

Flood Consequences Assessment (FCA) For:

Residential Development at
28 Michna Street,
Port Talbot,
Neath Port Talbot Council,
SA12 6UH

Prepared for:

Mr Andrew Williams

16027 – FCA - 1

29/11/2022

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LIMITATIONS

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Vale Consultancy makes no representation whatsoever concerning the legal significance of its findings or the legal matters referred to in the following report.

All the Natural Resources Wales (NRW) mapping data used is under special license. Data is current as of **November 2022** and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

Purpose of the report

The purpose of this report is to outline the potential flood risk to the site, the impact of the proposed development on flood risk elsewhere, and the proposed measures which could be incorporated to mitigate the identified flood risk. The report has been prepared in accordance with the guidance contained in Planning Policy Wales (PPW) and Technical Advice Note 15 (TAN15): Development and Flood Risk. This report has been prepared in consultation with Natural Resources Wales (NRW).

1 INTRODUCTION

Vale Consultancy has been instructed by *The Client* to undertake a Flood Consequences Assessment (FCA) for the proposed development, at 28 Michna Street, Port Talbot, Neath and Port Talbot Council, SA12 6UH (275808E, 190138M).

The site comprises a plot of undeveloped land situated between 28 Michna Street (south west) and Julian Terrace (north east). Although the plot of land is undeveloped, it comes under the proprietorship of the owner of the adjacent 28 Michna Street property and serves as a general outdoor amenity / garden area.

Refer to Existing Site and Location Plan, Appendix A.

1.1 Site Location

The site is located on Michna Street / Julian Terrace, Port Talbot; just east from Aberavon Court. The site is bounded on all sides by neighbouring residential properties and associated infrastructure. An electrical substation is sited immediately north east from the site. Refer to Figure 1 below and the Site Location Plan, Appendix A. Access to the site is provided by Julian Terrace.



Figure 1: Site Location Satellite Plan

1.2 Proposed Development

The proposal is for the erection of two (28A & 28B) 2-bedroom semi-detached dwellings with associated parking and amenity space. No habitable rooms (bedrooms) are located on the ground floor; they are located on the first floor. Refer to Proposed Development Plans, Appendix B.

1.3 Existing Topography

Topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution NRW composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). A review of LiDAR data records a level minimum of **5.34m AOD** at the site.

In accordance with Building Regulations, finished floor levels (FFL) should be set 150mm above surrounding ground levels. Therefore, a minimum FFL of **5.49m AOD** is assumed for the proposed development.

The immediate surrounding topography is relatively flat. Further afield, the wider topography slopes from north east to south west.

Refer to LiDAR Extract, Appendix C.

1.4 Existing Ground Conditions

Reference to the British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that the site is underlain by Superficial deposits defined as Tidal Flat Deposits comprising Clay, Silt and Sand. Bedrock geology is recorded as South Wales Middle Coal Measures Formation comprising Mudstone, Siltstone and Sandstone.

1.5 Existing Site Drainage

Public sewer records have not been obtained from DCWW. Online internet mapping tools indicate that the site and site access / egress routes are served by formal surface water drainage infrastructure due to the presence of rainwater downpipes (RWPs), gullies and manhole covers.

2 FLOOD ZONE CATEGORY AND POLICY CONTEXT

2.1 Flood Zone Category

The Welsh Government Development Advice Map (DAM) has been developed for land use planning purposes. It is based on Natural Resource Wales' extreme flood outlines and the British Geological Survey drift data. The DAM should be used alongside Planning Policy Wales and Technical Advice Note (TAN) 15 to direct new development with respect to flood risk. Together, they form a precautionary framework to guide planning applications.

In addition to the DAM, the Flood Risk Assessment Wales map indicates long term risk of flooding from Rivers, the Sea, Surface Water and Small Watercourses and Reservoirs.

The DAM excerpt for the site (**Appendix D**) shows that the site falls within Zone C1 which is defined by TAN15 as;

Zone C1 – Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.

The NRW Flood Risk Maps included in **Appendix D** show the site is at '**Low**' risk of flooding from fluvial flooding, meaning it has between 1 in 1000 (0.1%) and 1 in 100 (1%) annual probability of flooding.

From the Sea (tidal flooding), the site is shown to be outside of the extreme flood extent and therefore at '**Very Low**' risk of tidal / sea flooding, meaning it has less than 1 in 1000 (0.1%) annual probability (AEP) of flooding.

The application site is shown to fall within a TAN 15 Defended zone and therefore is served by formal NRW flood defences.

Flood Maps for Planning Wales (New Tan 15)

A review of the forthcoming Flood Maps for Wales (which will replace the DAM) show a considerably greater extent of flood zone which envelopes the site, with this defined as TAN 15 defended area. The Flood Map for Planning has no official status for planning purposes until June 2023 but should be considered as the 'best available information' on flood risk to inform our planning advice.

The new FMFP show that the site is located within Flood Zone 3 and therefore an area with more than 1% (1 in 100) chance of flooding from rivers in a given year, including the effects of climate change. From the Sea (tidal flooding), the site is also shown to be within Flood Zone 3 and therefore an area with more than 0.5% (1 in 200) chance of flooding from the sea in a given year, including the effects of climate change. **Refer to Appendix D.** It should be noted that the extreme flood extents shown by the new FMFP are run as *undefended* and therefore do not take into consideration flood defences.

2.2 Development Vulnerability Classification

The proposal is for the erection of two (28A & 28B) 2-bedroom semi-detached dwellings with associated parking and amenity space. No habitable rooms (bedrooms) are located on the ground floor; they are located on the first floor.

The proposed residential development is considered to be '*highly vulnerable development*' in accordance with Figure 2 of the Welsh Government's TAN15. Highly vulnerable developments are considered to have a lifetime of 100 years.

TAN 15 defines **Zone C1** as :

"Used to indicate that development can take place subject to application of justification test, including acceptability of consequences"

Paragraph 6.2 of TAN 15 states that highly vulnerable development should be permitted in Flood Zone C1, subject to the justification test and acceptability of consequences:

6.2 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. In zone C the tests outlined in sections 6 and 7 will be applied, recognising, however, that highly vulnerable development and Emergency Services in zone C2 should not be permitted. All other new development should only be permitted within zones C1 and C2 if determined by the planning authority to be justified in that location. Development, including transport infrastructure, will only be justified if it can be demonstrated that: -

- 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,

- i. It concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and,*
- ii. 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.*

Local Policy

The Neath Port Talbot County Borough Council Local Development Plan (LDP) (2011-2026) was adopted in January 2016 and now forms the development plan that will form the basis of decisions on land use for planning in the area. The following policies relate to flood risk and drainage:

Climate Change

3.0.2 Strategic Policy SP1 Climate Change

Policy SP 1

Climate Change

The causes and consequences of climate change will be addressed by implementing the following measures.

In relation to the causes of climate change:

1. The efficiency and sustainability of the County Borough's settlements will be enhanced through developing more cohesive and efficient settlements and settlement patterns, and consequently more sustainable travel patterns;
2. Greenhouse gas emissions from transport will be minimised through encouraging freight / commercial transport by alternatives to road (e.g. rail or sea);
3. Dependence on the private car and the need to travel in general will be reduced through promoting alternative means of transport and more efficient use of existing facilities, co-location and joint use of facilities;
4. Provision will be made for the County Borough's appropriate contribution to renewable and low carbon energy generation.

In relation to the consequences of climate change:

1. Likely increased flood risk will be taken into account and addressed by ensuring that there is greater resilience by avoiding development on land that is

5.5.13 Drainage systems should be designed to ensure that developments have no detrimental effects on the water environment or on flood risk. Normally this will involve the use of Sustainable Drainage Systems (SuDS) techniques.

at risk from flooding in the first instance in accordance with the sequential approach set out in national guidance or in locations that could increase the risk of flooding elsewhere;

2. The fragmentation of habitats will be minimised and opportunities made for habitat and species change and migration where possible.

LDP Objective: OB 1 and OB 2

3.0.3 Climate change is likely to affect the environment and future development of Neath Port Talbot in a range of significant ways, some of which are not fully predictable at present. It is also necessary to reduce greenhouse gas production as far as reasonably possible in order to minimise the causes of climate change. These issues are considered to be of fundamental importance to the LDP and have influenced every aspect of the Plan's development. Climate change is consequently seen as an overarching matter to be addressed by all topic areas.

3.0.4 The measures outlined in the climate change strategic policy have therefore fundamentally influenced the development of the Plan, and will be addressed and implemented through all its policies and proposals. Development allocations have been selected in accordance with sustainable development principles to be in locations that minimise as far as possible dependence on the private car and can benefit from local services and facilities, while encouraging the provision of locally based facilities in order to address the causes of climate change. At the same time, the effects of a changing climate (for example flood risk) have been taken into account as far as possible in all the Plan allocations and policies.

3.0.5 New developments will be expected to avoid unnecessary flood risk and to meet the requirements of TAN 15: Development and Flood Risk. No highly vulnerable development will be permitted within Development Advice Map (DAM) Zone C2[®] and development will only be considered in areas at risk of flooding where it can be demonstrated that the site can comply with the justification and assessment requirements set out in the TAN.

2.3 Consultation

As well as the LDP, the following documents have been consulted and reviewed as part of this FCA:

- Neath Port Talbot Strategic Flood Consequences Assessment September 2014
- Neath Port Talbot County Borough Council Local Flood Risk Management Strategy June 2013
- Neath Port Talbot County Borough Council Flood Risk Management Plan 2015
- Neath Port Talbot County Borough Council Preliminary Flood Risk Assessment Report March 2011 (including 2017 Addendum)

Product 5 and Product 6 data from the Port Talbot_5_V3.0_2016 model has been provided by NRW, and is included in **Appendix D** for reference. This has been reviewed and interrogated in conjunction with the modelling reports to enable quantitative interrogation of the fluvial / tidal flood risks posed to the site during various storm events. These are discussed in the proceeding section of the report.

3 SOURCES OF FLOODING AND PROBABILITY

3.1 Fluvial

The nearest watercourse to the site is the River Afan which is located approximately 470m away to the south east. The watercourse flows south west from here where it discharges into Swansea Bay. The River Afan is served by fluvial flood defences in the form of a flood wall along the river embankments. NRW data indicates the defence to be in good condition. At the location nearest to the site the wall has a design upper crest level (ucl) of 9.12m AOD.

Baglan Brook is located approximately 1km north west from the site. The Ffrwd Wylt is located approximately 1.6km south east from the site. The River Neath is located over 4km north west from the site.

The nearest major sources of potential fluvial flooding originate from the River Afan and Ely which benefits from flood alleviation measures including formal hard-engineered river flood defences.

The candidate site falls within Zone C1 on the Welsh Government DAM.

The NRW Flood Risk Map confirms that the site is at **Low Risk** of fluvial flooding – an area considered to have between a 0.1% (1 in 1000) and 1% (1 in 100) annual probability of fluvial flooding.

The new FMFP show that the site is located within Flood Zone 3 and therefore an area with more than 1% (1 in 100) chance of flooding from rivers in a given year, including the effects of climate change. It should be noted that the extreme flood extents shown by the new FMFP are run as **undefended** and therefore do not take into consideration flood defences.

The NRW 'Historic Flood Map' shows that there are no recorded historical flooding events at the site or in the immediate vicinity.

NRW Flood Data

From a review of the NRW Product 5 and Product 6 data (Port Talbot_5_V3.0_2016 model) it can be ascertained that the site remains flood-free during the Defended 1% annual event probability (AEP) fluvial event which is compliant with TAN15.

When climate change allowances are considered, the site is shown to flood by a maximum depth of 0.3m (300mm) up to the year 2116.

During the Q1000 (0.1% AEP) fluvial event the site is shown to flood by a maximum depth of 0.87m (870mm). As building regulations require finished floor levels (FFL) to be raised 150mm above surrounding ground levels, the ground floor would actually flood by a maximum of 720mm. Whilst this exceeds the maximum tolerable flood depth threshold of 600mm for residential developments, as stipulated by TAN15, it should be noted that there are no habitable rooms on the ground floor of the proposed development. All habitable rooms will remain flood free.

To appease this flood risk and ensure the proposal is fully compliant with TAN15 (maximum flood depth <600mm); FFL could be raised by a minimum of 270mm (an additional 120mm to the standard 150mm as required by building regulations) above surrounding ground levels.

Most recent national climate change guidance has been followed, specifically, *Flood Consequences Assessments: Climate Change Allowances September 2021*.

It should be noted that all fluvial design events of the model have been run with a mean high-water springs (MHWS) tidal curve.

Refer to Appendix D.

3.2 Tidal

In Port Talbot, parts of Baglan, and central Port Talbot have the potential to be affected by a combination of fluvial and tidal flooding.

As already mentioned, the site is shown to be outside the extreme flood extent and therefore at '**Very Low**' risk of tidal / sea flooding, meaning it has less than 1 in 1000 (0.1%) annual probability (AEP) of flooding.

The updated FMFP which has not come into formal use yet indicates a greater risk to the site from tidal / the sea as a source and has the site located within Flood Zone 3, which is defined as '*Areas with more than 0.5% (1 in 200) chance of flooding from the sea in a given year, including the effects of climate change.*'

The NRW modelled flood data shows the site to be flood free during the T200 and T1000 flood events, which is compliant with TAN15.

When climate change allowances are considered, the site is shown to flood by a maximum depth of 0.02m (20mm) and 0.5m (500mm) during the T200CC and T1000CC events respectively up to the year 2116. Although the site is shown to flood during these extreme events the estimated maximum flood levels are within (below) the maximum tolerable flood depth threshold of 600mm for residential developments, as stipulated by TAN15.

Tidal flood events are managed and are subject to the Neath Port Talbot County Borough Council Flood Risk Management Plan (2015), which will implement suitable monitoring and management responses to the most extreme tidal events.

It can be concluded that although the site is shown to be at risk from tidal / sea flooding, the provision of suitable mitigation measures and flood evacuation / safe egress ensures the risk is residual and manageable.

3.3 Surface Water

Surface water flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland

flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The NRW 'Risk of Flooding from Surface Water' map (**Appendix D**) indicates the extent of flood risk from surface water and small watercourses. The flood map shows that the proposed development site is outside the flood extent and therefore is at **Very Low** risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding.

There are no distinct flow routes in the area which would direct any excess surface water towards the site which is relatively flat. Site access / egress (Michna Street and Julian Terrace) is also shown to be outside of the flood extent and therefore at **Very Low** risk of surface water flooding. A small area to the rear (south) of the proposed development is shown to be at risk from surface water flooding. This is attributed to lower topographical levels associated with a pedestrian access path.

The proposed development will need to incorporate a sustainable surface water drainage strategy including SuDS which will likely improve the existing arrangement and therefore reduce the surface water flood risk to the site.

It can be concluded that the risk of surface water flooding to the proposed development is low.

3.4 Sewer Flooding

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity.

There are no known records of notable flooding from sewers at the site or in the near vicinity.

There are no distinct flow routes in the area which would direct any potential flooding arising from the sewer network within Michna Street / Julian Terrace which provide site access. It can be concluded that the risk of sewer flooding is low.

3.5 Groundwater Flooding

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

The Neath Port Talbot SFCA states that:

Groundwater flooding is not well documented in the area and there is very little information available. In general terms, the greatest risk from groundwater flooding is from groundwater level rise in response to prolonged extreme rainfall (predominantly from chalk aquifers), from groundwater level rise on floodplains in response to high in-bank river levels (particularly affects basements of structures located close to rivers) or from groundwater diversion by artificial obstructions and pathways.

The Preliminary Flood Risk Assessment produced by the authority states that there are no specific areas of historical flooding recorded in the Neath Port Talbot area and overall groundwater is not believed to be a major source of flooding. NRW has supplied data for the Authority area indicating susceptibility to surface water flooding.

There are no known records of groundwater flooding incidents at or near to the site. Furthermore, the site will be overlain predominantly by hardstanding which would prevent the ingress of groundwater to the surface. It can be concluded that the risk of groundwater flooding is low.

3.6 Artificial Sources of Flooding

There are no canals or other surface water bodies within the immediate vicinity of the site or surrounding area which would pose a flood risk to the site. The harbour which is a man-made surface water feature is located approximately 750m south from the site. Water levels are monitored and controlled by a lock system and it does not pose a flood risk to the site.

The NRW 'Risk of Flooding from Reservoirs' map (**Appendix D**) shows that the site is not at risk of flooding from reservoirs. The risk of flooding from reservoirs is extremely unlikely to happen.

All large reservoirs must be inspected and supervised by a reservoir panel engineer, as the enforcement agency the NRW ensure that reservoirs are inspected regularly, and essential safety work carried out.

It can be concluded that the probability of flooding from artificial sources is low.

3.7 Summary of Potential Flooding

It can be concluded that fluvial / tidal flooding are the main potential sources of flood risk to the site.

The site is shown to be flood free during the Q100 fluvial event and therefore compliant with TAN15.

When climate change allowances are considered, the site is shown to flood by a maximum depth of 0.3m (300mm) up to the year 2116.

During the Q1000 (0.1% AEP) fluvial event the site is shown to flood by a maximum depth of 0.87m (870mm). Whilst this exceeds the maximum tolerable flood depth threshold of 600mm for residential developments, as stipulated by TAN15, it should be noted that there are no habitable rooms on the ground floor of the proposed development. All habitable rooms will remain flood free.

The NRW modelled flood data shows the site to be flood free during the T200 and T1000 flood events, which is compliant with TAN15.

When climate change allowances are considered, the site is shown to flood by a maximum depth of 0.02m (20mm) and 0.5m (500mm) during the T200CC and T1000CC events respectively up to the year 2116. Although the site is shown to flood during these extreme events the estimated maximum flood levels are within (below) the maximum tolerable flood depth threshold of 600mm for residential developments, as stipulated by TAN15.

Although the site is shown to be at risk from tidal / sea flooding, this is only during the extreme events considered including allowances for climate change. the provision of suitable mitigation measures and flood evacuation / safe egress ensures the risk is residual and manageable.

The NRW 'Risk of Flooding from Surface Water' map (**Appendix D**) indicates that the proposed development site is outside the flood extent and therefore is at **Very Low** risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding.

The site is indicated as being within Zone C1 on the Welsh Government DAM.

All other potential sources of flooding have been assessed and are concluded to be low.

The risk of flooding to the development proposal has been addressed and a balanced judgement has been applied in recognising the important benefits of using previously developed land in realising the development expectations.

4 TAN15 ASSESSMENT

4.1 Justifying the Location

TAN15 advises that all new developments should only be permitted within Zones C1 if determined by the planning authority to be justified in the relevant location. Development, including transport infrastructure, should only be considered justified if it can be demonstrated that:

- Its location in Zone C is necessary to assist, or be part of the local authority regeneration initiative or a local authority strategy required to sustain an existing settlement or region; or
- 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
- It concurs with the aims of Planning Policy Wales 2002 and meets the definition of previously developed land; and
- The potential consequences of a flooding event for the development have been considered, and found to be acceptable.

In both these instances it is necessary that the development concurs with PPW and meets the definition of previously developed land. The potential consequences of a flooding event must be considered, and in terms of criteria identified in TAN 15 found to be acceptable.

The development site will provide additional affordable housing in the area and therefore satisfies the justification test outlined in Section 6 of TAN15. Furthermore, the proposal is in adherence with Policy BE1 of the LDP which states that development proposals should:

- *Making the best and most efficient use of the land available*
- *The layout and form of the development does not preclude the reasonable use of other adjacent land;*
- *Developing brownfield land in preference to greenfield land where possible.*

It is envisaged that the proposal makes the best use of the available (currently disused) land for which otherwise alternative proposals are limited, and which maximises the accommodation provided while remaining in keeping with the surrounding area.

It is concluded that the development concurs with the aims of PPW and meets the definition of previously developed land.

The potential consequences of flooding, to satisfy the latter part of these conditions, are assessed in terms of the requirements of TAN 15 in the following sections of the report.

Assuming a FFL which is raised 270mm above surrounding ground levels; it can be concluded that the proposed development is fully compliant with TAN15. This would be seen as taking a precautionary approach as the site is shown to be flood free / compliant with TAN15 in all events considered including climate change except for during the 0.1% AEP fluvial event.

5 MITIGATION & RECOMENDATIONS

The site is deemed to be at either low or residual risk from flooding from all of the potential sources assessed.

Taking a precautionary approach and as an additional factor of safety, mitigation measures could be incorporated into the proposed development.

The mitigation measures will ensure that the development is compliant with Sections A1.14 and A1.15 of TAN15.

Additional internal alterations that should be introduced where practically possible to the development include:

- Raised electronic control units and sockets.
- Install smart air bricks or air brick covers.
- Provide low level flood guards on all access points.
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives.
- Use solid flooring (tiled, resin, concrete) at lower ground level, where possible.
- Ensure that with the time afforded by advance warning, evacuation of property via safe egress and removal of valuables from the building can be implemented.
- Clearance of the existing surface water drainage system to improve drainage of the site and follow necessary maintenance procedures (to new & existing SW drainage) to ensure that the system functions to optimum capacity.
- The predicted depths, rise, speed of inundation and velocities are likely to satisfy the TAN 15 suggested tolerable conditions for more extreme events.
- Use robust flood resistant construction techniques as detailed the RIBA publication - *"Improving the Flood Performance of New Buildings, Flood Resilient Construction" (May 2007)*.

Flood Alerts and Flood Warnings cover this area (**see Appendix D**). Site owners should register to receive Flood Alerts and where possible, Flood Warnings. Flood Warnings Direct is a free service that provides prior warnings of a fluvial flood event. Areas at risk of flooding from rivers (fluvial) and the sea (tidal) are warned, which relies on direct measurements of rainfall, river levels, tide levels, in-house predictive models, rainfall data and information from the Met Office. This service operates 24 hours / day 365 days a year. If flooding is forecast, warnings are issued using a set of easily recognisable codes.

Appropriate documentation should be displayed to inform any users of the site of the potential risk. Documentation will be displayed at an appropriate position in the building. The documentation will indicate the risk of flooding and contain information on how prior warnings will be sent to the building. Further information on the documentation will comprise of the Floodline Warnings Direct telephone number, emergency services numbers and exit plans and egress directions from the hall, as identified in the evacuation procedure for the site.

The site owner should draw up an evacuation procedure for implementation during an extreme event. This should be done in conjunction with the appropriate professional bodies. An evacuation procedure should be drawn up after the developer has completed an action plan. The action plan is carried out and based on an assessment of the consequences of an extreme flood on the building. The extent of 'dry proofing' measures incorporated is determined by the assessment of the social and economic impact of a flood.

The evacuation procedure should be a written document which should outline the course of action to site users during a flood.

The evacuation procedure should address the following topics:

- A list of important contacts, building services, suppliers and evacuation contacts for officers and users.
- A description or plan showing locations of key property, protective materials and service shut-off points.
- Basic strategies for protecting property and assisting recovery.
- Checklist of procedures that can be quickly accessed by users during a flood.
- Safe exit-plan (building and site);
- Safe exit route to higher ground outside the flood risk area (building and site), kept and displayed on site.

Flood proofing measures should be incorporated as far as is practically possible.

It is proposed that the new building will be constructed with materials with inherently good wet proofing performance. Wet proofing is the use of more flood resistant building materials in the floors, walls and doors, i.e., concrete ground slab and masonry wall construction in this case.

5.1 Access and Egress

Safe access / egress is provided south west to an area outside of the extreme flood extent, firstly via the pedestrian access path to the rear of the proposed development, followed by Thomas St, Pendarvis Terrace, Victoria Road (crossing the A4241 / Afan Way. **Refer to Flood Evacuation / Safe Egress Route, Figure 2, below.**

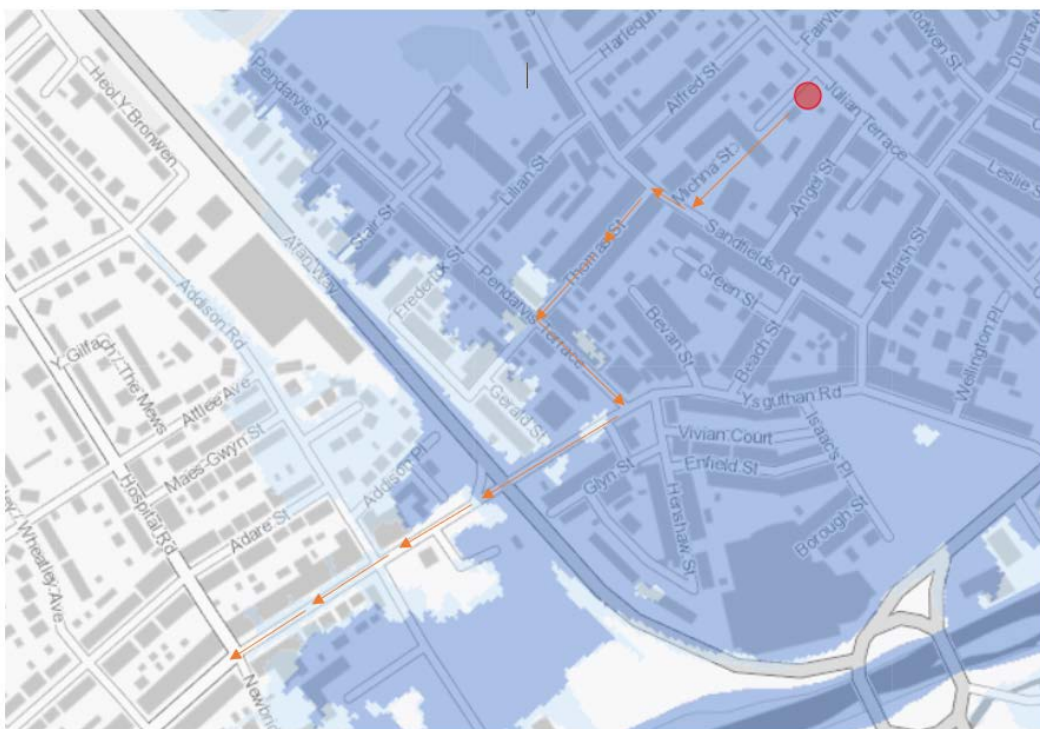


Figure 2: Proposed Flood Evacuation / Safe Egress Route

5.2 Safe Refuge Area and Flood Procedure

In the highly unlikely event that the site floods the competent warning authority is the NRW and a lead time of several hours in advance of flooding is provided, excluding potential breaches of defences. When a flood is expected Neath Port Talbot Council, and the local emergency services will be responsible for public care and

safety. In the event of the site flooding before site users have an opportunity to evacuate via the route specified - the occupants should seek refuge on the first floor as and where possible until flood waters have dispersed and it is safe to leave the building.

5.3 Finished Floor Level (FFL)

As aforementioned, there are no FFL shown on the proposed development plans at this stage. However, due to the topographical information available, it is assumed that the proposed dwelling will have a minimum FFL of 5.49m AOD. To ensure that the proposal is fully compliant with A1.15 of TAN15, a FFL of 5.61 should be applied.

6 CONCLUSIONS

The proposal is for the erection of two (28A & 28B) 2-bedroom semi-detached dwellings with associated parking and amenity space.

The DAM shows that the site falls within Zone C1, which is defined by TAN15 as:

Zone C1 – Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.

It can be concluded that fluvial and tidal flooding are the main potential sources of flood risk to the site. Having said this, it has been established that the risks are considered to be either low / residual and manageable.

The site is located within a TAN15 Defended Zone and is therefore served by formal NRW flood defences.

There are no records of historical flooding at or near to the site.

All other potential sources of flooding have been assessed and are concluded to be low.

The proposal is considered to be fully compliant with TAN15, providing the mitigation measures are applied.

Surface water drainage is to be suitably designed in line with local and national requirements.

APPENDIX A: Site Location / Existing Plan

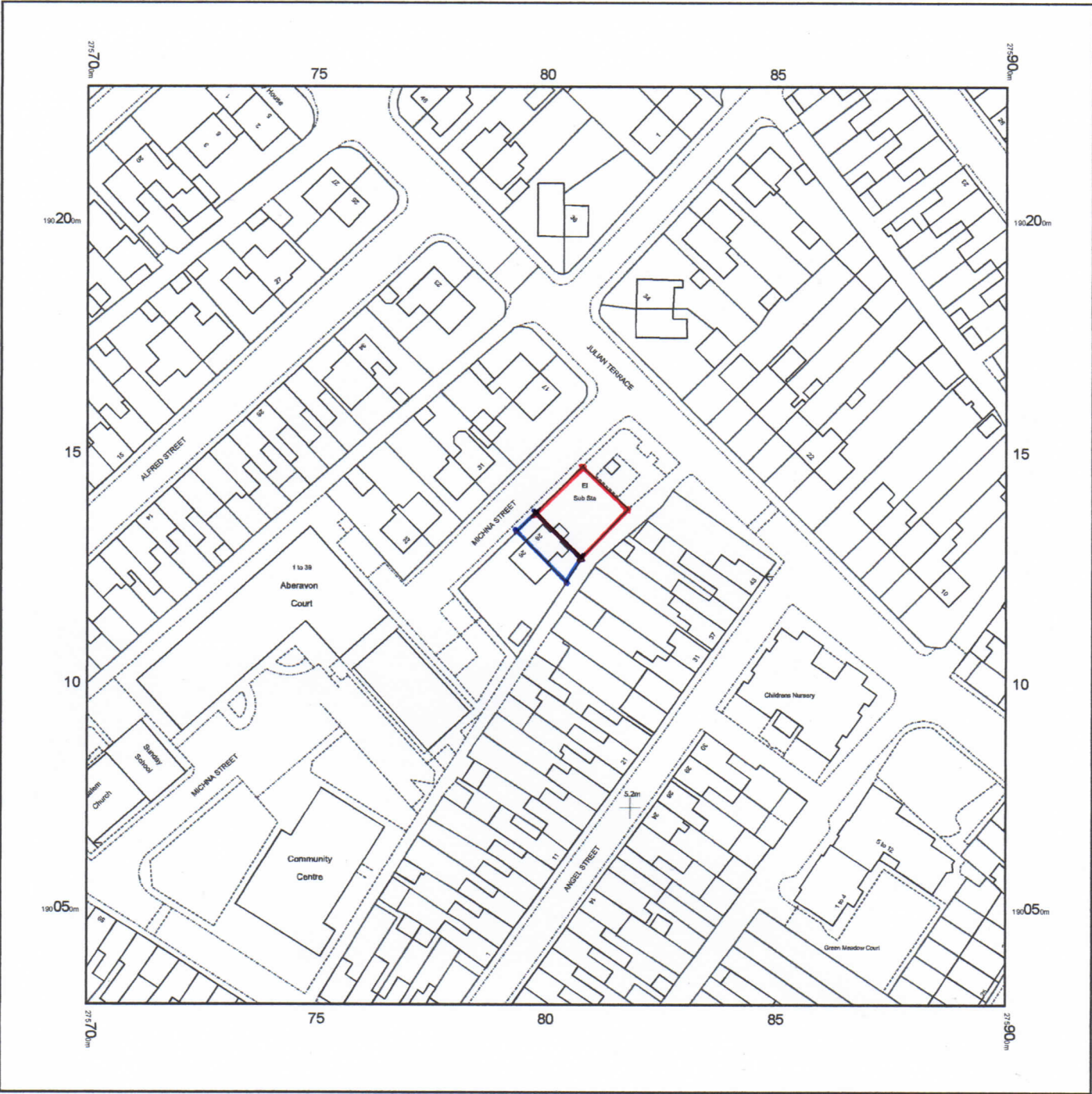
28, MICHNA STREET, PORT TALBOT, SA12 6UH

Supplied by: www.ukmapcentre.com

Serial No: 248015

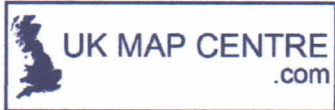
Centre Coordinates: 275800,190130

Production Date: 06/09/2022 11:00:04



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0m 1cm = 12.5m 62.5m
Scale 1:1250



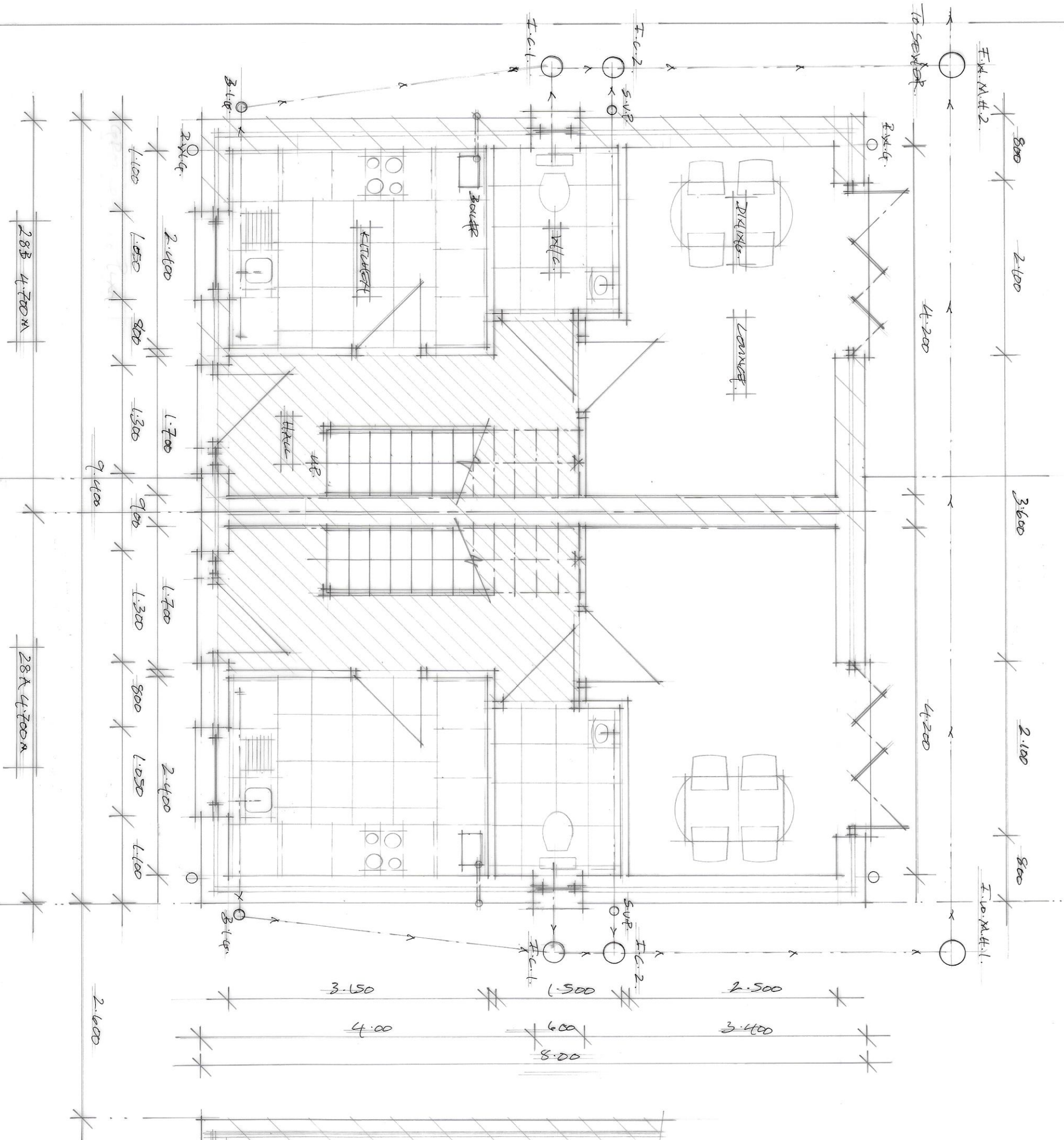
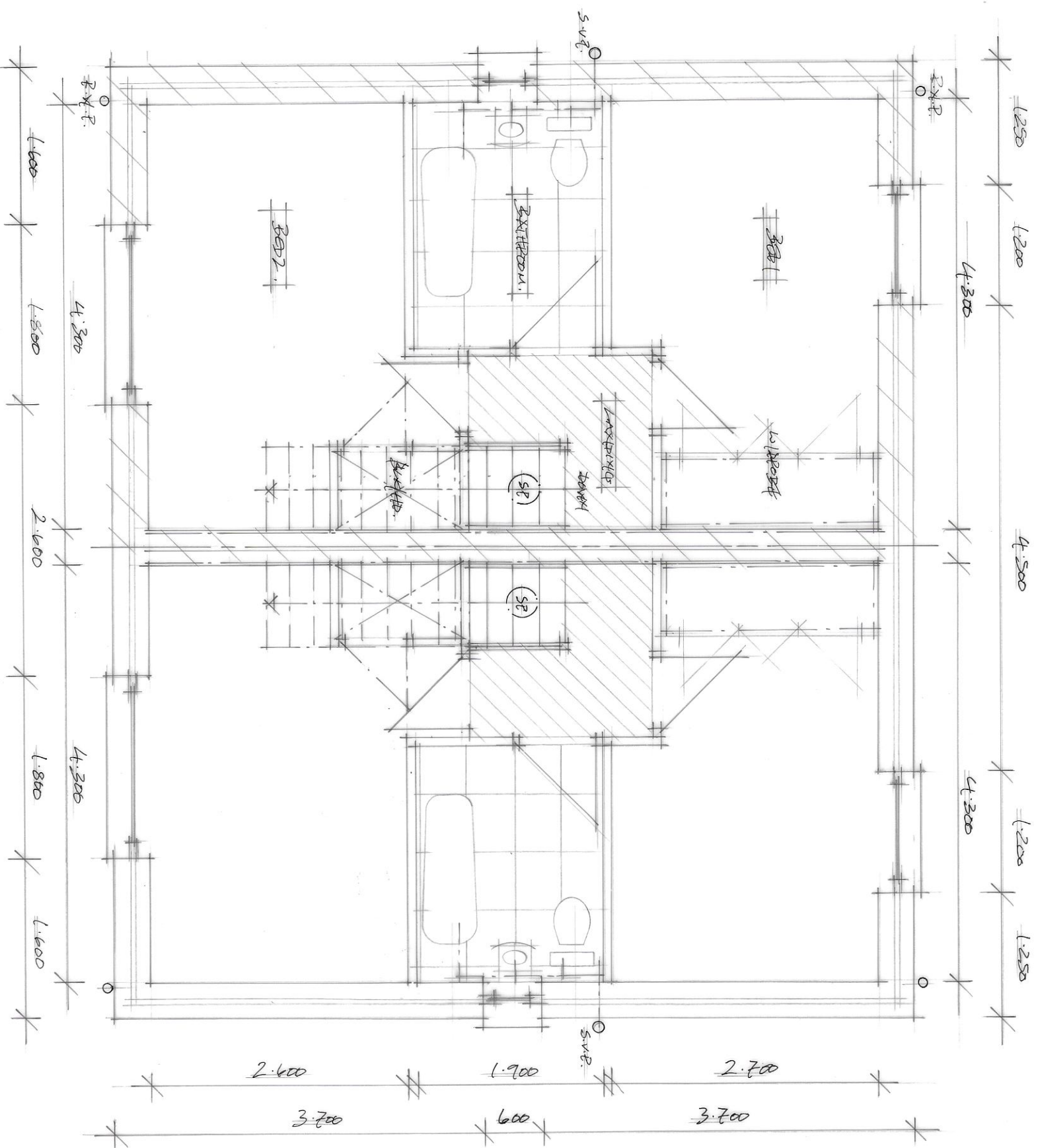
APPENDIX B: Proposed Development Plans

LEADER = 24D.

CONSTRUCTION:

CONSTRUCTION:

Plattixip octyl:



No. 28.

TIME:
2 Mo. Semi-Monthly Disbursements.

ADDRESS:
LAWYER ASSOCIATES 28, MILLIKEN STREET,

Proposed Spread + First Time Trials.

For:
T. G. PROPERTY DEVELOPMENTS LTD.

Scale: 1:56.
Date: Aug. 22!

Dec. 10th. 10F2. 11m41m15. Aug. 22nd.

ALLEGED VISIONS TO BE CHECKED ON SITE BY THE PROPER AUTHORITIES.
 ALL WORKS TO BE KEPT WITHIN THE CAPABILITY OF THE FLEET.
 TO NOT SCALE FROM THIS DRAWING.



LEADER:

EXTERNAL FINISHES:

(1) ROOF:

GREY CONCRETE TILE,
CHARCOAL PVC ZIPPED + CRABLE TILES,
CHARCOAL UPVC FACIAS.

(2) WALLS:

COLOR COATED RENDER,
FACIAL BRICK PLINTHS.

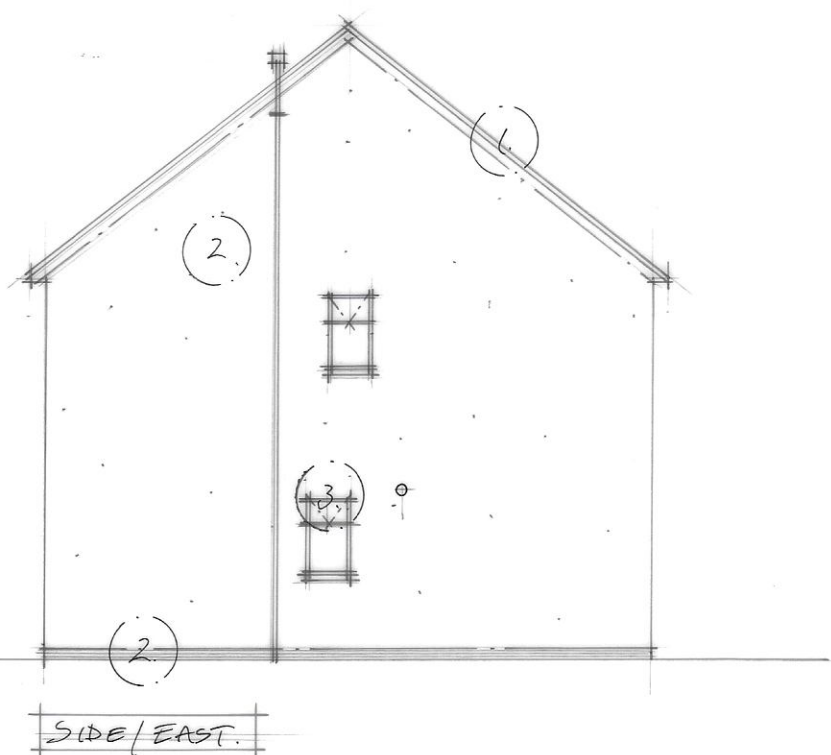
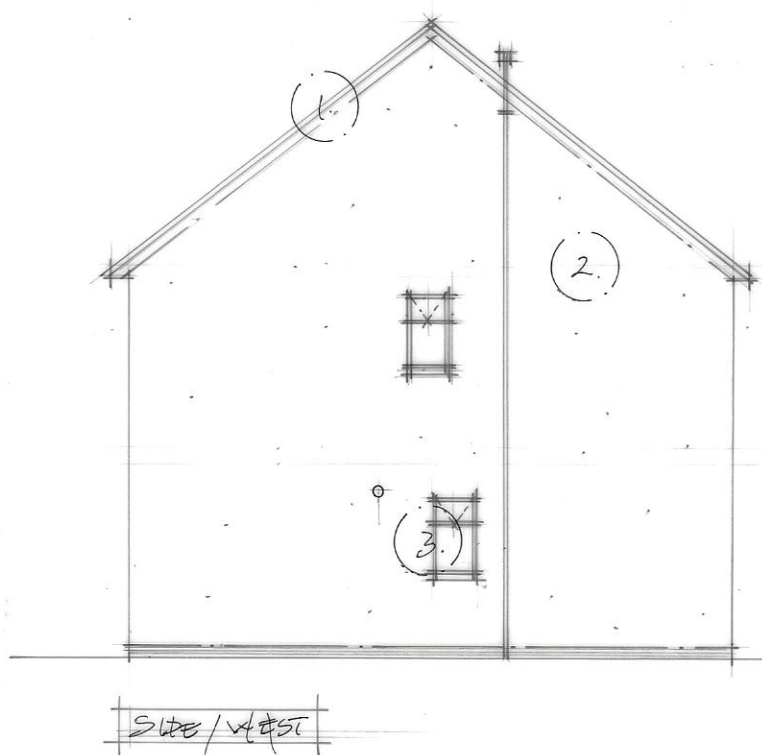
(3) WINDOWS + DOORS:

CHARCOAL UPVC OR ALUMINIUM UNITS.

(4) RAIN WATER GOODS:

CHARCOAL P.V.C. 75mm DIAMETER 2 ROUNDED CUTTERS
+ DOWN-PIPES.

PLANNING ONLY:



(5)

ALL NEW EXTERNAL FINISHES TO THE APPROVAL OF
THE LOCAL PLANNING AUTHORITY.

SAMPLES OF EXTERNAL FINISHES PROVIDED ON REQUEST
OF THE L.P.A. ON PURCHASE.



ALL DIMENSIONS TO BE CHECKED ON-SITE BY THE CONTRACTOR.
ALL WORKS KEPT WITHIN THE CURTAINAGE OF THE PROPERTY.
DO NOT SCALE FROM THIS DRAWING.

TITLE:

2x6. SEMI-DETACHED DWELLINGS.

PROPOSED ELEVATIONS.

SCALE: 1:100.

DATE: AUG. 22.

ADDRESS:

LAND ADJACENT 28, MALCOLM STREET,
PT. TALBOT.

FOR:

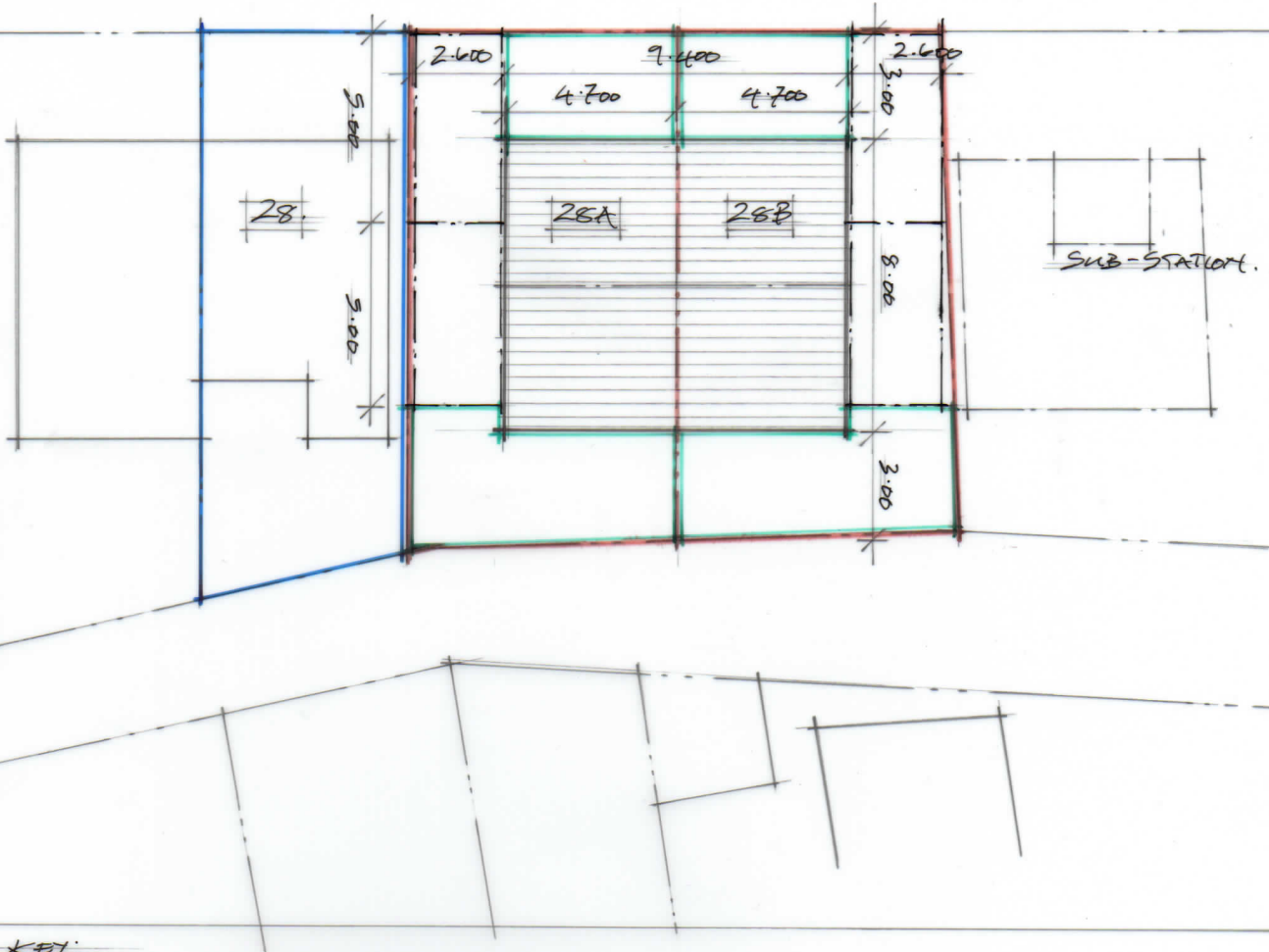
F. + G. PROPERTY DEVELOPMENTS LTD.

DRAW. NO. 20F2.

PLANNING:

AUG. 22.

MICHAELA STREET.



KEY:



SITE BOUNDARIES.

BOUNDARY NO. 28.

AMENITY SPACE FOR PLOTS 28A, 28B.

2x No. 5.00m x 2.600m PARKING SPACES TO 28A, 28B.

TITLE:

BLOCK PLAN. 1:200. REV. B.

ADDRESS:

LAND ADJACENT TO:
28, MICHAELA STREET,
P.T. TALBOT.

FOR:

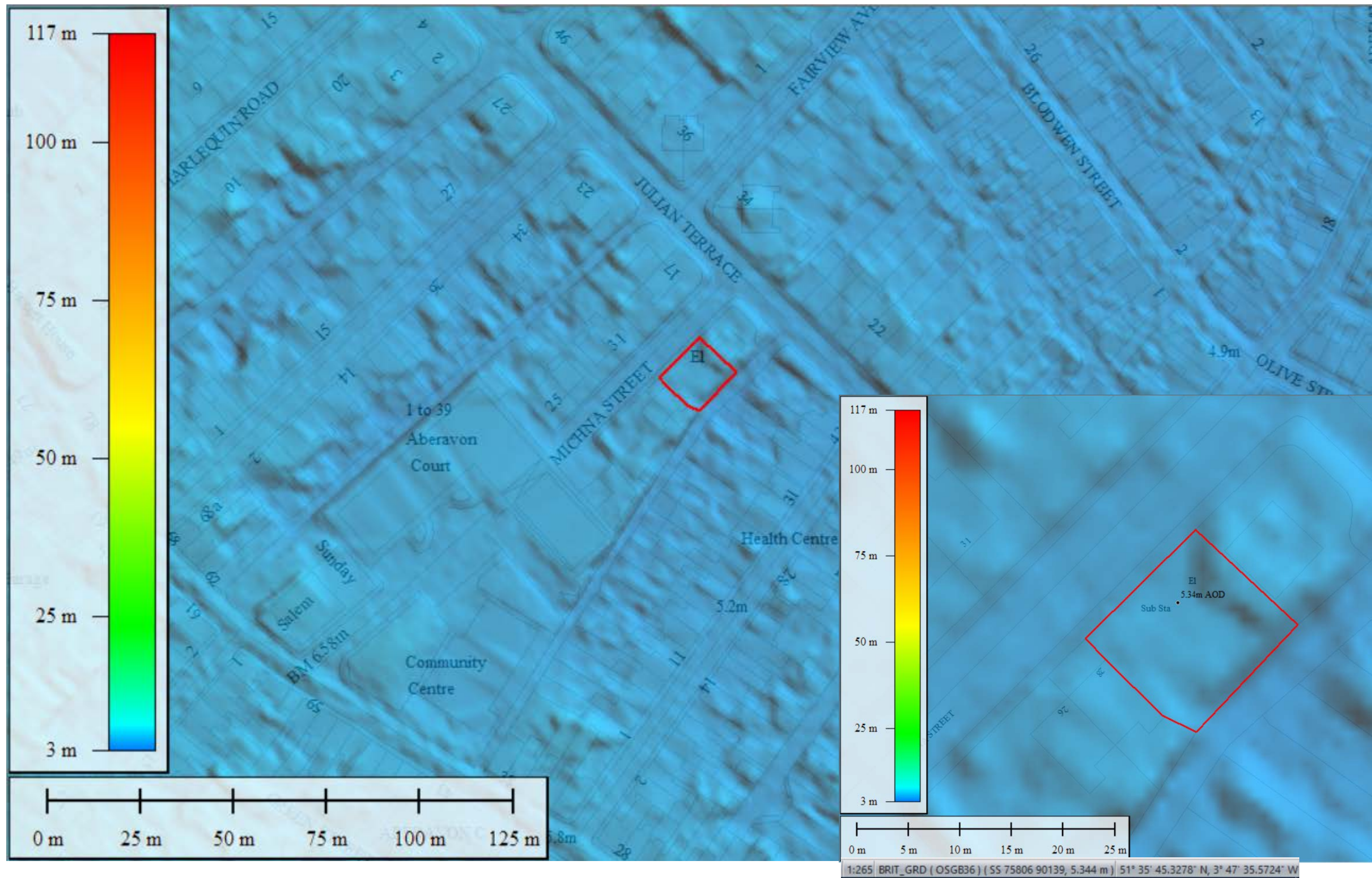
F.T.G. PROPERTY DEVELOPMENTS LTD.

SCALE: 1:200.

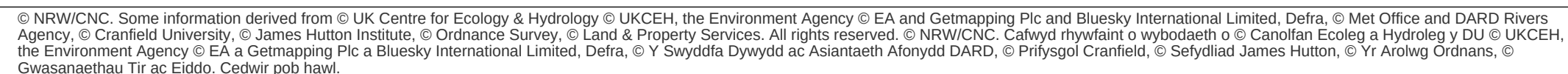
DATE: AUG. 22.

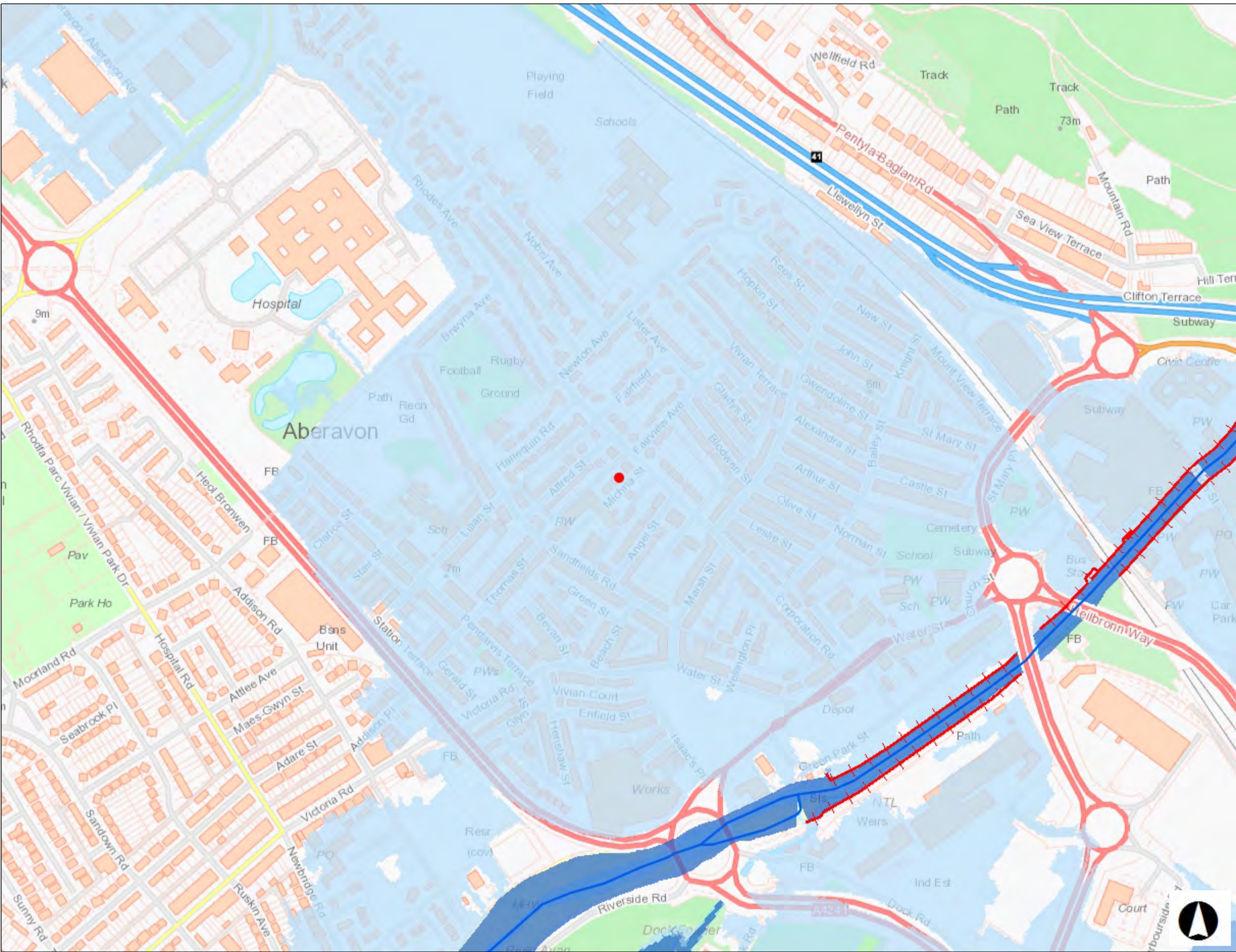
DRUGA BLOCK PLAN. PLANNING: AUG 22.

APPENDIX C: LiDAR Data



APPENDIX D: NRW Flood Maps & Product 5 / 6 data





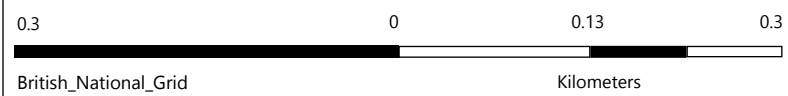
16027 - 28 Michna Street

Allwedd / Map Key

- Main Rivers
- + Flood Defence Locations
- Flood Risk from Rivers - Extent
 - High
 - Medium
 - Low

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
22/11/2022



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16027 - 28 Michna Street

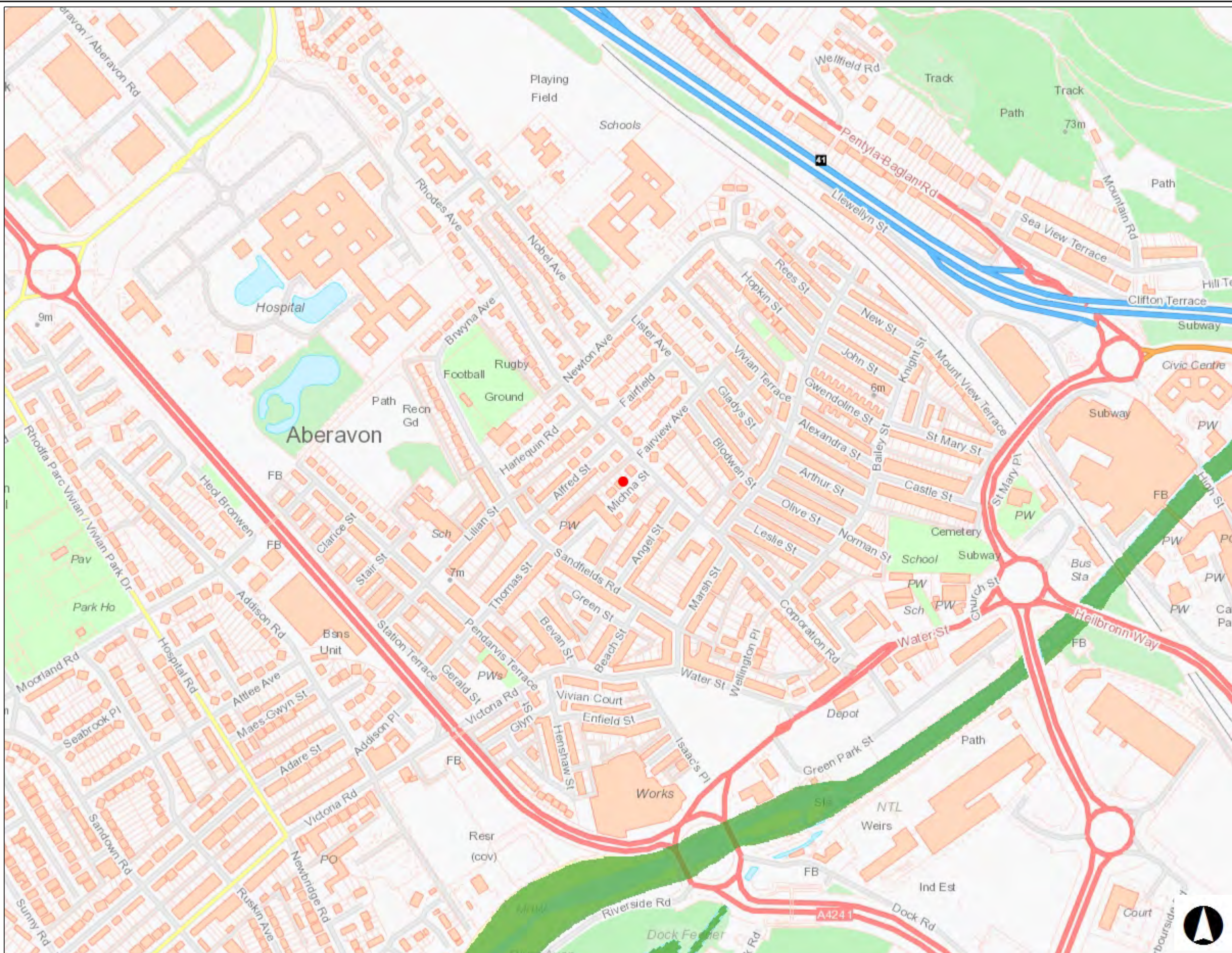
Allwedd / Map Key

Flood Risk from the Sea

- High
- Medium
- Low

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
22/11/2022



0.3 0 0.13 0.3
British_National_Grid Kilometers

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16027 - 28 Michna Street

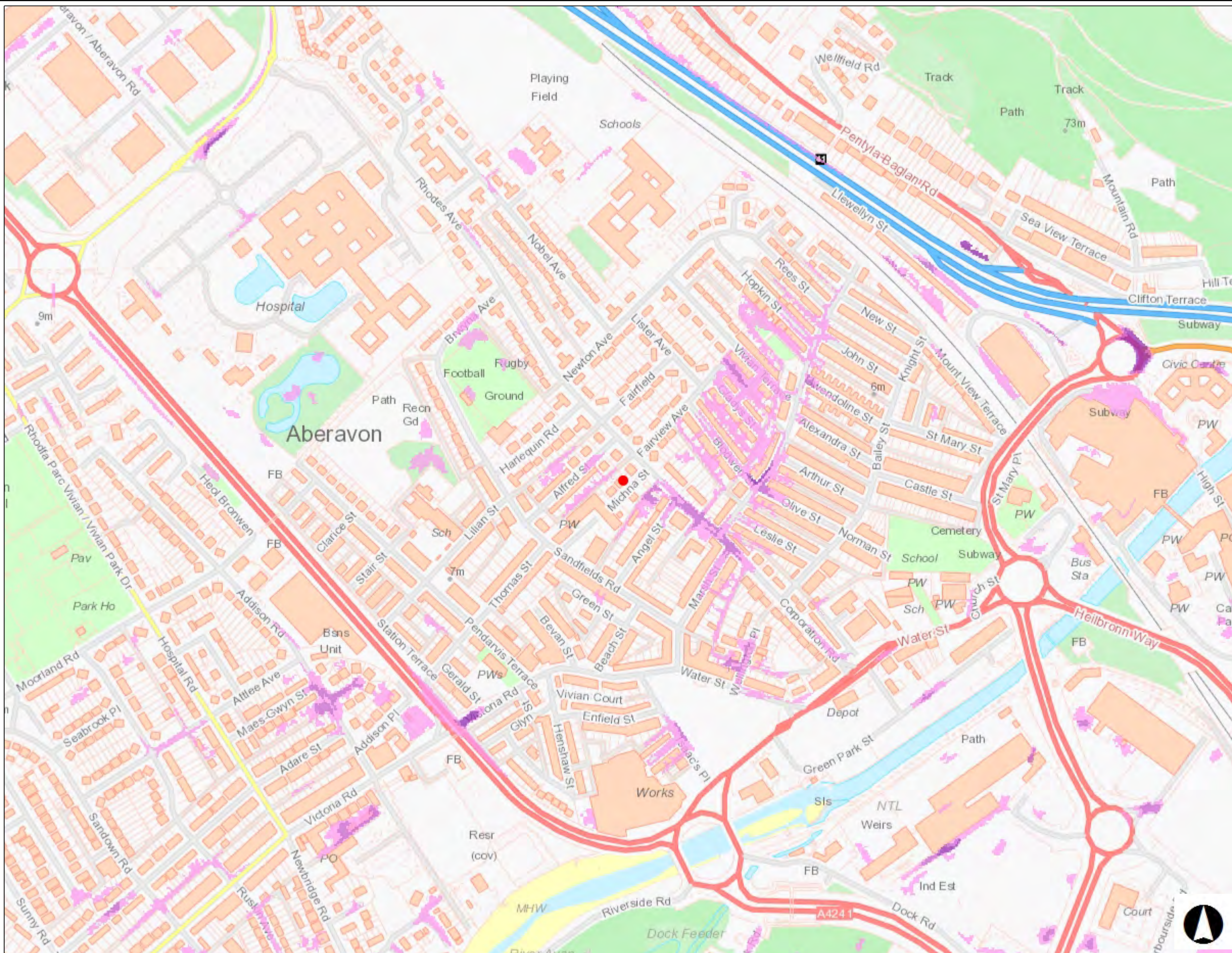
Allwedd / Map Key

Flood Risk from Surface Water & Small
Watercourses - Extent

- High
- Medium
- Low

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
22/11/2022



0.3 0 0.13 0.3
British_National_Grid Kilometers

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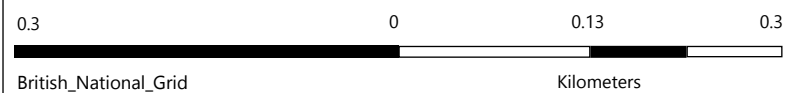
16027 - 28 Michna Street

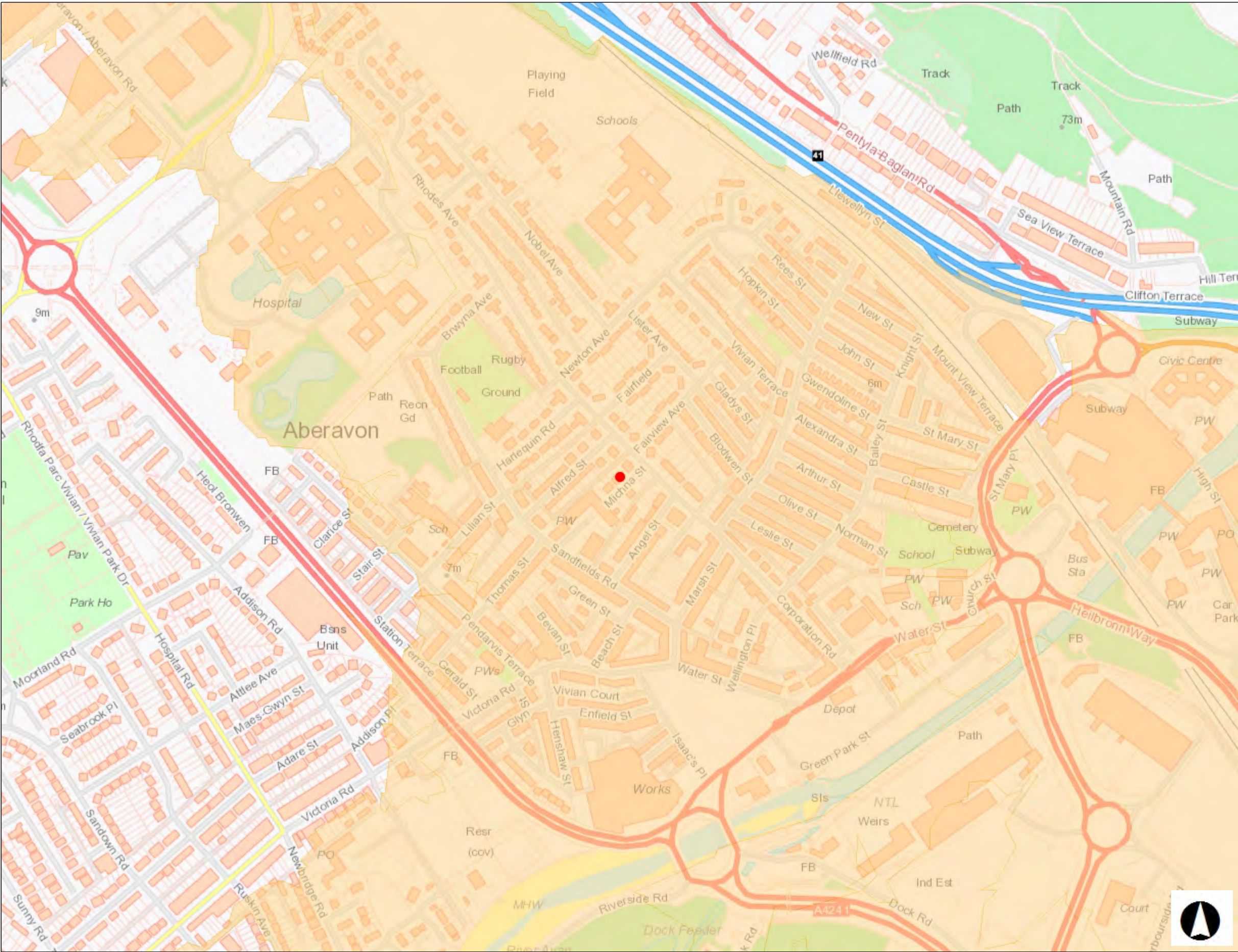
Allwedd / Map Key

- Recorded Flood Extents
- Flood Risk from Reservoirs

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
22/11/2022





16027 - 28 Michna Street

Allwedd / Map Key

 Flood Alert Areas

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
22/11/2022

Flood Map for Planning 16027 - 28 Michna Street

Legend

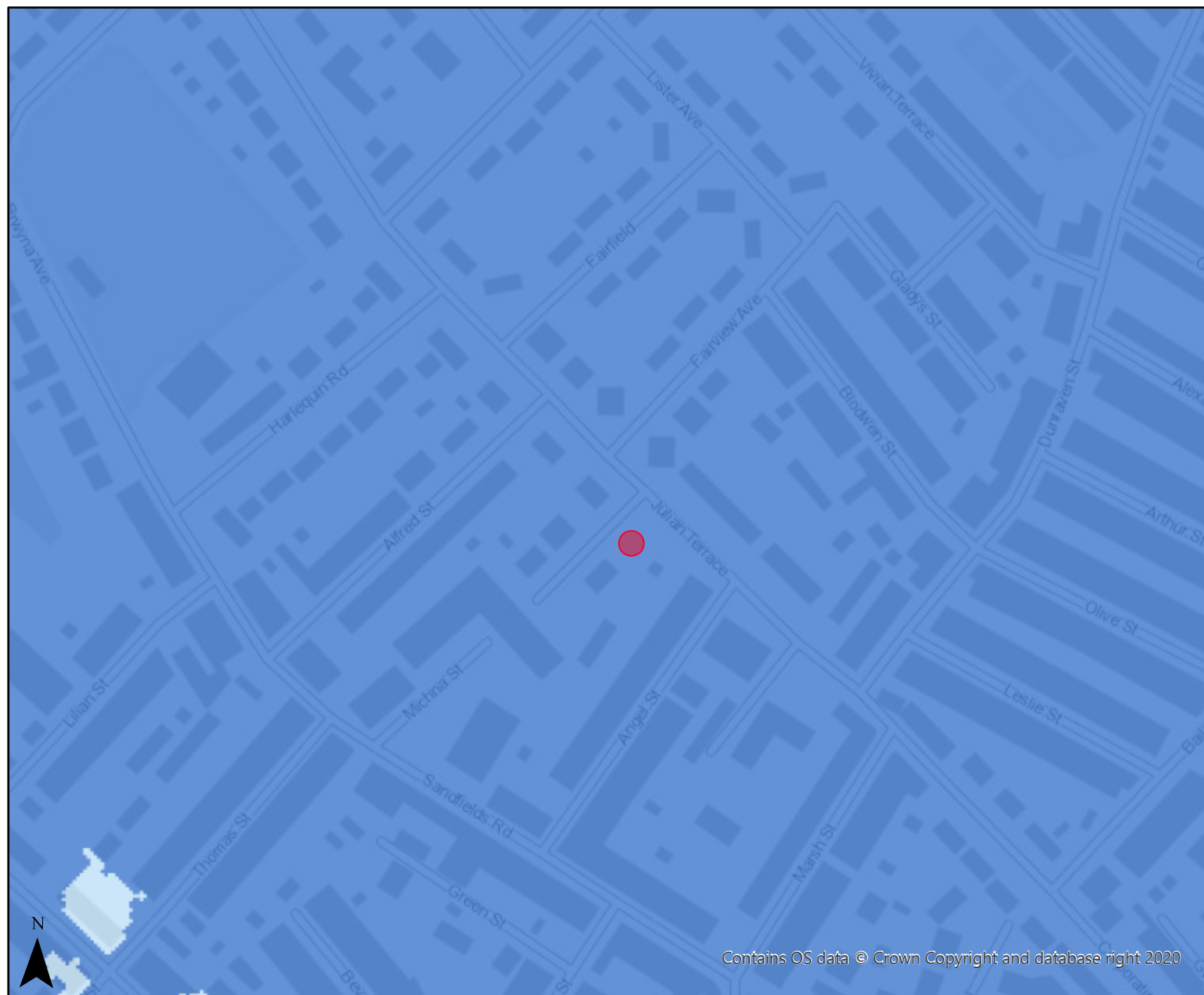
Rivers

Rivers

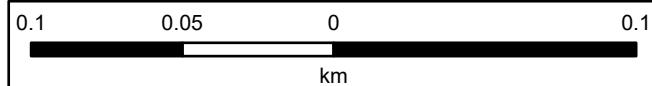
-  Flood Zone 3
-  Flood Zone 2

Scale: 1:2,500

Date: 22/11/2022



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Cyfoeth Naturiol Cymru
Natural Resources Wales

Flood Map for Planning 16027 - 28 Michna Street

Legend

Sea

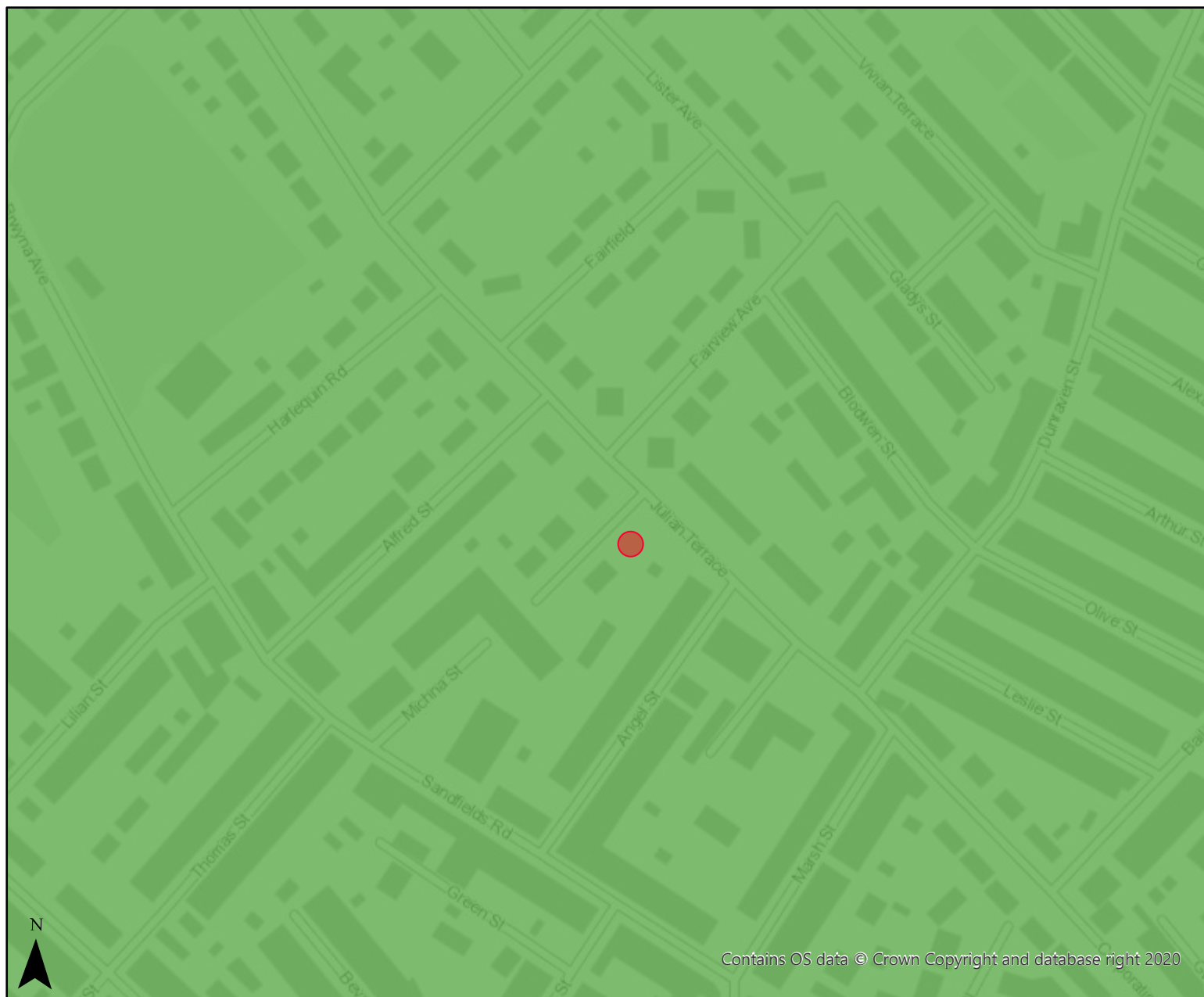
Sea

Flood Zone 3

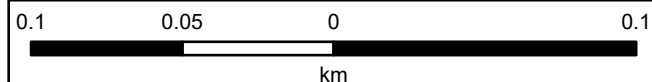
Flood Zone 2

Scale: 1:2,500

Date: 22/11/2022



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Flood Map for Planning 16027 - 28 Michna Street

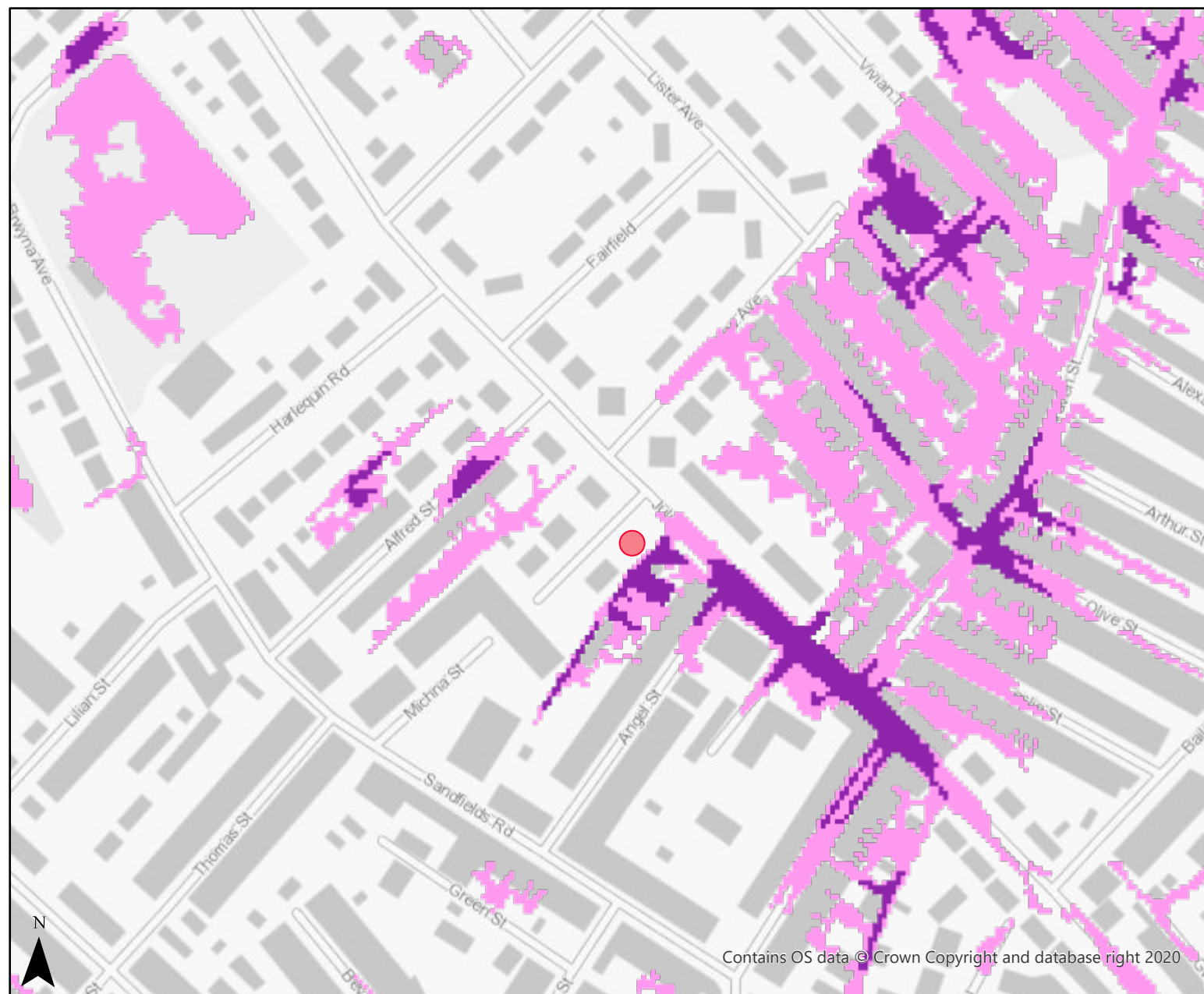
Legend

Surface Water and Small Watercourses

Surface Water and Small Watercourses

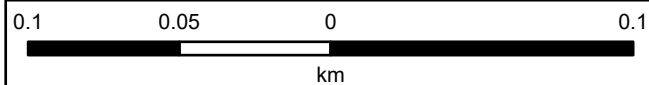
 Flood Zone 3

 Flood Zone 2



Scale: 1:2,500

Date: 22/11/2022



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Flood Map for Planning 16027 - 28 Michna Street

Legend

Flood Defence Location

 Flood Defences

TAN15 Defended Zones

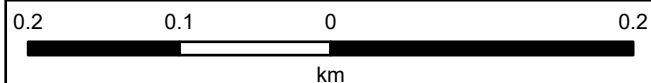
TAN15 Defended Zones

-  Rivers
-  Sea
-  Rivers and Sea



Scale: 1:5,000

Date: 22/11/2022



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