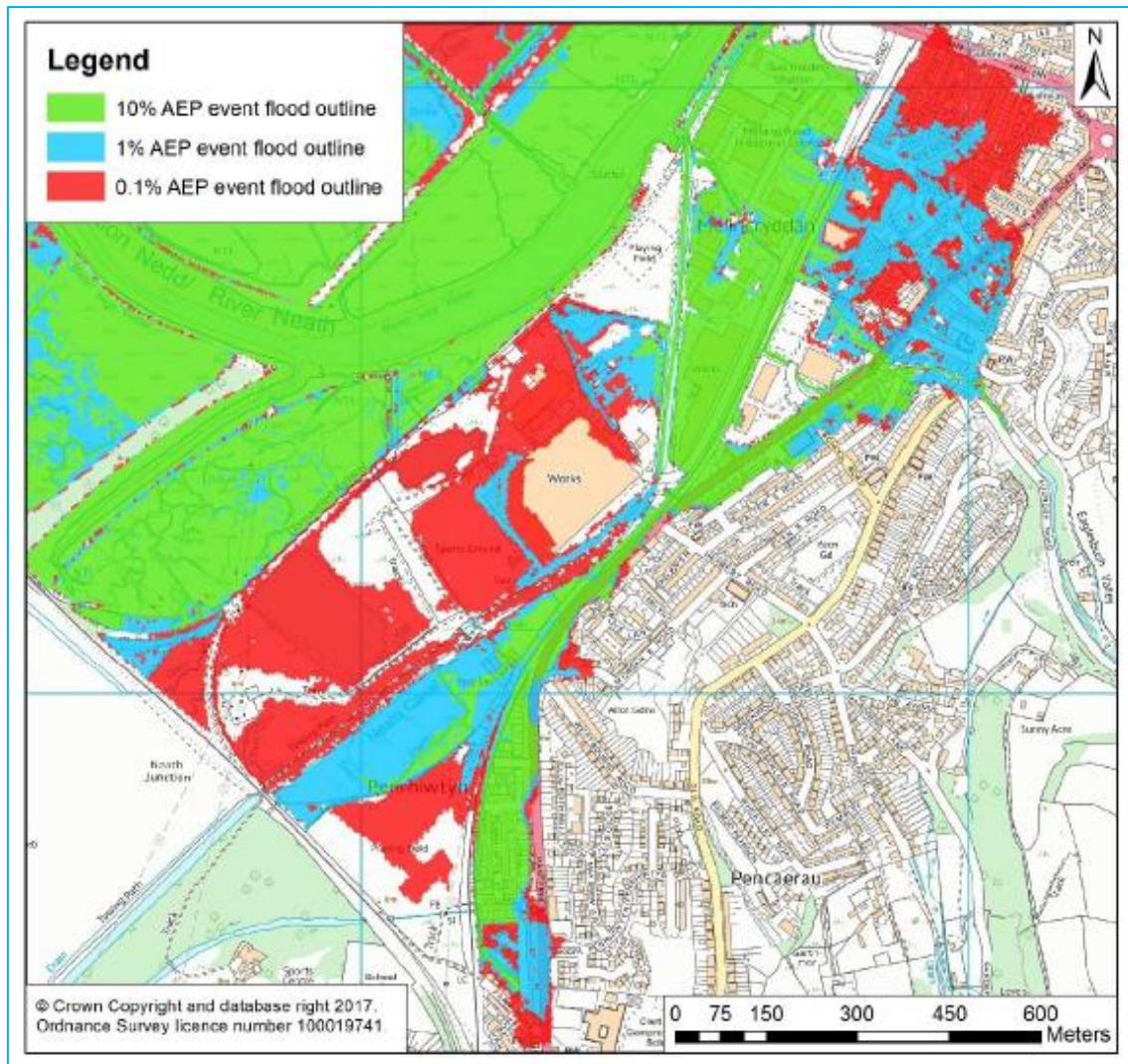


Figure 3 - Natural Resources Wales Flood Risk Map

### 3.9 Fluvial (river) Flooding

The Natural Resources Wales defended model fluvial flood outlines show that the site is located within the 1 in 100 year flood outline (see Figure 4). The National Flood Hazard and Risk maps shows that a water depth of less than 0.15m, water velocity of less than 1m/s and a hazard rating of low may be experienced during the 1 in 100 year and 1 in 1000 year events. The National Flood Hazard and Risk maps do not have any official status for planning purposes they do provide a useful assessment of flood risk where other data is not available.

Given the scale and nature of the proposed development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low flood risk to the site therefore, the risk of flooding from fluvial flooding is considered to be of **low significance**. The risk from this source will be further mitigated by using a number of risk management measures to manage and reduce the overall flood risk at the site (see Section 4.0).



**Figure 4 - Natural Resources Wales Defended Model Fluvial Flood Outlines**

### 3.10 Tidal (coastal) Flooding

The site is not located within the vicinity of tidal flooding sources and the risk of tidal flooding is considered to be **not significant**.

### 3.11 Groundwater Flooding

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements and car parks) underlain by permeable rocks (aquifers).

Site conditions suggest a low probability of groundwater flooding. The local geology is not considered to yield significant volumes of groundwater. No below surface infrastructure and buildings are located or are proposed for the site. The risk of flooding from groundwater flooding is considered to be **not significant**.

### 3.12 Surface Water (pluvial) Flooding

The site is not situated near to large areas of poor permeability or areas with the geology and/or topography which may result in surface water flooding. The soil conditions at the site and within the vicinity of the site indicate that the site may be at risk of surface water flooding.

The Natural Resources Wales Surface Water flood map shows that the site has a very low risk of surface water flooding (see Figure 5) with a chance of surface water flooding of less than 1 in 1000 (0.1%) years. Surface water flooding tends to occur sporadically in both location and time such surface water would tend to be confined to the streets around the development.

Surface flooding poses a very low flood risk to the site therefore, the risk of flooding from surface water flooding is considered to be of **low significance**. The risk from this source will be further mitigated by using a number of risk management measures to manage and reduce the overall flood risk at the site (see Section 4.0).

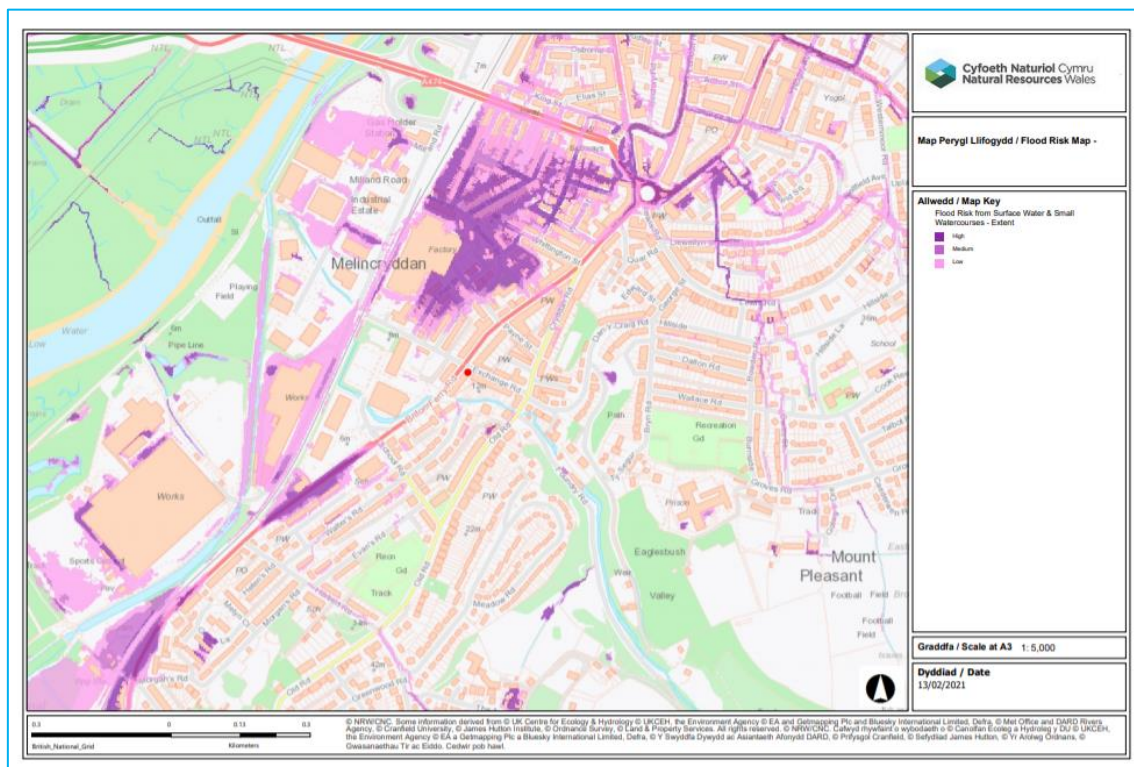


Figure 5 - Natural Resources Wales Surface Water Flood Map

### 3.13 Sewer Flooding

Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time such flood flows would tend to be confined to the streets around the development.

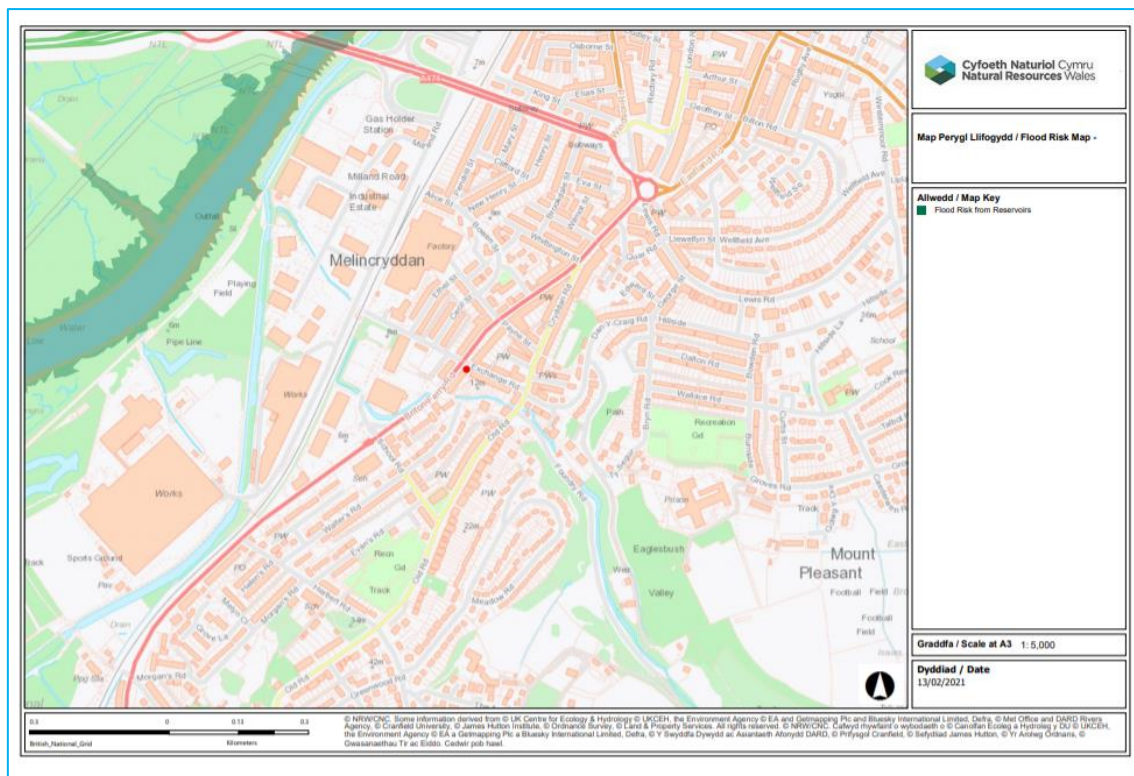
It has been assumed that there are existing sewers located within the vicinity of the site and these will inevitably have a limited capacity so in extreme conditions there would be surcharges, which may in turn cause flooding. Flood flows could also be generated by burst water mains, but these would tend to be of a restricted and much lower volume than weather generated events and so can be discounted for the purposes of this assessment.

Given the design parameters normally used for drainage design in recent times and allowing for some deterioration in the performance of the installed systems, which are likely to have been in place for many years, an appropriate flood risk probability from this source could be assumed to have a return period in the order of 1 in 10 to 1 in 20 years. The provision of adequate level difference between the ground floors and adjacent ground level would reduce the annual probability of damage to property from this source to 1 in 100 years or less.

Sewer flooding poses a flood risk to the site therefore, the risk of flooding from sewer flooding is considered to be of **low significance**. The risk from this source will be further mitigated by using a number of risk management measures to manage and reduce the overall flood risk at the site (see Section 4.0).

### 3.14 Flooding from Artificial Drainage Systems/Infrastructure Failure

There are no nearby artificial water bodies, water channels, reservoirs and artificial drainage systems that could be considered a flood risk to the property. The Natural Resources Wales Reservoir flood map shows that the site is not at risk of reservoir flooding (see Figure 6). The risk of flooding from artificial drainage systems/infrastructure failure is considered to be **not significant**.



**Figure 6 - Natural Resources Wales Reservoir Flood Map**

### 3.15 Effect of the Development on Flood Risk

The building is existing therefore, the proposed development will have no impact on the movement of floodwater across the site. The overall direction of the movement of water will be maintained within the developed site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed. There will be no increase in the flood water levels due to the proposed development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

### 3.16 Summary of Site Specific Flood Consequence Assessment

A summary of the sources of flooding and a review of the risk posed by each source at the site is shown in Table 3.

**Table 3 - Risk Posed by Flooding Sources**

| Sources of Flooding                                              | Potential Flood Risk | Potential Source  | Probability/Significance |
|------------------------------------------------------------------|----------------------|-------------------|--------------------------|
| Fluvial Flooding                                                 | Yes                  | Cryddan Brook     | Low                      |
| Tidal Flooding                                                   | No                   | None Reported     | None                     |
| Groundwater Flooding                                             | No                   | None Reported     | None                     |
| Surface Water Flooding                                           | Yes                  | Poor Permeability | Low                      |
| Sewer Flooding                                                   | Yes                  | Local Sewers      | Low                      |
| Flooding from Artificial Drainage Systems/Infrastructure Failure | No                   | None Reported     | None                     |

The site is unlikely to flood except in extreme conditions. The primary, but unlikely, flood risk posed to the site is from fluvial flooding from the Cryddan Brook. The DAM shows that the site is located within C2 - Areas of the floodplain without significant flood defence infrastructure. A review of the Natural Resources Wales Flood Risk Map indicates that the site is located within the medium fluvial flood risk zone with a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%) years. However, the site has no history of flooding.

The existing development is classified as 'highly vulnerable' and the proposed development is classified as 'highly vulnerable'. It should be noted that the proposed retail uses are classified as 'less vulnerable' and will be located on the ground floor with the 'highly vulnerable' residential uses being located on the first floor.

The proposed development will reduce the vulnerability of the site to flooding. The proposed development will improve the sites resilience, resistance to flooding and by using property level protection measures to protect the site from flooding the vulnerability of the site will be improved (see Section 4.0).

The Natural Resources Wales defended model fluvial flood outlines show that the site is located within the 1 in 100 year flood outline. The National Flood Hazard and Risk maps shows that a water depth of less than 0.15m, water velocity of less than 1m/s and a hazard rating of low may be experienced during the 1 in 100 year and 1 in 1000 year events. The National Flood Hazard and Risk maps do not have any official status for planning purposes they do provide a useful assessment of flood risk where other data is not available.

Given the scale and nature of the proposed development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low flood risk to the site therefore, the risk of flooding from fluvial flooding is considered to of **low significance**. A number of secondary flooding sources have been identified which may pose a **low significant** risk to the site. These are:

- Surface Water Flooding
- Sewer Flooding

The building is existing therefore, the proposed development will have no impact on the movement of floodwater across the site. The overall direction of the movement of water will be maintained

within the developed site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed. There will be no increase in the flood water levels due to the proposed development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

## 4.0 RISK MANAGEMENT

---

### 4.1 Introduction

In this flood zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout and form of the development and the use of flood mitigation measures.

A number of techniques and mitigation strategies to manage and reduce the overall flood risk in the area will be used. This will ensure the development will be safe and there is:

- Minimal risk to life;
- Minimal disruption to people living and working in the area;
- Minimal potential damage to property;
- Minimal impact of the proposed development on flood risk generally; and;
- Minimal disruption to natural heritage.

The flood risk at the site will be reduced by using a number of risk management measures to manage and reduce the overall flood risk at the site.

### 4.2 Sequential Approach

The sequential approach has been applied within the site by locating the most vulnerable elements of the development in the lowest risk areas. The most vulnerable use, the residential accommodation, will be situated on the first floor well above any floodwater levels. The more flood-compatible uses such as the retail uses will be situated on the ground floor at a higher risk of flooding.

### 4.3 Finished Floor Levels

The finished floor levels of the buildings will be set no lower than the existing finished floor levels. It is recognised however that owing to limited headroom constraints, massing, planning policy and Building Regulations it is considered impractical to raise the finished floor levels further. Therefore, in order to mitigate against this, it is recommended that the occupants of the building sign up to receive flood warnings from Natural Resources Wales and implement a flood evacuation plan to a safe area away from the building during times of flood. It is also proposed that flood protection measures are employed within the building design to reduce the overall risk to the occupants.

A combination of resistance (proofing) and resilience measures will be included to provide further protection. This is discussed below.

### 4.4 Sleeping Accommodation

All Sleeping accommodation will be located on the first floor, the levels of the first floor are located a minimum of 2.50m above the ground floor finished floor level well above any floodwater levels.

### 4.5 First Floor Accommodation

Accommodation will be located on the first floor as well as the ground floor of the building. This will allow occupants to retreat to higher floor levels if needed. The levels of the first floor are located a minimum of 2.50m above the ground floor finished floor level well above any floodwater levels.

This provides a 'safe haven' above any floodwater levels. This will enable rapid escape should flooding occur which is unlikely. The upper floors are accessed via internal stairs and are sufficient in size to safely house all occupants of the building. The 'safe haven' will only be required in very extreme events or if a flood warning has not been received.

#### **4.6 Flood Resilience and Resistance**

The development of the layout should always consider that the site is potentially at risk from an extreme event and as such the implementation of flood resilience and resistance methods should be assessed.

To make the buildings more resistant to seepage the following measures will be incorporated. Sealant will be used around external doors and windows. All windows will be located well above any floodwater levels. All external doors and windows will be constructed from synthetic materials. The walls of the buildings will be resistant to water ingress.

To improve the resilience to flooding the following measures will be incorporated. All electrical wiring, switches, sockets, socket outlets, electrical, and gas meters etc. will be located a minimum of 450mm above the finished floor levels.

#### **4.7 Flood Warning and Evacuation**

The site is located in a flood risk area therefore; the site will participate in Natural Resources Wales flood warning telephone service. The site will register contact details with the Natural Resources Wales Flood Warning Service in order to receive Flood Warnings. Natural Resources Wales operate a free flood warning service providing alerts by phone, text or email when flooding is anticipated providing an opportunity for owners to take necessary precautions, giving enough time for the building to be safely evacuated and mitigation measures to be put in place.

All occupants of the site will be made aware of the Natural Resources Wales Floodline telephone number and the Flood Warning Codes and their meaning. The owner of the properties will carry out the role of Flood Warden for the site and ensure they have an understanding of the flood mechanisms of the site and will ensure that the safety of the occupants and visitors will not be compromised.

Natural Resources Wales uses Flood Warnings Codes. They can be issued in any order, usually ending with an 'all clear'. They are issued by Natural Resources Wales through their website and issue Flood Alerts for this area. The flood warning will be passed onto the occupiers and visitors of the site verbally, by telephone and/or in person. It will be ensured that everyone receives the flood warnings when required.

#### **4.8 Flood Plan**

A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed. Sensible precautions would include raising electrical items, irreplaceable items and sentimental items off the ground or where possible moving them to a higher floor, rolling up carpets and rugs and turning off utilities. In addition, consider what actions you would take should the property need to be evacuated including access and egress routes and preparing a flood kit in advance containing warm clothing, medication, a torch, food and wellingtons.

The Flood Plan is a 'living' document and therefore should be periodically reviewed and updated to provide advice and guidance to occupants in the event of an extreme flood. The Flood Plan will therefore reduce the vulnerability of the occupants to flooding and makes them aware of the

mechanisms of flooding at the site. If required a 'safe haven' can also be maintained and may be required in very extreme events if a flood warning has not been received.

#### **4.9 Safe Access and Egress Route**

Access routes should be such that occupants can safely access and exit their buildings in design flood conditions. These routes must also provide the emergency services with access to the development during a flood event and enable flood defence authorities to carry out any necessary duties during the period of flood. A safe access and egress route, including emergency access can be maintained for vehicles and/or by foot:

- 1) Exchange Road to the south east.

Ground levels rise along Exchange Road to the south east rising to 11.60mAOD and 13.60mAOD at the junction with Cryddan Road. The Safe Access and Egress Route shown in Figure 7 indicates the exit route that all people (i.e. occupants and visitors) on site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone.

Given that the site is located within a flood warning area, site users would be aware of the flood risk and should have more than sufficient time to evacuate the site before flooding of the access road would be expected. Therefore, the lead time of the flooding will provide site users with more than ample time to evacuate the site and seek safe refuge outside the floodplain. In the event of a flood warning, vital belongings, including waterproof clothing, necessary medication and essentials for infants and children will be collected. It should be ensured that all occupiers and visitors to the site are accounted for, and then exit the site.

The mechanism for flooding from tidal flooding is generally prolonged episodes of high sea level/rainfall, which affords good time for flood warnings to be issued. The likelihood of a rapid water level rise and possible rapid inundation of urban areas posing a risk to life is considered to be minimal with a forewarning of two (2) days of a pending flood event. The site is located within a low risk area where the onset of flooding is very gradual (many hours) as per Flood Risk Assessment Guidance for New Development Phase 2, R&D Technical Report FD2320/TR2.

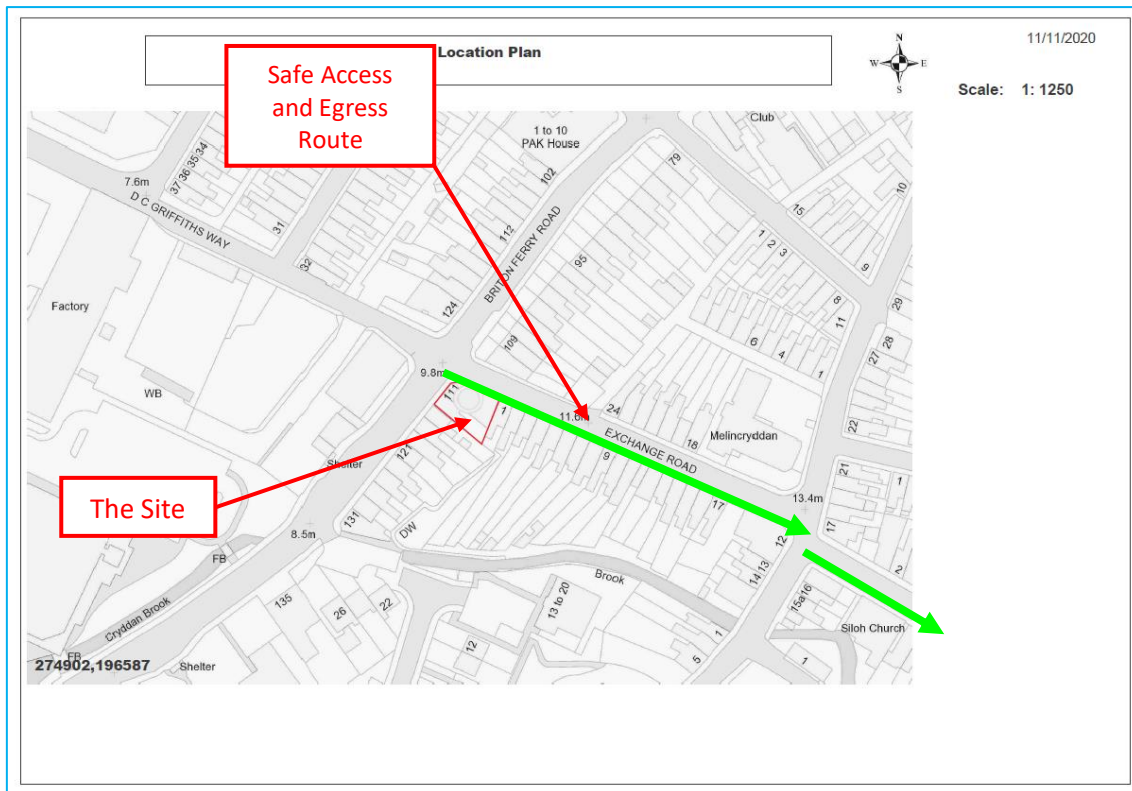
In the event of a flood warning, vital belongings, including waterproof clothing, necessary medication and essentials for infants and children will be collected. It should be ensured that all occupiers and visitors to the site are accounted for, and then exit the site using the routes shown in Figure 7.

Therefore, safe access and egress from the site will be possible. The above factors would, therefore, allow safe access and egress as per TAN15 and Natural Resources Wales guidance. In the event of a flood warning, vital belongings, including waterproof clothing, necessary medication will be collected. It should be ensured that all occupiers and visitors to the site are accounted for, and then exit the site.

#### **4.10 Flooding Consequences**

The proposed development of the site will provide betterment compared to the existing situation due to the proposed mitigation measures as discussed above.

The site can be justified in accordance with TAN15 as it can be demonstrated that the consequences of flooding can be managed down to a level which is acceptable for the nature and type of site. The mitigation measures detailed above show that the flood risk can be effectively managed and therefore the consequences of flooding are acceptable.



**Figure 7 - Safe Access and Egress Route**

## 5.0 JUSTIFYING THE LOCATION OF THE DEVELOPMENT

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### 5.1 Justification Test

The Justification Test sets out the details required to justify siting a new development in an area believed to be at risk of flooding and is defined in Section 6 of TAN15. The required criteria a site / development must fulfil are:

- i) its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or
  - ii) its location in zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region;
- and
- iii) it concurs with the aims of PPW and meets the definition of previously developed land; and,
  - iv) the potential consequences of a flooding event for the particular type of development have been considered, and in terms of the criteria contained in sections 5 and 7 and appendix 1 found to be acceptable.

The proposed development has been assessed against the requirements of the Justification Test.

#### *Criterion i and ii*

The planning application is for a change of use. The existing development is classified as 'highly vulnerable' and the proposed development is classified as 'highly vulnerable'. It should be noted that the proposed retail uses are classified as 'less vulnerable' and will be located on the ground floor with the 'highly vulnerable' residential uses being located on the first floor.

The proposed development will reduce the vulnerability of the site to flooding. The proposed development will improve the sites resilience, resistance to flooding and by using property level protection measures to protect the site from flooding the vulnerability of the site will be improved (see Section 4.0).

The proposed development plans would assist a local authority strategy for this area by providing and maintain residential uses and employment opportunities.

#### *Criterion iii*

Previously developed land is defined in Planning Policy Wales (PPW) as:

*"...that which is or was occupied by a permanent structure (excluding agricultural or forestry buildings) and associated fixed surface infrastructure."*

The site is occupied by an existing building is therefore, defined as previously developed land.

#### *Criterion iv*

The potential consequences of a flooding event for the particular type of development have been considered within this FCA. This FCA details the potential consequences of flooding from all sources taking into account the proposed development type has been considered and has been found to be

acceptable. The development proposals should be considered by the LPA to satisfy the Justification Test as set out in TAN15.

## **5.2 Assessment of Acceptability Criteria**

New development should be directed away from Zone C and towards suitable land in Zone A, otherwise to Zone B, where river or coastal flooding will be less of an issue. However, in some areas where developable land is in short supply, there can be an overriding need to build in areas that are at risk of flooding.

The Council's objectives are to sustain and enhance the vitality and viability of the region, and to ensure a wide range of employment to which people have easy access by a range of transport therefore, improving the overall quality of life. This is underpinned by the quality of the physical environment, social well-being and economic and environmental improvements. The Council seeks to grant permission for developments that add to the vitality and viability of the region.

The site is suitable in size and location to accommodate the proposed development. The wider area surrounding the proposed development site is affected by a very similar, and in many cases, higher risk of flooding. The application is for a new, suitable flood-resilient design which is preferable to the existing building. The proposed development of the site will provide betterment compared to the existing situation due to the proposed mitigation measures as discussed in Section 4.0.

The exposure of people and property will be minimised. From the above it is shown that there are overriding sustainability reasons for the development to be granted planning permission at the site. The existing and proposed development is classified as 'less vulnerable'. The proposed development will improve the sites resilience, resistance to flooding and by using property level protection measures to protect the site from flooding, the vulnerability of the site will be improved.

The consequences of flooding can be acceptably managed for the lifetime of the development recognising the small scale proposal on the edge of floodplain. Therefore, the indicative requirements of A1.12, A1.14 and A1.15 of TAN15 are passed. The development proposals should therefore be considered by the LPA to satisfy the Acceptability Criteria as set out in TAN15.

## 6.0 SUMMARY AND CONCLUSIONS

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### 6.1 Introduction

This report presents an FCA in accordance with TAN15 for the proposed development at 111-113 Briton Ferry Road, Neath, SA12 2AS.

This FCA identifies and assesses the risks of all forms of flooding to and from the development and demonstrates how these flood risks will be managed so that the development remains safe throughout the lifetime, taking climate change into account.

### 6.2 Flood Risk

The site is unlikely to flood except in extreme conditions. The primary, but unlikely, flood risk posed to the site is from fluvial flooding from the Cryddan Brook. The DAM shows that the site is located within C2 - Areas of the floodplain without significant flood defence infrastructure. A review of the Natural Resources Wales Flood Risk Map indicates that the site is located within the medium fluvial flood risk zone with a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%) years. However, the site has no history of flooding.

The existing development is classified as 'highly vulnerable' and the proposed development is classified as 'highly vulnerable'. It should be noted that the proposed retail uses are classified as 'less vulnerable' and will be located on the ground floor with the 'highly vulnerable' residential uses being located on the first floor.

The proposed development will reduce the vulnerability of the site to flooding. The proposed development will improve the sites resilience, resistance to flooding and by using property level protection measures to protect the site from flooding the vulnerability of the site will be improved.

The Natural Resources Wales defended model fluvial flood outlines show that the site is located within the 1 in 100 year flood outline. The National Flood Hazard and Risk maps shows that a water depth of less than 0.15m, water velocity of less than 1m/s and a hazard rating of low may be experienced during the 1 in 100 year and 1 in 1000 year events. The National Flood Hazard and Risk maps do not have any official status for planning purposes they do provide a useful assessment of flood risk where other data is not available.

Given the scale and nature of the proposed development and the size and location of the fluvial flooding sources it has been concluded that fluvial flooding poses a low flood risk to the site therefore, the risk of flooding from fluvial flooding is considered to of **low significance**. A number of secondary flooding sources have been identified which may pose a **low significant** risk to the site. These are:

- Surface Water Flooding
- Sewer Flooding

The building is existing therefore, the proposed development will have no impact on the movement of floodwater across the site. The overall direction of the movement of water will be maintained within the developed site and surrounding area. The conveyance routes (flow paths) will not be blocked or obstructed. There will be no increase in the flood water levels due to the proposed development. There will be no loss in flood storage capacity and no change in the on-site and off-site flood risk.

### 6.3 Risk Management

The flood risk at the site will be reduced by using a number of risk management measures to manage and reduce the overall flood risk at the site. Measures used:

**Sequential Approach:** The sequential approach has been applied within the site by locating the most vulnerable elements of the development in the lowest risk areas. The most vulnerable use, the residential accommodation, will be situated on the first floor well above any floodwater levels. The more flood-compatible uses such as the retail uses will be situated on the ground floor at a higher risk of flooding.

**Finished Floor Levels:** The finished floor levels of the buildings will be set no lower than the existing finished floor levels. It is recognised however that owing to limited headroom constraints, massing, planning policy and Building Regulations it is considered impractical to raise the finished floor levels further. Therefore, in order to mitigate against this, it is recommended that the occupants of the building sign up to receive flood warnings from Natural Resources Wales and implement a flood evacuation plan to a safe area away from the building during times of flood. It is also proposed that flood protection measures are employed within the building design to reduce the overall risk to the occupants.

A combination of resistance (proofing) and resilience measures will be included to provide further protection. This is discussed below.

**Sleeping Accommodation:** All Sleeping accommodation will be located on the first floor, the levels of the first floor are located a minimum of 2.50m above the ground floor finished floor level well above any floodwater levels.

**First Floor Accommodation:** Accommodation will be located on the first floor as well as the ground floor of the building. This will allow occupants to retreat to higher floor levels if needed. The levels of the first floor are located a minimum of 2.50m above the ground floor finished floor level well above any floodwater levels.

This provides a 'safe haven' above any floodwater levels. This will enable rapid escape should flooding occur which is unlikely. The upper floors are accessed via internal stairs and are sufficient in size to safely house all occupants of the building. The 'safe haven' will only be required in very extreme events or if a flood warning has not been received.

**Flood Resilience and Resistance:** To make the buildings more resistant to seepage the following measures will be incorporated. Sealant will be used around external doors and windows. All windows will be located well above any floodwater levels. All external doors and windows will be constructed from synthetic materials. The walls of the buildings will be resistant to water ingress.

To improve the resilience to flooding the following measures will be incorporated. All electrical wiring, switches, sockets, socket outlets, electrical, and gas meters etc. will be located a minimum of 450mm above the finished floor levels.

**Flood Warning and Evacuation:** The site is located in a flood risk area therefore; the site will participate in Natural Resources Wales flood warning telephone service. The site will register contact details with the Natural Resources Wales Flood Warnings Direct Service (Floodline 0845 988 1188) in order to receive Flood Warnings.

**Flood Plan:** A Flood Plan outlining the precautions and actions you should take when a flood event is anticipated to help reduce the impact and damage flooding may cause will be developed.

**Safe Access and Egress Route:** A safe access and egress route, including emergency access can be maintained for vehicles and/or by foot:

1) Exchange Road to the south east.

Ground levels rise along Exchange Road to the south east rising to 11.60mAOD and 13.60mAOD at the junction with Cryddan Road. The Safe Access and Egress Route indicates the exit route that all people (i.e. occupants and visitors) on site should follow once a flood warning has been received. People should make their way to areas outside of the flood zone.

#### **6.4 Justifying the Location of the Development**

The development proposals should be considered by the LPA to satisfy the Justification Test and Acceptability Criteria as set out in TAN15. The proposed development of the site will provide betterment compared to the existing situation.

#### **6.5 Conclusion**

In conclusion, the proposed development would be expected to remain dry in all but the most extreme conditions. Providing the recommendations made in this FCA are instigated, flood risk from all sources would be minimised, the consequences of flooding are acceptable and the development would be in accordance with the requirements of TAN15. The proposed development of the site will provide betterment compared to the existing situation.

This FCA demonstrates that the proposed development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of TAN15. The development should not therefore be precluded on the grounds of flood risk.

## APPENDICES

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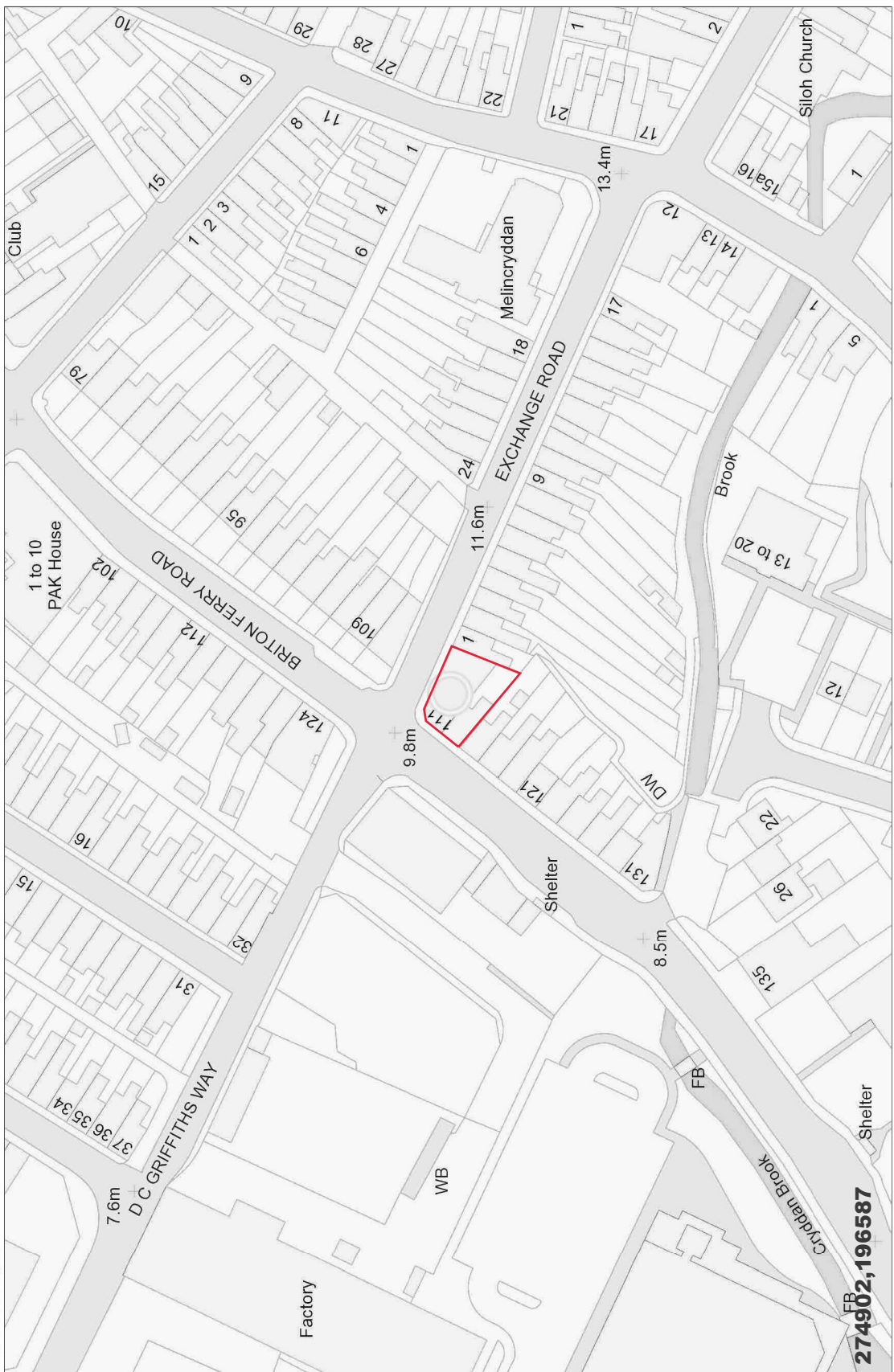
## APPENDIX 1 – Existing and Proposed Site Layout

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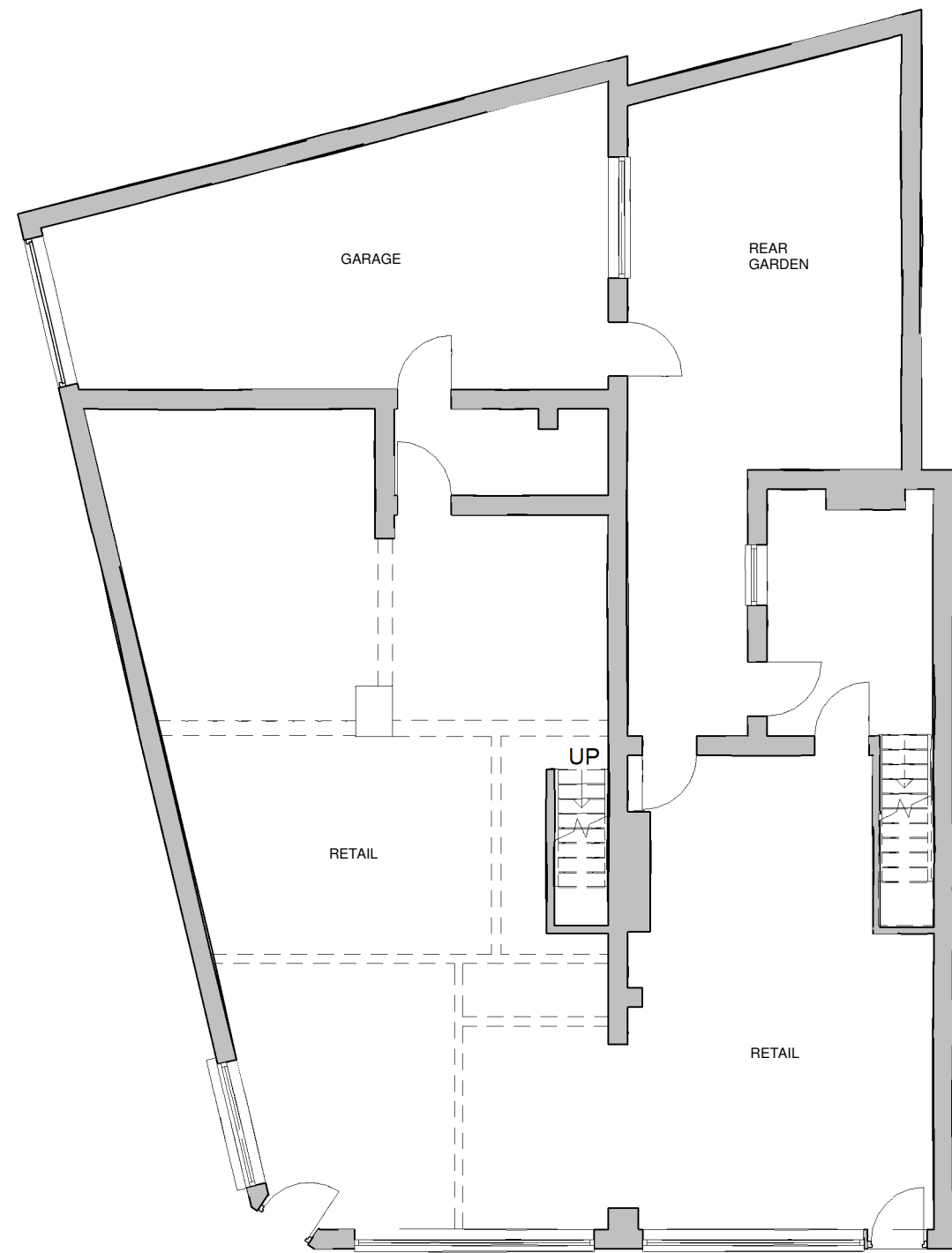


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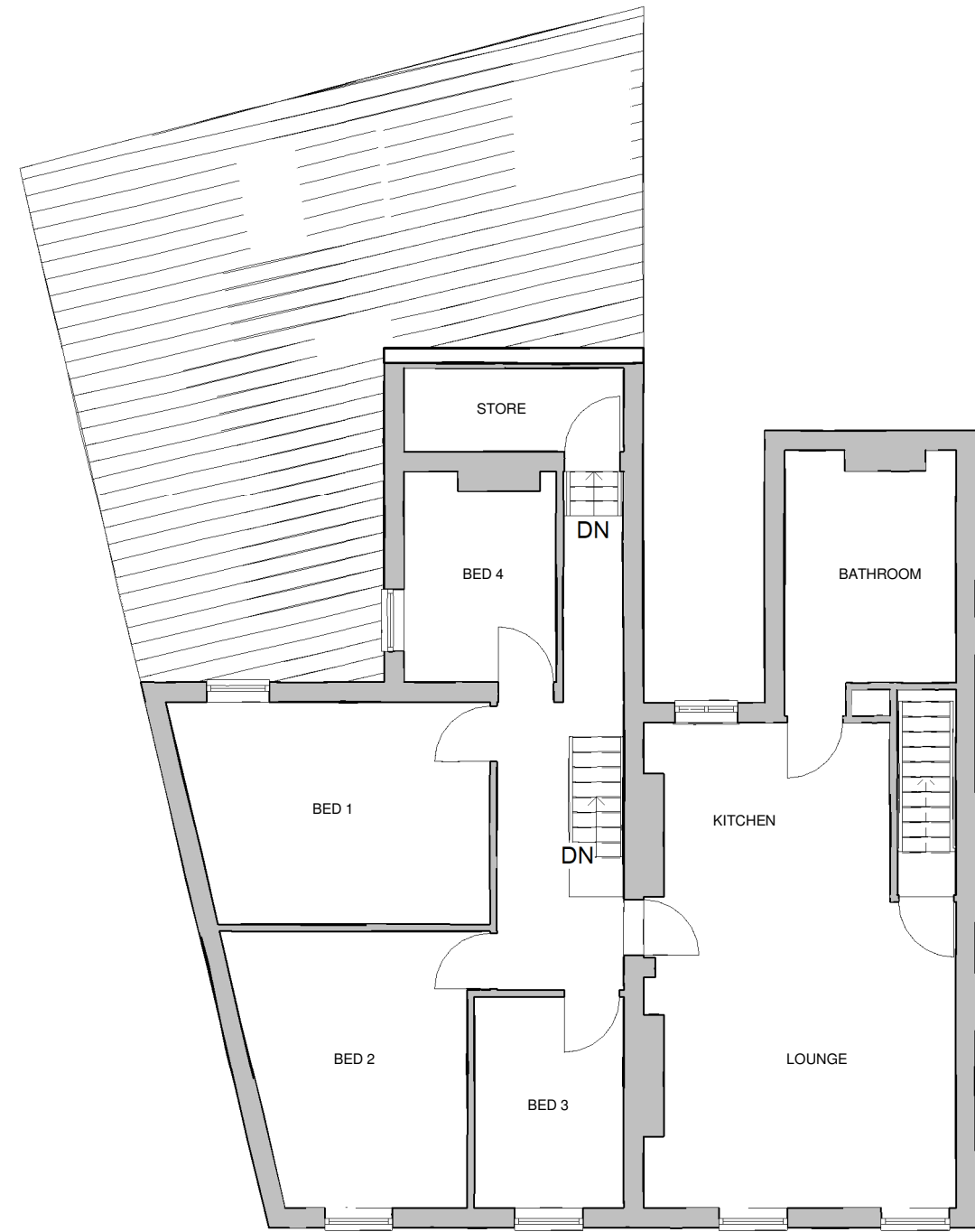
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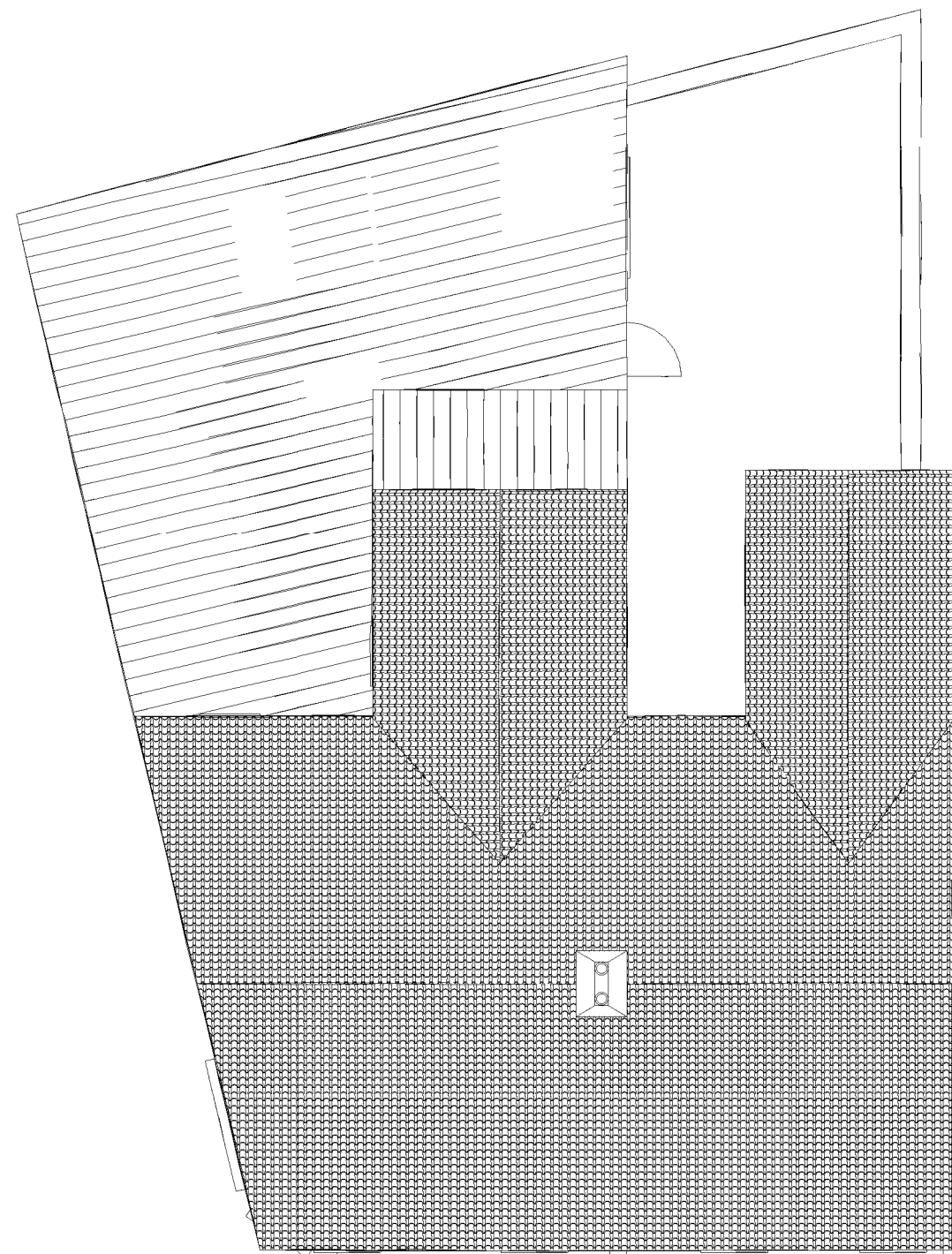
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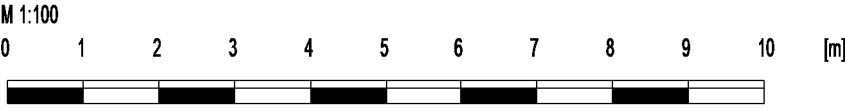
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Existing First Floor  
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Existing Roof Plan  
1 : 100



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All works to be carried out in accordance with the latest appropriate codes of practice and to comply with current building regulation  
Prior to commencement of the building works the contractor should:

1. Ensure that all drawings are approved for used by the planning department and (if applicable) by building control.
2. Inform the building control department that works have commenced onsite.
3. Verify the boundary lines and ground conditions, including checking of all the services (gas, water, electric, telecom and sewers) prior to any excavation work.
4. Request a copy of the party wall award where works affect a party wall or involve excavations with in 3m of adjoining buildings.
5. Where the works include demolition to ensure that all elements of the building and adjoin structures are accounted for and that all necessary propping and temporary works are in place.
6. Works carried out under a building notice or prior to the approval of the drawings all works are at the contractors own risk.
7. Any discrepancies either between the written dimension and the site dimensions or between the drawing and other consultants/ suppliers drawings should be brought to the attention of the client.

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PROJECT

Change of use A1 to A3

TITLE

Existing Floor Plans

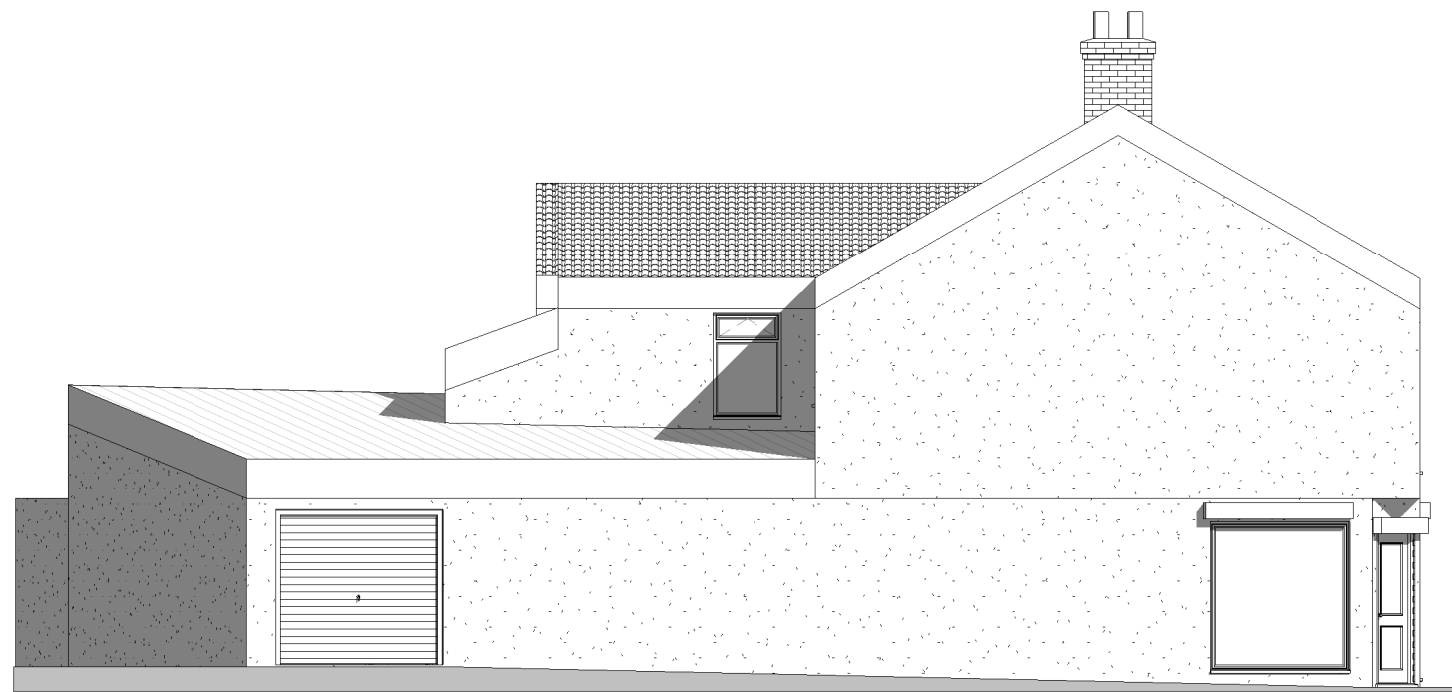
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Mr Johal Singh

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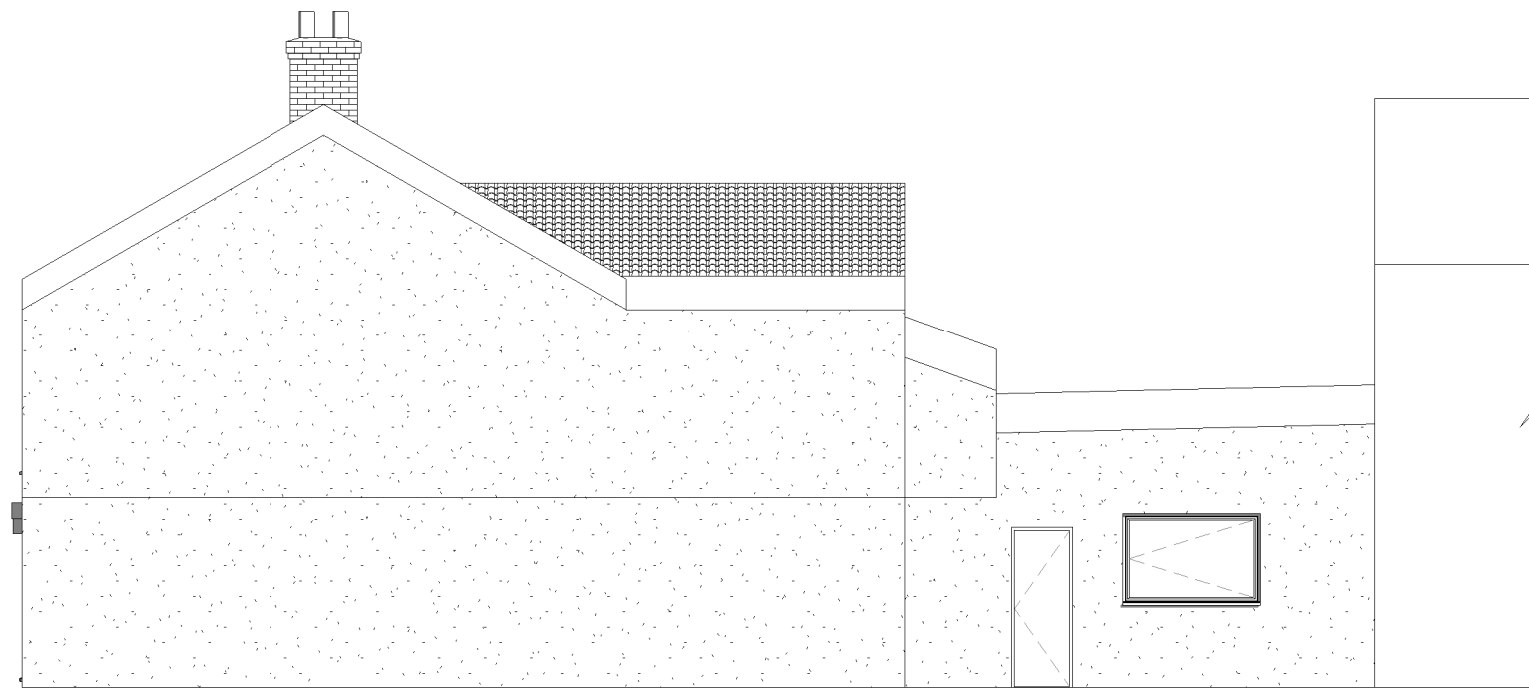
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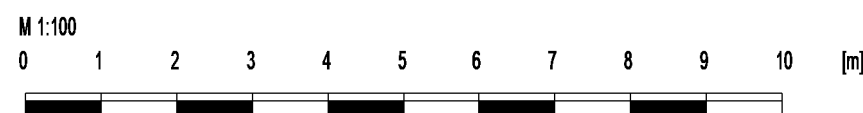
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Existing South  
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Existing West  
1 : 100



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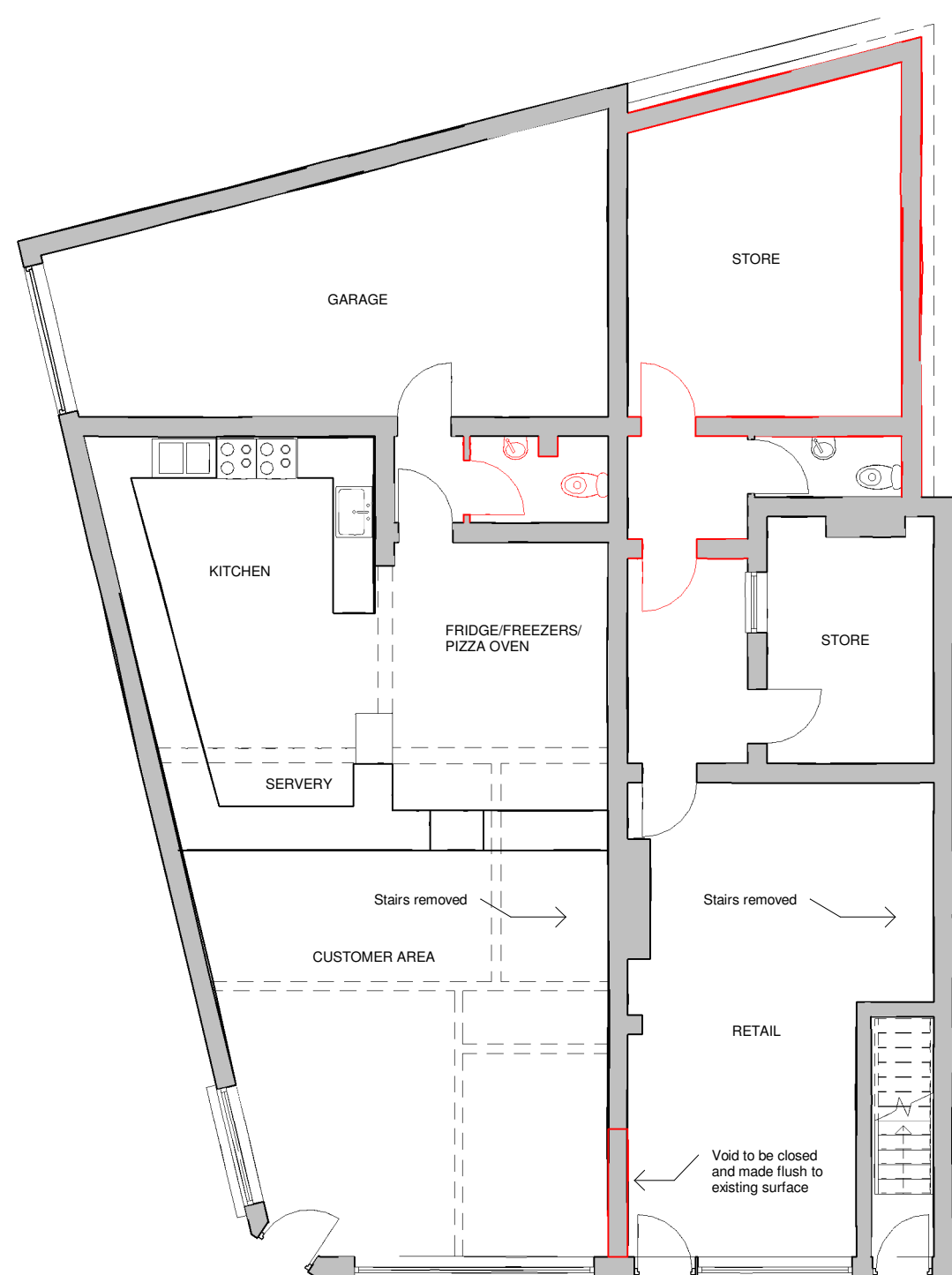
1. Ensure that all drawings are approved for used by the planning department and (if applicable) by building control.
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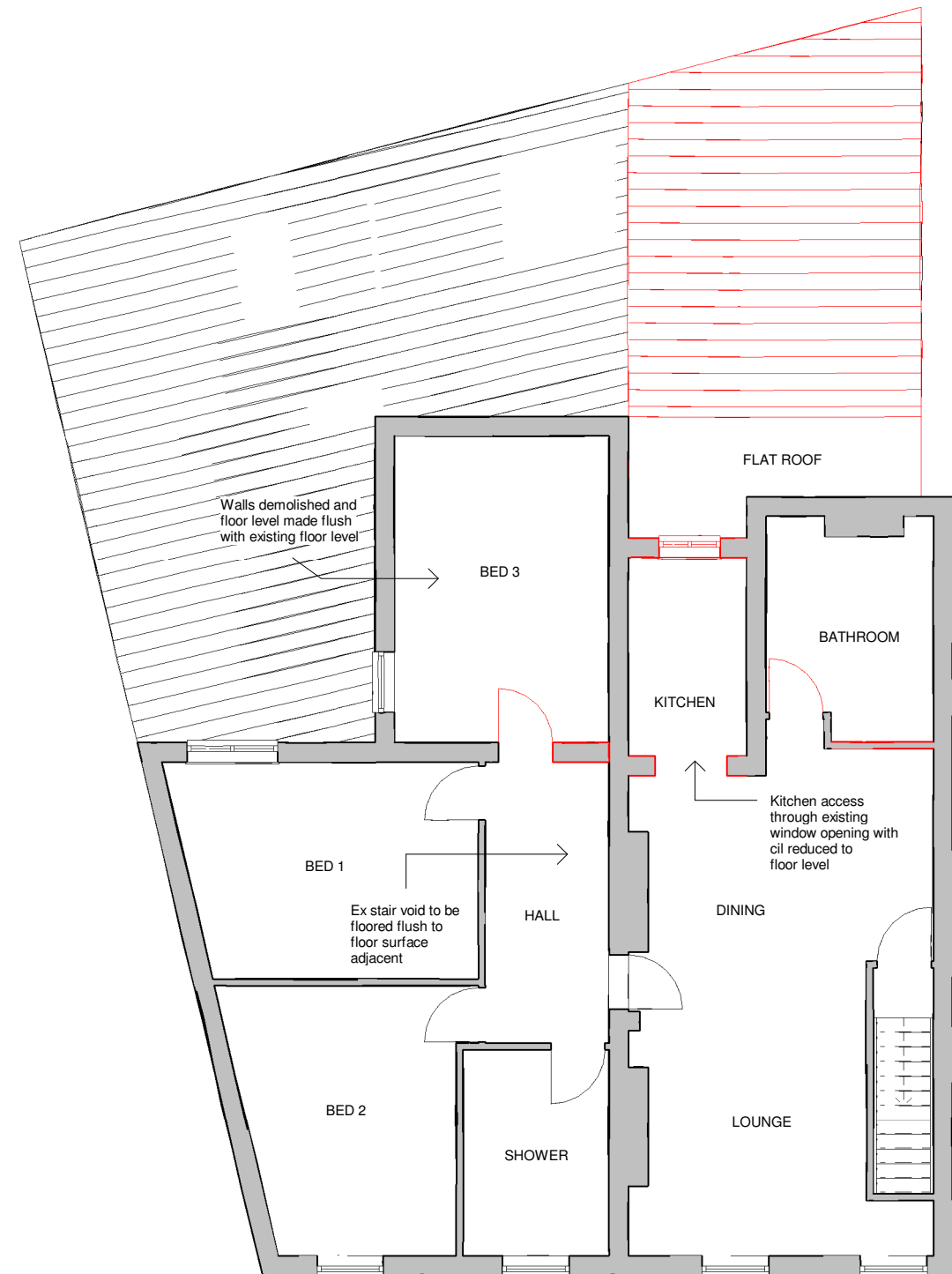
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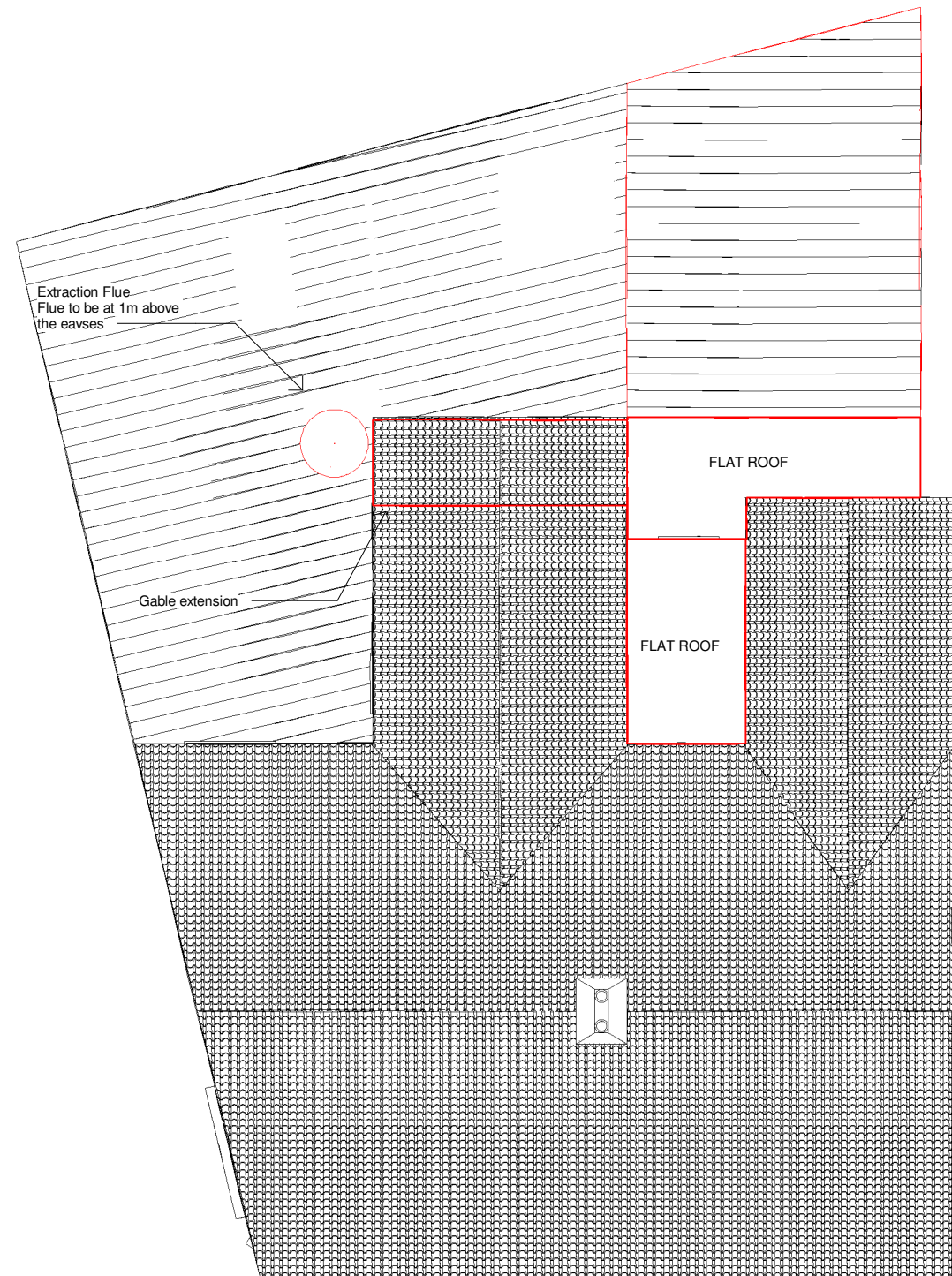
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| Existing Elevations    |            |                |
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Proposed Ground Floor  
1 : 100



Proposed First Floor  
1 : 100



Proposed Site  
1 : 100



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PROJECT

Change of use A1 to A3

TITLE

Proposed Floor Plans

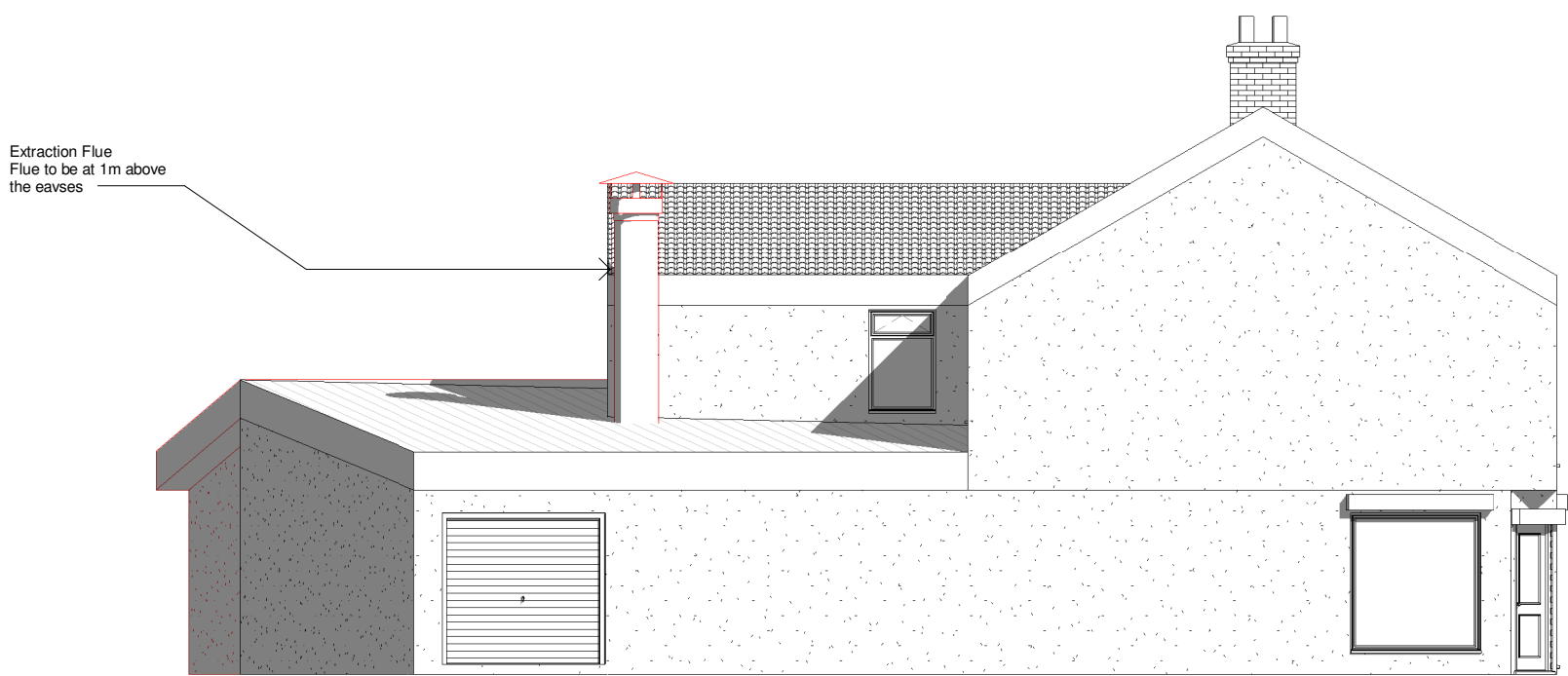
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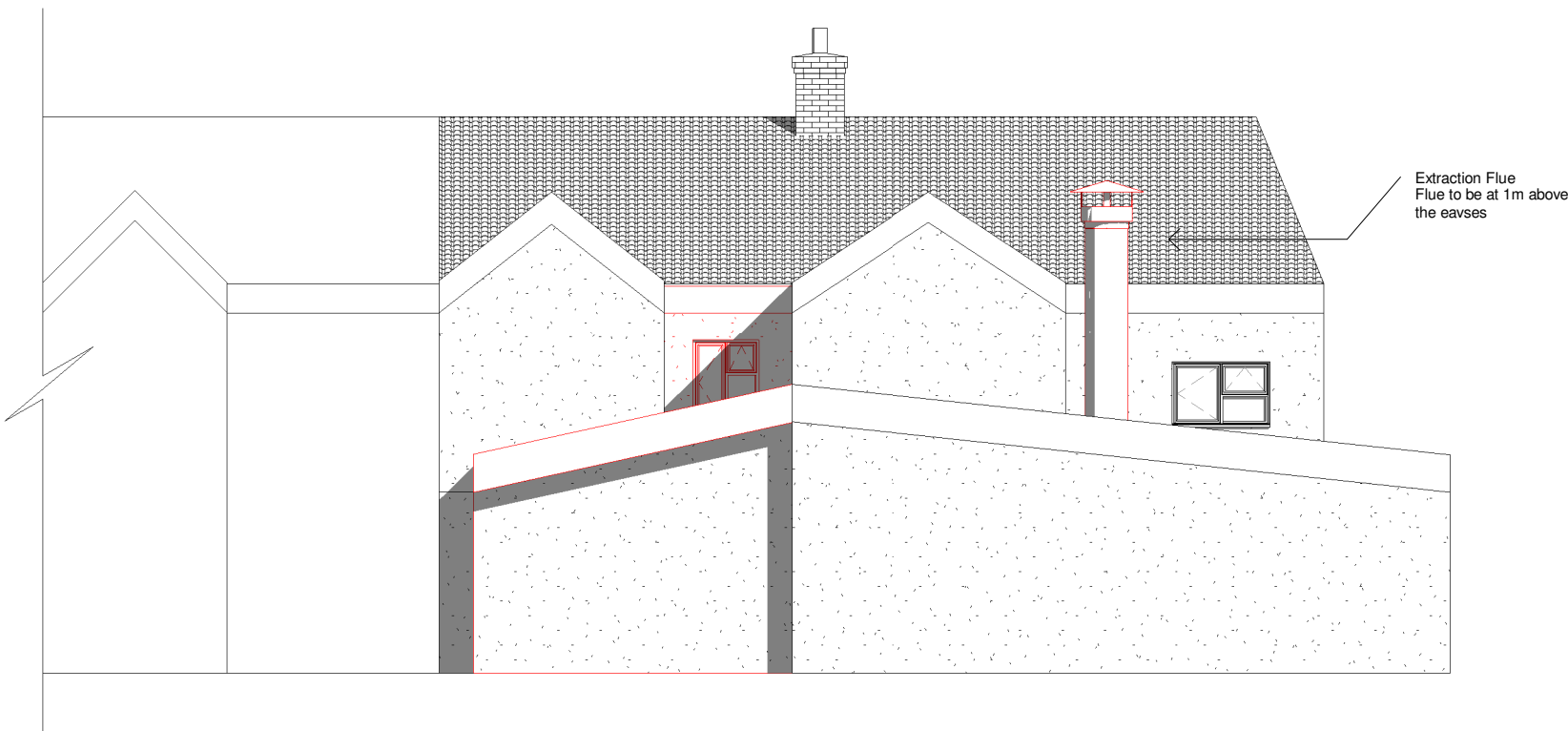
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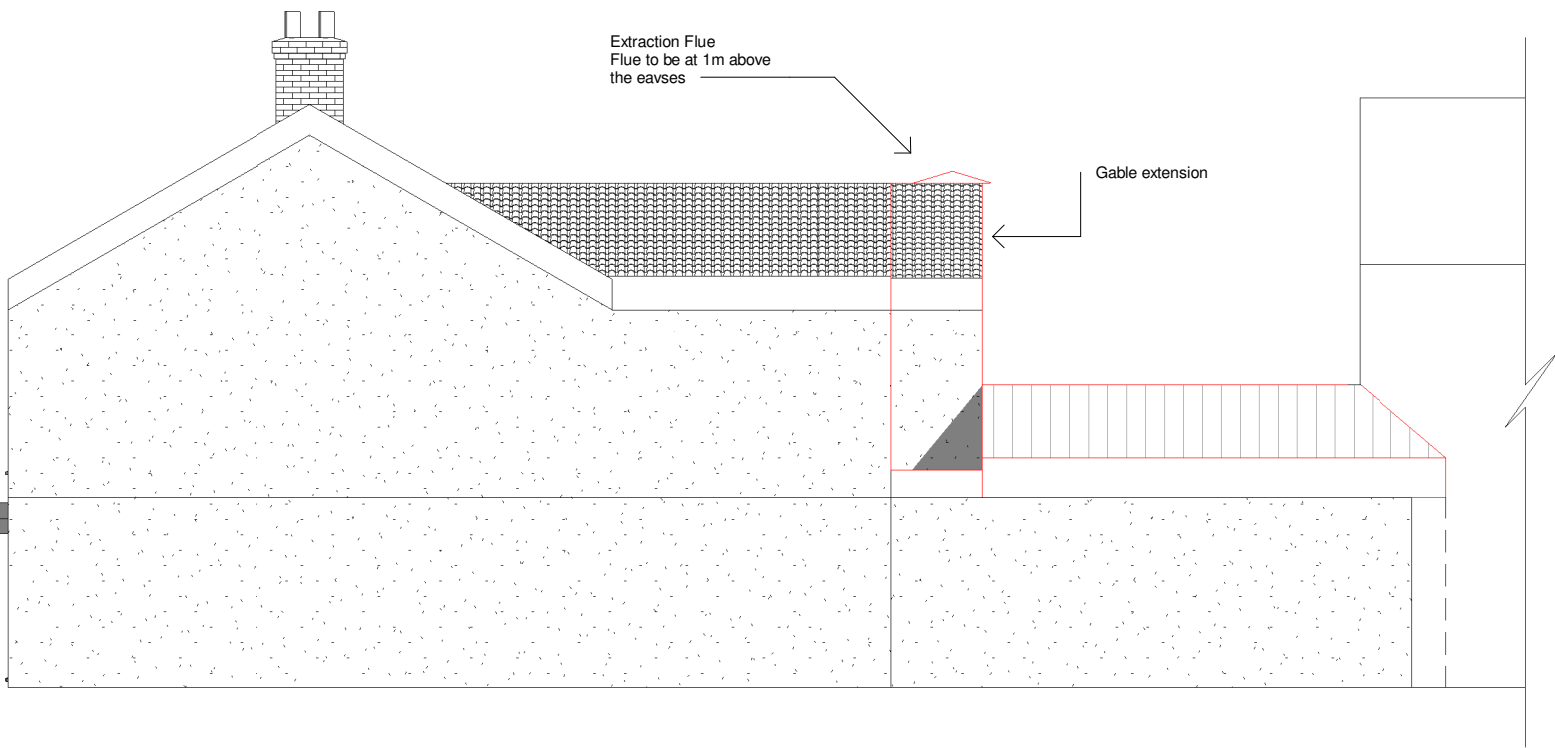
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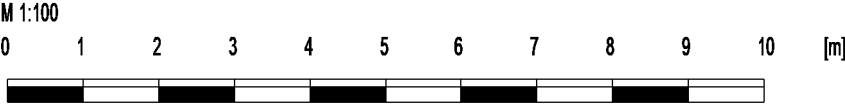
**Proposed East**  
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**Proposed South**  
1 : 100



**Proposed West**  
1 : 100



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PROJECT

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TITLE

**Proposed Elevations**

CLIENT

**Mr Johal Singh**

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