



Flood Consequence Assessment AEG0603_SA8_Swansea_07

Lb Group

Site Address: 6 James Street
Pontardawe
Swansea
SA8 4LR

UK Experts in Flood Modelling, Flood Consequence
Assessments, and Surface Water Drainage Strategies



Document Issue Record

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Site Location: 6 James Street, Pontardawe, Swansea, SA8 4LR

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Rev A:

NRW objected to the submitted FCA (Rev -) – NRW Ref CAS-202162-V3M8, dated 16/11/2022. NRW objected stating:

The FCA is informed using data, from the NRW Pontardawe model (2015). This modelling is now out of date, since 2015 there have been multiple changes to modelling software and the base hydrology. Additionally, it is likely that the topology for the area has changed since the time of modelling. There does not appear to be any evidence that this model has been verified as still up to date. Therefore, we cannot guarantee that the modelling is suitable for use.

Within Section 4.18 of the FCA, it is stated that as there is not a value for the 1% Annual Probability of Flooding (APF) with a 30% allowance for climate change, then the 0.5% APF scenario has been used following a depth assessment. While this may be suitable at this location, it does not appear that there has been any verification that the flows for both these scenarios are exactly the same.

For the 1% APF scenario with climate change (in which the FCA uses the 0.5% APF Scenario), the finished floor levels are set to be raised to 38.36m. We would have concerns that this figure is used given the uncertainties described above.

The FCA also uses Flood Risk Assessment Wales (FRAW) map data which has no official status for planning purposes and should not be used to inform an FCA.

In the absence of a fit for purpose model, the client has revised the scheme to include commercial uses only at ground level. This therefore reduces the flood risk vulnerability classification at ground floor whilst allocating all residential development (Highly Vulnerable) at the first floor. This has been done to provide a conservative approach while there is little confidence in the design flood level and hydraulic modelling provided by NRW.

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Summary

Development Description	Existing	Proposed
Development Type	Public House	Conversion of the existing building to provide 3no. Commercial units on the ground floor and 5no. Residential apartments on the first floor. No increase in footprint proposed at ground floor.
EA Vulnerability Classification	Highly Vulnerable (Public Building)	Less Vulnerable (commercial use) on the ground floor and Highly Vulnerable (residential use) on the first floor
Ground Levels	Between approximately 37.89m AOD and 39.91m AOD based on 1m LiDAR for the site. Within the proposed footprint boundary, the ground levels vary between 37.95m AOD and 38.50m AOD.	The proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD).
Level of Sleeping Accommodation	First Floor	First Floor
Impermeable Surface Area	Approximately 430m ²	No change.
Surface Water Drainage	N/A ¹	Surface Water Drainage Strategy recommended
Site Size	Approximately 430m ²	No change
Risk to Development	Summary	Comment
NRW Advice Zone	C2	Areas of the floodplain without significant flood defence infrastructure.
Flood Source	Fluvial	Upper Clydach River
SFCA Available	Yes – Neath Port Talbot County Borough Council (2014)	

Management Measures	Summary	Comment
Ground floor level above extreme flood levels	Yes	The proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD).
Safe Access/Egress Route	N/A	Site owners and tenants should sign up to the NRW Flood Warning Service –Alloy Industrial Estate, health centre and Tawe Terrace, and property adjacent to the Upper Clydach including Herbert Street (Quickdial number 603067). Safe access/egress is possible to the north on Dynevor Terrace for the 1 in 100 year +CC event.
Flood Resilient Design	Yes	Recommendations suggested in Section 5 of this report.
Site Drainage Plan	N/A	Surface Water Drainage Strategy recommended
Flood Warning & Evacuation Plan	N/A	Tenants and management should sign up to the NRW Flood Warning Service (Alloy Industrial Estate, health centre and Tawe Terrace, and property adjacent to the Upper Clydach including Herbert Street (Quickdial number 603067))
Offsite Impacts	Summary	Comment
Displacement of floodwater	Negligible	As the proposed development is for a change of use with a reduction in overall footprint, as such there should be no significant impact on floodplain storage.
Increase in surface run-off generation	N/A ¹	Surface Water Drainage Strategy recommended

Impact on hydraulic performance of channels	Negligible	No change
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¹ not required for this assessment ² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Lb Group to undertake a Flood Consequence Assessment (FCA) to accompany a full planning application for the proposed development. This FCA has been prepared in accordance with the requirements set out in the Technical Advice Note 15 (TAN15) and Planning Policy Wales.
- 1.2. This FCA is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

- 1.3. The site of the proposed development is 6 James Street, Pontardawe, Swansea, SA8 4LR (Figure 1). It is understood that the proposed development is for the conversion of the public house into 3no. commercial units on the ground floor and 5no. flats on the first floor. The proposed development includes a reduction in the building's footprint. Figure 1 shows that the footprint has been reduced from those areas including the proposed and existing footprints, to just those areas marked as the proposed footprint.



Figure 1: Site Location (Source: OpenStreetMaps © Contains public sector information licensed under the Open Government License v3.0)

- 1.4. Natural Resource Wales (NRW) Light Detecting and Ranging (LiDAR) data (1m resolution) was used to review the existing ground levels at the site. Within the site boundary ground levels are shown to vary between 37.89 meters Above Ordnance Datum (m AOD) and 39.91m AOD (Figure 2). Within the proposed footprint boundary the ground levels vary between 37.95m AOD and 38.50m AOD.
- 1.5. A topographical survey has been provided by the client which confirms that at the threshold level at the ground floor is 38.19m AOD. The survey also gives the cill level at the ground floor which is 39.07m AOD, and the cill levels at the first floor which are 41.86m AOD and 41.92m AOD. The full topographical survey can be found in Appendix A of this report.
- 1.6. The site plans provided (Appendix B), show that the existing FFLs range between 38.16m AOD and 38.31m AOD at the ground floor.

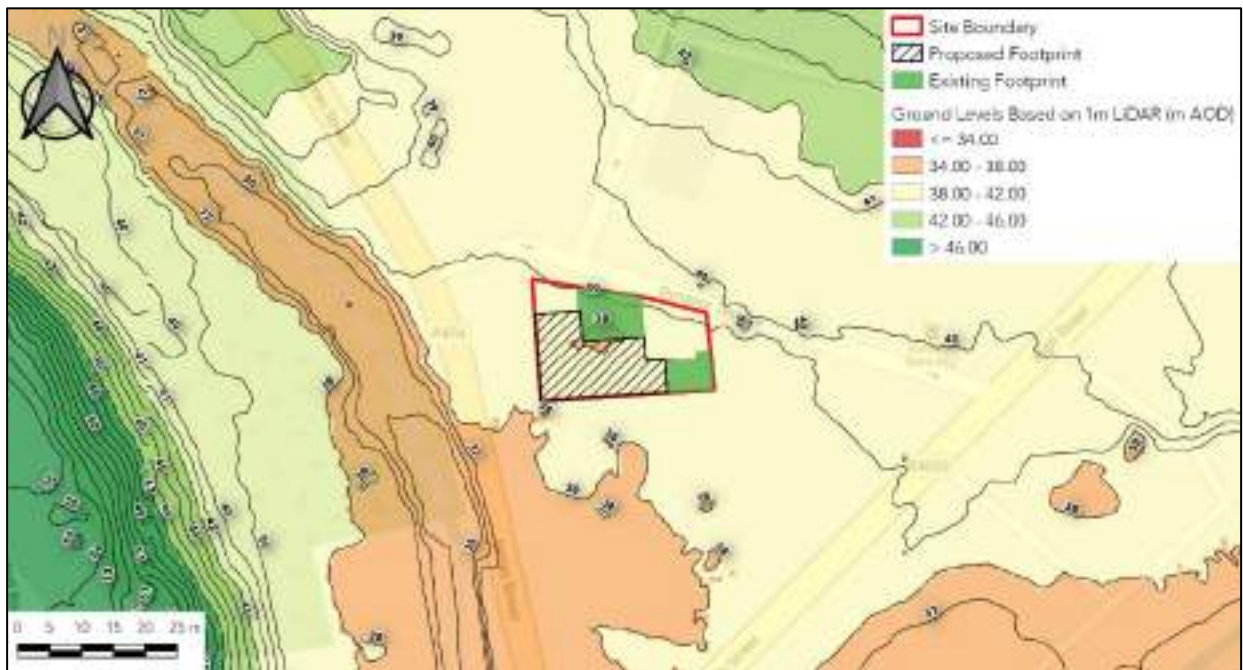


Figure 2: Site Topography

- 1.7. Neath Port Talbot Council is the Local Planning Authority (LPA) for the site, and also the designated Lead Local Flood Authority (LLFA). The site sits within NRW's South West Wales region.

2. Planning Policy and Guidance

- 2.1. Technical Advice Note 15 (TAN15), in conjunction with Planning Policy Wales (PPW) and any local planning documentation forms the basis for assessment of flood risk in Wales and its risk mitigation and development control. For an application to be acceptable, it must pass both a Flood Risk justification test and the assessment/acceptability of flooding consequences tests.

Flood Risk Justification Test

- 2.2. The Flood Risk justification test is undertaken against both the development advice maps (DAM) and the Land Use Vulnerability Classification, provided within TAN15.
- 2.3. The DAM contains 3 zones – A, B and C subdivided into C1 and C2, summarised in Table 1.

Table 1: Development Advice Map Zone Classifications

Description of Zone	Flood Zone	Use within the precautionary framework
Considered to be at little or no risk of fluvial or tidal/coastal flooding.	A	Used to indicate that justification test is not applicable and no need to consider flood risk further.
Areas known to have been flooded in the past evidenced by sedimentary deposits.	B	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further
Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river, tidal or coastal)	C	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
Areas of the floodplain which are developed and served by significant infrastructure, including flood defences.	C1	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.

Areas of the floodplain without significant flood defence infrastructure.	C2	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.
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2.4. Interrogation of the NRW Development Advice Map shows that the proposed site is within Flood Zone C2, described above as areas of the floodplain without significant flood defence infrastructure.

2.5. The land use vulnerability classifications are presented in Table 2.

Table 2: TAN15 Vulnerability Classifications

Development Category	Type
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

2.6. As the proposed development is for commercial units on the ground floor, this would be classified as 'Less Vulnerable' with all 'Highly Vulnerable' development located on the upper floor of the development. 'Less Vulnerable' developments are largely seen as acceptable in Flood Zone C2 subject to the application of the justification test in accordance with section 6, including acceptability of consequences (section 7 and appendix 1 of TAN15). It should be noted that the existing public house would be classified as 'Highly Vulnerable', so there will be a reduction in vulnerability on the ground floor post-development.

2.7. Paragraph 6.2 of TAN15 states:

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,

- iii. It concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and,*
- iv. The potential consequences of a flooding event for the development have been considered, and in terms of the criteria contained in sections 5 and 7 and appendix 1 found to be acceptable.*

2.8. With regards to Paragraph 6.2 section I and ii of the TAN15, the proposal is for the change of use of the existing public house building to 3 commercial units and 5 flats. The Neath Port Talbot Local Plan (2016) includes the following policies relating to the provision of new housing within the Borough by 2026.

Policy SP 7 Housing Requirement

In order to deliver the 7,800 new dwellings required to meet the economic-led growth strategy, provision will be made for the development of 8,760 additional dwellings between 2011-2026 including a 12.31% flexibility allowance.

2.9. Therefore, the proposed development is contributing towards the needs of a Local Authority strategy to sustain an existing settlement (Port Talbot). Creation of the 3 commercial units at ground floor, thus seeks to contribute to key employment objectives and sustain an existing settlement with employment opportunities. The 5 flats would also be meeting the needs of

Policy SP 7, mentioned above, by helping to contribute to the requirements of the target for new dwellings.

- 2.10. Therefore, the proposals seek to sustain an existing settlement, meeting the requirements set out in Paragraph 6.2 section i.
- 2.11. With regards to Paragraph 6.2 section iii of the TAN15, the proposed development is for a change of use and by definition, previously developed.
- 2.12. With regards to Paragraph 6.2 section iv, section 4 of this report will assess the flood risk to the proposed site from various flood sources. The analysis of this risk will meet the needs of the criteria contained in section 5 and 7 and appendix 1 of the TAN 15 document. TAN15 requires that a site should only be considered for development if the following conditions can be satisfied. The report sets out the risk of flooding to the site and appropriate mitigation measures; the ground floor of the proposed development would be considered 'Less Vulnerable' (commercial development) – decreasing vulnerability compared to existing, therefore also meeting the second part (iv) of the justification test.

Assessment/Acceptability of Flooding Consequences Test

- 2.13. If a development is to be located within Zone C1 or Zone C2 and, having passed the initial Flood Risk Justification Test, then an assessment of flooding consequences will be required. This assessment will assess all potential flood mechanisms which could impact the development and establish if the consequences of flooding can be managed appropriately for the type of development being proposed.
- 2.14. Appendix 1 of the TAN 15 provides the criteria which should be met by the Acceptability Test;

Acceptability Criteria:

- 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 year).*
- The cost of future maintenance for all new/approved flood mitigation measures, including defences must be accepted by the developer and agreed with the Environment Agency (now Natural Resources Wales).*

- *The developer must ensure that future occupiers of the development are aware of the flooding risks and consequences.*
- *Effective flood warnings are provided at the site*
- *Escape/evacuation routes are shown by the developer to be operational under all conditions*
- *Flood emergency plans and procedures produced by the developer must be in place*
- *The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from floodwaters.*
- *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.*
- *No flooding elsewhere*

- 2.15. Sections 4 and 5 of this report will address each of the points above in order to show that the proposed development is able to pass the Acceptability Test.
- 2.16. Any points where action is required by the developer should be completed by the site developer separately and may not be explicitly mentioned within this report.

Surface Water Run-Off from New Development

- 2.17. TAN15 states that flooding from all new development, in all zones, should not increase the risk of flooding elsewhere, via the creation of additional run-off when compared with the undeveloped situation.
- 2.18. The Welsh Sustainable Drainage (SuDS) Statutory Guidance (2019) requires that Sustainable Drainage Systems (SuDS) should be included in all new development proposals, irrespective of which zone they are to be located. Developments with an overall construction area of 100m² or more, or more than 1 dwelling, will require SuDS.
- 2.19. A surface water drainage strategy is therefore recommended prior to the detailed design stage.

Neath Port Talbot County Borough Council Local Development Plan (2011-2026)

- 2.20. The Neath Port Talbot County Borough Council Local Development Plan (LDP) (2016) is the development plan for the local area and is the basis for land use planning within the Council's administrative area. The LDP includes Policy SP1 which refers to the management of flood risk within the Borough:

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:

1.1 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;

1.2 Greenhouse gas emissions from transport will be minimised through encouraging freight / commercial transport by alternatives to road (e.g. rail or sea);

1.3 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;

1.4 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:

2.1 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 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;

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

2.21. However, only point 2.1 in Policy SP 1 directly refers to the management of flood risk.

3. Consultation and Review

Sources of Information

Consultation

- 3.1. The site is within the remit of Neath Port Talbot Council as Lead Local Flood Authority (LLFA). NRW have been consulted and have provided flood depth and extent data for various return periods. This data has been provided as Product 6 outputs from the Pontardawe model (2015). This information will be used to determine the flood risk to the proposed site.
- 3.2. Consultation from NRW was received on 16th November 2022 (ref CAS-202162-V3M8) relating to the conversion of the public house to 6no. residential units across the ground and first floor, which stated the following:

The planning application proposes a change of use from a public house to six residential flats. Our Flood Risk Map confirms the site to be within Zone C2 of the Development Advice Map (DAM) contained in TAN15 and the Flood Map for Planning (FMfP) identifies the application site to be at risk of flooding and falls into Flood Zone 2 Rivers.

We refer you to Section 6 of TAN15 and the Chief Planning Officer letter from Welsh Government, dated 9 January 2014, which affirms that highly vulnerable development should not be permitted in Zone C2 (paragraph 6.2 of TAN15). The justification tests in paragraph 6.2 of TAN15 do not apply to highly vulnerable development in Zone C2

Notwithstanding this policy position, we have reviewed the FCA (Aegaea Ref AEG0603_SA8_Swansea_07, Sept. 2022) to provide you with technical advice on the acceptability of flooding consequences in accordance with Appendix 1 of TAN15.

Our advice is that the FCA fails to demonstrate that the risks and consequences of flooding can be managed to an acceptable level in line with TAN15 and we have the following comments to make:

The FCA is informed using data, from the NRW Pontardawe model (2015). This modelling is now out of date, since 2015 there have been multiple changes to modelling software and the base hydrology. Additionally, it is likely that the topology

for the area has changed since the time of modelling. There does not appear to be any evidence that this model has been verified as still up to date. Therefore, we cannot guarantee that the modelling is suitable for use.

Within Section 4.18 of the FCA, it is stated that as there is not a value for the 1% Annual Probability of Flooding (APF) with a 30% allowance for climate change, then the 0.5% APF scenario has been used following a depth assessment. While this may be suitable at this location, it does not appear that there has been any verification that the flows for both these scenarios are exactly the same.

For the 1% APF scenario with climate change (in which the FCA uses the 0.5% APF Scenario), the finished floor levels are set to be raised to 38.36m. We would have concerns that this figure is used given the uncertainties described above.

The FCA also uses Flood Risk Assessment Wales (FRAW) map data which has no official status for planning purposes and should not be used to inform an FCA.

The FCA acknowledges that the proposed development site is in DAM Zone C2 but makes no reference to it being in FMfP Flood Zone 2, (rivers).

Due to our concerns over the suitability of the model and data used to inform the FCA we are unable to determine compliance with TAN15 or offer an informed response on flood risk to the development

Should you grant planning permission contrary to policy, the applicant should be required to submit a revised FCA prior to determination of the application. We can then advise you whether the revised FCA is in accordance with the technical criteria in Appendix 1 of TAN15. If no further information is submitted, or the revised FCA fails to demonstrate that the consequences of flooding can be acceptably managed over the lifetime of the development, then we object to this application.

Please inform us, in accordance with paragraph 11.7 of TAN15, if you are minded to grant permission for the application contrary to our advice.

- 3.3. Based on the above, it was not deemed to be financially viable to undertake a remodelling exercise of the Pontardawe model (2015). Therefore, the proposals have been amended to address the concerns/uncertainties of flood depths associated with the design event.

3.4. The new proposals do not include any new residential development (highly vulnerable development) on the ground floor – instead the ground floor will be retained for commercial use (less vulnerable development) only. The proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD). This therefore reduces the flood risk vulnerability classification of the ground floor from Highly Vulnerable (public house) to Less Vulnerable (commercial).

Documents

3.5. Local Governments and LLFA's provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FCA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.

3.6. The following sources of information have been reviewed for this assessment:

- The Interactive Flood Risk Mapping available on the Natural Resources Wales (NRW) website¹.
- Planning Policy Wales Technical Advice Note 15 (TAN 15): Development and Flood Risk (June 2004)²
- British Geological Survey – Geoindex Onshore (British Geological Survey, 2022).
- Local Plan, Neath Port Talbot County Borough Council (2016)³
- Neath Port Talbot Council Preliminary Flood Risk Assessment (PFRA), Neath Port Talbot Council (2011)⁴
- Neath Port Talbot Council Stage 1 & 2 Strategic Flood Consequences Assessment (SFCA), Neath Port Talbot Council (2014)⁵

¹ https://maps.cyfoethnaturiolcymru.gov.uk/Html5Viewer/Index.html?configBase=https://maps.cyfoethnaturiolcymru.gov.uk/Geocortex/Essentials/REST/sites/Flood_Risk/viewers/Flood_Risk/virtualdirectory/Resources/Config/Default&layerTheme=0

² <https://gov.wales/sites/default/files/publications/2018-09/tan15-development-flood-risk.pdf>

³ https://www.npt.gov.uk/media/7321/ldp_written_statement_jan16.pdf?v=20170727124344

⁴ https://www.npt.gov.uk/media/4629/pfra_report_2011.pdf?v=20171123145433

⁵ https://www.npt.gov.uk/media/5137/ldp_submission_eb01.pdf

- Neath Port Talbot County Borough Council Flood Risk Management Plan (FRMP), (2015)⁶
- Neath Port Talbot County Borough Council Local Flood Risk Management Strategy (LFRMS), (2013)⁷

Preliminary Flood Risk Assessment (PFRA)

- 3.7. The PFRA, published in 2011, is a high-level appraisal of flood risk across LLFANeath Port Talbot Council. The flood risk from all sources, including fluvial, surface water, groundwater and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy (described below) is produced.
- 3.8. The PFRA summarises historical flood incidents in Neath Port Talbot Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Consequences Assessment (SFCA)

- 3.9. The SFCA, published in 2014, provides the evidence base for the Local Planning Authority Neath Port Talbot Council Local Plan and guidance for consideration when determining planning applications.
- 3.10. The SFCA seeks to place new development into areas of lower flood risk, taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.
- 3.11. The SFCA online mapping provided by Neath Port Talbot Council has been used throughout production of this report as a source of information, particularly pertaining to historic flood incidents.

Local Flood Risk Management Strategy

- 3.12. The Local Flood Risk Management Strategy (LFRMS), published in 2013, sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where

⁶ <https://www.npt.gov.uk/media/5399/floodriskmanagementplan15.pdf?v=20170627002320>

⁷ https://www.npt.gov.uk/media/4930/lfrms_npt_local_flood_risk_management_strategy.pdf?v=20170627002244

funding can be found to manage flood risk, what our policies are as a Lead Local Flood Authority and what our objectives and actions are to manage flood risk.

- 3.13. The Neath Port Talbot Council LFRMS, as mentioned above, assesses the risk of flooding in the county and will be used within this report to identify whether the proposed site is at risk.

Flood Risk Management Plan

- 3.14. This Flood Risk Management Plan (FRMP) is the further extension of the work previously undertaken by the authority in the production of its Preliminary Flood Risk Assessment and Local Flood Risk Management Strategy.
- 3.15. The FRMP gives a greater focus on the areas at risk of flooding and identifies measures to reduce that risk, and in so doing demonstrates the authority's commitment to long term sustainability and ensuring that Neath Port Talbot remains an attractive place to live, work and visit

4. Sources of Flood Risk

Fluvial Flood Risk

- 4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.

Main Rivers and Ordinary Watercourses

- 4.2. The nearest NRW Main River is the Upper Clydach River, located approximately 20m west of the proposed development. The Upper Clydach flows from north to south past the site and is culverted from approximately 25m southwest of the site till it reaches the south side of the A474 road.
- 4.3. The River Tawe is also within the vicinity of the site, located approximately 530m southeast of the proposed development.
- 4.4. The Swansea canal also lies within the vicinity of the site approximately 80m southeast of the site.
- 4.5. There are no other ordinary watercourses within the vicinity of the site.

NRW Development Advice Map

- 4.6. The NRW Development Advice Map (Figure 3) shows that the proposed site lies within the NRW Zone C2. This denotes areas of the floodplain without significant flood defence infrastructure.

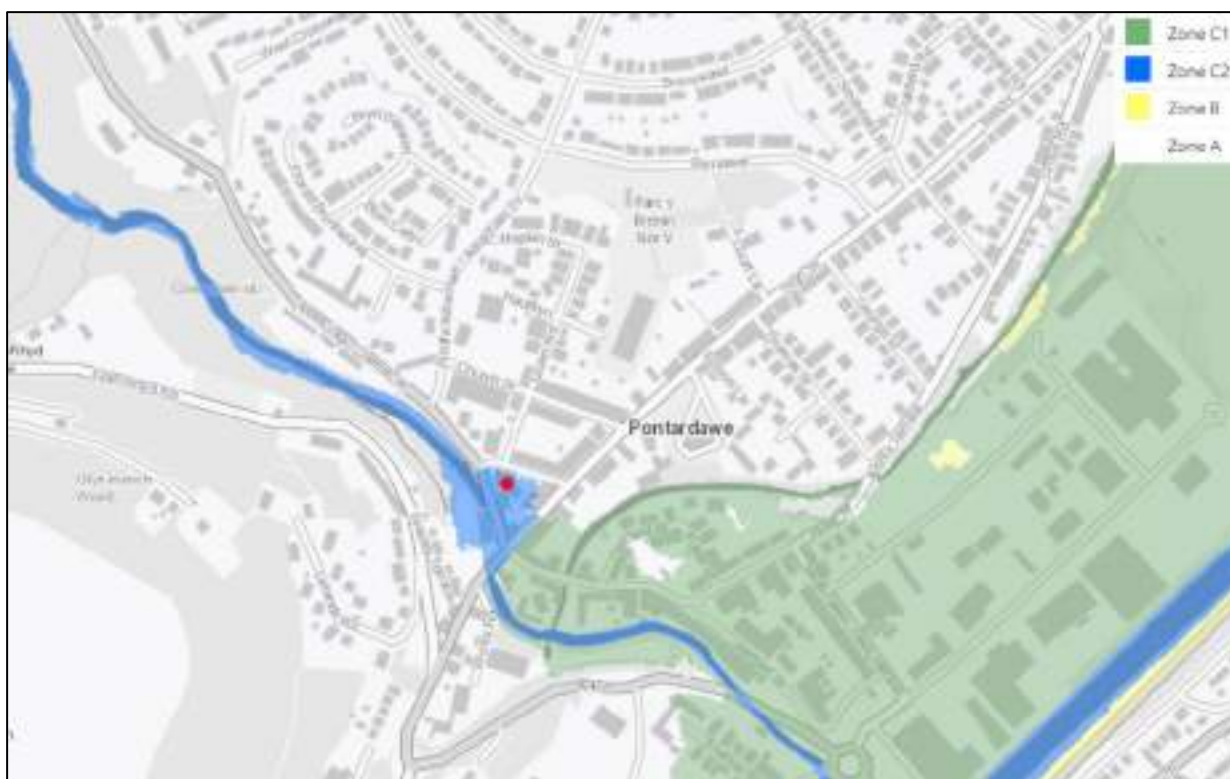


Figure 3: NRW Development Advice Map (Contains OS data © Crown Copyright and database right 2020 | Airbus Defence & Space)

NRW National Flood Risk and Hazard Map

- 4.7. The NRW National Flood Risk Assessment Wales Flood Risk from Rivers dataset indicates that the site is at a low risk (between 0.1% Annual Exceedance Probability (AEP) and 1.0% AEP) of flooding from rivers (fluvial sources) as shown in Figure 4.



Figure 4: NRW Flood Risk Assessment Wales Flood Risk from Rivers (Contains OS data © Crown Copyright and database right 2020)

- 4.8. The NRW National Flood Hazard and Risk Maps were further assessed to determine likely flood depths for the modelled high risk (3.3% AEP), medium risk (1% AEP) and low risk (0.1% AEP) events. These depths are presented in Figure 5, Figure 6, and Figure 7 respectively.
- 4.9. Figure 5 shows that in the modelled 3.3% AEP flood event the site should remain unaffected by fluvial flooding.
- 4.10. Figure 6 shows that in the modelled 1.0% AEP event the site should also remain unaffected by fluvial flooding.
- 4.11. In the 0.1% AEP low risk event, shown in Figure 7, the site could experience flood depths between 0.30m and 0.90m.



Figure 5: NRW National Flood Risk and Hazard Map – Depth – High Risk (3.3% AEP) (Contains OS data © Crown Copyright and database right 2020)



Figure 6: NRW National Flood Risk and Hazard Map – Depth – Medium Risk (1% AEP) (Contains OS data © Crown Copyright and database right 2020)



Figure 7: NRW National Flood Risk and Hazard Map – Depth – Low Risk (0.1% AEP) (Contains OS data © Crown Copyright and database right 2020)

Fluvial Climate Change

- 4.12. The 2018 NRW guidance for climate change states that developments in the Western Wales catchment for the 2080s epoch should consider a 30% allowance (central) to assess the potential impact of climate change as part of an FCA. It does further state that in addition to the central allowance of 30%, an assessment of risk should be made using the upper end estimate – which for the Western Wales catchment is 75%. Although, the guidance states:

It is recommended that the central estimate, or change factor, for the 2080s for the relevant river basin district should be used to assess the potential impact of climate change as part of a flood consequence assessment...

...The information derived from this assessment [using the upper end estimate] should be used to inform mitigation measures that help to ensure the long term resilience of the development. (Note: The upper end estimate may not be applicable to every site but will need to be considered depending upon the scale and nature of the site in question).

- 4.13. At the time of writing this report, detailed flood model data has been provided by NRW. The climate change (CC) allowance provided in the Product 6 model outputs was +20% in the 1.0% AEP event. No outputs were provided for the central allowance of 30%. Based on the

information provided, interpolation of the +30% CC event is not possible, therefore as a proxy, the 0.5% AEP event has been analysed to determine the flood risk for the central allowance climate change allowance event (as the flood extent for this event is greater than the 1%AEP +20%CC extent).

- 4.14. Flood extents or depths have not been provided for the upper end estimate allowance of 75% and due to the limited information provided by NRW, interpolation of the +75% CC allowance scenario is not currently possible given the information provided. However, analysis of the 0.1% AEP event has been used as a proxy for the 1.0% +75% CC event.

Portardawe Model (2015) – Defended Scenario

- 4.15. The NRW have provided results of the Pontardawe Model (2015). The Product 5 information provided alongside the Product 6 model outputs describes the scenarios which were modelled;

List of Design Runs

The main purpose of the design runs was to produce flood extent, depth, velocity and hazard maps for the following scenarios and fluvial events:

Defended

- Present Day: (50% {QMED}, 20%, 10%, 5%, 2%, 1.33%, 1%, 0.5%, 0.2% and 0.1% AEP)
- Future: (1% AEP with 20% flow increase {climate change}).

Undefended

- Present Day: (1% & 0.1% AEP)
- Future: (1% AEP with 20% flow increase {climate change}).

- 4.16. In the modelled defended 1.0% AEP event (Figure 8), the extent of the flooding remains within the channel of the Upper Clydach River. The model results from this event also show the location of the culvert southwest of the proposed site. This is indicated by the fact that the flood extent is shown to be cut off abruptly as the river enters the culvert. The proposed site is not affected in the modelled defended 1.0% AEP event.
- 4.17. Figure 9 shows the flood extent for the 1.0% AEP +20%CC event. In this event the site remains unaffected by fluvial flooding. However, the flood extent in this modelled event is not just contained to the river channel. It is shown to back up around the culvert entrance and floods both on the sides of the riverbanks to the north of the culvert and around the sides of the culvert.

- 4.18. As a proxy for the +30%CC central allowance recommended by the NRW 2018 guidance for the site, the 0.5% AEP event (Figure 10) has been analysed. In this modelled event the flood depths at the proposed site range up to 0.38m based on the depth grid provided by NRW. The flood level in this event is 38.36m AOD. When comparing this to the minimum topographical level at the proposed footprint (37.95m AOD), the depths at this location could reach 0.41m.
- 4.19. In the defended modelled 0.1% AEP event (Figure 11) the site is affected by fluvial flooding. The flood depths in this event at the proposed development ranges up to 0.79m based on the depth grid provided by NRW. The flood level in this event is 38.79m AOD. This event has been considered a proxy for the 1.0% AEP +75% CC upper end climate change allowance. Moreover, when comparing this to the minimum topographical level at the proposed footprint (37.95m AOD), the depths at this location could reach 0.84m.
- 4.20. It should be noted that the proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD).

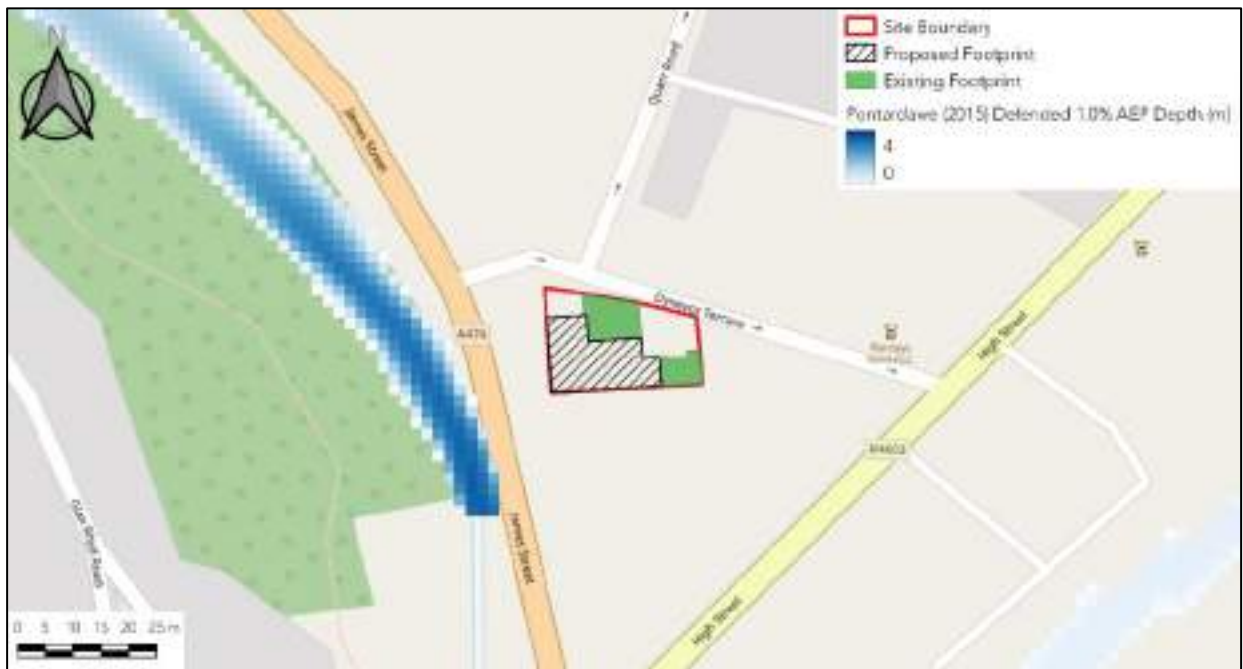


Figure 8: Pontardawe (2015) Model Defended 1.0% AEP Flood Depths and Extent



Figure 9: Pontardawe (2015) Model Defended 1.0% AEP +20%CC Flood Depths and Extent



Figure 10: Pontardawe (2015) Model Defended 0.5% AEP Flood Depths and Extent (1.0% AEP +30% CC Proxy)



Figure 11: Pontardawe (2015) Model Defended 0.1% AEP Flood Depths and Extent (1.0% AEP +75% CC Proxy)

- 4.21. In summary, in the modelled defended present-day scenario, the site is considered to be at a low risk of fluvial flooding. The modelled defended residual risk, which includes the central and upper end climate change allowances, is considered high. Mitigation measures to manage this risk are recommended in Section 5 of this report.

Portardawe Model (2015) – Undefended Scenario

- 4.22. In addition to the defended scenarios analysed above, NRW also provided outputs in the Product 6 data for the undefended scenario of the 2015 Pontardawe model.
- 4.23. However, as shown in Figure 12, the site is not served by any current flood defences. As such, the extent of each of the modelled defended and undefended flood events were the same in each case for the proposed development.



Historical Flooding

4.24. The NRW Recorded Flood Extents dataset shows that the site is located outside of the recorded outline for any historic fluvial flood extent. This is shown in Figure 13. The closest recorded historic event is located approximately 200m southeast recorded in October 1998 and was associated with fluvial flooding of the River Tawe.



Figure 13: NRW Recorded Flood Extents

Summary

- 4.25. Based on the information above in the defended present day scenario, the site is considered to be at a low risk of fluvial flooding. The residual risk, which includes the central and upper end climate change allowances, is considered high, however all new residential development will be located on the first floor. Mitigation measures to manage this risk are recommended in Section 5 of this report.
- 4.26. Furthermore, the proposal therefore reduces the flood risk vulnerability classification of the ground floor from Highly Vulnerable (public house) to Less Vulnerable (commercial).

Tidal Flood Risk

- 4.27. The NRW Flood Risk Assessment Mapping also shows details relating to the Flood Risk from the Sea to the proposed development.

- 4.28. Figure 14 shows that the proposed development lies outside the extent of the low, medium, and high risk areas associated with tidal sources. The nearest area which could be affected by tidal flooding is towards Neath, approximately 7.2km southeast of the site.
- 4.29. As such, the site is considered to be at a very low risk of tidal flooding.

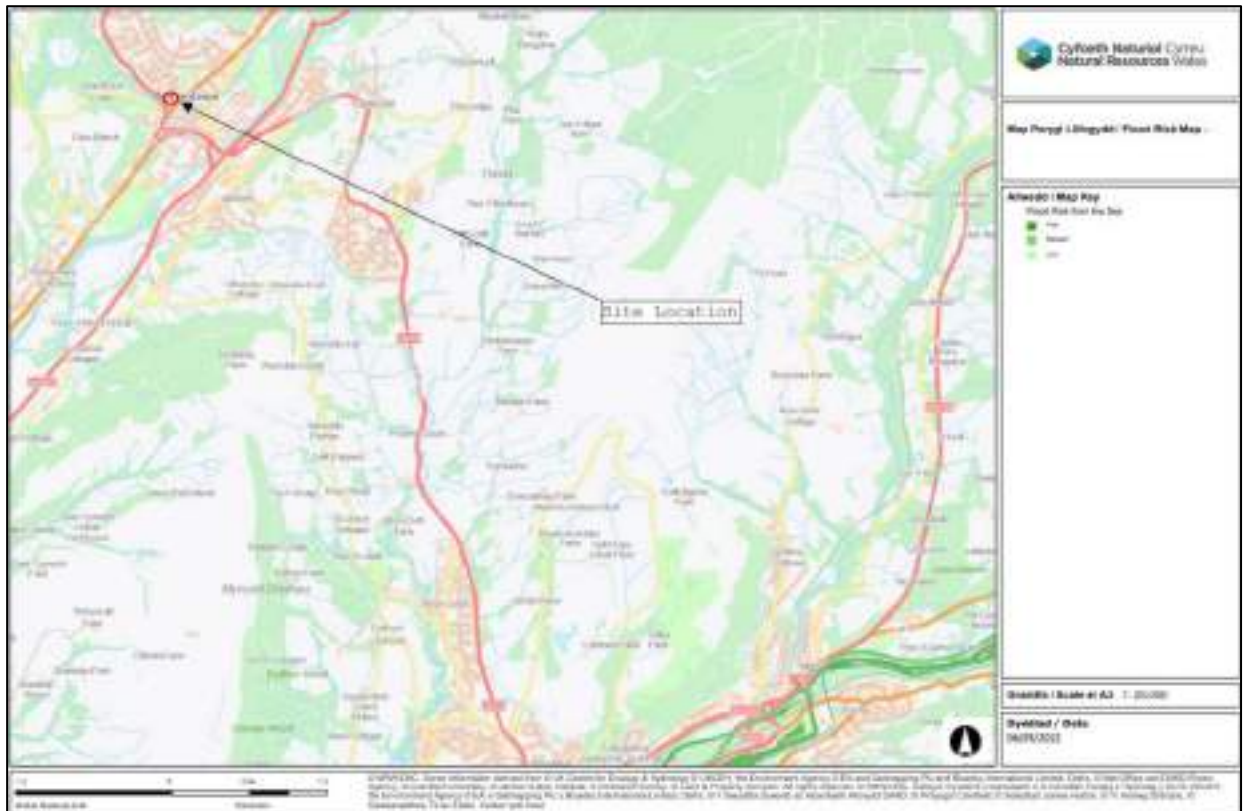


Figure 14: NRW Flood Risk Assessment Wales map (Contains OS data © Crown Copyright and database right 2020 | Airbus Defence & Space)

Canals

- 4.30. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders and boreholes and manages water levels by transferring it within the canal system.
- 4.31. Water in a canal is typically maintained at predetermined levels by control weirs. When rainfall or other water enters the canal, the water level rises and flows out over the weir. If the level continues rising it will reach the level of the storm weirs. The control weirs and storm weirs are normally designed to take the water that legally enters the canal under normal conditions. However, it is possible for unexpected water to enter the canal or for the weirs to become

obstructed. In such instances the increased water levels could result in water overtopping the towpath and flowing onto the surrounding land.

- 4.32. Flooding can also occur where a canal is impounded above surrounding ground levels and the retaining structure fails.
- 4.33. Water levels within the canal to the southwest of the site will be maintained and controlled as described above. In addition to the management measures described, Figure 15 shows the existing ground levels between the proposed site and the Swansea Canal based on existing LiDAR data. The site lies at a location approximately 2m higher than the canal level.
- 4.34. As such, considering both the management of the UK canal network by the CRT and the raised elevation of the proposed site above the canal water level, the site is considered to be at a low risk of canal flooding.

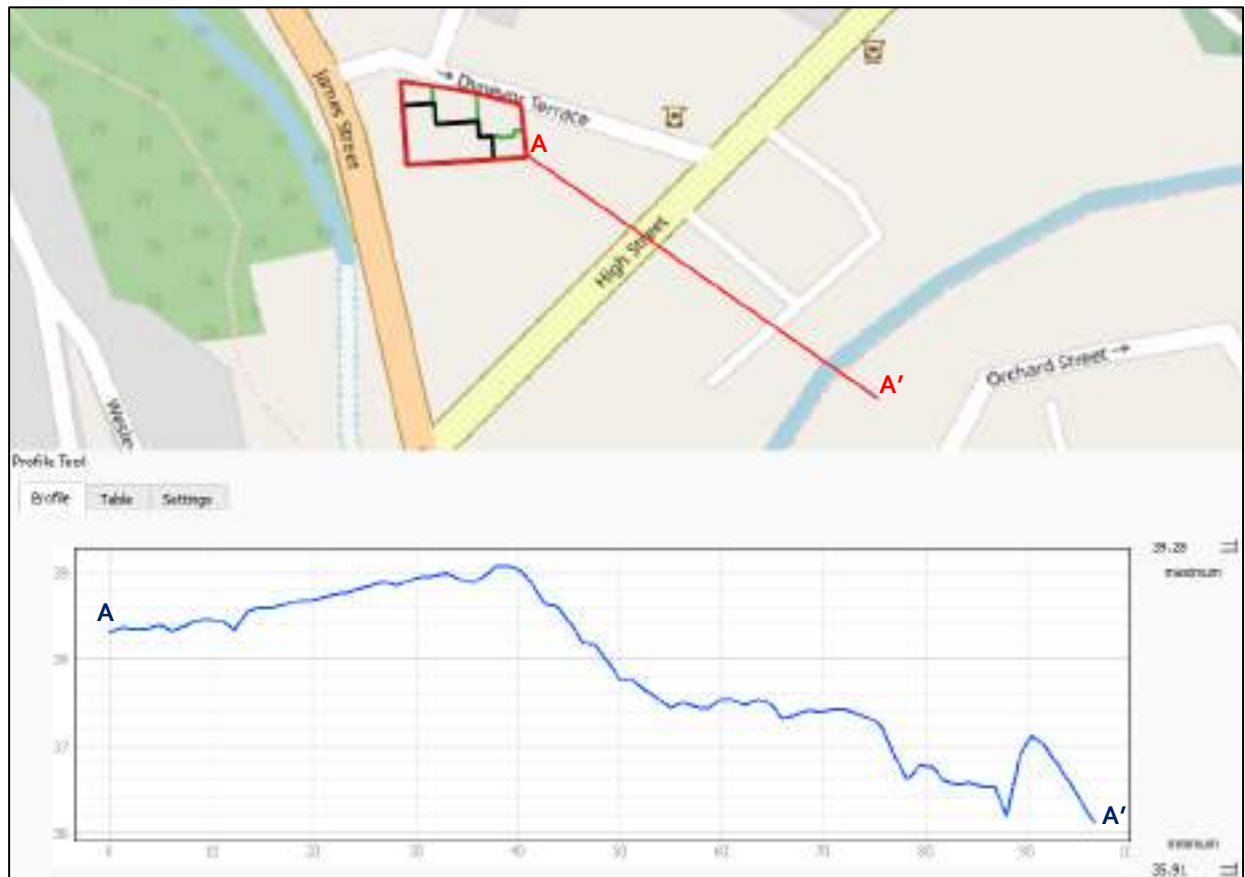


Figure 15: Cross Section of Existing Ground Levels between the Proposed Development and the Swansea Canal (Northeast to Southwest)

Pluvial Flood Risk

- 4.35. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.
- 4.36. Examination of NRW Flood Risk Assessment Wales map (Figure 16) Flood Risk from Surface Water and Small Watercourses shows that the site lies outside the extent of the each of the modelled low risk (0.1% AEP), medium risk (1% AEP), and high risk (3.3% AEP) events. Additionally, both James Street to the east of the site and Dynevor Terrace to the north of the site do not experience flooding in any of the modelled events included in the NRW mapping.



Figure 16: NRW Flood Risk Assessment Wales map (Contains OS data © Crown Copyright and database right 2020 | Airbus Defence & Space)

- 4.37. Based on the information above, the site is considered to be at a low risk of pluvial flooding.

Reservoirs

- 4.38. Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain water in times of flood. Although unlikely,

reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.

- 4.39. The NRW Wales Flood Risk Assessment map shows the site is not located within a reservoir flood risk extent. Therefore, the risk of flooding from reservoirs is considered to be low.

Groundwater

- 4.40. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.
- 4.41. The British Geological Survey's (BGS) mapping shows superficial deposits of Alluvium – Sand and Gravel underlying the site. The bedrock underlying the site is Rhondda Member Formation – Sandstone.
- 4.42. Historic BGS borehole (ref: SS78NE243) located approximately 225m south of the site did not identify water being struck within the 5m deep borehole.
- 4.43. The LFRMS (2013) presents the NRW's Areas Susceptible to Groundwater Flooding mapping (Figure 17). This mapping consists of 1km grid squares and shows what proportion of each is considered susceptible to groundwater flooding. The site is within a 1km cell of which less than 25% is considered susceptible to groundwater flooding.

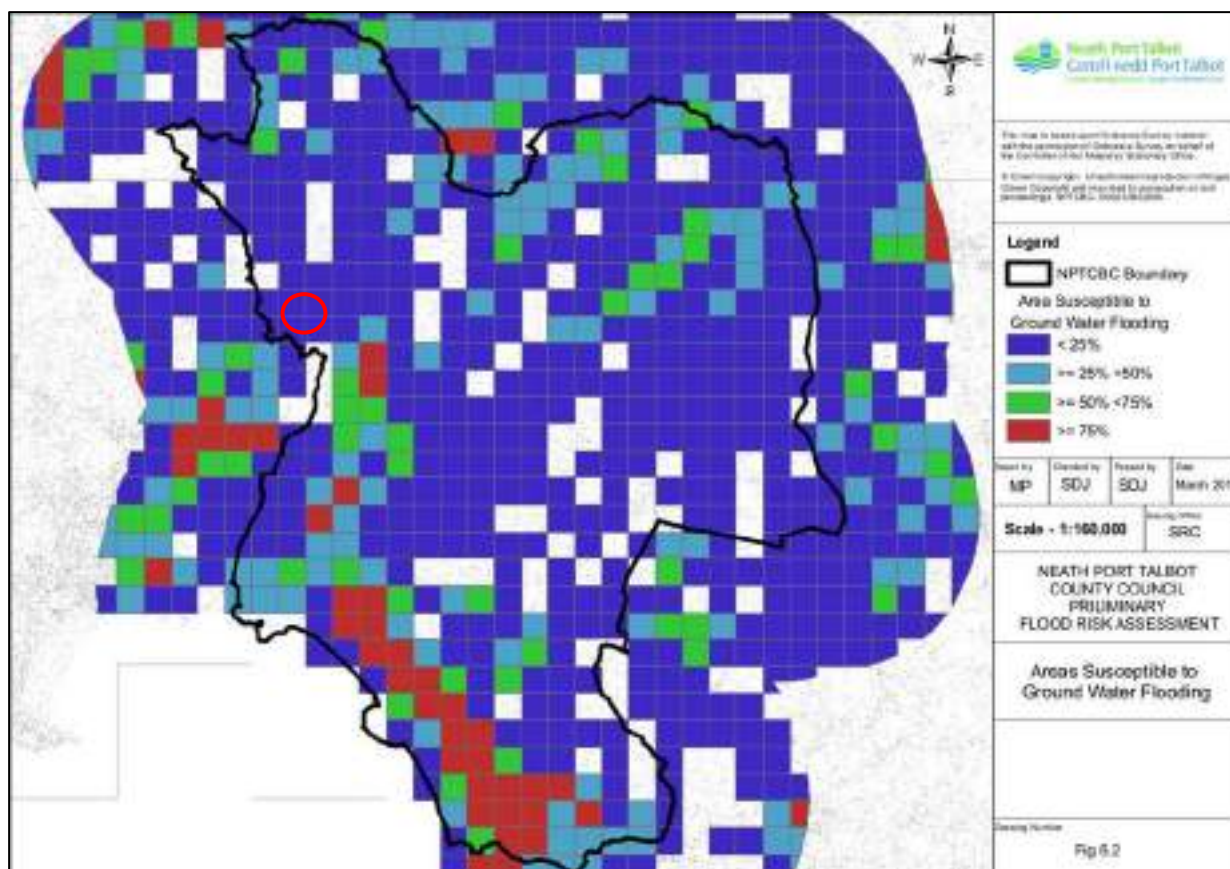


Figure 17: LFRMS (2013) Groundwater Flood Susceptibility Mapping

4.44. Based on the information above, the risk of groundwater flooding is considered low.

Sewer Flooding

- 4.45. Sewers can be a cause of flooding where the drainage network has become overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.
- 4.46. Neither the SFCA (2014) or PFRA (2011) contain publicly available specific mapping to illustrate the number of historical sewer flooding incidents in the borough. However, the SFCA does mention the risk of sewer flooding within its report;

Records are also available from the Drainage and Streetcare Services department of the Council of drainage incidents, including general flooding incidents, call outs in relation to heavy rain incidents, sewer flooding and culvert blocking and significant historic flood outlines. Most of the information records spot addresses only, but 13

historic floods were considered significant enough to be plotted in more detail, although the outlines recorded may not be entirely accurate

- 4.47. Based on the information above the site is considered to be at a low risk of sewer flooding. This is considering that there are only 13 recorded sewer flood incidents within the entire borough.

5. Flood Risk Mitigation

Fluvial and Canals

- 5.1. The Flood Risk Assessment Wales Map and the National Flood Hazard and Risk Map shows the site to be at a low risk of flooding from fluvial sources. Overall, considering the historical flood extent, flood depth, and flood extent from all datasets (including the NRW Port Talbot Model (2016)), the site is considered to be at a low risk of flooding from fluvial sources in the present day scenario.
- 5.2. However, the residual risk which includes the central and upper end climate change allowances to the modelled 1.0% AEP event, is considered to be high.
- 5.3. The mitigation measures included below are recommendations and should be reviewed prior to construction in line with the architectural and structural proposals and wider site constraints.

Finished Floor Levels

- 5.4. The proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD).
- 5.5. The commercial units (ground floor) will remain at the same level as the existing finished floor levels, circa. 38.20m AOD.
- 5.6. The proposal reduces the flood risk vulnerability classification of the ground floor from Highly Vulnerable (public house) to Less Vulnerable (commercial).

Safe Access and Egress

- 5.7. An analysis of the detailed modelling provided in the Pontardawe (2015) model shows that safe access/egress may not to be possible at the site for 0.1% fluvial flood event. The locations of the entrances to the flats are shown in Figure 18.
- 5.8. TAN15 states that 'in respect of the residual risk to the development it should be designed so that over its lifetime (A1.15) in an extreme (1 in 1000 chance) event there would be less than 1000mm of water on access roads and within properties, the velocity of any water flowing across the development would be less than 0.3m/second on access roads and 0.45m/second in

properties and the maximum rate of rise of floodwater would not exceed 0.3m/hour (refer to table at paragraph 7.7.41)'.

- 5.9. The front courtyard/terrace area (where the residential property entrances are located) may be affected by flooding with levels of 38.79m AOD. The topographic levels in this location are 38.15m AOD, which equates to flood depths of 0.64m. No data has been provided regarding the 0.1%+CC event.
- 5.10. Based on the flood extents shown in Figure 18, site users should be able to exit the site and very quickly be in an area not at risk of flooding. The site is also located on the edge of the floodplain, therefore, upon the onset of flooding in the surrounding area, it should be possible to immediately evacuate the site.



Figure 18: Pontardawe (2015) Model Defended 0.1% AEP Flood Depths and Extent (1.0% AEP +75% CC Proxy) and Evacuation Routes

- 5.11. Evacuation should be sought prior to the onset of flooding. Subscription to the local flood warning system should provide adequate notice prior to the onset of a flood event. Details on the NRW Flood Warning Service can be found in subsequent sections of this report.

Flood Resistance and Resilience

- 5.12. TAN15 also states for developments to be considered acceptable the below criteria must be met:

• *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.*

5.13. Given that the development may be subject to flooding following fluvial flood events greater than the 1.0% AEP, flood resilience measures are recommended to facilitate quick recovery following a flood event. The following measures are recommended where applicable and possible over and above the flood protection systems:

- Solid (i.e. concrete floors) with waterproof screed.
- Raised wiring and power outlets at lower ground and ground level.
- Air brick covers to be installed.
- Damp Proof Membranes (d.p.m.) should be included in any design to minimise the passage of water through ground floors.
- Non-return valves on any new sewer connection to prevent back flow.
- All new plumbing insulation to be of closed cell design.
- Site owners and residents required to sign up to the NRW flood warning service.

Pluvial

5.14. The site is considered to be at a low risk of pluvial flooding. As such, no specific mitigation is recommended.

Reservoirs, Groundwater and Sewers

5.15. The flood risk from other sources is considered to be low, therefore no further specific mitigation is recommended.

Increase to Flood Risk Elsewhere

5.16. The existing site is public house. The proposed development is for change of use of the existing public house to 3no. commercial units and 5no. residential flats.

5.17. Furthermore, the proposed development does not include any external increase in footprint. In fact, there is a reduction of the footprint.

5.18. As such, the proposed development in isolation should have no impact on flood risk elsewhere.

NRW Flood Warning Service

- 5.19. As a further precaution and risk reduction, the tenant of the dwelling should sign up the 'Alloy Industrial Estate, health centre and Tawe Terrace, and property adjacent to the Upper Clydach including Herbert Street' NRW flood warning service. This service allows tenants to register an address, which is at risk of flooding, along with contact details so that in the event of a flood being forecast, the tenant will be sent an alert directly to their chosen method of contact.
- 5.20. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides occupants some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide tenants with time to take necessary action, e.g. communication of the risk of flooding to occupants/employees etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding and the mounting of site specific flood defences.

6. Conclusions

- 6.1. This FCA has been undertaken with reference to the requirements of TAN15 with respect to the development at 6 James Street, Pontardawe, Swansea, SA8 4LR. It has been written to support a full planning application and has been prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. The FCA supports the full planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are implemented in the scheme. The development does not increase flood risk off site or to the wider area.

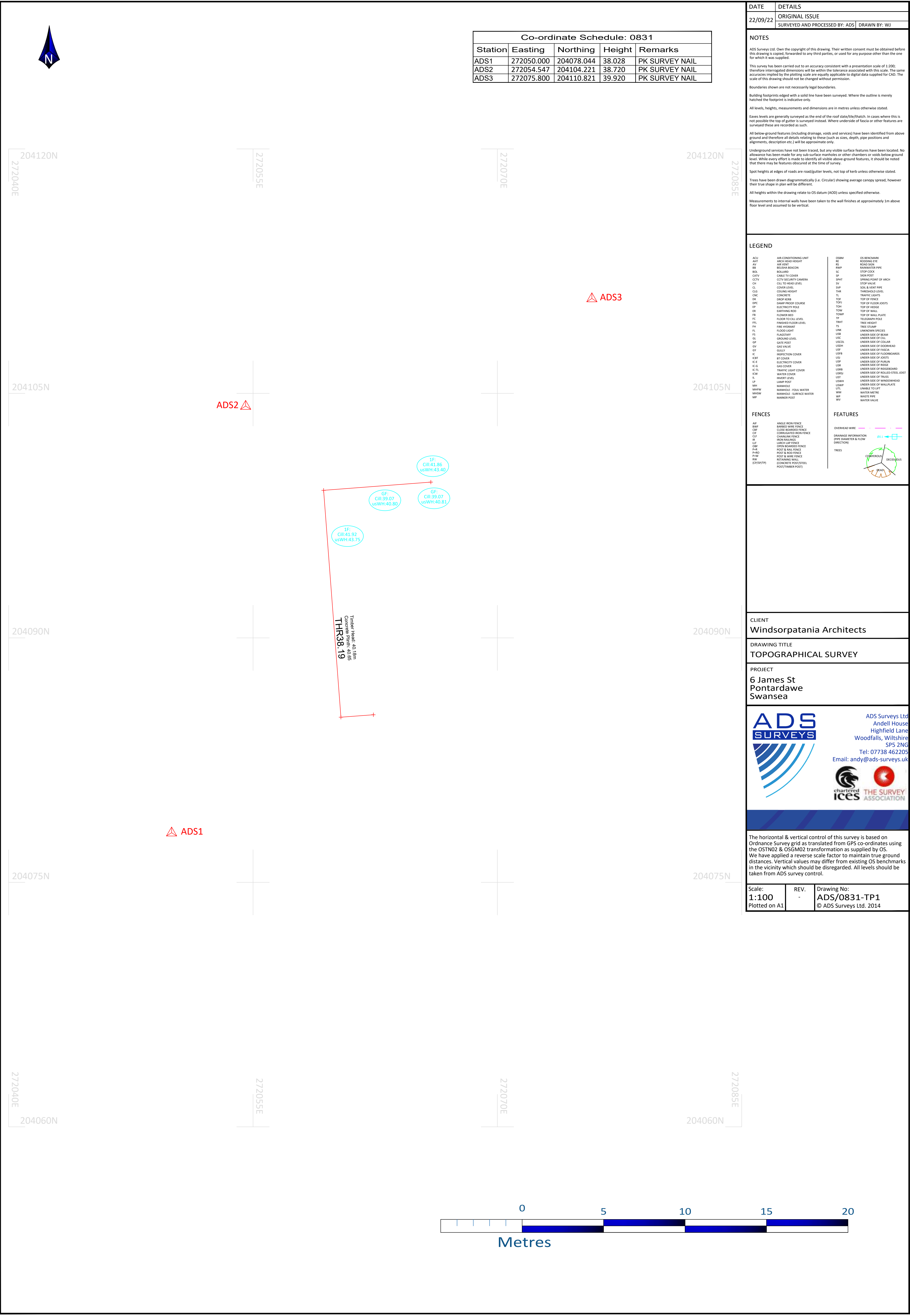
Source of Flooding	Flood Risk Summary
Fluvial (and Canals)	The Flood Risk Assessment Wales Map and the National Flood Hazard and Risk Map shows the site to be at a low risk of flooding from fluvial sources. Overall, considering the historical flood extent, flood depth, and flood extent from all datasets (including the NRW Port Talbot Model (2016)), the site is considered to be at a low risk of flooding from fluvial sources in the present-day scenario. However, the residual risk which includes the central and upper end climate change allowances to the modelled 1.0% AEP event, is considered to be high. Based on the Pontardawe (2015) model results, safe access/egress should be located outside of the 1.0% AEP +30%CC event (0.5% AEP year event used as a proxy) at either the southeast or northwest corners of the proposed development footprint. The proposed first floor level (and therefore all residential use) is set at 40.95m AOD, approximately 2.16m above the modelled 0.1% AEP flood level (38.79m AOD). The proposal reduces the flood risk vulnerability classification of the ground floor from Highly Vulnerable (public house) to Less Vulnerable (commercial). The owners and managers of the commercial premises and residents should sign up to the NRW flood warning service.
Pluvial	The site is considered to be at a low risk of pluvial flooding. As such, no specific mitigation is recommended.
Reservoirs Groundwater Sewers	The risk from reservoir, groundwater, and sewer sources is considered low.

6.3. The following conclusions can be drawn from this level 1 FCA:

- This FCA has identified no prohibitive constraints in developing the proposed site for the proposed usage.
- The site is considered to be at a low risk of fluvial flooding in the present day event. The residual risk, including CC allowances is considered high.
- The site is considered to be at a low risk of pluvial flooding.
- The change in risk from all other sources is considered low.
- The proposal reduces the flood risk vulnerability classification of the ground floor from Highly Vulnerable (public house) to Less Vulnerable (commercial).
- Flood resilience measures are recommended to facilitate quick recovery following a flood event.
- The owners and tenants of the commercial premises should sign up to the NRW flood warning service.

6.4. This Flood Consequence Assessment should be submitted as part of the planning application to satisfy the requirements under TAN15.

Appendix A – Topographical Survey



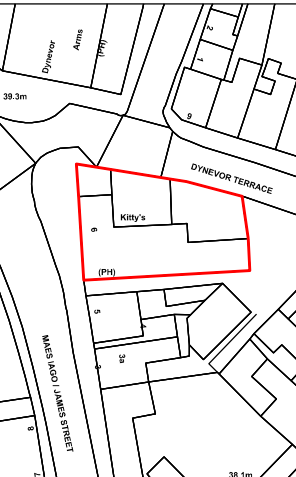
DATE		DETAILS	
22/09/22		ORIGINAL ISSUE	
		SURVEYED AND PROCESSED BY: ADS DRAWN BY: WJ	
NOTES			
ADS Surveys Ltd. Own the copyright of this drawing. Their written consent must be obtained before this drawing is copied, forwarded to any third parties, or used for any purpose other than the one for which it was supplied.			
This survey has been carried out to an accuracy consistent with a presentation scale of 1:200; therefore interperated dimensions will be within the tolerance associated with this scale. The same accuracies implied by the plotting scale are equally applicable to digital data supplied for CAD. The scale of this drawing should not be changed without permission.			
Boundaries shown are not necessarily legal boundaries.			
Building footprints edged with a solid line have been surveyed. Where the outline is merely hatched the footprint is indicative only.			
All levels, heights, measurements and dimensions are in metres unless otherwise stated.			
Above levels are generally surveyed as the end of the roof state/side/hatch. In cases where this is not possible the top of gutter is surveyed instead. Where underside of fascia or other features are surveyed these are recorded as such.			
All below-ground features (including drainage, voids and services) have been identified from above ground and therefore all details relating to these (such as sizes, depth, pipe positions and alignments, description etc.) will be approximate only.			
Underground services have not been traced, but any visible surface features have been located. No allowance has been made for any sub-surface manholes or other chambers or voids below ground level. While every effort is made to identify all visible above-ground features, it should be noted that there may be features obscured at the time of survey.			
Spot heights at edges of roads are road/gutter levels, not top of kerb unless otherwise stated.			
Trees have been drawn diagrammatically (i.e. Circular) showing average canopy spread, however their true shape & plan will be different.			
All heights within the drawing relate to OS datum (AOD) unless specified otherwise.			
Measurements to internal walls have been taken to the wall finishes at approximately 3m above floor level and assumed to be vertical.			
LEGEND			
ACU	AIR-CONDITIONING UNIT	OSBM	OS BENCHMARK
ARC	ARCH/DOOR HEIGHT	RCS	ROOFING EYE
AV	AIR VENT	RD	ROAD SIGN
BRS	BELONGER/BASON	RWP	RAINWATER PIPE
BOL	BOLLARD	SC	STOP COCK
CATV	CABLE TV COVER	SF	SEA FLOOR
CCV	CCTV SECURITY CAMERA	SH	SPIRING POINT OF ARCH
CHL	CHILD HEAD LEVEL	SP	STEP
CL	COVER LEVEL	SV	SEA VENT PIPE
CLS	CLOSING HEIGHT	TBR	THRESHOLD LEVEL
CON	CONCRETE	TL	TRAFFIC LIGHTS
CP	CURB	TOF	TOP OF FINCE
DPC	DAMP PROOF COURSE	TOFI	TOP OF FLOOR JOISTS
EP	ELECTRIC POLE	TOH	TOP OF HEDGE
ERC	EARTHING ROD	TOHP	TOP OF HILL
F	FENESTRATION	TP	TOP OF WALL PLATE
HC	FLOOR TO CEILING LEVEL	TRM	TELEGRAPH POLE
FL	FINDRIB LID	TS	TREE HEIGHT
FR	FIRE HYDRANT	UNK	UNKNOWN SPECIES
FL	FLOOR LIGHT	USC	UNDER-SIDE OF BEAM
FS	FLAGSTAFF	USCL	UNDER-SIDE OF COLLAR
G	GROUND LEVEL	USD	UNDER-SIDE OF DOORHEAD
GP	GATE POST	USDS	UNDER-SIDE OF DOTS
GV	GAS VALVE	USDI	UNDER-SIDE OF DOWNPIPE
H	HATCH	USFO	UNDER-SIDE OF FACIA
I	IRON BAR	USG	UNDER-SIDE OF GUTTER
C	INSPECTION CHUTE	USP	UNDER-SIDE OF PURLIN
CBT	BT CUBICLE	USRI	UNDER-SIDE OF ROOFING
I-C-E	ELECTRIC COVER	USRS	UNDER-SIDE OF RIGGED/SIDE
I-G	GAS COVER	USRT	UNDER-SIDE OF RIGGED/TIE-ROD END
I-CTL	ELECTRIC TIGHT COVER	USRU	UNDER-SIDE OF TRUSS
L	LEVEL	USWH	UNDER-SIDE OF WINDOWHEAD
LCN	LIGHT COVER	USWP	UNDER-SIDE OF WALLPLATE
MH	MANHOLE	W	WALL
MHW	MANHOLE - FOLI WATER	WM	WATER METRE
MHW	MANHOLE - SURFACE WATER	WT	WATER METRE
MMP	MANHOLE PIPES	WW	WATER WAY
FENCES		FEATURES	
AF	ANGLE IRON FENCE	OVERHEAD WIRE ORIENTATION INFORMATION (PIPE DIAMETER & FLOW DIRECTION) TREES	
BMF	BANDED WOOD FENCE		
CBF	CLOSE BOARDS FENCE		
CF	CORNICE/IRON FENCE		
CHF	CHARLEVILLE FENCE		
IMR	IRON MASTIFF		
LPF	LATHS LAP FENCE		
OBF	OPEN BOARD FENCE		
P-F	POST & RAIL FENCE		
P-RD	POST & RAIL FENCE		
P-W	POST & RAIL FENCE		
RF	RETAINING WALL		
RP	RAIL POST/STEEL POST(PITCHER POST)		
IF	IRON FENCE		
MF	WOOD FENCE		
WF	WOOD FENCE		
CLIENT			
Windsorpatania Architects			
DRAWING TITLE			
TOPOGRAPHICAL SURVEY			
PROJECT			
6 James St Pontardawe Swansea			
		ADS Surveys Ltd Anndell House Highfield Lane Woodfalls, Wiltshire SP5 2NG Tel: 07738 462205 Email: andy@ads-surveys.uk	
The horizontal & vertical control of this survey is based on Ordnance Survey grid as translated from GPS co-ordinates using the OSTN02 & OSGM02 transformation as supplied by OS. We have applied a reverse scale factor to maintain true ground distances. Vertical values may differ from existing OS benchmarks in the vicinity which should be disregarded. All levels should be taken from ADS survey control.			
Scale: 1:100 Plotted on A1		REV. - Drawing No: ADS/0831-TP1 © ADS Surveys Ltd. 2014	



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1. This drawing remains copyright of Windsor & Patania Architects and may not be reproduced or copied without consent in writing.
2. Print out to actual scale. Do not scale drawing using figured dimensions only. All dimensions to be cross-checked on-site by the appointed contractor prior to manufacture and construction
3. Any discrepancies between site and drawings to be reported to the Windsor & Patania Architects immediately.
4. Read in conjunction with all relevant drawings and documentation produced by other consultants
5. All structural elements to be agreed with local authority Building Control prior to commencement of works.
6. Attention is drawn to the provisions of the party wall act 1996. Legal boundaries should be determined by others.
7. All suggested demolition works to be reviewed by a Structural Engineer and to be assessed on site prior to demolition.
8. All areas are approximate and are to be used for indicative purposes only. Areas don't take into account possible variations related to the impact of Site Conditions, Structure, Drainage and M&E.
9. Windsor & Patania Architects accepts no liability for any expense, loss or damage of whatsoever nature and however arising from any variation made to this drawing or in the execution of the work to which relates which has not been referred to them and their approval obtained.
10. Contractors to be responsible for the design and supply of all temporary works (i.e. bracing, propping, showing, tying, etc) and the security, stability, and safety of the building works.

--- Boundary line - indicative only



FL- Floor Level
SH- Window Sill Level
HH- Window Height
TL - Top Level

Existing floor levels Existing in metres Above Ordnance Datum (m AOD) - tied to OS Datum. The datum reference based on sea level in Newlyn, Cornwall

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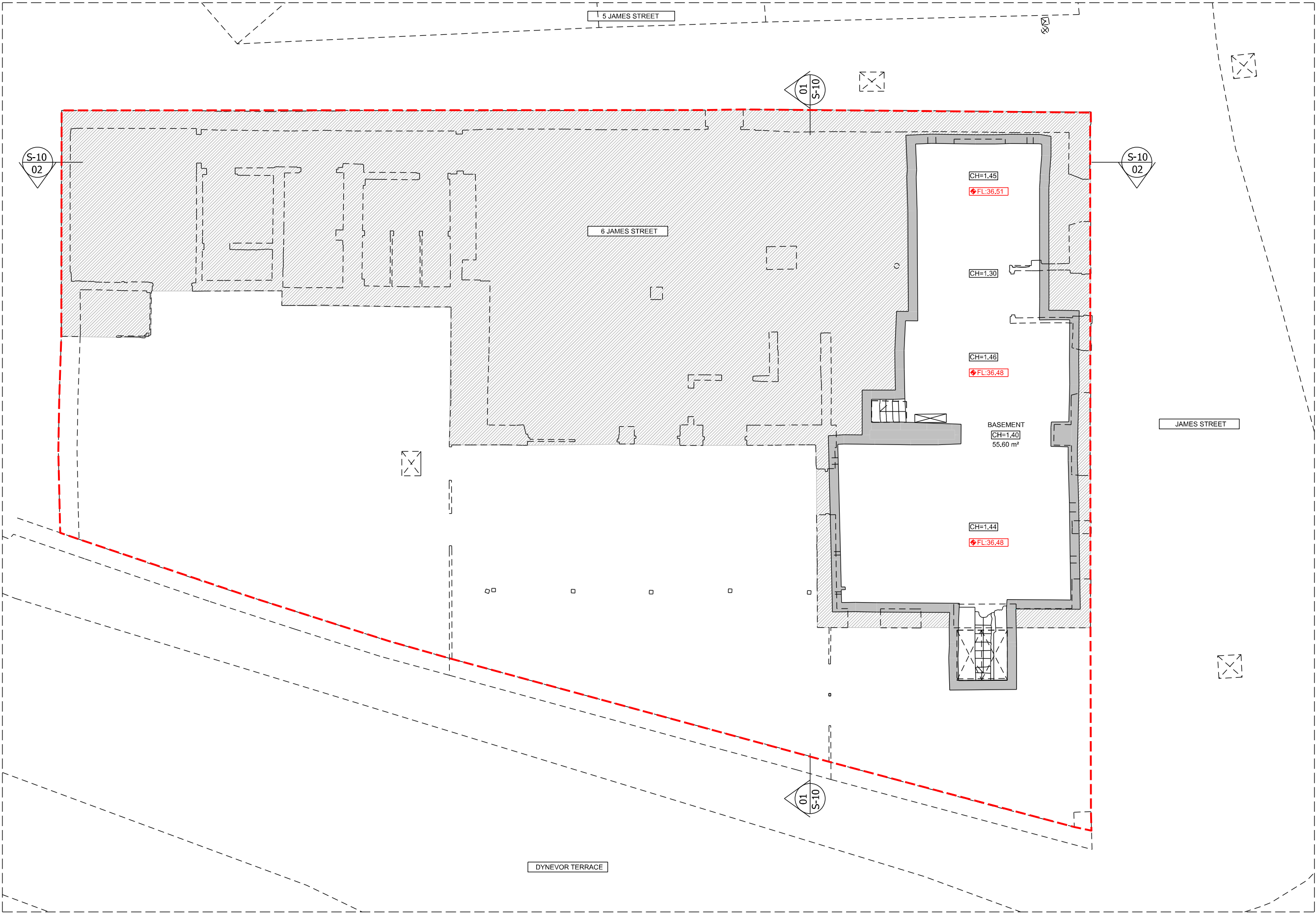
Drawing title
EXISTING FLOOR PLANS

date
SEPTEMBER 2022

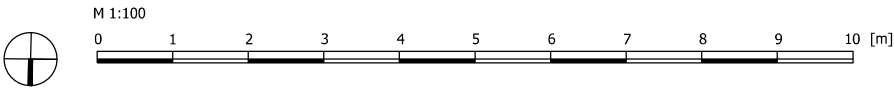
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3 OF 17



01 EXISTING BASEMENT PLAN
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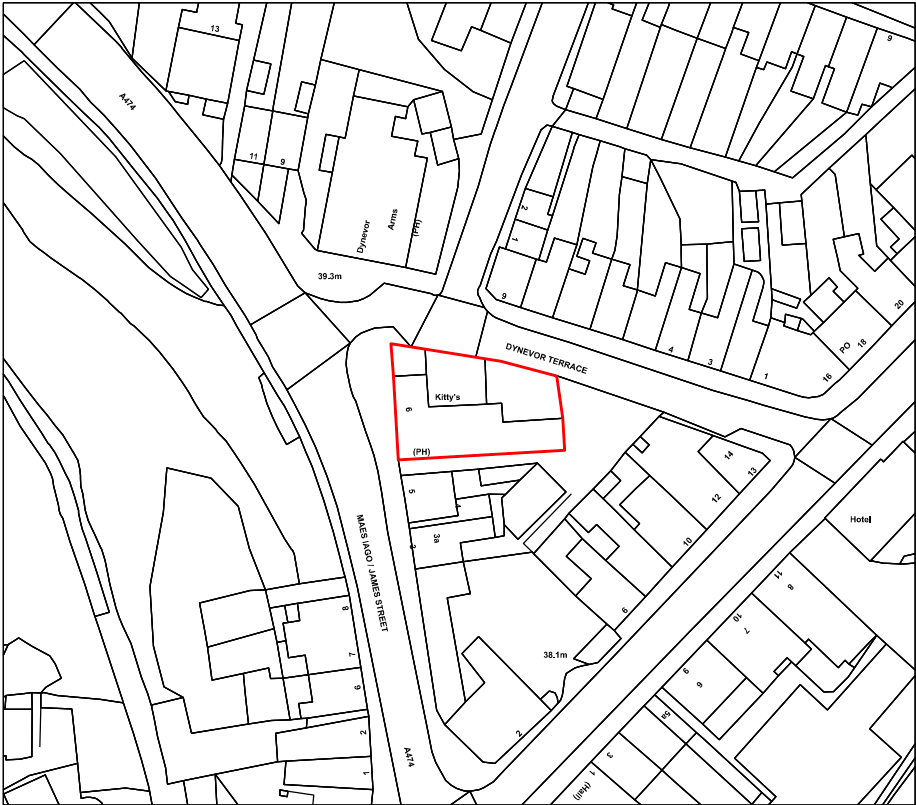


Appendix B - Development Proposals



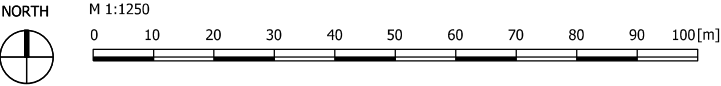
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ReQuestAPlan
Map number: TORQM22098163129739
Title: 6 James Street, Pontardawe, SA8 4LR
Map Produced for: Planning

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Project ID:
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Drawing title
Ordinance Survey Map

date
SEPTEMBER 2023

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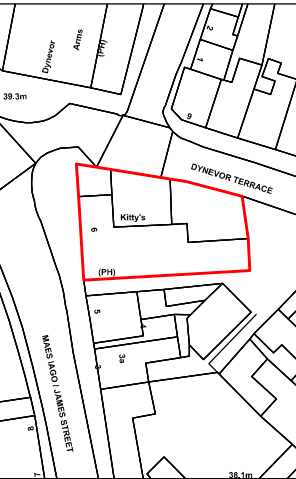
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--- Boundary line - indicative only



FL- Floor Level
SH- Window Sill Level
HH- Window Height
TL - Top Level

⬆️ FL:

Existing floor levels Existing in metres Above Ordnance Datum (m AOD) - tied to OS Datum. The datum reference based on sea level in Newlyn, Cornwall

Prepared by ADS Surveys, Andell House, Highfield Lane, Woodfalle, Salisbury, Wiltshire, SP5 2NG
Issued 23/9/2023

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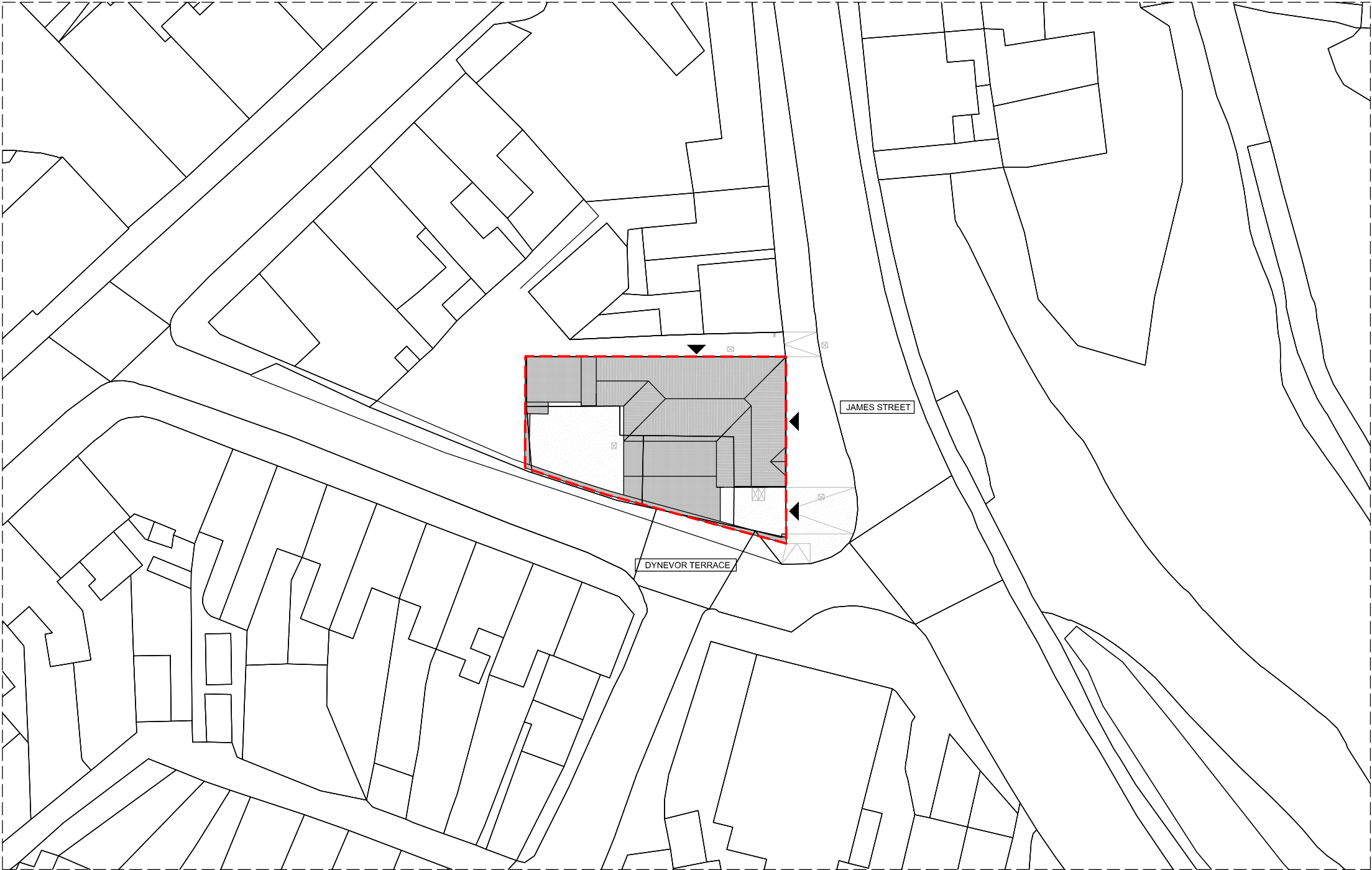
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Drawing title
EXISTING FLOOR PLANS

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drawing number
S-02
sheet no.
2 OF 19



EXISTING SITE PLAN

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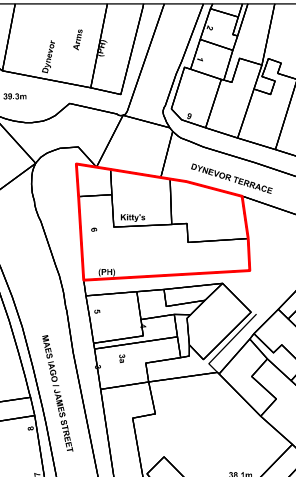




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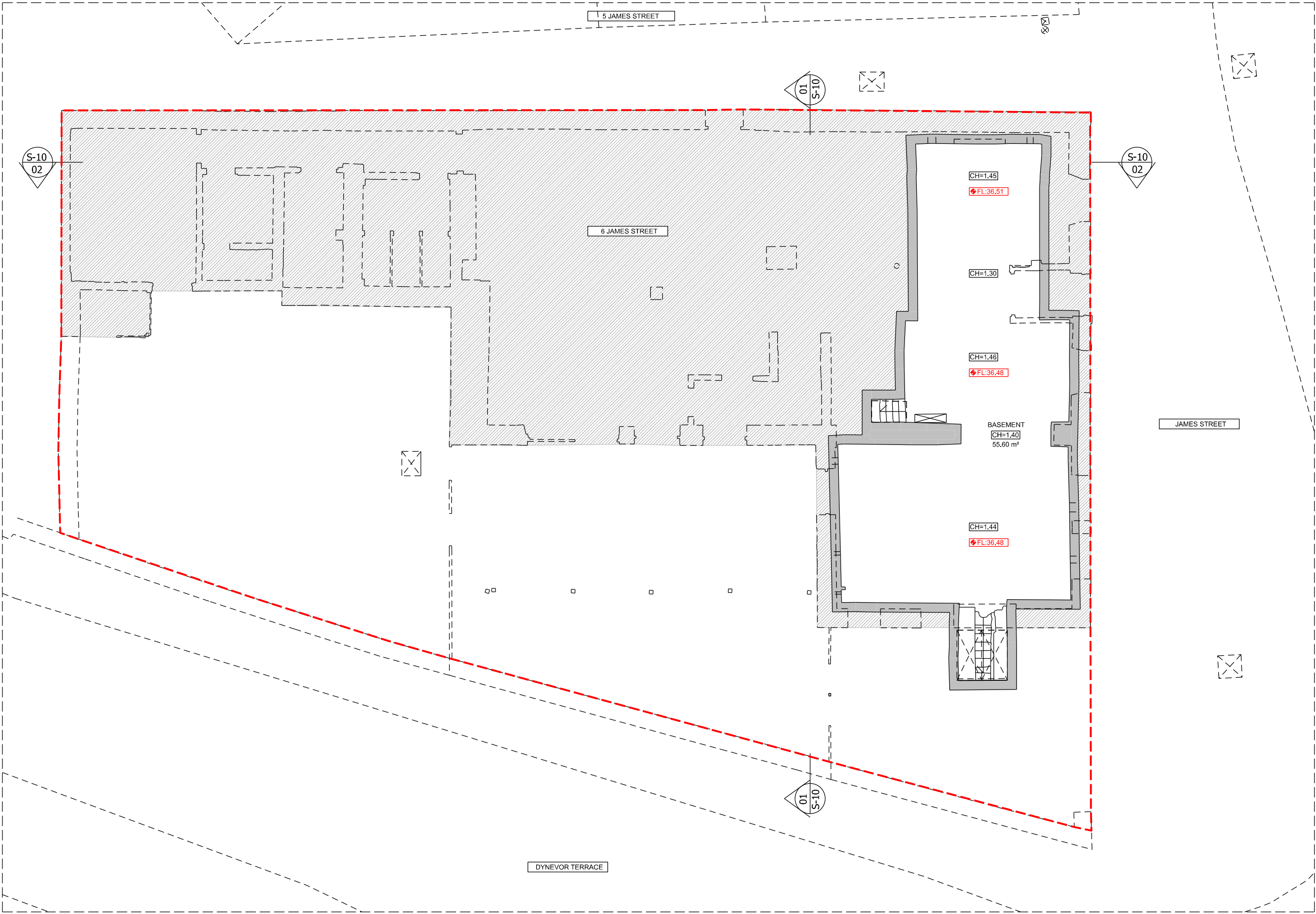
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SEPTEMBER 2023

drawing number
S-03

scale
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sheet no.
3 OF 19



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1:100@A3

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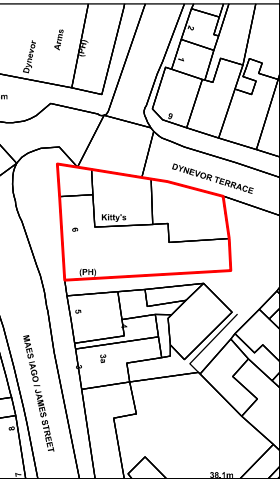
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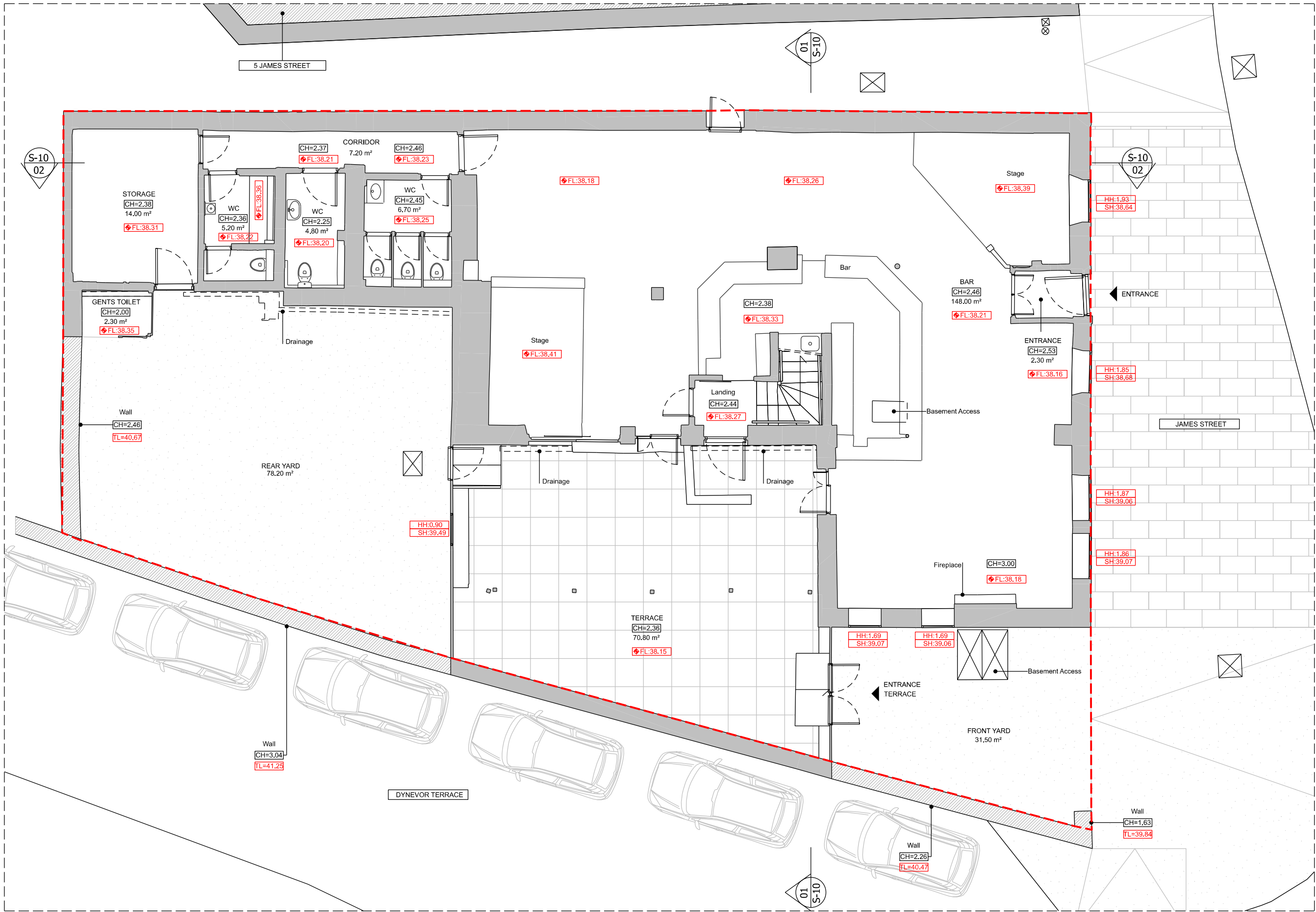
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SEPTEMBER 2023

drawing number
S-04

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4 OF 19



01 EXISTING GROUND FLOOR PLAN
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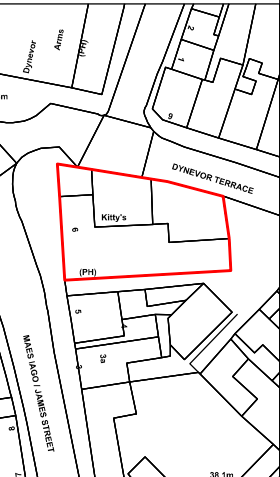




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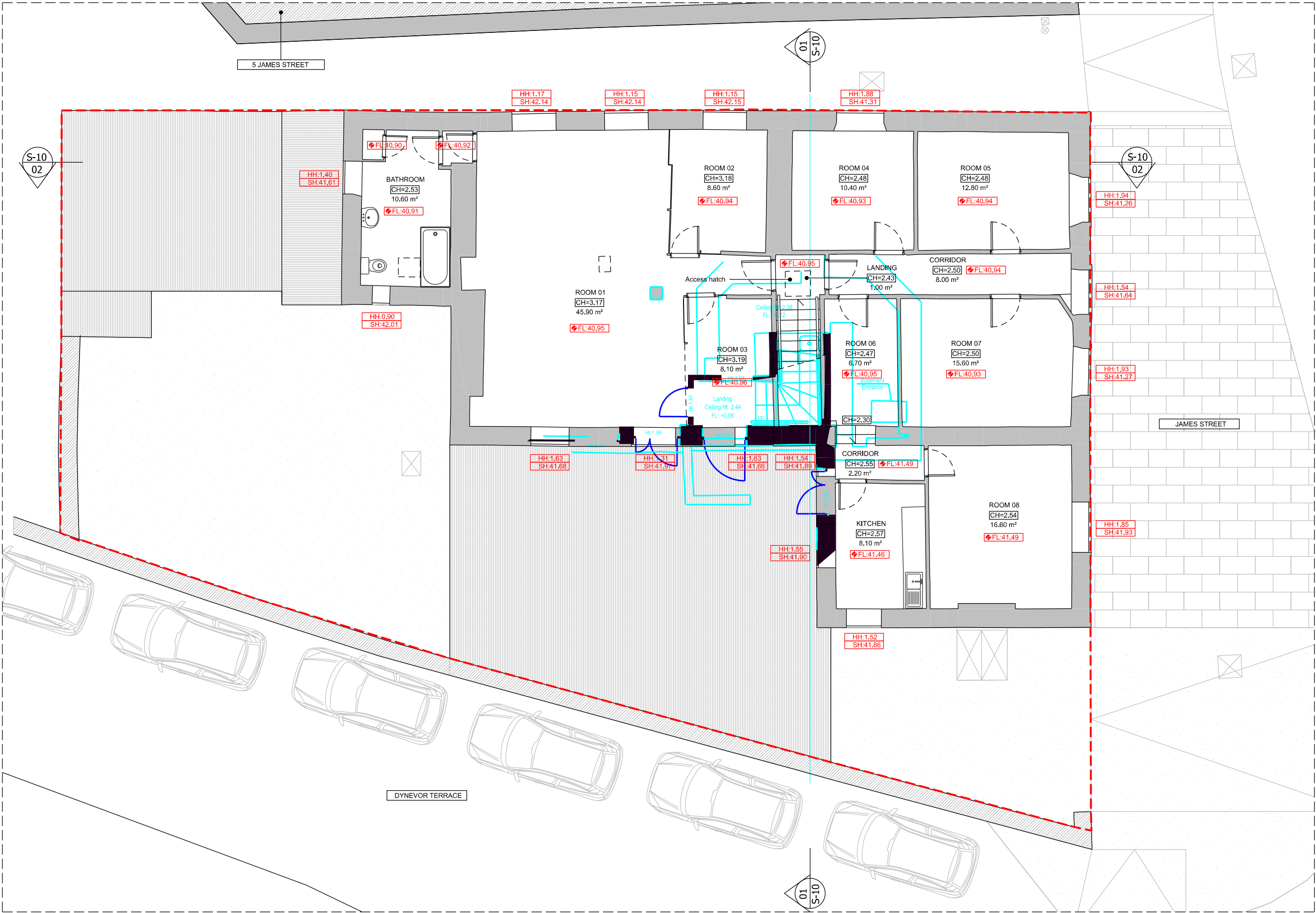
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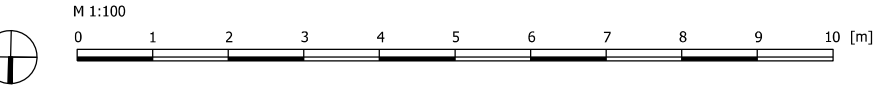
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5 OF 19



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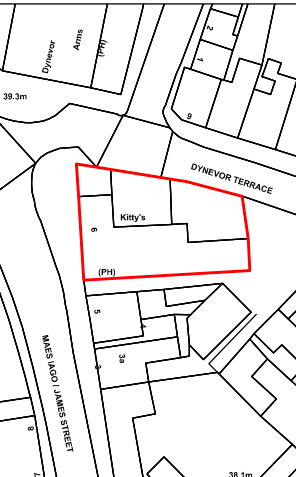




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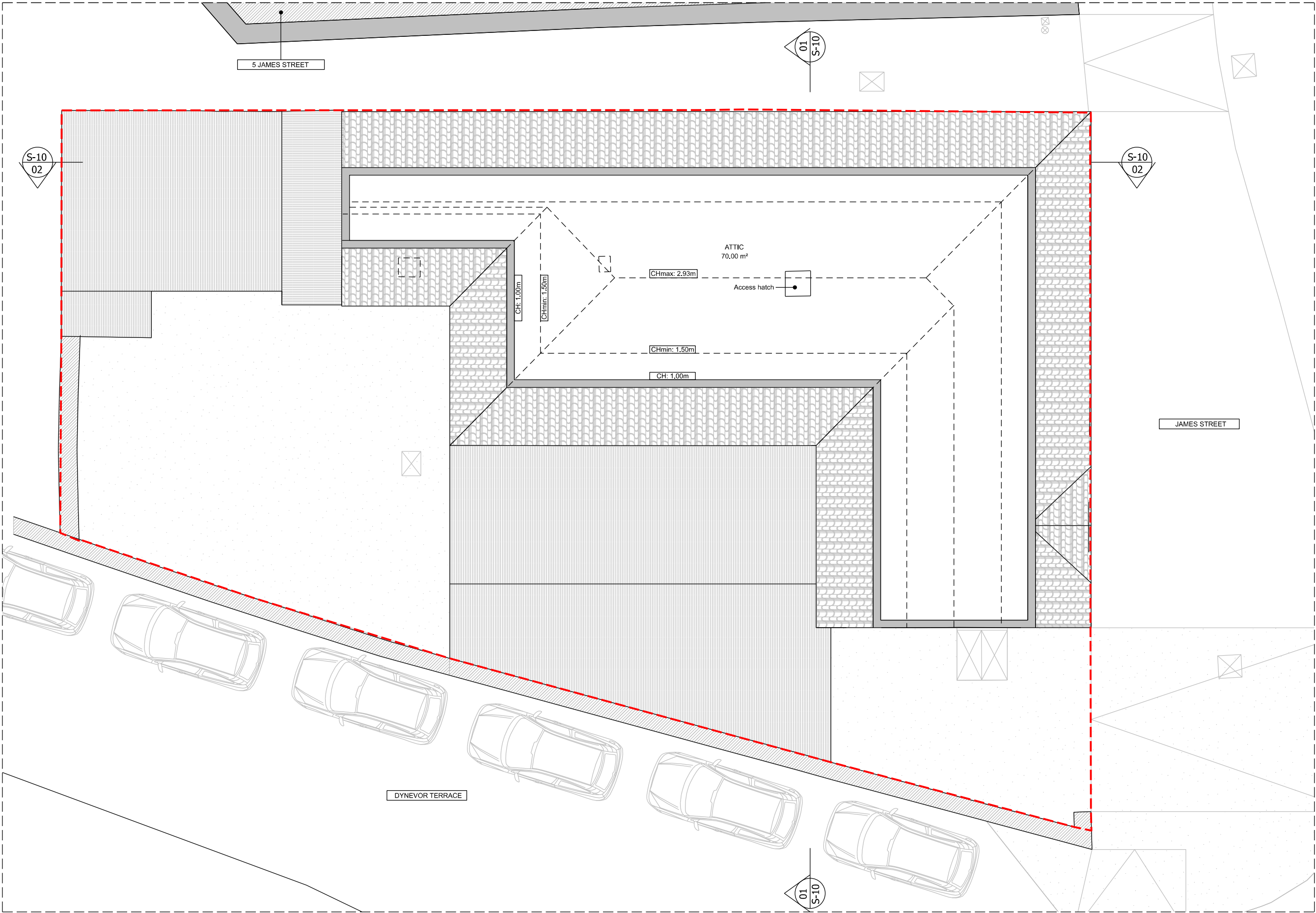
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01 EXISTING ATTIC FLOOR PLAN
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