Flood Consequences Assessment (FCA) For:

Development at West of England Tavern
42 Brunel Street,
Newport, Gwent
NP20 2JS

Prepared for:

Femi David

15320 – FCA – R02

January 2024

Vale Consultancy
CONSULTING CIVIL & STRUCTURAL ENGINEERS

VALE CONSULTANCY
29 Bocam Park | Old Field Road
Pencoed | Bridgend | CF35 5LJ

VALE CONSULTANCY
CONSULTING CIVIL & STRUCTURAL ENGINEERS

T 01656 863794
E enquiries@vale-consultancy.co.uk
W http://vale-consultancy.co.uk

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Project	**West of England Tavern, Newport**
Client	**Femi David**
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Prepared By: R Peskett **Signed:** 

Checked By: S Hardacre **Signed:** 

Verified By: S Hardacre **Signed:** 

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Contents

Appendices

LIMITATIONS

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All the Natural Resources Wales (NRW) mapping data used is under special license. Data is current as of *January 2024* 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).

This report is a revision (R02) to the FCA first issued. The sole purpose of this is to provide additional information from NRW following the standalone comment regarding flood risk;

'Whilst it is unlikely when the full allowance of climate change is applied, that the first and second floors will experience flooding, this will increase the flood depth on site, to the ground floor, parking area and access / egress. We would suggest that this information is submitted in an updated FCA for review to ensure your Authority is fully informed.'

1 INTRODUCTION

Vale Consultancy has been instructed by *The Client* to undertake a Flood Consequences Assessment (FCA) for the proposed development which comprises the *Change of use of upper floors of this former public house* at 42 Brunel Street, Newport, NP20 2JS (*331609E, 186306N*).

1.1 Existing Site and Location

The current site comprises of a disused and somewhat dilapidated public house (West of England Tavern) in the central southern extent of Newport. **Refer to Figure 1 below**.

Figure 1 : Site Location Satellite Plan

The site is bordered by an area of disused hardstanding to the rear (north), access (Mill Parade) / parking to the east with the Newport Transporter Bridge further afield, Brunel Street to the south, and residential units to the west. The surrounding land use is largely made up of industrial and residential. Access / egress to the site is provided by Brunel Street / Mill Parade.

Refer to the Existing Site and Location Plan, Appendix A.

1.2 Proposed Development

The proposal is for ***change of use*** of the upper floors to up to 8no. self-contained flats. The ground floor will remain as a club / public house. No habitable rooms are proposed on the ground floor – all habitable spaces are to be located exclusively on the first and second floors.

Refer to the Proposed Development Plans, Appendix B.

1.3 Existing Topography

In the absence of topographical survey data; topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution NRW composite 'Light Detecting and Ranging' (LiDAR) Digital Surface Model (DSM).

A review of LiDAR data indicates a minimum level of 8.04m AOD at the site.

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

Building regulations require that finished floor levels (FFL) are raised at least 150mm above surrounding ground levels. Therefore, an existing FFL of 8.19m AOD is assumed for the existing property.

Refer to Topographical Data, 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 and Silt. Bedrock geology is recorded as Maercia Mudstone Group comprising Mudstone.

1.5 Existing Site Drainage

Public sewer records have not been obtained from DCWW at this stage. Online internet mapping tools indicate that the site and site access / egress routes (Brunel Street / Mill Parade) are served by formal surface and foul water drainage infrastructure due to the presence of rainwater downpipes (RWPs), gullies and manhole covers. It is assumed that under the current arrangement, surface water drains directly into the local public sewage network at an unrestricted rate.

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 C2 which is defined by TAN15 as;

Zone C2 – Areas of the floodplain without significant flood defence infrastructure.

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

From the Sea (tidal flooding), the site is shown to be at *'Low'* risk of tidal / sea flooding. This means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (0.5%). Refer to Appendix D.

Flood Maps for Planning Wales (New Tan 15)

A review of the forthcoming Flood Maps for Wales (which will replace the DAM) shows a similar flood zone extent but with a greater risk posed to the site from the sea (tidal). The site is shown within Flood Zone 3 (sea). The site is still shown outside of the extreme fluvial flood extent (Flood Zone 1).

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. Furthermore, 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 the benefits of flood defences.

2.2 Development Vulnerability Classification

The proposal is for *change of use* of the upper floors to up to 8no. self-contained flats. The ground floor will remain as a club / public house. No habitable rooms are proposed on the ground floor – all habitable spaces are to be located exclusively on the first and second floors.

The proposal will see the development vulnerability classification change from '*Less vulnerable development*' to '*Highly vulnerable development*' in accordance with Figure 2 of the Welsh Government's TAN15.

In terms of how Zone C2 is used within the precautionary framework, TAN15 defines Zone C2 as;

"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".

Paragraph 6.2 of TAN15 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 Newport Local Development Plan (LDP) was adopted in January 2015 and now forms the development plan that will form the basis of decisions on land use for planning in Newport. The relevant specific policies relating to flood risk, drainage and climate change have been reviewed and considered as part of this FCA. In addition to the LDP, the following local authority documents and associated relevant policies have been consulted;

- Newport City Council Local Flood Risk Management Strategy (October 2014)
- Newport City Council Preliminary Flood Risk Assessment (April 2011).

2.3 Consultation

NRW have been consulted regarding the development proposals.

Furthermore, Product 5 and Product 6 data from the *Newport_5_V6.0_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 Report to quantitively interrogate the fluvial / tidal flood risk posed to the site during the relevant storm events.

Model Information

NRW have confirmed that although the Newport model is currently being updated (flood defences at Crindau); this update will not affect the site in question; so providing you are satisfied that the 2016 report and results are appropriate for your site, it would be acceptable to use this data. **Refer to Appendix D**. The existing three models for the Newport area have been brought together to provide an updated and improved dataset for Newport:

Newport_5_V6.0_2016 Model – Newport Velocity Depth Mapping – Update November 2016 (Rev 002)

This update was undertaken by Natural Resources Wales (NRW) in October 2016. The updated model for Newport has been based on three existing models:

- Newport SFRM Modelling – Update of Newport Tidal Model, JBA Consulting, December 2011
- Crindau Pill Flood Alleviation Scheme, JBA Consulting, April 2014
- Stephenson Street Appraisal, NRW, November 2015

Climate Change Guidance

Regarding climate change guidance, the Model Report states;

Natural Resources Wales current climate change guidance states that the FCDPAG3 guidance should be followed for Development Control purposes and the UKCP09 for Flood Risk Management scheme appraisal.

And;

This study has used the FCDPAG3 guidance.

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

The base year for the model was taken as 2015, with climate change values set at 75 years (2090) and 100 years (2115). To account for climate change, the FCDPAG3 guidance was used, which adds 0.69m to sea levels for 2090 and 1.06m for 2115.

Previous modelling studies within Newport have shown the dominant flood risk to the area is tidal, therefore all tidal simulations have been run with a QMED (1 in 1-year) fluvial event. No other fluvial scenarios have been run. The modelled results show that large areas of Newport (including the site) are well defended up to the 1 in 200-year event.

The results from six separate breach scenarios for the 2015 (base year) 1 in 200-year scenario were compared against the defended results. None of the breach events considered will affect the site, which will remain flood-free.

3 SOURCES OF FLOODING AND PROBABILITY

3.1 Fluvial

The nearest watercourse is the River Usk which lies approximately 120m south east from the site. From here, the River Usk flows south and discharges into the Severn Estuary. There are no other surface water bodies / features in the vicinity that pose a potential source of fluvial flood risk to the site.

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

A review of the forthcoming FMFP Wales (which will replace the DAM) shows the site located within **Flood Zone 1** (Rivers) – an area considered to have below a 0.1% (1 in 1000) annual probability of flooding.

The NRW Historic Flood Map indicates no records of historical flooding at the site or within the vicinity.

NRW Data

From a review of the NRW Product 5 and Product 6 data it can be ascertained that the site remains flood-free during the Combined T200 (0.5% AEP) and 1 in 1-year fluvial event. Therefore, the proposal is compliant with A1.14 of TAN15.

The candidate site falls within **Zone C2** on the Welsh Government DAM.

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

A review of the forthcoming FMFP Wales (which will replace the DAM) shows the site located within **Flood Zone 1** (Rivers) – an area considered to have below a 0.1% (1 in 1000) annual probability of flooding.

The NRW Historic Flood Map indicates no records of historical flooding at the site or within the vicinity.

NRW Data

Previous modelling studies within Newport have shown the dominant flood risk to the area is tidal, therefore all tidal simulations have been run with a QMED (1 in 1-year) fluvial event. No other fluvial scenarios have been run.

A review of the modelled data indicates that the site remains flood free during the 1 in 1-year fluvial event. For instance, the site is shown to be flood free during the T0200_2015_F002_DEF_001 event (which has been run with a QMED fluvial event). Therefore, it can be concluded that the site is at Very Low Risk of fluvial flooding.

3.2 Tidal

From the sea (tidal flooding), the site is shown to be at '*Low*' risk of tidal / sea flooding. This means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (0.5%).

A review of the forthcoming Flood Maps for Wales (which will replace the DAM) shows a similar flood zone extent but with a greater risk posed to the site from the sea (tidal). The site is shown within Flood Zone 3 (Sea).

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.*

NRW Data

As already mentioned, previous modelling studies within Newport have shown the dominant flood risk to the area is tidal.

A review of NRW modelled data indicates the site to be flood-free during the T200 (2015) event and thus compliant with A1.14 of TAN15.

During the T1000 (2015) event, the site is shown to flood by up to a maximum depth of 0.39m which is within (below) the tolerable limits prescribed by TAN15 for all types of development.

When climate change allowances are incorporated and considered, the site is shown to flood. For instance, during the T200 (2090) event, the site is shown to flood by up to a maximum depth of 1.23m. However, the Proposed Development Plans indicate that this location will be made up of parking spaces. At the location of the existing Tavern, a maximum flood depth of 1.07m is recorded. Seeing as all habitable rooms are located on the first and second floors, and the fact that UK ceilings have a minimum height from floor to ceiling of 2.2m; it can be ascertained that the first and second floors (developable aspects of the property) will remain flood free during all events up to and including the T200 event plus CC (2090).

Therefore, it can be concluded that the development proposals are compliant with A1.15 of TAN15.

Tidal flood events are managed and are subject to the Newport City Council Flood Risk Management Strategy, which will implement suitable monitoring and management responses to the most extreme tidal events.

The coastal sea defences providing Newport with flood defence infrastructure are Council, Government and NRW maintained assets which are highly unlikely to fail without suitable warning and thus the tidal flood risk to the site is considered a residual risk subject to the FMRP.

It can be concluded that the site is at *Low Risk* of tidal flooding / from the sea.

As aforementioned in the cover page – NRW have requested maximum estimated flood depths for the site during the T200 (2115) event and hence the revision (R02 of report). A review of the model indicates that the site is shown to flood by up to a maximum depth of 1.56m. However, this location will be occupied by parking spaces. At the location of the existing Tavern, a maximum estimated flood depth of 1.40m is recorded.

Refer to Appendix D.

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 ***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.

The proposal will be subject to current guidance and policy regarding SuDS and surface water drainage which is likely to improve the sites current surface water drainage arrangement.

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

Site access / egress is also shown to be located outside of the extreme flood extent and therefore at ***Low Risk*** meaning it has a less than 0.1% annual probability of flooding.

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 Brunel Street and Mill Parade 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 Newport Flood Risk Management Strategy states that;

"Groundwater is not considered to be a significant flood risk and is considered to rise and fall relatively slowly."

There are no known records of groundwater flooding incidents at or near to the site. Furthermore, the site is currently overlain by 100% 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 artificial / man-made surface water bodies within the immediate vicinity of the site or surrounding area which would pose a flood risk to the site.

The NRW 'Risk of Flooding from Reservoirs' map (Appendix D) shows that the site is at risk of flooding from reservoirs. However, 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 tidal flooding is the main potential source of flood risk to the site.

All other sources of flooding have been reviewed and are considered to either pose null, a ***Very Low***, or ***Low Risk***.

The candidate site falls within **Zone C2** on the Welsh Government DAM.

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

A review of the forthcoming FMFP Wales (which will replace the DAM) shows the site located within **Flood Zone 1** (Rivers) – an area considered to have below a 0.1% (1 in 1000) annual probability of flooding.

The NRW Historic Flood Map indicates no records of historical flooding at the site or within the vicinity.

Therefore, it can be concluded that the site is at ***Very Low Risk*** of fluvial flooding.

From the sea (tidal flooding), the site is shown to be at ***'Low'*** risk of tidal / sea flooding. This means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (0.5%).

A review of the forthcoming Flood Maps for Wales (which will replace the DAM) shows a similar flood zone extent but with a greater risk posed to the site from the sea (tidal). The site is shown within **Flood Zone 3** (Sea).

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.*

NRW Data

As already mentioned, previous modelling studies within Newport have shown the dominant flood risk to the area is tidal.

A review of NRW modelled data indicates the site to be flood-free during the T200 (2015) event and thus compliant with A1.14 of TAN15.

During the T1000 (2015) event, the site is shown to flood by up to a maximum depth of 0.39m which is within (below) the tolerable limits prescribed by TAN15 for all types of development.

When climate change allowances are incorporated and considered, the site is shown to flood. For instance, during the T200 (2090) event, the site is shown to flood by up to a maximum depth of 1.23m. However, the Proposed Development Plans indicate that this location will be made up of parking spaces. At the location of the existing Tavern, a maximum flood depth of 1.07m is recorded. Seeing as all habitable rooms are located on the first and second floors, and the fact that UK ceilings have a minimum height from floor to ceiling of 2.2m; it can be ascertained that the first and second floors (developable aspects of the property) will remain flood free during all events up to and including the T200 event plus CC (2090).

Therefore, it can be concluded that the development proposals are compliant with A1.15 of TAN15.

4 TAN15 Assessment

4.1 Justifying the Location

TAN15 advises that all new developments should only be permitted within Zone C2 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 TAN15 found to be acceptable.

The proposed development will sustain and enhance the facilities provided by the existing site. Furthermore, the development is consistent with the land use and image of the area.

The development proposal will provide important affordable housing in the area whilst retaining and enhancing the potential of the ground floor space. The development will vastly improve the aesthetic value of the site which is currently dilapidated and in dire need of renovation / re-development.

The proposals present a great opportunity to make the existing site and building more resilient and resistant to climate change, flooding and global warming in alignment with the LDPs definition of sustainable development.

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

There is extremely limited scope for alternative development / usage / arrangement of the site which requires refurbishment and an improvement of ancillary facilities.

It can be concluded that the site and development proposals are fully compliant with TAN15.

The potential consequences of flooding, to satisfy the latter part of these conditions, are assessed in terms of the requirements of TAN15 in the following sections of the report.

It can be concluded that the site and proposals meet and therefore pass the requirements of the justification test.

5 MITIGATION & RECOMENDATIONS

Tidal flooding poses the greatest flood risk to the site.

The site is deemed to be at either no, ***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 should be incorporated into the proposed development.

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.

All construction methods to be inherently flood resilient i.e., polished concrete floors, no plasterboard. Refer to the *BS 85500: 2015, Flood resistant and resilient construction. Guide to improving the flood performance of buildings* (November 2015).

External alterations such as commercial flood guards (barriers) are available and could be fitted to doorways. They can be applied and removed as and when be site users / residents and can provide a protection and freeboard to inundation waters up to 0.6m and will prevent the ingress of waters to properties thus minimising and avoiding internal damage. Other products which would protect the building from flooding and which should be considered; include flood fences, flood doors and air bricks.

Flood Alerts and Flood Warnings cover this area (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 all occupants 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 any new building elements will be constructed from materials with inherently good wet proofing performance. Wet proofing is the use of more flood resistant building materials in the floors, walls and doors.

5.1 Access and Egress

Safe access / egress is provided by Brunel Street and Mill Parade, followed by Usk Way (south west bound).

Taking into consideration the facts that the evacuation route is relatively far and the site is located within Flood Zone 3 (sea); evacuation should only be undertaken if safe to do so.

Figure 2: Proposed Flood Evacuation / Safe Egress Route

5.2 Safe Refuge Area and Flood Procedure

In the 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 typically provided, excluding potential breaches of defences. When a flood is expected Newport 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 upper floors as and where possible until flood waters have receded and it is safe to evacuate the site.

5.3 Finished Floor Level (FFL)

No alterations to the current, existing FFL are required / proposed. Furthermore, the raising of FFLs would displace inundation waters – causing an increased flood risk elsewhere (immediately neighbouring third-party land and infrastructure).

5.4 Flood Risk Elsewhere

There will be no loss of floodplain / displacement of floodplain storage as a result of the proposed works. Therefore, the proposed development will not increase flood risk elsewhere or to third-party land.

6 CONCLUSIONS

The proposal is for ***change of use*** of the upper floors to up to 8no. self-contained flats. The ground floor will remain as a club / public house. No habitable rooms are proposed on the ground floor – all habitable spaces are to be located exclusively on the first and second floors.

The proposal will see the development vulnerability classification change from '*Less vulnerable development*' to '*Highly vulnerable development*' in accordance with Figure 2 of the Welsh Government's TAN15.

The DAM shows that the site falls within **Zone C2**, which is defined by TAN15 as:

Zone C2 – Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.

It can be concluded that tidal flooding is the main potential source of flood risk to the site.

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

A review of the forthcoming FMFP Wales (which will replace the DAM) shows the site located within **Flood Zone 1** (Rivers) – an area considered to have below a 0.1% (1 in 1000) annual probability of flooding.

Therefore, it can be concluded that the site is at ***Very Low Risk*** of fluvial flooding.

From the sea (tidal flooding), the site is shown to be at ***'Low'*** risk of tidal / sea flooding. This means that each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (0.5%).

A review of the forthcoming Flood Maps for Wales (which will replace the DAM) shows a similar flood zone extent but with a greater risk posed to the site from the sea (tidal). The site is shown within **Flood Zone 3** (Sea).

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.*

A review of NRW modelled data indicates the site to be flood-free during the T200 (2015) event and thus compliant with A1.14 of TAN15.

During the T1000 (2015) event, the site is shown to flood by up to a maximum depth of 0.39m which is within (below) the tolerable limits prescribed by TAN15 for all types of development.

When climate change allowances are incorporated and considered, the site is shown to flood. For instance, during the T200 (2090) event, the site is shown to flood by up to a maximum depth of 1.23m. However, the Proposed Development Plans indicate that this location will be made up of parking spaces. At the location of the existing Tavern, a maximum flood depth of 1.07m is recorded. Seeing as all habitable rooms are located on the first and second floors, and the fact that UK ceilings have a minimum height from floor to ceiling of 2.2m; it can be ascertained that the first and second floors (developable aspects of the property) will remain flood free during all events up to and including the T200 event plus CC (2090).

Therefore, it can be concluded that the development proposals are compliant with A1.15 of TAN15.

The proposed development will sustain and enhance the facilities provided by the existing site. Furthermore, the development is consistent with the land use and image of the area.

The development proposal will provide important affordable housing in the area whilst retaining and enhancing the potential of the ground floor space. The development will vastly improve the aesthetic value of the site which is currently dilapidated and in dire need of renovation / re-development.

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

There is extremely limited scope for alternative development / usage / arrangement of the site which requires refurbishment and an improvement of ancillary facilities.

It can be concluded that the site and development proposals are fully compliant with TAN15.

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.

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

APPENDIX A: Existing Site and Location Plan

North

Scale bar 1:500 @ A3

0 10 20 50

Scale bar 1:1250 @ A3

0 25 50 100

Skerryvore Designs Ltd
Sexton's Tower
2 Caerphilly Road
Bassaleg,
Newport,
NP10 8LE.
Phone **01633 897922**
Mobile **07816 934352**
steve_groucott@hotmail.com

JOB
TITLE West Of England Tavern
Existing Floor Plans
with
possible apartment sizes added

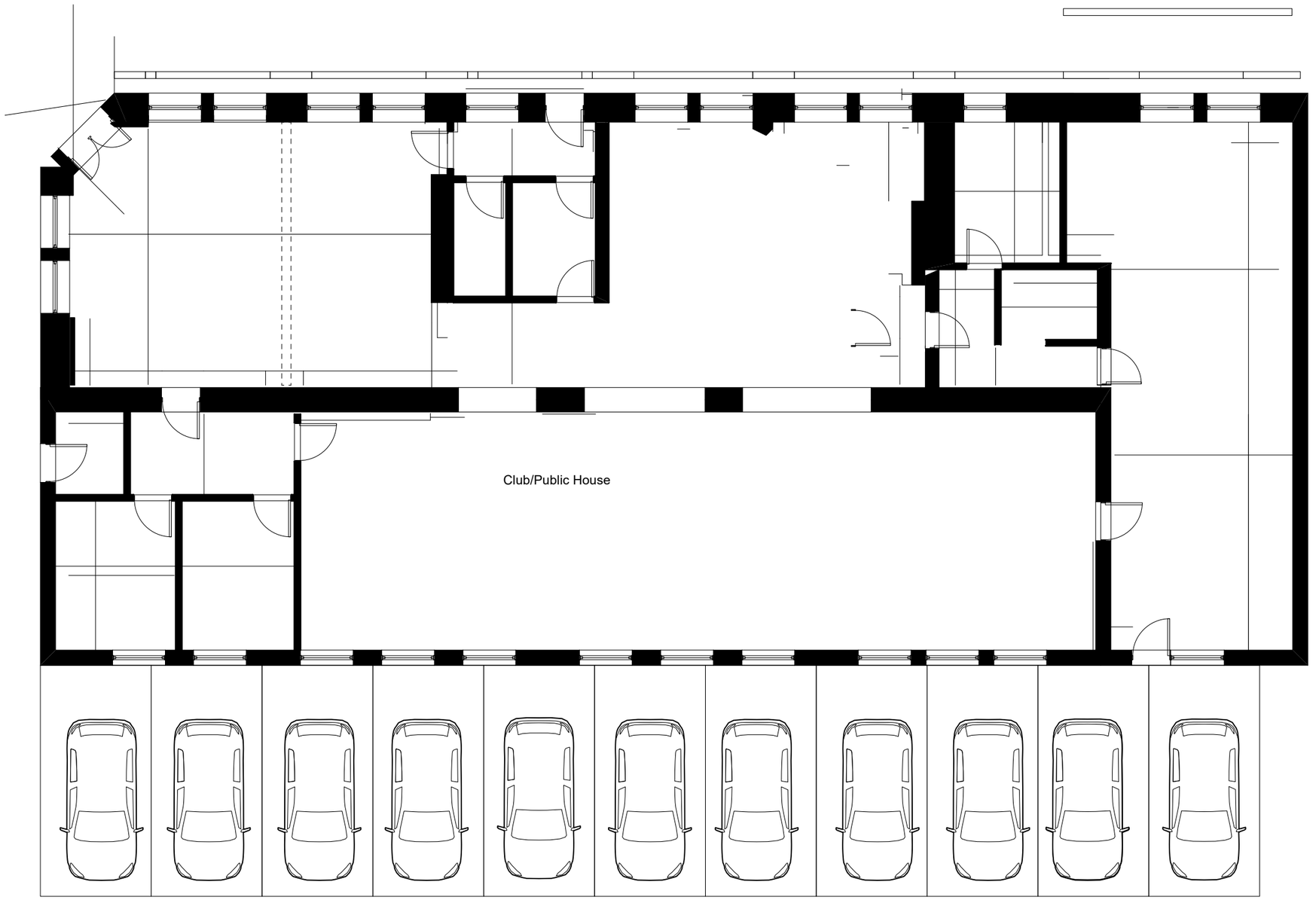
DRAWING
TITLE Existing site plan &
Layouts

DRAWING No. SD724 01

SCALE 1:100 & 1:1250 @ A2

DATE May 2022

APPENDIX B: Proposed Development Plans



North

Skerryvore Designs Ltd
Sexton's Tower
2 Caerphilly Road
Bassaleg,
Newport,
NP10 8LE.
Phone **01633 897922**
Mobile **07816 934352**
steve_groucott@hotmail.com

JOB TITLE West Of England Tavern
Existing Floor Plans
with
possible apartment sizes added

DRAWING TITLE Ground floor

DRAWING No. SD724 02

SCALE 1:100 @A3

DATE May 2022

APPENDIX C: Topographical Data

North

Scale bar 1:500 @ A3

0 10 20 50

Scale bar 1:1250 @ A3

0 25 50 100

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JOB
TITLE West Of England Tavern
Existing Floor Plans
with
possible apartment sizes added

DRAWING
TITLE Existing site plan &
Layouts

DRAWING No. SD724 01

SCALE 1:100 & 1:1250 @ A2

DATE May 2022

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

Cyfoeth Naturiol Cymru
Natural Resources Wales

15320 - West of England Tavern, Newport

Allwedd / Map Key

- Zone C1
- Zone C2
- Zone B
- Zone A

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
21/03/2023

0.3 0 0.13 0.3

British_National_Grid Kilometers

Cyfoeth Naturiol Cymru
Natural Resources Wales

Flood Map for Planning

15320 - West of England Tavern, Newport

Legend

Flood Defence Location

Flood Defences

TAN15 Defended Zones

TAN15 Defended Zones

Rivers

Sea

Rivers and Sea

Rivers

Rivers

Flood Zone 3

Flood Zone 2

Sea

Sea

Flood Zone 3

Flood Zone 2

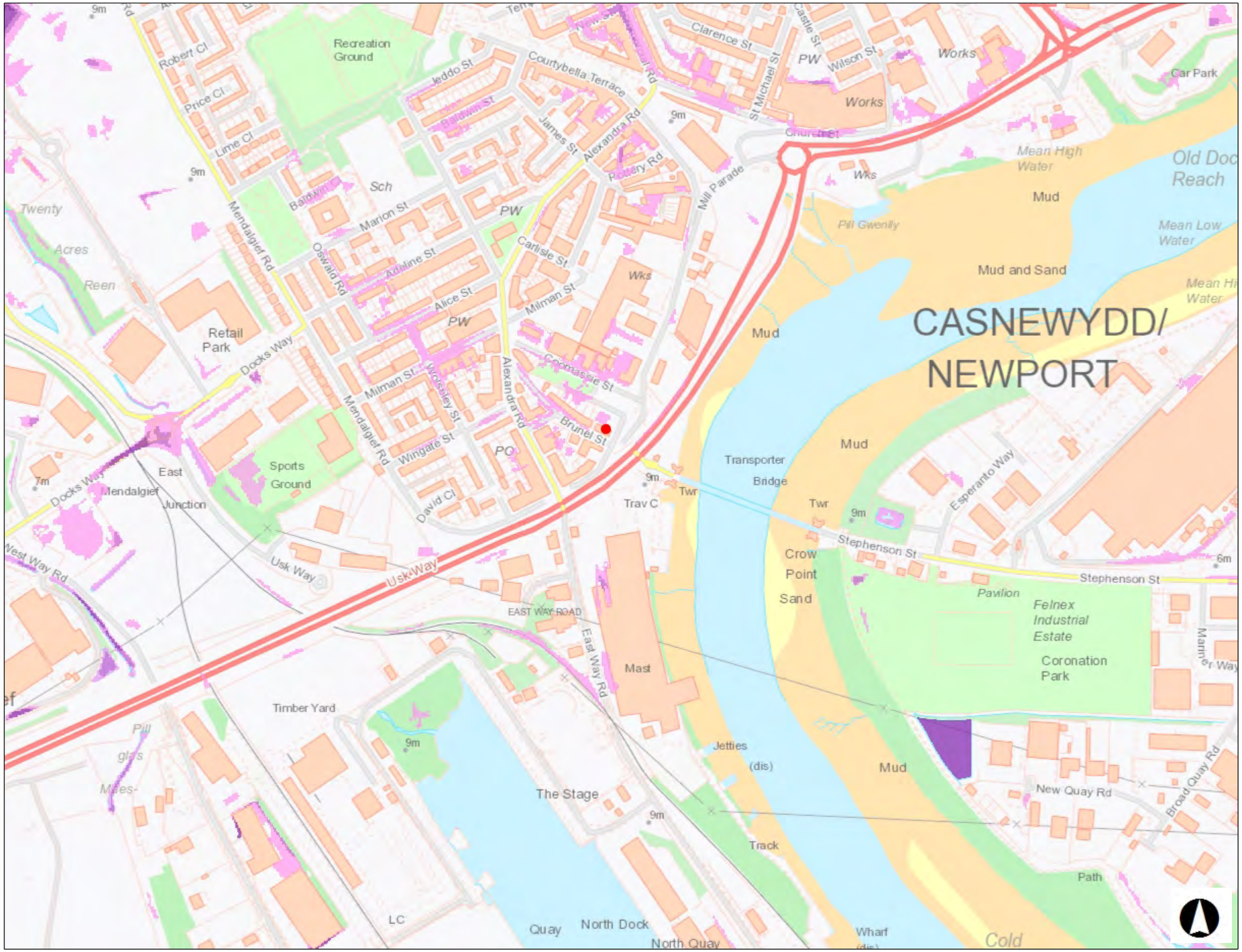
Scale: 1:2,500

Date: 21/03/2023

0.1 0.05 0 0.1

km

British National Grid



Cyfoeth Naturiol Cymru
Natural Resources Wales

15320 - West of England Tavern, Newport

Allwedd / Map Key

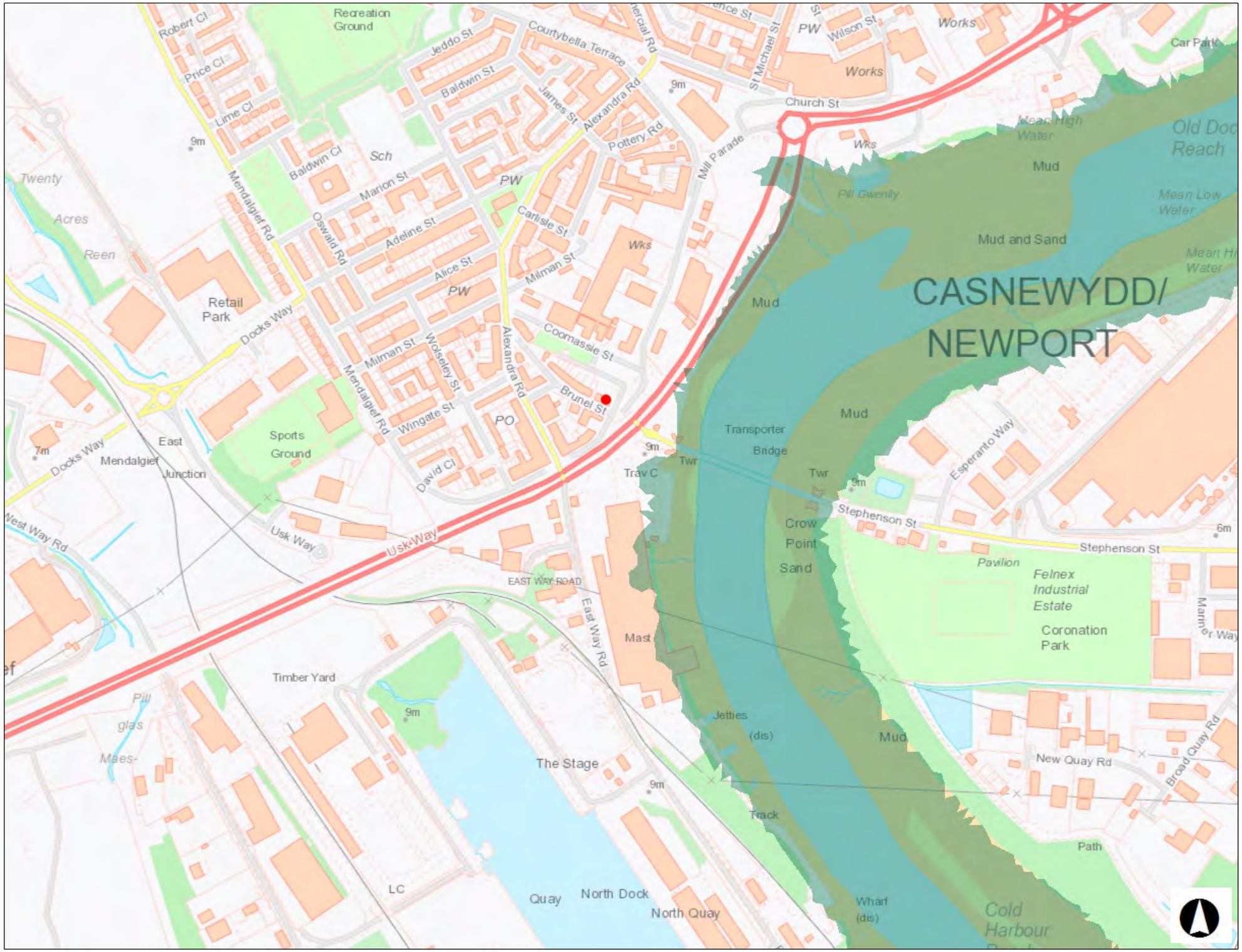
- Risk Level Under Review
- Flood Risk from Surface Water & Small Watercourses - Extent
  - High
  - Medium
  - Low
- Recorded Flood Extents

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
21/03/2023

0.3 0 0.13 0.3

British_National_Grid Kilometers



Cyfoeth Naturiol Cymru
Natural Resources Wales

15320 - West of England Tavern, Newport

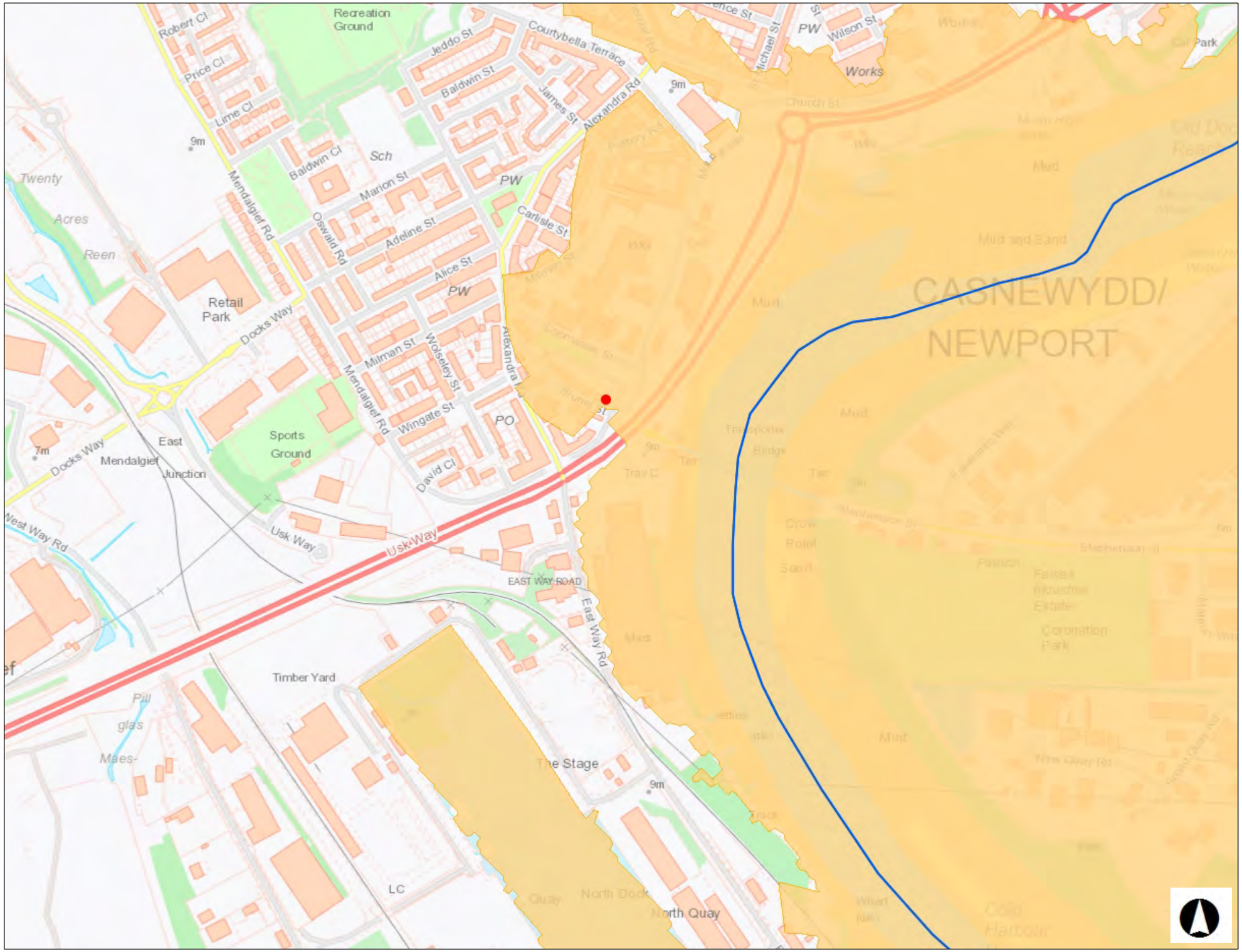
Allwedd / Map Key

- Recorded Flood Extents
- Flood Risk from Reservoirs

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
21/03/2023

0.3 0 0.13 0.3
British_National_Grid Kilometers



Cyfoeth Naturiol Cymru
Natural Resources Wales

15320 - West of England Tavern, Newport

Allwedd / Map Key

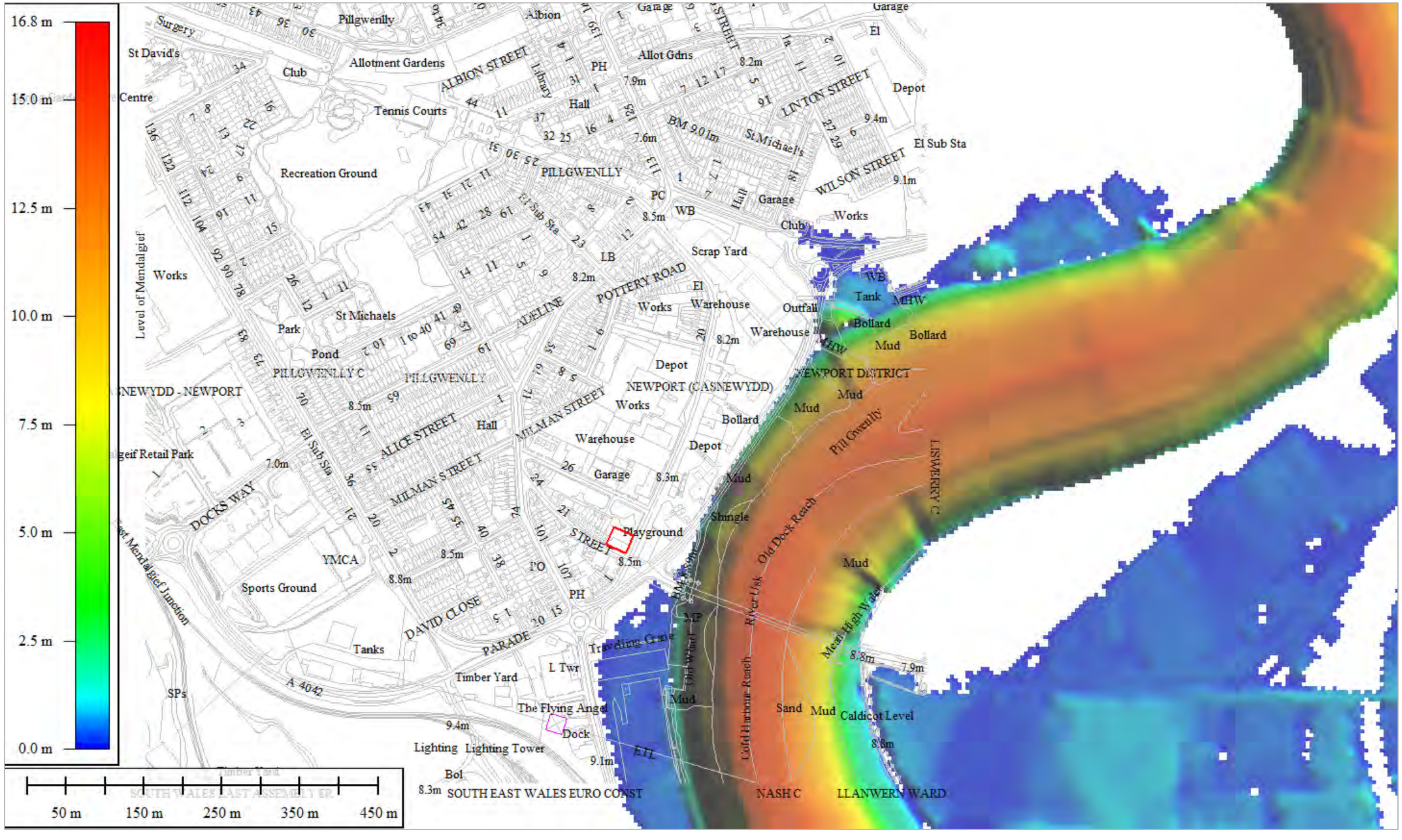
- Main Rivers
- Flood Alert Areas

Graddfa / Scale at A3 1: 5,000

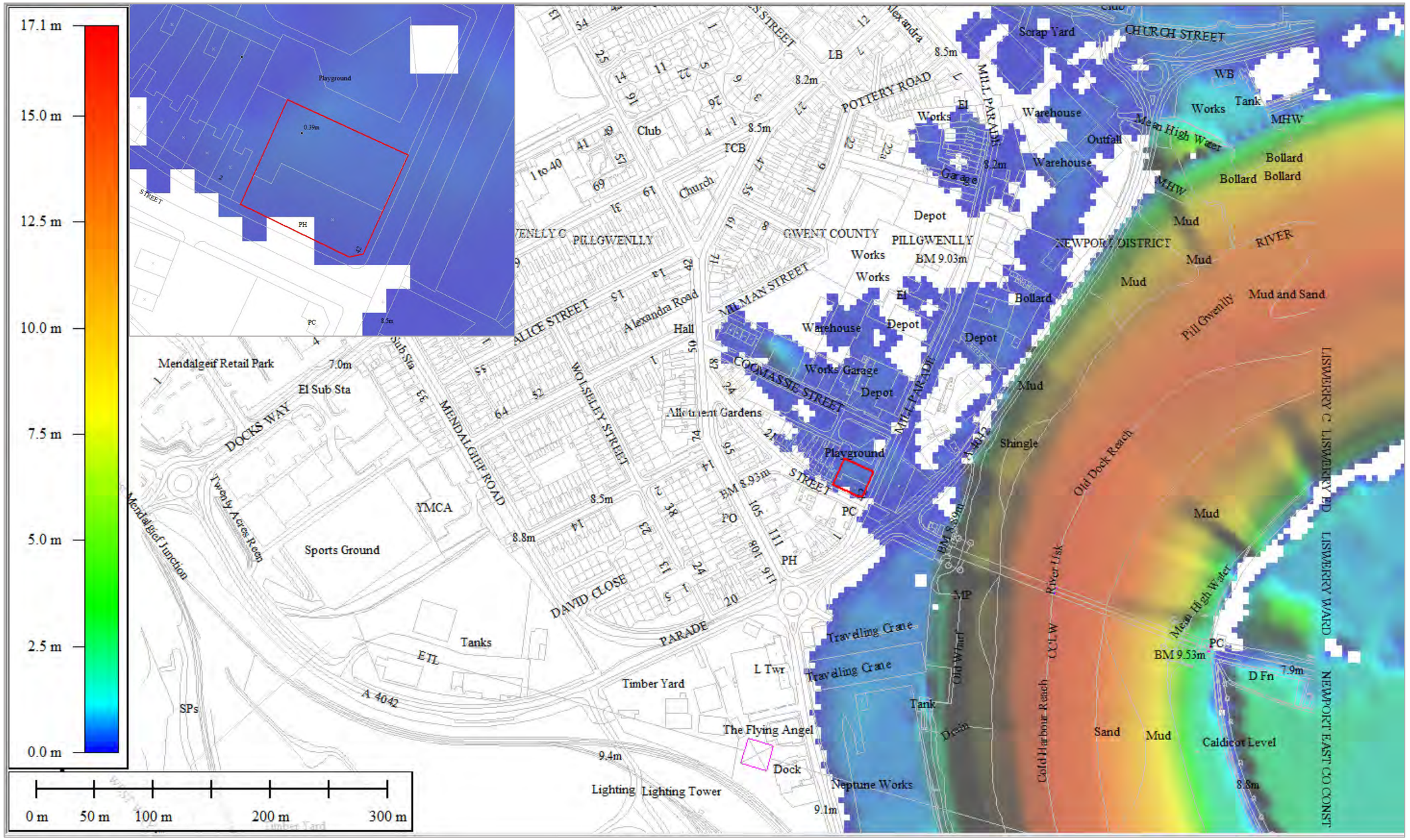
Dyddiad / Date
21/03/2023

0.3 0 0.13 0.3

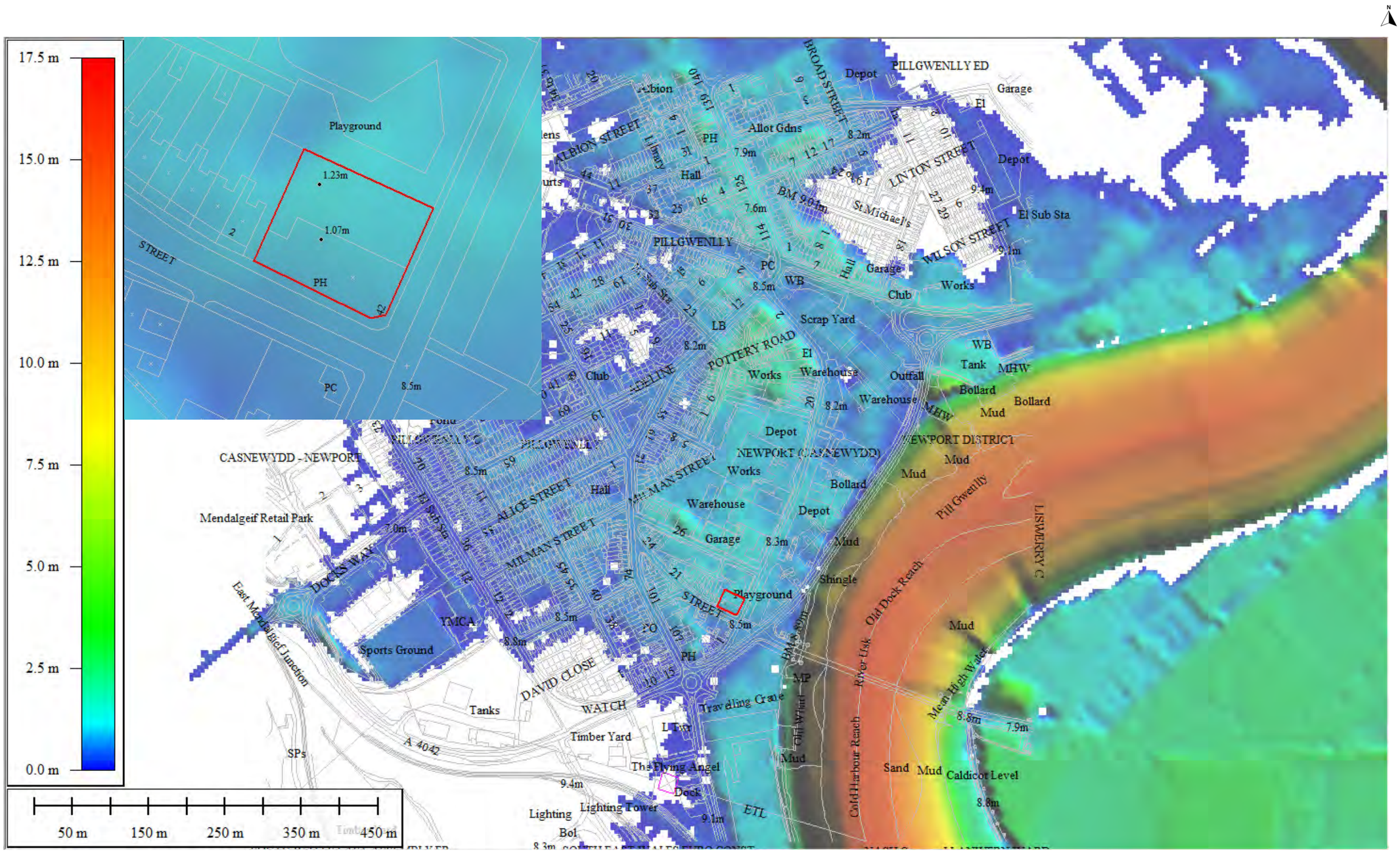
British_National_Grid Kilometers



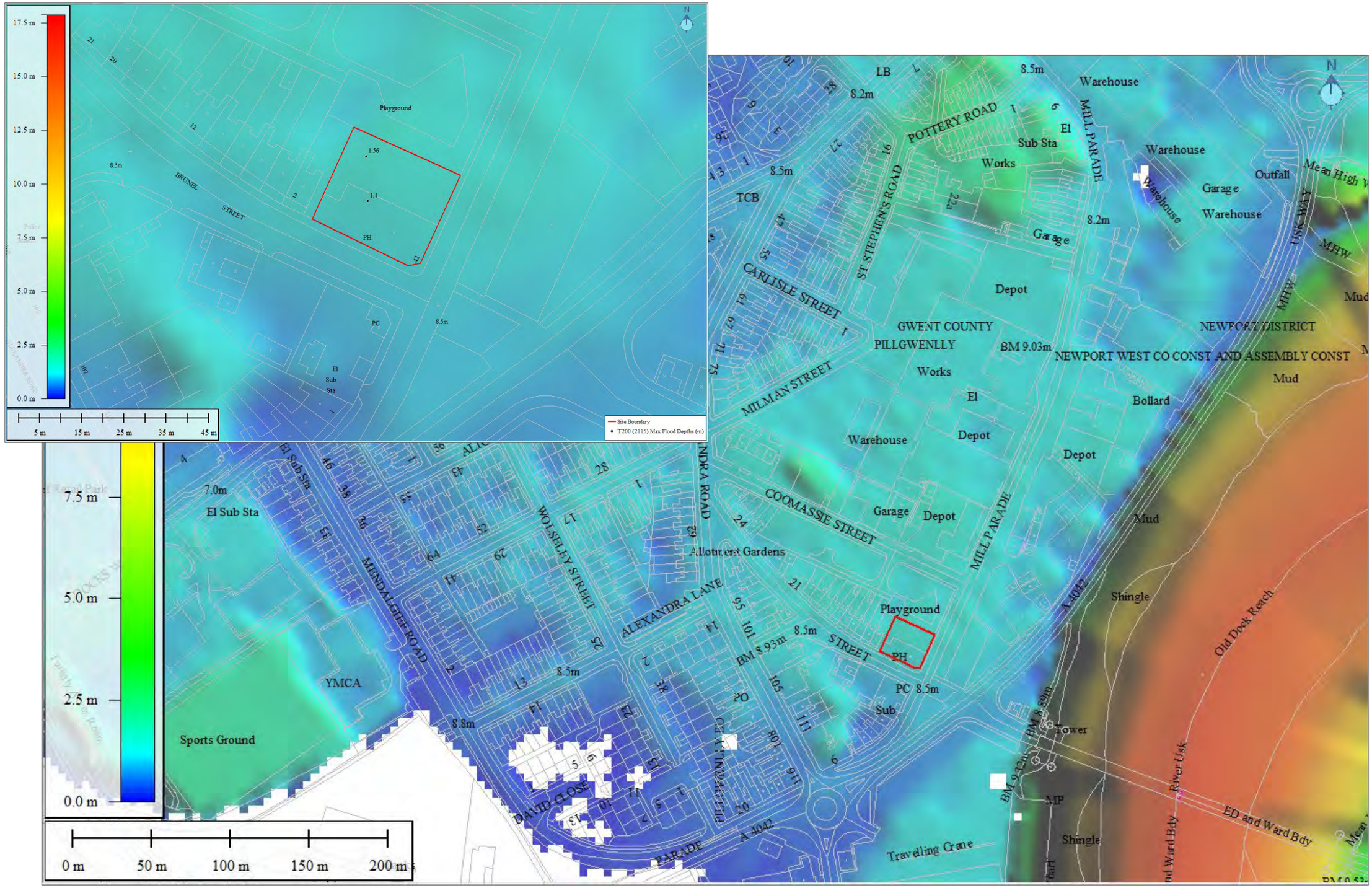
Maximum Estimated Flood Extent and Depths (m) from NRW Product 5 and Product 6 data (*Newport_5_V6.0_2016 model*) – Combined T200 (0.5% AEP) and 1 in 1-year Fluvial Event



Maximum Estimated Flood Extent and Depths (m) from NRW Product 5 and Product 6 data (*Newport_5_V6.0_2016 model*) – Combined T1000 (0.1% AEP) and 1 in 1-year Fluvial Event



Maximum Estimated Flood Extent and Depths (m) from NRW Product 5 and Product 6 data (*Newport_5_V6.0_2016 model*) – Combined T200 (0.5% AEP) and 1 in 1-year Fluvial Event + CC (2090)



Maximum Estimated Flood Extent and Depths (m) from NRW Product 5 and Product 6 data (*Newport_5_V6.0_2016 model*) – Combined T200 (0.5% AEP) and 1 in 1-year Fluvial Event + CC (2115)