

Former Bus Depot, Tawe Terrace – Flood Consequence Assessment

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This report describes work commissioned by Robert Bowen of Robert Bowen Planning & Development Ltd, on behalf of Brother Engineering Ltd, by an email dated 23rd April 2021. Brother Engineering Ltd representative for the contract was Blu Thomas. Nia Vines and Hannah Booth of JBA Consulting carried out this work.

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Purpose

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1 Introduction

JBA Consulting were commissioned by Brother Engineering Ltd to prepare a Level 1 Flood Consequence Assessment (FCA) to support a change of use planning application for a former bus depot development and the retention of portacabins at Alloy Industrial Estate, Pontardawe, Swansea. This FCA demonstrates the suitability of the proposed development and describes the flood mitigation measures recommended to manage flooding at the site.

1.1 FCA requirements

This FCA follows Welsh Government guidance on development and flood risk set out in the Technical Advice Note 15: Development and Flood Risk (TAN-15). Where appropriate, the following aspects of flood risk will be addressed in all planning applications over its expected lifetime in flood risk areas:

- The likely mechanisms of flooding
- The likely source of flooding
- The depths of flooding through the site
- The speed of inundation of the site
- The rate of rise of flood water through the site
- Velocities of flood water across the site
- Overland flow routes
- The effect of access and egress and infrastructure, for example, public sewer outfalls, combined sewer outflows, surface water sewers and effluent discharge pipes from wastewater treatment works
- The impacts of the development in terms of flood risk on neighbouring properties and elsewhere on the floodplain

2 Site description

The site is a former bus depot situated on Tawe Terrace, in Pontardawe, as shown in Figure 2-1. The site is approximately 0.32 hectares in size and is situated 220m from the River Tawe. The site is currently comprised of a former bus depot with external parking to the front, side and rear of the building. There is a bus wash to the west of the building and two portacabins in the south, which are used for the manufacture of PPE during the COVID 19 pandemic.

Following the acquisition of the site the applicant began to use the building as a precision engineering workshop, not realizing that planning permission for change of use was required. In 2020 the applicant obtained Welsh Government Funding for the production of face masks to assist in the requisition of PPE following the outbreak of COVID 19. The applicant placed the cabins on the site having read Westminster Government advice that such works did not require planning permission.

Table 2-1 Site summary

Site name	Former Bus Depot, Tawe Terrace, Pontardawe, Swansea
Site area	0.32 ha
Existing land use	General Industrial
Purpose of development	General Industrial
OS NGR	SN 72429 03992
Local Planning Authorities	Neath Port Talbot County Borough Council
Lead Local Flood Authority	Neath Port Talbot County Borough Council

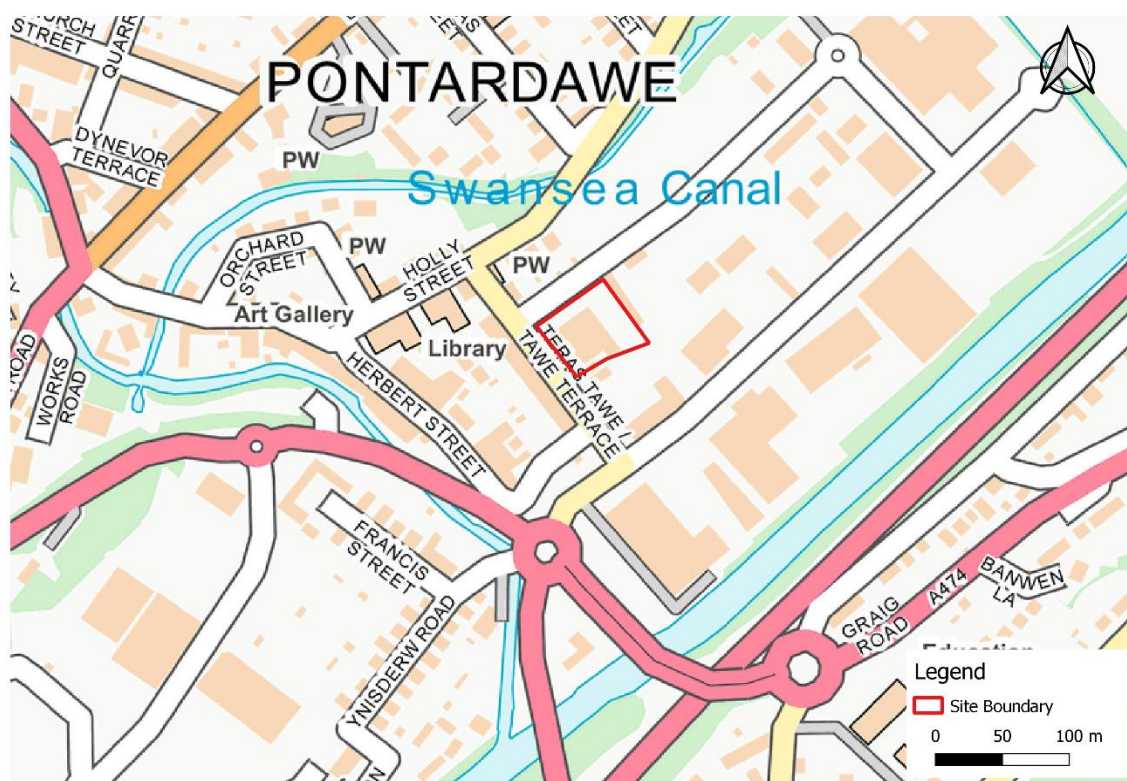


Figure 2-1 Proposed development site

2.1 Site topography

Robert Bowen Planning & Development Ltd undertook a topographic survey in May 2021 to determine the current site levels. A copy of the survey results is contained in Appendix A. Figure 2-2 shows Natural Resources Wales' (NRW) Open Source 1m Detection and Ranging (LiDAR) data¹ which provides an alternative illustration of the site topography.

Results from the topographic survey show the site is generally flat and low lying with ground levels ranging from 30.95mAOD in the southeast to 31.67mAOD in the northwest. The north side of the site where the portacabins are located is slightly higher than the concrete area to the west and the car park to the east. Land levels to the east and south of the site are marginally lower than the rest of the site.

Ground levels across the Alloy Industrial Estate are lower than those of the surrounding area and are only marginally higher than the River Tawe, as shown in Figure 2-3.

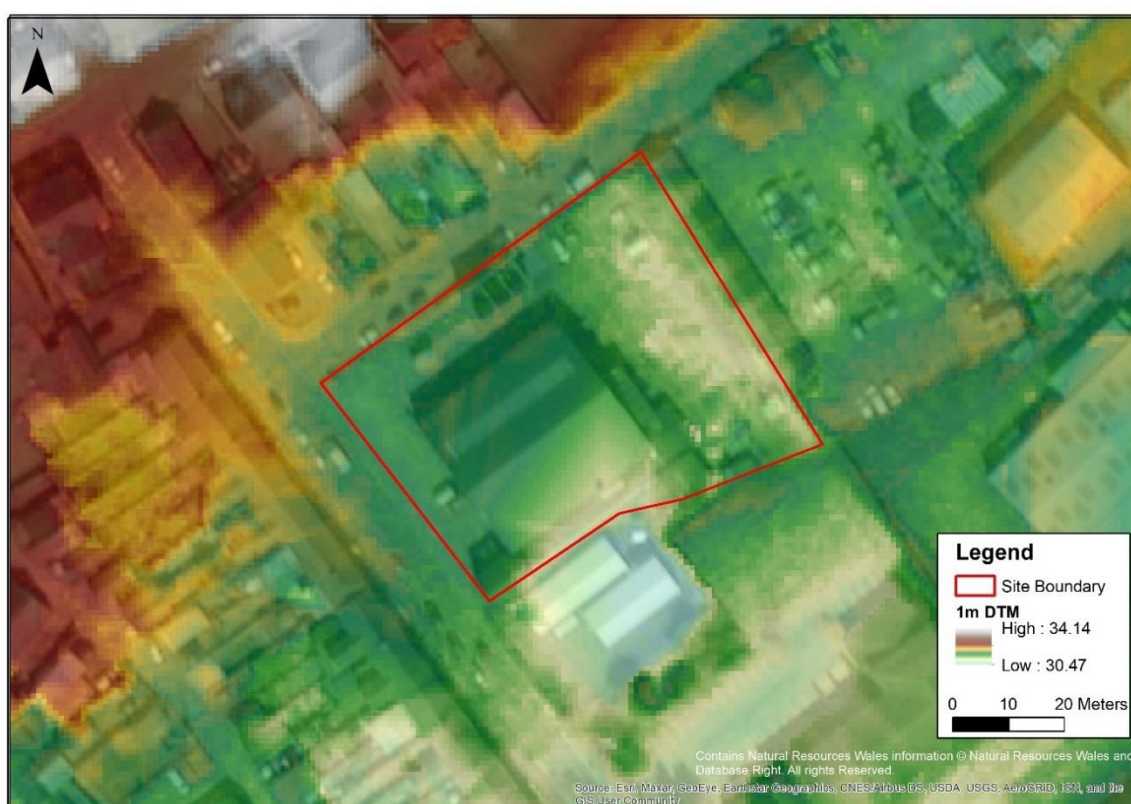


Figure 2-2 1m LiDAR Topography

¹ LLe Geoportal for Wales: <http://lle.gov.wales/catalogue/item/LidarCompositeDataset/?lang=en>

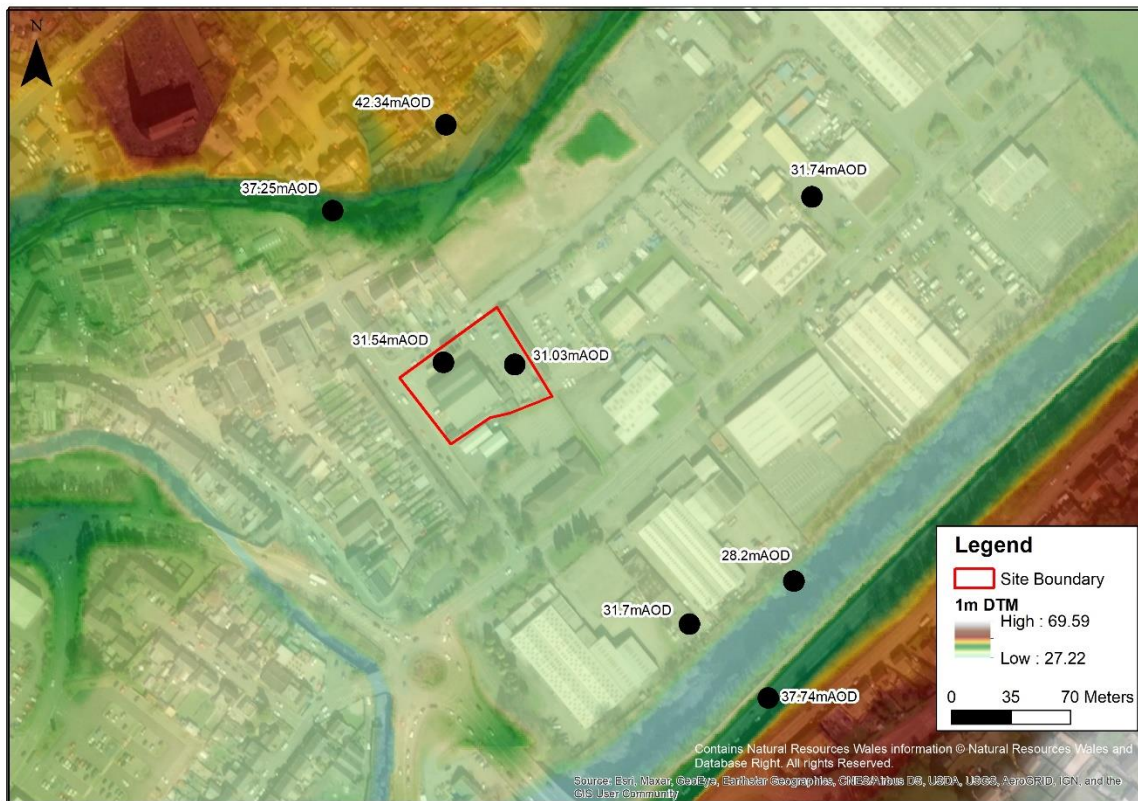


Figure 2-3 1m LiDAR Topography- Ground levels across the wider Alloy Industrial Estate

2.2 Soils, geology and watercourses

The Cranfield University Soilscape² viewer describes the underlying strata as freely draining floodplain soils. Soils are reported to drain to local groundwater before feeding into the river. According to the British Geological Survey (BGS) Geology of Britain Viewer, bedrock at the site is described as Rhondda Member - Sandstone. These sedimentary rocks are fluvial in origin. They are detrital, ranging from coarse- to fine-grained. The superficial deposits found at the site are Alluvium comprised of Clay, Silt, Sand and Gravel. The superficial deposits were formed up to 2 million years ago in the Quaternary Period.

2.3 Watercourses and Flood Defences

Two watercourses are located close to the site, as shown in Figure 2-4. The site is located approximately 220m north-west of the River Tawe and 145m to the south-east of the Upper Clydach River. Both of these rivers are NRW designated Main Rivers.

Flood defences are located in line with the site on the River Tawe and the Upper Clydach River, as shown in Figure 2-3. On the River Tawe, flood defences consisting of a raised embankment and flood walls offer protection to areas between the Pontardawe recreational ground and the A474 road bridge. On the Upper Clydach River, there are flood walls on both sides of the river between the A474 road bridge and Ynysdwerw Road bridge. There is a further flood wall located on the left-hand side bank upstream of the A474 road.

The Swansea Canal is found approximately 100 m north of the site. The canal is perched above the base of the valley and raised above the Alloy Industrial Estate. The canal is owned and maintained by the Canal and Rivers Trust.

² Cranfield University Soilscape: <http://www.landis.org.uk/soilscape/>

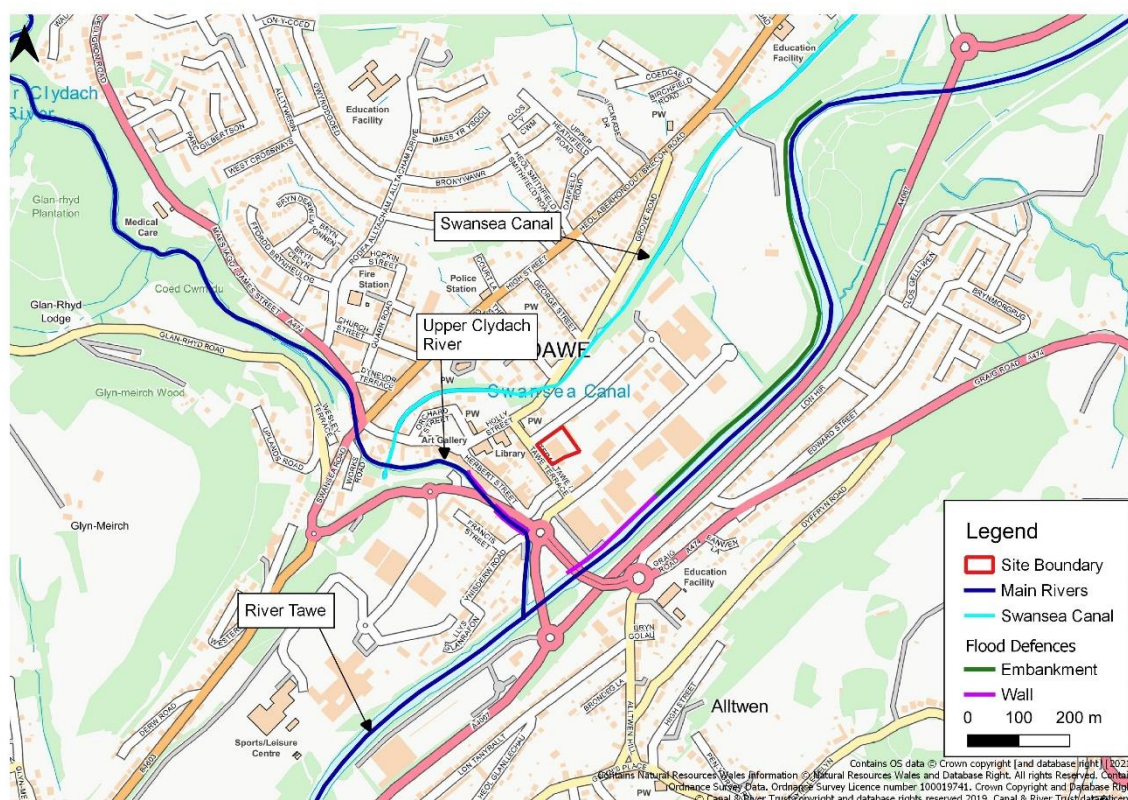


Figure 2-4 Watercourses and flood defences around the site

2.4 Development proposal

The planning application consists of two separate planning elements. A change of use application to retain the former Bus Depot building (Sui Generis) for a new use as a Precision Engineering Workshop (Class B2) and the retention of the portacabins for the manufacture of surgical masks for a period of two years. No new buildings or any significant material changes are proposed on the site.

A plan of the site showing the site layout prior to the placement of the portacabins is shown in Figure 2-5 and Appendix B. The current layout including the portacabins is shown below in Figure 2-6 and in Appendix B.

The applicant has confirmed that the portacabins are raised above the existing ground level, as shown in Figure 2-7. The topographic survey demonstrates that the Finished Floor Level (FFL) of the portacabins is 31.67mAOD. The bus depot has not been raised above the existing ground levels therefore the presumed FFL of the bus depot has been taken from the ground levels at the edge of the building, as shown on the topographic survey, and have presumed to be 31.4mAOD.

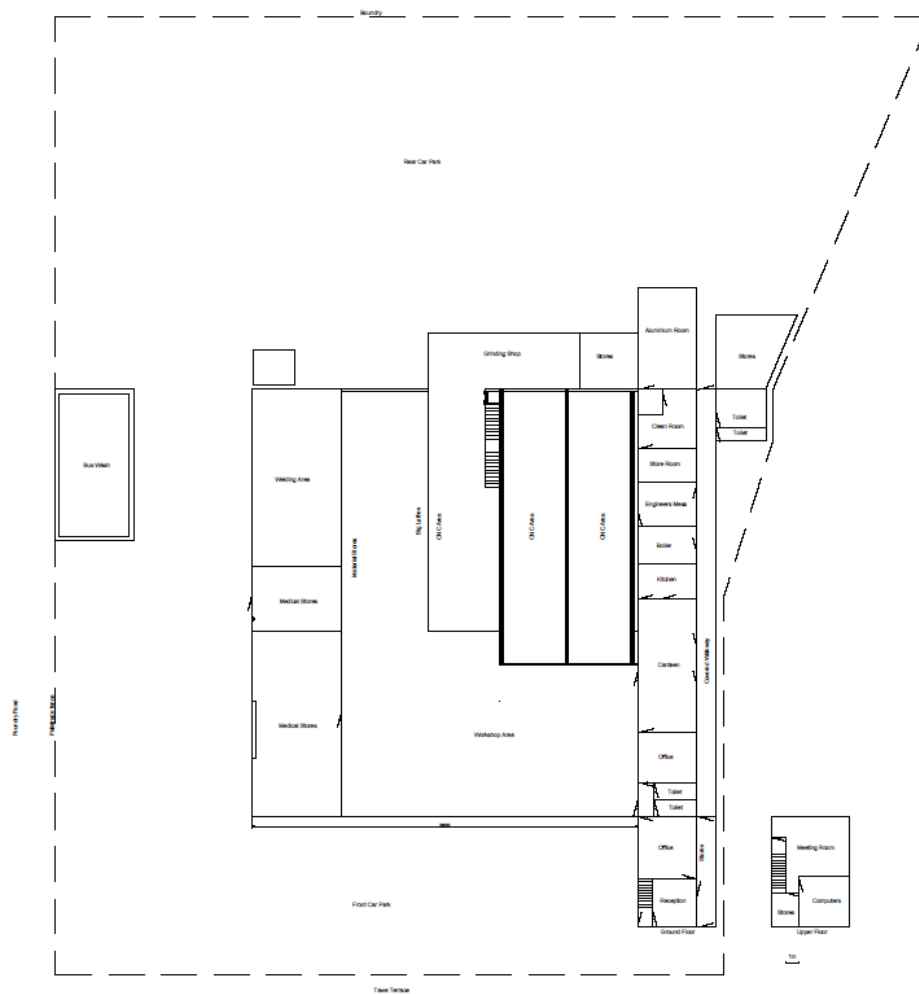


Figure 2-5 2019 Site Layout

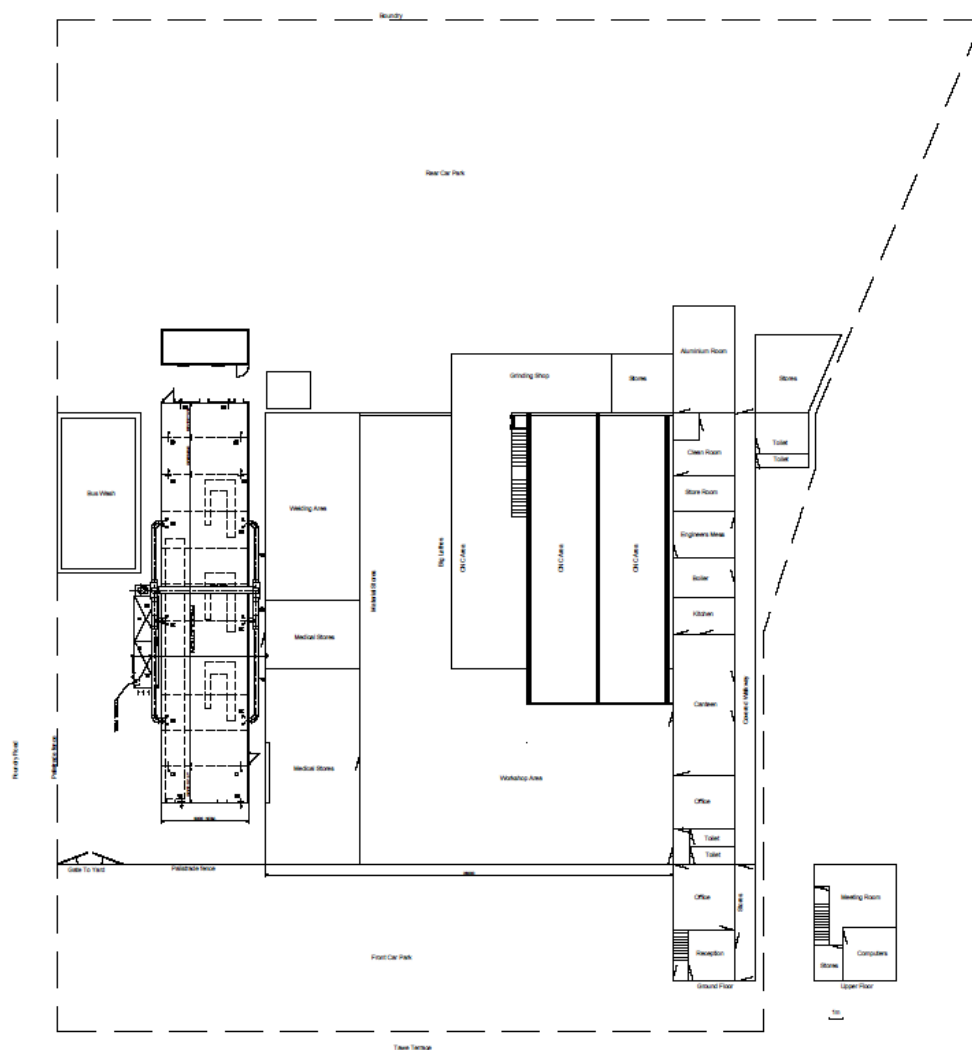


Figure 2-6 2020 Site Layout



Figure 2-7 Photo of the portacabin situated on the site

3 Planning Policy and flood risk

3.1 Planning context

TAN-15 was introduced in 2004 by the Welsh Assembly Government. It is technical guidance related to development planning and flood risk using a sequential characterisation of risk based on the Welsh Government's Development Advice Map (DAM). Its initial requirement is to identify the flood zones and vulnerability classifications relevant to the proposed development, based on an assessment of current and future conditions.

3.2 Vulnerability classification

TAN-15 assigns one of three flood risk vulnerability classifications to developments, as shown in Table 3-1. The former use of the site as a bus depot would be described as 'transport and utilities infrastructure' which is classified as a 'less vulnerable development'. Under the proposals for the bus depot building, the site use will change to 'General Industrial' which is also classed as 'less vulnerable development'. Consequently the proposed reuse of the building will not increase the vulnerability classification of the site.

The portacabins are defined as 'general industrial' development which is classified as a 'less vulnerable development' by TAN-15.

Table 3-1 Development categories defined by TAN-15

Development category	Types
Emergency services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings, (e.g. schools, libraries, leisure centres), especially vulnerable industrial development (e.g. power stations, chemical plants, incinerators), and waste disposal sites.
Less vulnerable development	General industrial , employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

3.3 Development Advice Map classification

Figure 3-1 shows that the proposed development site falls into Zone C1 of the DAM. The DAM zone classification is used to trigger different planning actions based on a precautionary assessment of flood risk. Zone C1 is described as "areas of the floodplain served by significant infrastructure, including flood defences".

Less vulnerable development within Zone C1, can take place subject to the application of a Justification Test, including the acceptability of consequences.

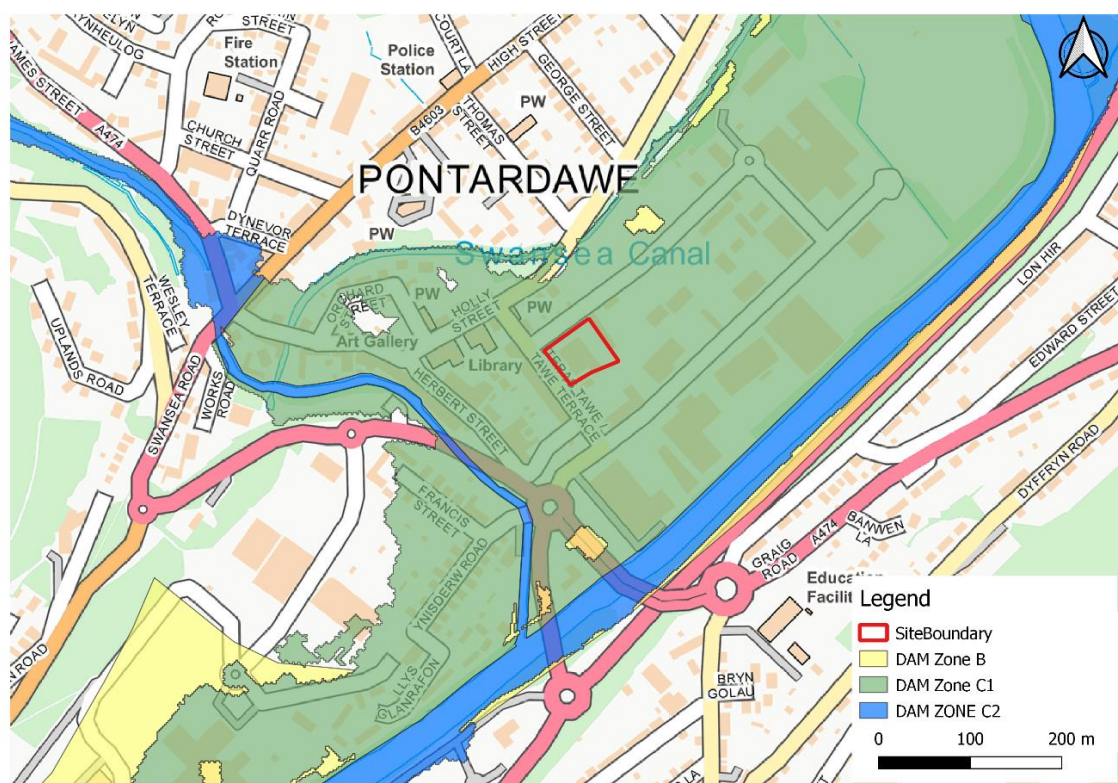


Figure 3-1 Development Advice Map

3.4 Local Development Plan

The Local Development Plan (LDP) is a land-use document in which the County Borough Council sets out its land use development over a 15-year period. The current LDP, entitled 'Neath Port Talbot County Borough Council Local Development Plan (2011-2026)',³ was adopted by Neath Port Talbot County Borough Council in January 2016.

Within the LDP, Pontardawe is identified as a key settlement and a Strategic Growth Area (SGA), playing a critical role in the development aspirations within the county. Policy SP3 of the LDP has highlighted that Pontardawe is the largest settlement in the Valleys Strategy Area and has the facilities and amenities to support significant additional growth over the Plan period. This growth in the wider Pontardawe area will help to support and enhance the town of Pontardawe, its retail and cultural amenities and will support and encourage economic development across the Swansea and Amman Valleys.

The strategy also identifies that large areas of the County Borough are brownfield land (formerly developed land) and that these areas should be prioritised through regeneration schemes to prevent the unnecessary loss of greenfield land. The following policies require that the development of brownfield land is prioritised over greenfield sites.

- Policy SP16
- Policy BE1-C

³ Neath and Port Talbot County Borough Council (2016) Neath Port Talbot County Borough Council Local Development Plan, Retrieved from: https://www.npt.gov.uk/media/7321/ldp_written_statement_jan16.pdf?v=20170727124344

The Strategic Policy SP11 also identifies the importance of Employment Growth, stating that existing employment uses should be supported and safeguarded while encouraging new expanding employment developments.

3.5 Justification test

TAN-15 states that “new development” will be justified if it can be demonstrated that:

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

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 and meets the definition of previously developed land;

and,

The potential consequences of a flooding event for the particular type of development have been considered and found to be acceptable.

TAN-15 does not specifically explain how the justification test should be applied to a change of use application, particularly where there will be no increase in the vulnerability of the development. Notwithstanding this point, the proposed re-development has been assessed against the requirements of the Justification Test, with the results summarised in Table 3-2. All the criteria have been satisfied with regards to the proposed development.

Table 3-2 Justification Test applied to the proposed development

TAN 15 Justification Criteria	Comments	Achieved
Its location is necessary to assist a local authority regeneration initiative or strategy, or contribute to key employment objectives necessary to sustain an existing settlement or region	The Neath Port Talbot County Borough Council Local Development Plan (LDP) 2011 – 2026 notes that Pontardawe is identified as a key primary settlement and Strategic Growth Area under Strategic Policy SP3. The site also supports Strategic Policy SP16 and BE 1-(C) by making use of an existing building and not building on greenfield land. The development will also contribute to the employment growth objective SP11.	✓
The site meets the definition of previously developed land (i.e. it is not a Greenfield site) and concurs with the aims of Planning Policy Wales (i.e. the presumption in favour of sustainable development)	This site currently is currently developed; meeting the definition of previously developed land.	✓
A Flood Consequence Assessment has been produced to demonstrate that the potential consequences of a flood event up to the extreme flood event (1 in 1000 chance of occurring in any year) have been considered and meet the [Acceptability Criteria] in order to be considered acceptable	An assessment of the flood risk at the site has been undertaken to demonstrate the proposed development's acceptability. See Section 4 and Section 5.	✓

4 Flood Risk Assessment

This section assesses the risk to the proposed development from all sources of flooding, the risk of increased flooding to others, and how flood risks can be managed. As a Level 1 FCA, the flood risk assessment is based solely on a desk-based analysis of existing flood risk data.

4.1 Review of existing flood risk data

The latest available information of flood risk at the site, published by NRW and Neath Port Talbot County Borough Council, is summarised in Table 4-1.

Table 4-1 Summary of flood risk

Source of Flooding	Onsite Presence	Description
Flood Risk from Rivers	✓	The site is in an area at risk of river flooding.
Flood Risk from the Sea	✗	The site is located outside of the area at risk of tidal flooding.
Flood Risk from Surface Water and Small Watercourses	✓	The site is at low risk of surface water flooding.
Flood Risk from Groundwater	✗	The site is at very low risk of flooding from groundwater.
Flood risk from Reservoirs	✗	The site is at very low risk of flooding from reservoirs.
Flood risk from Canals	✓	The site is at very low risk of flooding from a breach of the Swansea canal.
Flood risk from Sewers	✗	The site is at very low risk of flooding from sewers.

4.2 Historical flooding

NRW's map of recorded flood extents (see Figure 4-1) shows evidence of historic flooding on the site from the River Tawe in 1979. The flood outline shown is considered simplified and may not correlate to a detailed flood extent reconnaissance map.

Major flooding in December 1979 effected large areas of South Wales. Following this event many flood defences were built and improved. It has not been possible to determine the construction dates for the flood defences in the area, but it is likely that they have seen significant improvements since 1979.

No further records of historic flooding were identified at the site in the Neath Port Talbot County Borough Council Flood Risk Management Plan⁴ and Preliminary Flood Risk Assessment (PFRA)⁵. Although, it was noted in the plan that fluvial flooding in Pontardawe has historically occurred in the town because of its location on the floodplain of the confluence of two rivers and a canal system.

4 Neath and Port Talbot Council, (2015), Flood Risk Management Plan. Retrieved from: <https://www.npt.gov.uk/media/5399/floodriskmanagementplan15.pdf?v=20170627002320>

5 Neath and Port Talbot Council, Preliminary Flood Risk Assessment, (2011), Retrieved from: https://www.npt.gov.uk/media/4629/pfra_report_2011.pdf?v=20171123145433

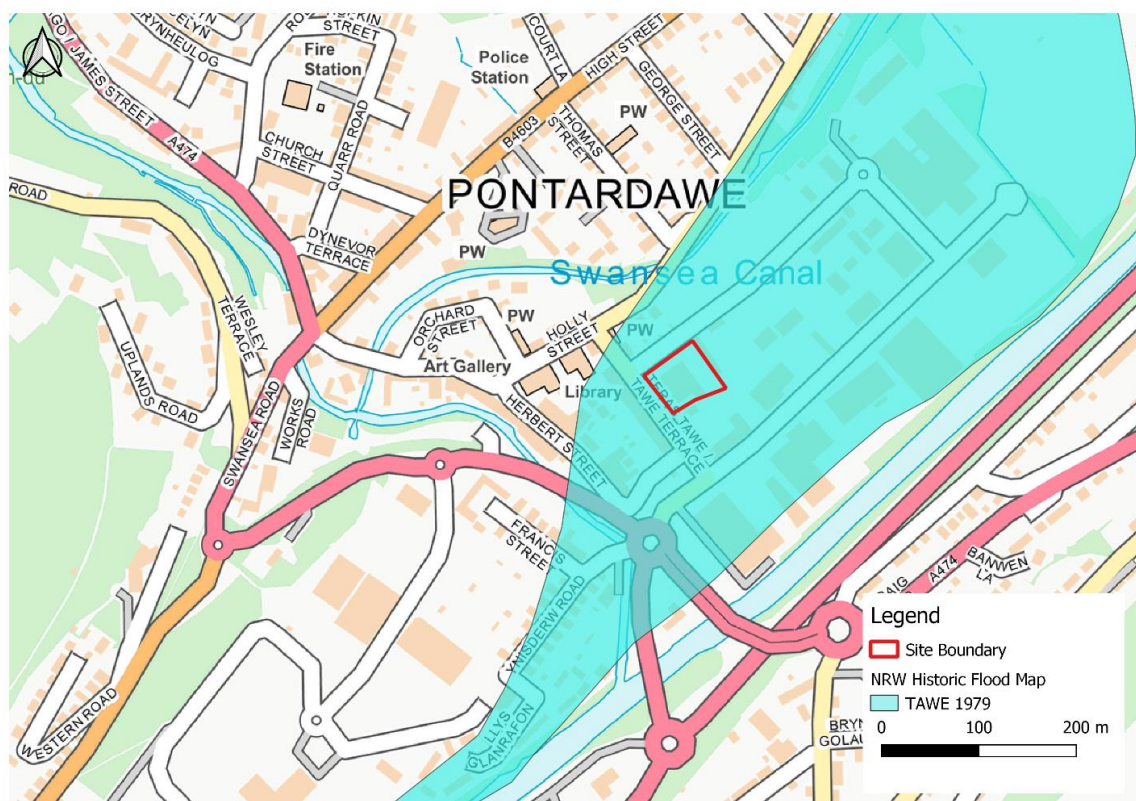


Figure 4-1 NRW Historic Flooding records

4.3 Flood Risk from Rivers

NRW's Flood Risk Assessment Wales (FRAW) map for Flood Risk from Rivers shows that the site is at medium risk of fluvial flooding from the River Tawe and Upper Clydach River. This means that the site has a 1 in 100 (1 in 100 (1%) and 1 in 30 (3.3%)) chance of flooding during a flood event, as shown in Figure 4-3.

Flood defences are present upstream of the A474 road bridge and flood defence walls are also present along the banks of the Upper Clydach River. Consequently, the site is located within an 'Area Benefitting from Flood Defences' as designated by NRW's Flood Risk Assessment Wales Map.

To better understand the risk of flooding posed by fluvial flooding sources, further assessment using modelled data was undertaken and discussed in Section 5.

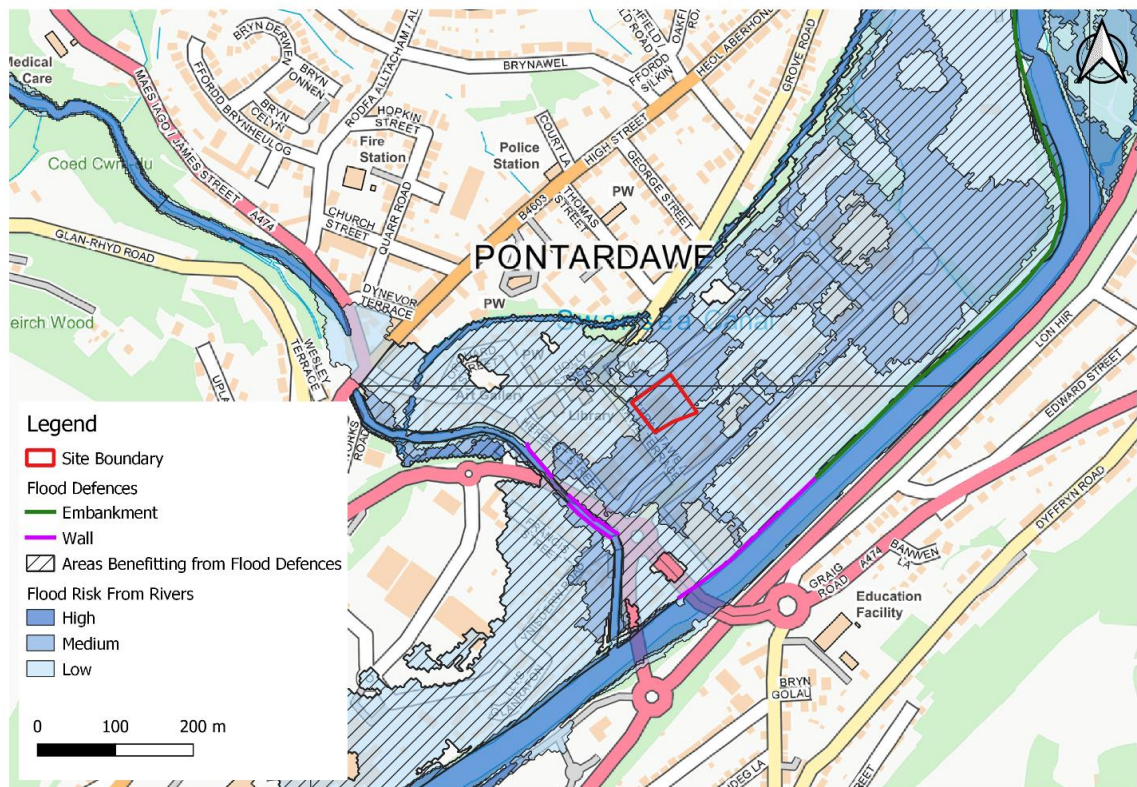


Figure 4-2 FRAW- Risk of flooding from the rivers

4.4 Flood Risk from the Sea

The NRW FRAW Flood Risk from the Sea map show that the site is **not at risk of tidal flooding**.

4.5 Flood Risk from Surface Water and Small Watercourses

The NRW FRAW Surface Water and Small Watercourses map shows that the majority of the site is at **a very low risk of flooding** from surface water and small watercourses, meaning that most of the site has less than a 1 in 1,000 (0.1% AEP) chance of flooding from this source, as shown in Figure 4-3. The east of the site and a small point in the south west are at **medium risk of flooding** from surface water and small watercourses, meaning they have a 1 in 100 (1% AEP) chance of flooding from this source, as shown in Figure 4-3.

According to NRW's National Flood Hazard mapping, flood depths are predicted to be a maximum of 0.5m in the car park to the rear of the bus garage building, with flood depths across the majority of the site, less than 0.4m in this most extreme flood event.

As noted in section 2.1, site levels are lowest in the car park to the rear of the bus station building. Due to the topography of the site, surface water from the site and the surrounding area flows into this area and ponds.

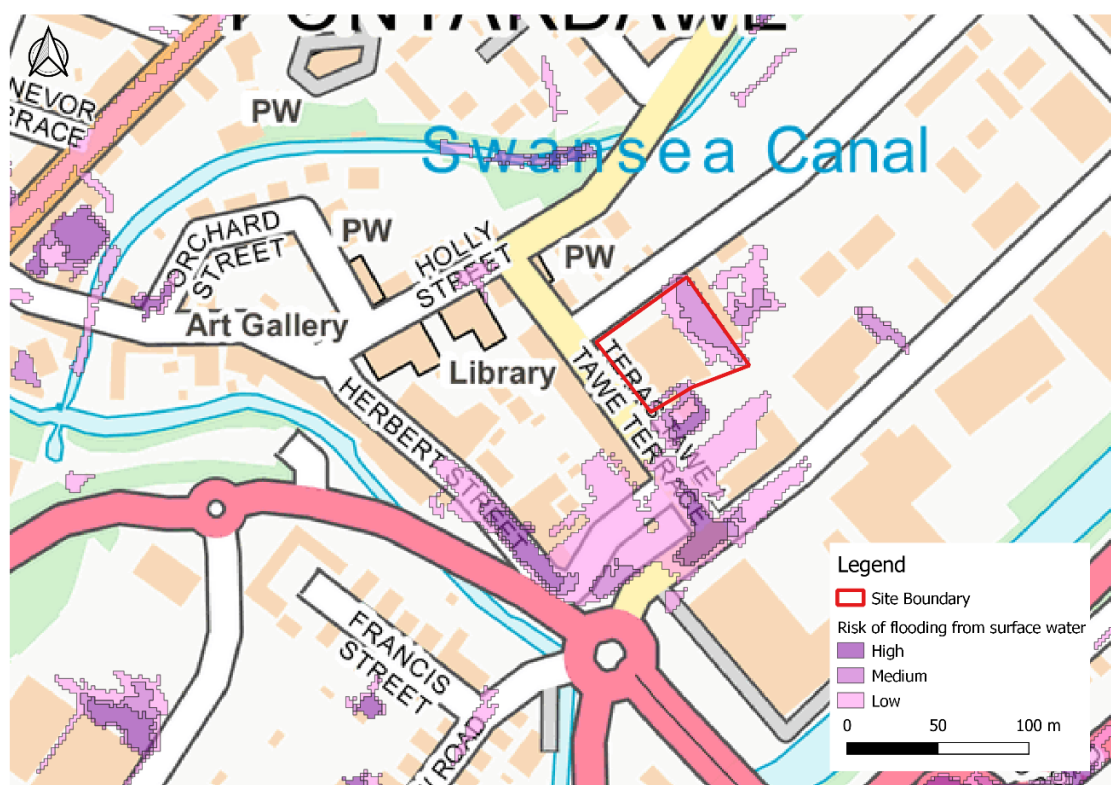


Figure 4-3 FRAW- Risk of Flooding from Surface Water and Small Watercourses

4.6 Flood Risk from Groundwater

Groundwater flooding is caused by unusually high groundwater levels. It occurs as excess water emerges at the ground surface or within manmade structures such as basements. Groundwater flooding tends to be more persistent than surface water flooding, in some cases lasting for weeks or months, and can result in damage to property. This risk of groundwater flooding depends on the nature of the geological strata underlying the site and the local topography.

The Neath Port Talbot County Borough Council Flood Risk Management Plan⁴, states that 'there are no specific areas of historical groundwater flooding recorded in the Neath and Port Talbot area'.

It can therefore be concluded that the risk of groundwater flooding at the site is **very low**.

4.7 Flood Risk from Reservoirs

NRW flood maps indicate that the proposed development site is not at risk of flooding due to reservoir failure. It can therefore be concluded that there is **no risk** of reservoir flooding at the site.

4.8 Flood Risk from Canals

The Swansea Canal is approximately 100m north of the site and could result in flooding at the site as a result of breaching or following periods of prolonged and heavy rainfall. The risk of flood water entering the canal upstream and causing flooding in Pontardawe is already captured in NRW's River Tawe flood model and therefore covered under 'Flood risk from Rivers'. The risk of a canal breach is carefully managed by the Canal and Rivers Trust who have measures in place for monitoring, preventative maintenance and risk reduction. It can therefore be concluded that the risk of canal flooding at the site is **very low**.

4.9 Flood Risk from Sewers

The Neath Port Talbot County Borough Council Flood Risk Management Plan does not show any evidence of historic sewer flooding on or close to the site. It can therefore be concluded that the risk of sewer flooding at the site is **very low**.

5 Detailed Fluvial Flood Risk Assessment

5.1 Hydraulic modelling availability

The current NRW flood mapping for the area is based on modelling undertaken by JBA on behalf of NRW in 2015. The model is a detailed 1D-2D ESTRY-TUFLOW model that is generally appropriate for detailed site assessment.

JBA updated this modelling in 2019 as part of an unrelated FCA for a site off Holly Street, Pontardawe. The planning application reference for this scheme is P2019/5708. The model results from the Holly Street FCA have been used to inform this assessment.

The Holly Street flood modelling updated the 2015 model in the following ways:

- Updated the TUFLOW executable to use the most recent available software at the time of that study.
- Updated the flood flow estimates to follow the current Flood Estimation Handbook methods and NRW's flood estimation guidelines.
- Applied the current Welsh Government climate change guidelines (30% to the 1% AEP event).

The flood modelling work completed as part of the Holly Street FCA was reviewed and approved by NRW at the time. JBA consider the model suitable to inform this flood consequence assessment.

5.2 1% AEP plus Climate Change

The 1% plus climate change event has been used to inform this FCA. However, it might be argued that as the proposals are for the change of use for an existing building and the temporary (2 year) deployment of portacabins, consideration of climate change is not necessary.

Figure 5-1 shows the maximum flood depths at the proposed site as a result of the 1% AEP plus climate change event. This shows that the whole site is at risk of flooding in this event. The east of the site is expected to experience greater flood depths relative to the west, with flood depths of 0.45m to the west and 0.9m to the east. Flood depths are also predicted to be greatest south of the former bus garage where the portacabins are located, exceeding 1.20m at the south-eastern border. Similar flood depths are predicted across the Alloy Industrial Estate, as shown in Figure 5-2.

Flood levels at the site are predicted to be 31.92mAOD as a result of the 1% plus climate change event.

The portacabins have a finished floor level of 31.67mAOD and are raised above the existing ground level. Taking this finished floor level into consideration, flood depths in the portacabins are predicted to be 0.27m.

The former bus garage building has not been raised above the existing ground levels; therefore flood depths are predicted between 0.4m and 0.8m inside the building.

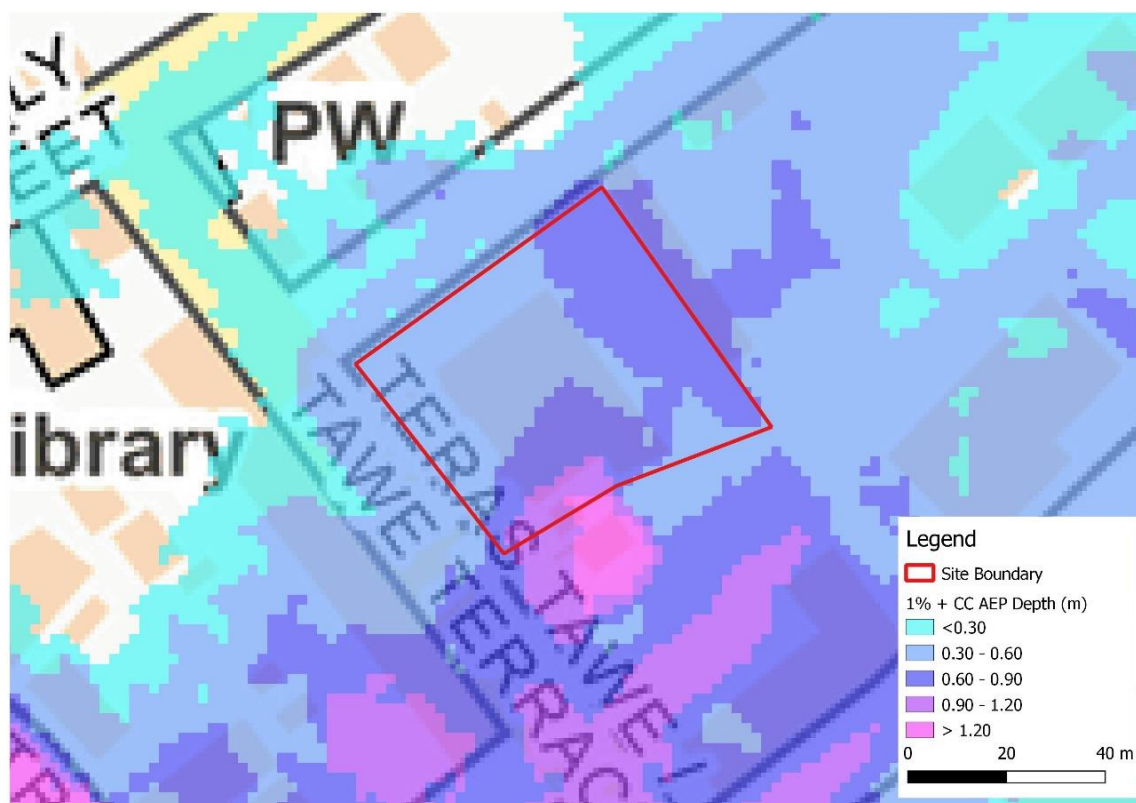


Figure 5-1 1% AEP plus climate change maximum depth at the site

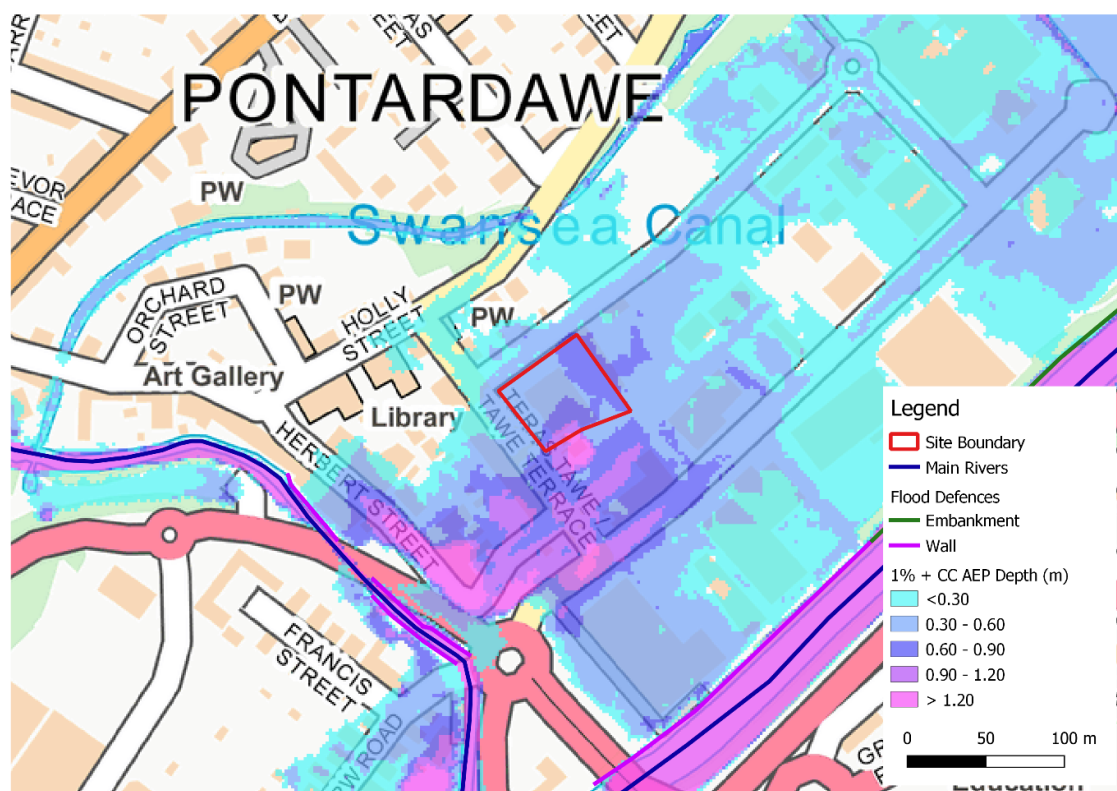


Figure 5-2 1% AEP plus climate change maximum depth across the Alloy Industrial Estate

5.3 0.1% AEP

Figure 5-3 shows the maximum flood depths in the 0.1% AEP event.

During this scenario flood depths across the industrial estate, including the site, are high with a minimum flood depth of 1.20m. The east of the site is expected to experience greater flood depths relative to the west, with flood depths of up to 2.0m to the west and 2.4m to the east. Flood depths are also predicted to be greatest south of the former bus garage where the portacabins are located, exceeding 2.8m at the south-eastern border. Similar flood depths are predicted across the Alloy Industrial Estate.

Flood levels at the site are predicted to be 33.47mAOD as a result of the 0.1% event.

The portacabins have a finished floor level of 31.67mAOD and are raised above the existing ground level. Taking this finished floor level into consideration, flood depths in the portacabins are predicted to be 1.83m.

The former bus garage building has not been raised above the existing ground levels; therefore flood depths are predicted between 2m and 2.4m inside the building.

Figure 5-4 shows the maximum flood hazard classification for the site in the 0.1% AEP event. The results show that the site falls within the category of 'Danger to all' due to the significant depths of flooding.

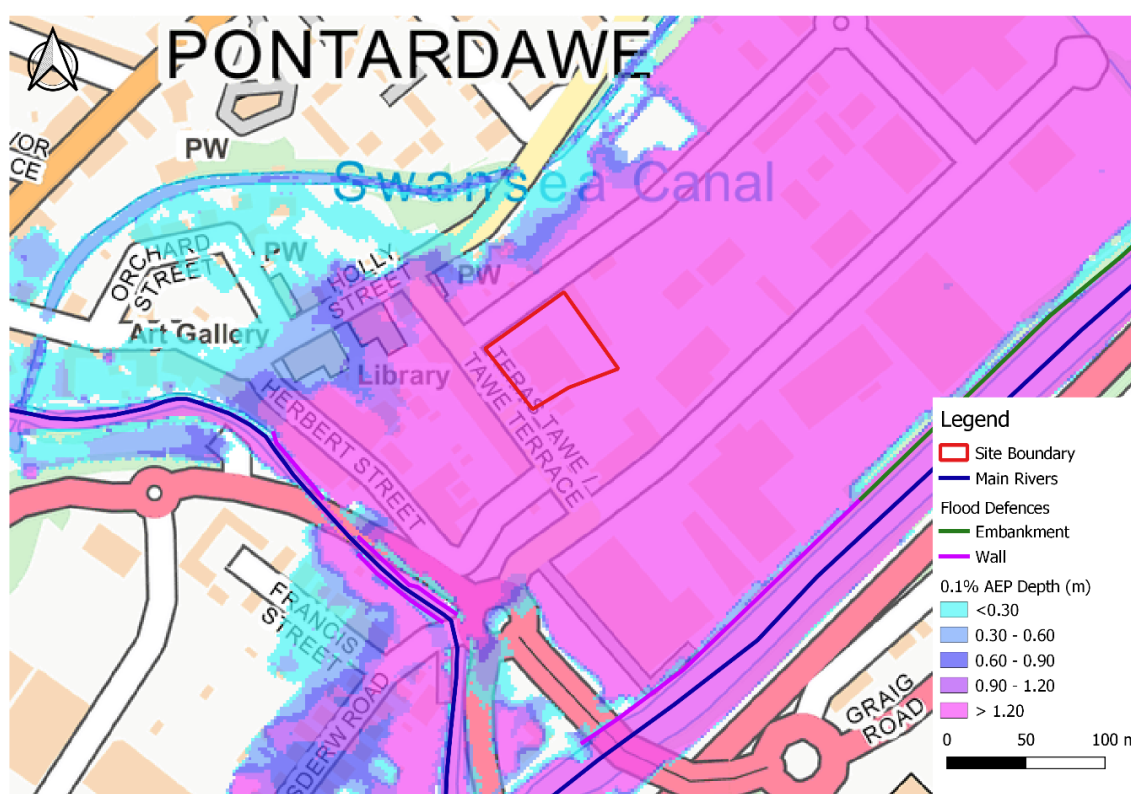


Figure 5-3 0.1% maximum depth

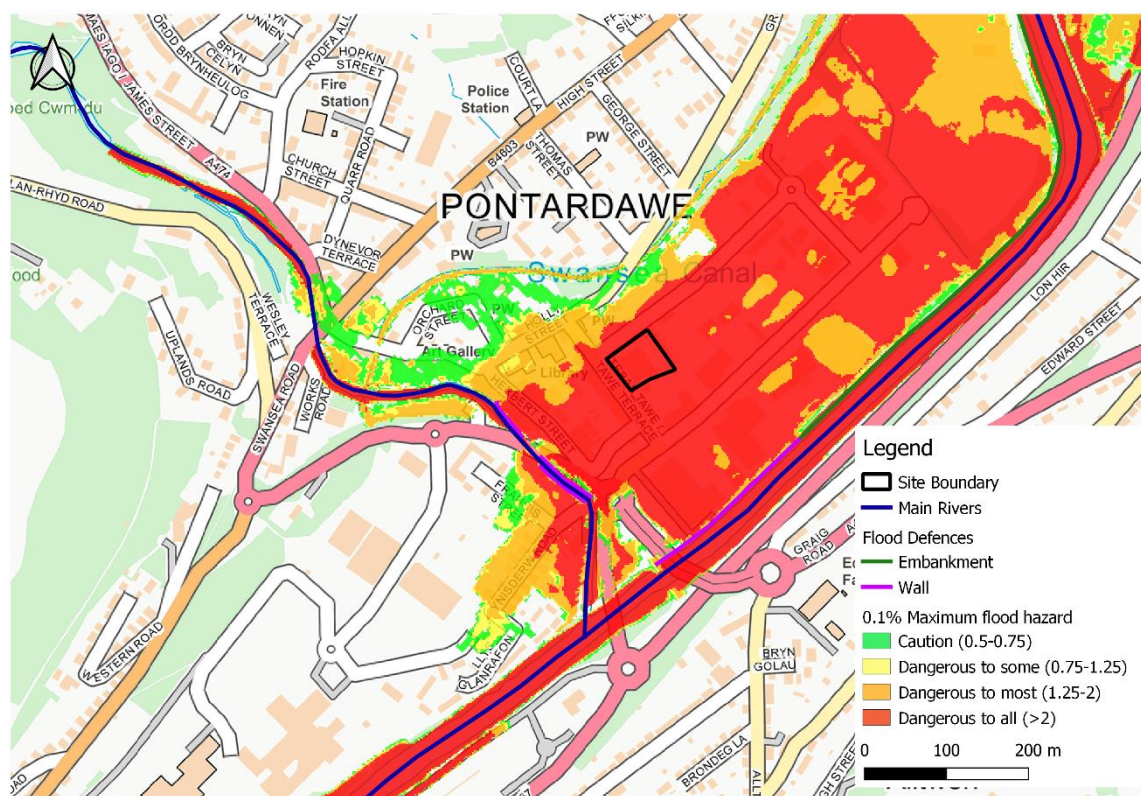


Figure 5-4 0.1% maximum flood hazard

6 Assessment of Acceptability Criteria

6.1 Flood risk summary

The site is at risk of flooding during both the 1% AEP plus climate change and 0.1% AEP flood events, with the whole site exceeding flood depths of 1.2 m in the 0.1% AEP event.

TAN-15 requires that any new development does not have an adverse impact on the flood risk to any third-party. The development won't significantly displace floodwater as the portacabins are raised above the existing ground levels on blocks, and ground levels of the site will remain unchanged. Therefore, floodwater will be able to enter under the building and into the building without measurable displacement of floodwater. The change of use of the bus depot building will have no impact on flood storage as the structure is unchanged.

The proposed porta cabin development is only set to be used for 2 years. Therefore, the likelihood of extreme flooding in this time is very low.

6.2 Acceptability Assessment

Table 6-1 assesses the proposed re-development against the acceptability requirements required to be met for the development Zone.

Table 6-1 Assessment of accessibility criteria

TAN 15 Justification Criteria	Comments	Achieved
Developer is required to demonstrate that the site is designed to be flood free for the lifetime [Ref: TAN-15 A1.5] of development for a 1 in 100 (1%) chance (fluvial) flood event including an allowance for climate change in accordance with TAN-15 table A1.14.	The site is predicted to experience flooding during the 1% AEP plus climate change event. However, the portacabins are only due to be in place for 2 years and the workshop will be in an existing building and therefore the flood risk at the site will remain the same.	No
The development should be designed so that in an extreme (1 in 1000 chance) event, there would be less than 1000mm of water on access roads and within the property in accordance with TAN-15 table A1.15.	Flood depths on the site and the site access roads in the 0.1% AEP event are greater than the 1000mm indicative recommendations of TAN15.	No
No flooding elsewhere.	As detailed in Section 6.1, the raised portacabins will not result in a measurable displacement in floodwater. The bus depot building will be structurally unchanged. Consequently, the proposals will not increase flooding elsewhere.	Yes

Flood defences must be shown by the developer to be structurally adequate particularly under extreme overtopping conditions (i.e. that flood with a 1 in 1000 chance of occurring in any given year).	The proposed re-development is protected by the presence of flood defences to the south and west of the site. These are NRW owned assets that must be maintained to offer protection throughout Pontardawe.	Yes
The developer must ensure that future occupiers of development are aware of the flooding risks and consequences	The applicant is aware of the flood risks on site. The applicant is advised to prepare a flood emergency plan.	Yes
Effective flood warnings are provided at the site	The site is included in within the "River Tawe at Ynysderw Road and Cwm-Du, Pontardawe" Flood Warning Area and the "Upper Tawe" Flood Alert Area. It is recommended that occupants sign up for these flood warnings and alerts.	Yes
Escape/evacuation routes are shown by the developer to be operational under all conditions.	Flood risk can be managed with the assistance of the flood warning service provided by NRW, which provides adequate lead times to implement flood preparations.	Yes
The development is designed by the developer to allow the occupier of the facility for rapid movement of goods/possessions to areas away from flood waters.	It is recommended that the occupier signs up to the NRW flood warning service so that they are aware of the potential for any flooding.	Yes
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood.	As temporary buildings, the portacabins are not designed to withstand significant flooding. It is therefore likely that significant flooding would require their replacement.	Yes

7 Conclusions

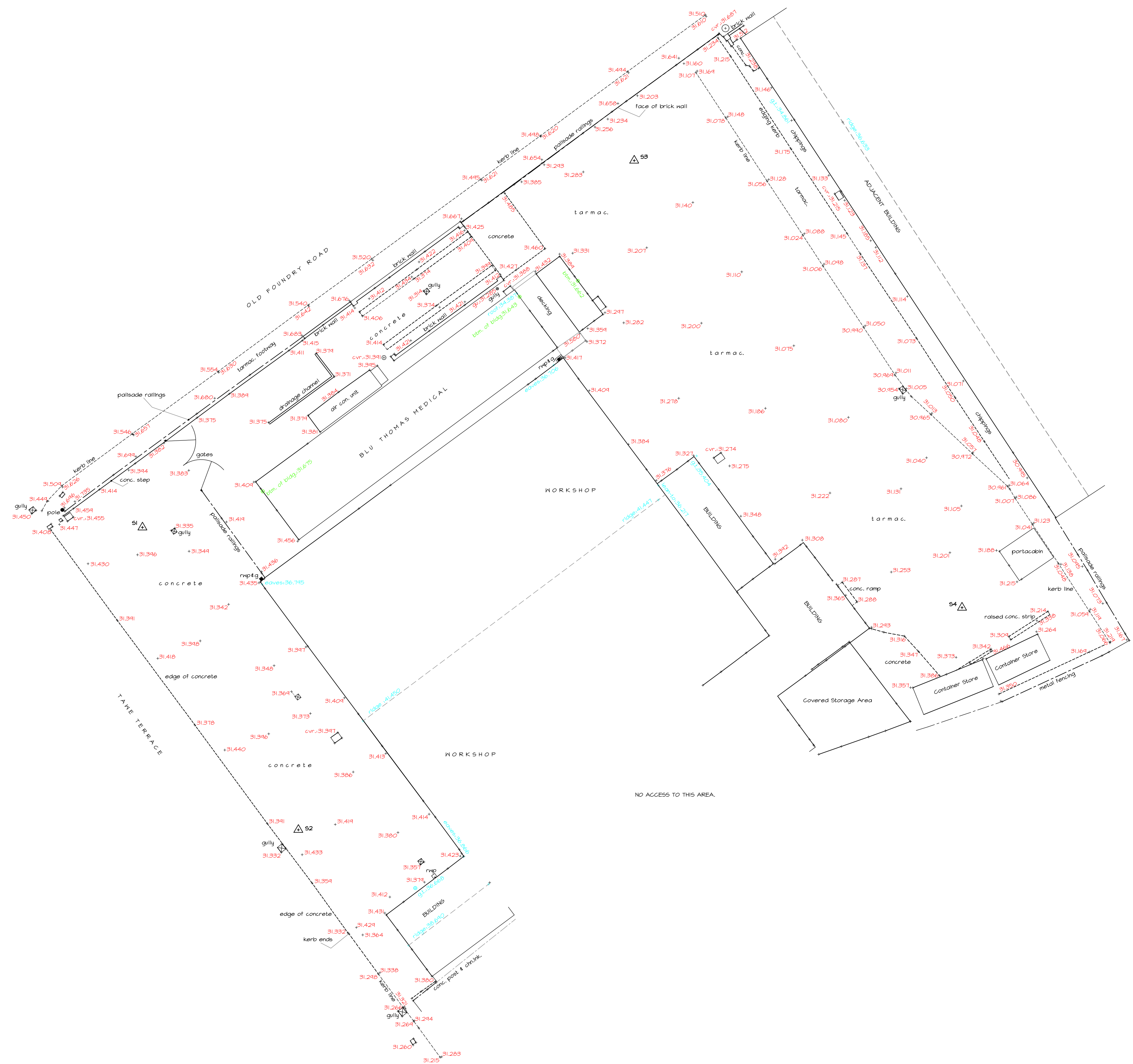
- JBA Consulting were commissioned to prepare a Flood Consequence Assessment (FCA) for the former bus depot site located on Tawe Terrace, Pontardawe. The FCA is to support a planning application for the retention of the use of the premises as an Engineering Workshop (Class B2) and the retention of portacabins for the manufacture of surgical masks for a period of 2 years
- The site is 0.32 hectares in size and currently comprised of a former bus depot with parking to the front, side and rear of the building, a bus wash station to the west and two portacabins used for the manufacture of surgical face masks.
- The former use of the site is a bus depot which is described as 'transport and utilities infrastructure' and is therefore defined as less vulnerable by TAN-15. Under the changes proposals for the bus depot building, the site will change to 'General Industrial' which is also classed as less vulnerable. Consequently, the proposed re-use of the building will not increase the vulnerability classification of the site. The portacabins are also defined as 'general industrial development' and therefore also classified as less vulnerable development.
- The site is located within Zone C1, as categorised by NRW's Development Advice Maps. Zone C1 refers to areas of the floodplain served by significant infrastructure, including flood defences. General Infrastructure developments in C1 must satisfy the Justification Tests of TAN-15.
- Detailed flood modelling, undertaken in 2019 by JBA Consulting, shows that the site and the surrounding area is at risk of flooding during the 1% AEP event with an allowance for climate change and during the 0.1% AEP event. Flood depths in the 1% plus climate change event are predicted to be between 0.4m-0.8m in the bus depot building and 0.27m in the portacabins. In the 0.1% AEP event, flood depths in the bus depot building are predicted to be between 2m-2.4m and up to 1.83m in the portacabins.
- As the proposal for the workshop only includes a change of use and does not result in any material changes to the existing building, the risk of flooding to the site will not be increased as a result of development proposals. Moreover, the portacabins will only be in use for 2 years to provide surgical masks for the COVID-19 Virus so are very unlikely to experience flooding in this time.
- The raised portacabins will not result in a measurable displacement in flood water. The bus depot building will be structurally unchanged and as a result, will not increase flooding elsewhere.
- The site is not at risk of tidal, groundwater, sewer, or reservoir flooding.
- The site is at low risk of canal and surface water flooding.
- An assessment of the Justification Test and Acceptability Criteria has been undertaken. The site meets the criteria of the Justification Test however does not fully meet all of the recommended and indicative acceptability criteria of A1.14 and A1.15 due to the significant flood depths predicted on the site when the NRW flood defences are overtopped. However, the area is served by an effective flood warning service and it is recommended that the applicant develop a flood emergency plan for the site.
- The majority of employment in Pontardawe is located on the Alloy Industrial Estate, an area at significant flood risk. However, without an ability to make modest changes to existing sites there will be significant economic loss over time. The proposed change of use and modest addition of temporary buildings does not change the flood risk vulnerability or general intensity of development but shall secure employment on the site. However, by recognising the flood risk the applicant will be able to take more proactive steps to plan and prepare for

the possibility of flooding, thereby achieving the goal of TAN15 and PPW to reduce flood risk through sustainable development.

A Appendices

Topographic Survey

SURVEY CONTROL POINTS BY GPS
DETAIL SURVEY BY TOTAL STATION
CONTROL COORDINATES :---
S1
E : 212411.671
N : 2039116.804
Z : 31.361
S2
E : 212424.101
N : 203951.521
Z : 31.434
S3
E : 212452.166
N : 2040271.464
Z : 31.215
S4
E : 212480.162
N : 203910.103
Z : 31.248

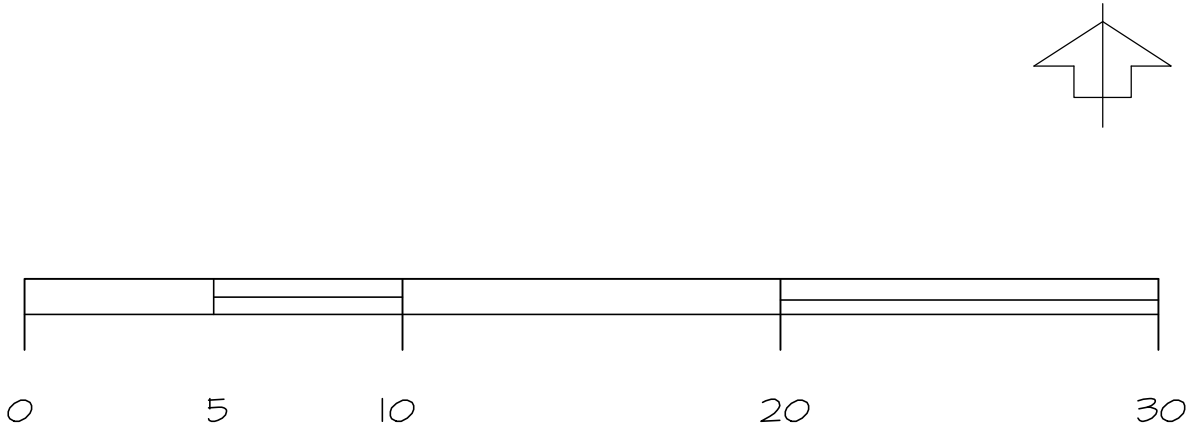


TOPOGRAPHIC SURVEY OF LAND OFF TAME TERRACE , PONTARDAWE.

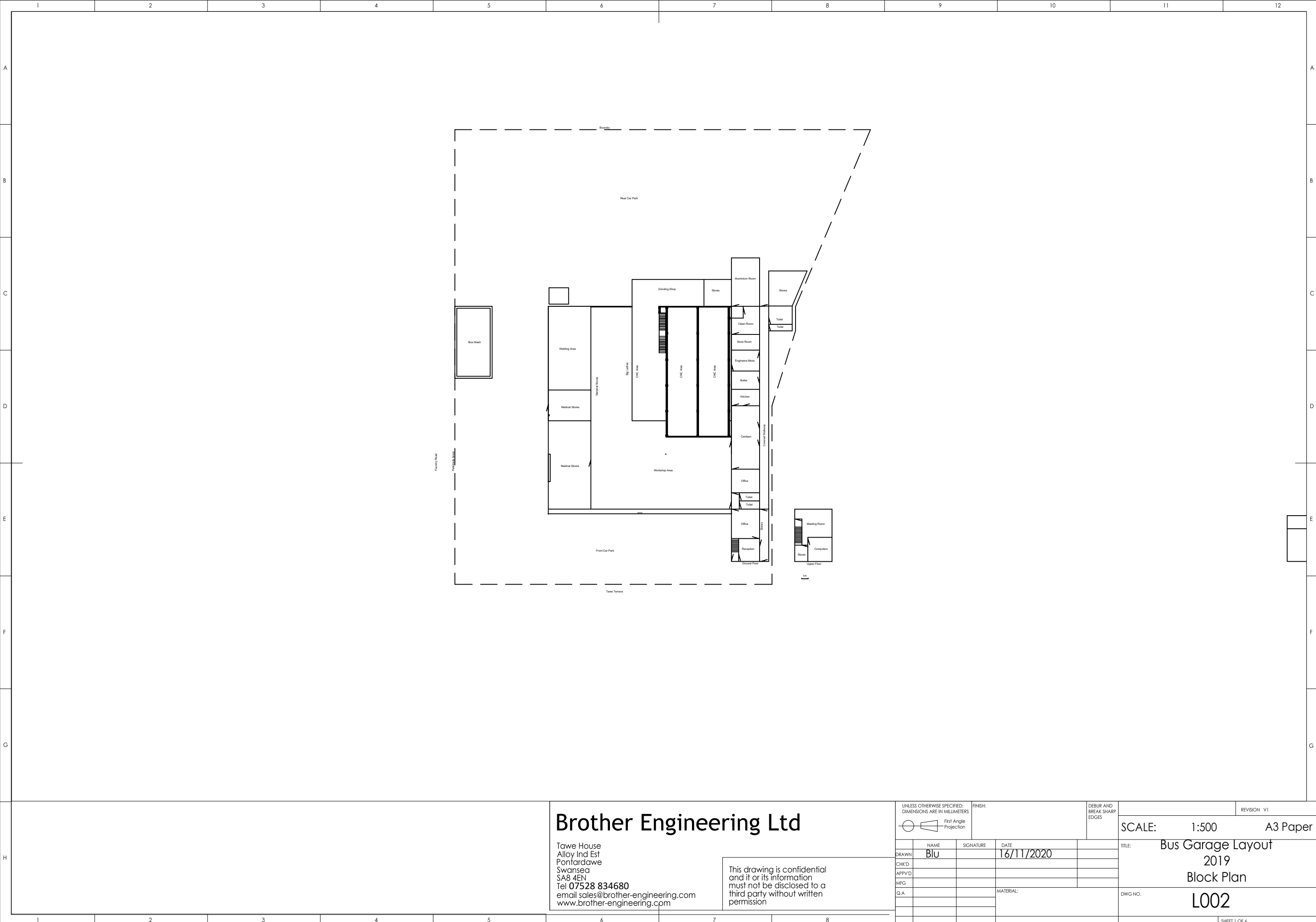
DATE : MAY 2021

SCALE 1:200 @ A1

DWG. No. PB / 01



B Proposed development site plan

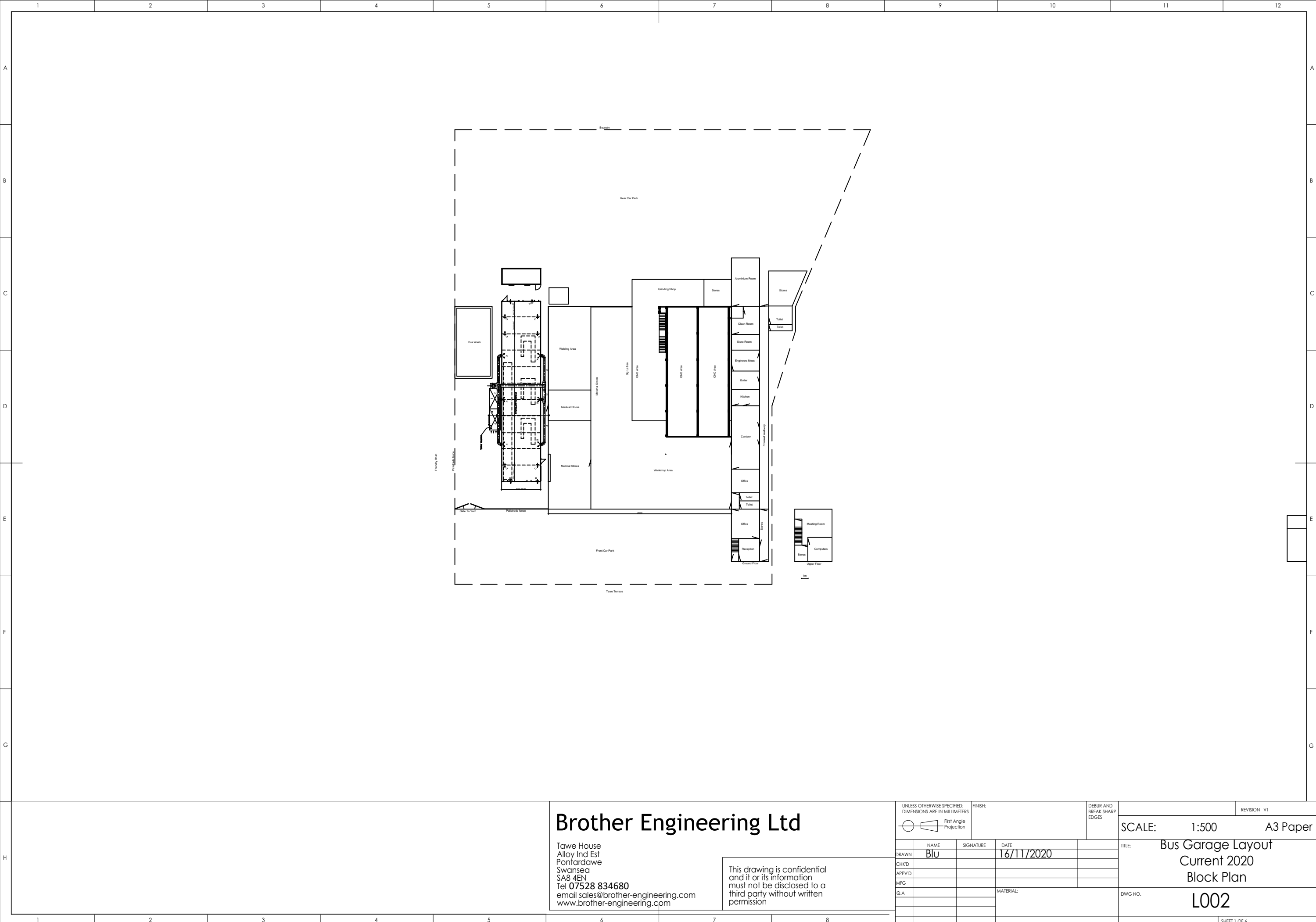


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First Angle Projection							SCALE: 1:500 A3 Paper
DRAWN	NAME BLU	SIGNATURE	DATE 16/11/2020			TITLE: Bus Garage Layout 2019 Block Plan	
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO. L002	
						SHEET 1 OF 4	



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		First Angle Projection				SCALE: 1:500 A3 Paper	
DRAWN	NAME BLU	SIGNATURE	DATE 16/11/2020			TITLE: Bus Garage Layout Current 2020 Block Plan	
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO. L002	

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