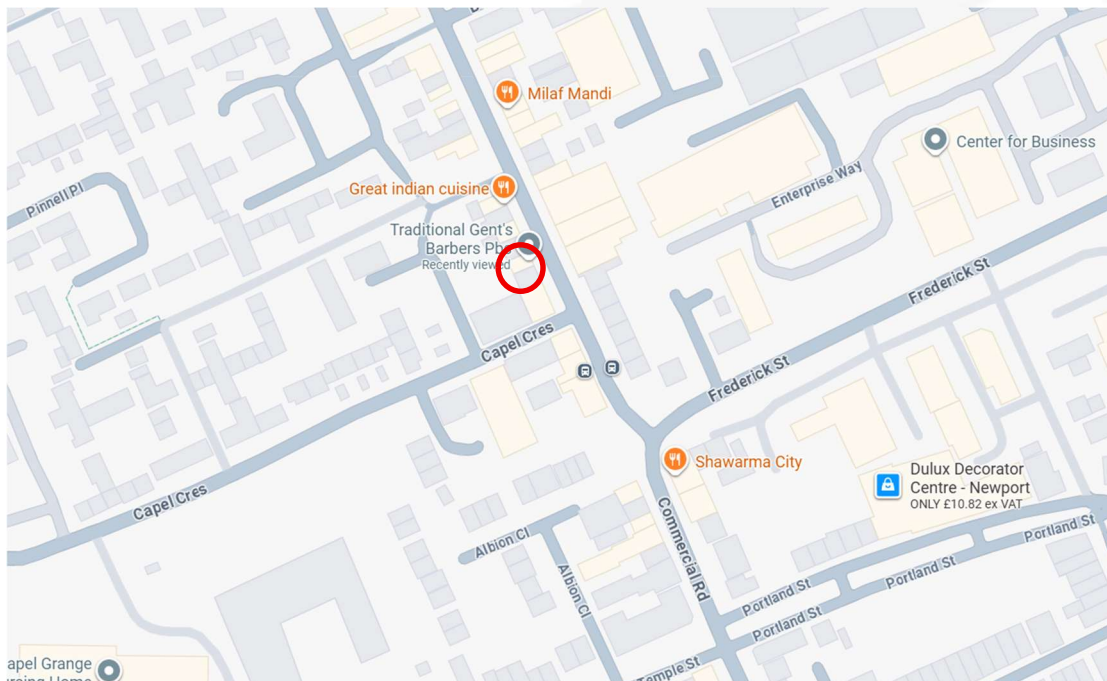


FLOOD CONSEQUENCE ASSESSMENT & DRAINAGE STRATEGY

149 COMMERCIAL ROAD, NEWPORT, NP20 2PJ

FEBRUARY 2026
REPORT REF: FRE-2026-115



Arbtech Consulting Ltd: Co 05678552, VAT GB 903660148.

Head office: Unit 3, Well House Barns, Chester Road, Chester CH4 0DH

arbtech.co.uk
01244 661170

CLIENT: Mrs Shahnaz Khokhar

ENGINEER: Antony Riozzi – Arbtech
Arbtech,
Unit 3,
Well House Barns,
Chester,
CH4 0DH

Tel: Tel: 01244 747080

Email email@arbtech.co.uk

Report Prepared By:



.....
Antony Riozzi, BEng (Hons)

REGISTRATION OF AMENDMENTS

REV	COMMENTS AND ANY CHANGES	PREPARED BY:
First Issue February 2026	For Planning Application	AR

CONTENTS

EXECUTIVE SUMMARY

1. INTRODUCTION
2. SITE DESCRIPTION
3. PLANNING POLICY CONTEXT
4. FLOOD RISK ASSESSMENT
5. FLOOD CONSEQUENCE ASSESSMENT
6. CONCLUSIONS AND RECOMMENDATIONS
7. CONCLUSIONS AND RECOMMENDATIONS
8. APPENDICES
9. REFERENCES

APPENDICES

EXECUTIVE SUMMARY

Flood Risk

This Flood Consequence Assessment has been prepared in accordance with the requirements of Technical Advice Note 15: Development, Flooding and Coastal Erosion (TAN15, March 2025) and Planning Policy Wales (Edition 12). The assessment supports a planning application for the change of use and extension of 149 Commercial Road, Newport, Monmouthshire, NP20 2PJ.

The NRW Flood Map for Planning confirms the site is located within Flood Zone 3 for Sea (tidal risk). The site is not within any flood zone for rivers. The site is not within a TAN15 Defended Zone. The development is classified as redevelopment on previously developed land under TAN15, which affords significantly greater flexibility for changes of use, conversions and extensions. The flood consequence thresholds in TAN15 Sections 11.7 and 11.8 are applied as guidance rather than prescriptive requirements for redevelopment.

The vulnerability of the development to flooding from other sources, including surface water, groundwater, sewers and reservoirs, has been assessed. The NRW Flood Risk Assessment Wales interactive map confirms no recorded flood extents at the site and no reservoir flood risk.

Summary of Flood Risk to the Development

Source	Ground Floor (Shop)	Flats (1st Floor+)	Site Access
Tidal (FZ3 Sea)	Moderate (defended)	Very Low (above flood level)	Moderate
Surface Water (FZ3)	Moderate	Very Low	Moderate
Groundwater	Low	Very Low	Low
Sewerage (Combined)	Moderate	Very Low	Low
Reservoir	Not at risk	Not at risk	Not at risk
Historic Flooding	None recorded	None recorded	None recorded

1.0 INTRODUCTION

1.1 This Flood Consequence Assessment (FCA) and Drainage Strategy has been prepared by Flood Risk and Environmental on behalf of Mrs Shahnaz Khokhar in support of a planning application for the change of use and extension of 149 Commercial Road, Newport, Monmouthshire, NP20 2PJ.

1.2 This report has been prepared in accordance with the requirements of Technical Advice Note 15: Development, Flooding and Coastal Erosion (TAN15, March 2025), Planning Policy Wales (Edition 12, February 2024) and the Welsh Government climate change allowances for flood consequence assessments.

1.3 Reference has been made to the NRW Flood Map for Planning, the NRW Flood Risk Assessment Wales (FRAW) interactive map, NRW modelling reports received under data licence (ATI-29399a), British Geological Survey mapping, and Dwr Cymru Welsh Water sewer records.

1.4 The purpose of this report is to provide relevant information to satisfy the requirements of planning policy with respect to flood risk, to assess the consequences of flooding to the proposed development from all sources, and to present a viable surface water drainage strategy.

1.5 The proposed development constitutes redevelopment of previously developed land as defined by TAN15 and Planning Policy Wales. TAN15 (Section 10) distinguishes between new development (greenfield) and redevelopment (previously developed land), with significantly greater flexibility afforded to redevelopment, changes of use, conversions and extensions. The flood consequence thresholds in TAN15 Sections 11.7 and 11.8 (Figure 5) are applied as guidance rather than prescriptive requirements for such development, recognising that the ability to substantially redesign is limited.

1.6 The assessment has been prepared using best engineering judgement but there are levels of uncertainty implicit in the historical flood data, topographical information and modelling outputs. Reference has been made to the following:

- NRW Flood Map for Planning (Sea, Surface Water)
- NRW Flood Risk Assessment Wales (FRAW) interactive mapping
- NRW Newport Model v8 (October 2021) modelling report
- JBA Caldicot and Wentlooge Coastal VDM (2016) modelling report
- NRW LiDAR data (1m DTM composite)
- British Geological Survey Geology of Britain Viewer
- Dwr Cymru Welsh Water sewer records

- Proposed floor plans (EDEEM Architectural, January 2026)
- Existing floor plans (Redeem Architectural, Drawing R304/01, 2012)

1.7 All comments and opinions contained in this report, including any conclusions, are based on the information available at the time of preparing this report. No responsibility or liability is accepted for any changes that may have occurred since the date of this report, which may affect the validity of the findings.

1.8 This report has been completed for the benefit of Mrs Shahnaz Khokhar and any relevant Statutory Authority which may require reference to this document as part of the planning application determination.

2.0 SITE DESCRIPTION

Site Location and Surroundings

2.1 The site is located on the northern side of Commercial Road in the Pillgwenlly area of Newport, at approximate grid reference ST 3115 8710, approximately 400m south-west of Newport city centre and 500m west of the River Usk. The site is situated within a continuous frontage of mixed-use terraced properties on Commercial Road, with retail and commercial uses at ground floor and residential above.

Site Description

2.2 The site currently comprises an existing two/three-storey terraced building with two retail units at ground floor level, residential accommodation above (first and second floors), and a basement. A car parking area and rear garden are located to the rear (north) of the building. The existing building has a lawful residential use on the upper floors, as evidenced by the 2012 Redeem Architectural drawings (Drawing R304/01) which show an existing kitchen, lounge, landing and bedrooms on the first and second floors.

2.3 The site lies within the administrative boundary of Newport City Council. The Lead Local Flood Authority (LLFA) for the area is Newport City Council. The flood risk authority is Natural Resources Wales (NRW).

Topography

2.4 Site ground levels have been estimated from NRW LiDAR data (1m DTM composite). The area of Pillgwenlly is generally flat and low-lying, situated on the floodplain of the River Usk and the Severn Estuary. Estimated ground levels at the site are approximately 7.0 to 7.5 mAOD, with Commercial Road at approximately 7.5 mAOD. The site is generally level with a very slight fall towards the rear (north).

Geology

2.5 The British Geological Survey (BGS) Geology of Britain Viewer shows the site is underlain by Mercia Mudstone Group (Triassic sedimentary mudstone/siltstone).

2.6 Superficial deposits comprise Tidal Flat Deposits (clay, silt, sand) of Quaternary age, deposited by tidal processes on the floodplain of the River Usk and Severn Estuary. The combination of low-permeability Tidal Flat Deposits overlying Mercia Mudstone bedrock indicates very low permeability ground conditions. Infiltration-based drainage solutions are not viable and have been discounted from the drainage hierarchy.

Hydrology and Hydrogeology

2.7 Given the Tidal Flat Deposits and proximity to the River Usk, groundwater levels may be relatively high. However, the existing building has a basement indicating the site can

accommodate below-ground construction. No recorded incidents of groundwater flooding have been identified.

2.8 The nearest principal watercourse is the River Usk, approximately 500m to the east. The River Usk is tidally influenced at this location and is designated as a Main River managed by Natural Resources Wales. The site is located within the catchment of the Severn Estuary, which has one of the highest tidal ranges in the world.

Existing Drainage

2.9 Dwr Cymru Welsh Water is responsible for the operation and maintenance of the public sewers within the Newport area.

2.10 Dwr Cymru Welsh Water sewer records show a combined public sewer serving Commercial Road. The existing building and hardstanding drain to this combined sewer. No separate surface water drainage system exists.

Reservoir Flood Risk

2.11 The NRW Flood Risk Assessment Wales (FRAW) interactive map confirms that the site is not at risk of reservoir flooding in the event of a dam or reservoir failure.

3.0 PLANNING POLICY CONTEXT

Planning Policy Wales

3.1 Planning Policy Wales (Edition 12, February 2024) sets out the land-use planning policies of the Welsh Government. Section 6.6 addresses flood risk and states that development should be directed away from areas of flood risk wherever possible. Where development in flood risk areas is unavoidable, the consequences of flooding must be acceptable.

Technical Advice Note 15 (TAN15) - March 2025

3.2 Technical Advice Note 15: Development, Flooding and Coastal Erosion (March 2025) provides detailed guidance on development and flood risk in Wales. This TAN came into effect on 31 March 2025 and replaces the previous 2004 version and the withdrawn December 2021 version.

3.3 A fundamental distinction in the 2025 TAN15 is between new development (any development on greenfield land) and redevelopment (any development on previously developed land as defined in PPW). This development is classified as redevelopment. TAN15 affords significantly greater flexibility to redevelopment, changes of use, conversions and extensions, recognising that the ability to substantially redesign such development is limited.

3.4 TAN15 Section 11.7 and 11.8 (Figure 5) provide that for redevelopment, changes of use, conversions and extensions, the flood consequence thresholds are applied as guidance rather than prescriptive requirements. This is a material relaxation compared to the test applied to new greenfield development, where highly vulnerable development in Flood Zone 3 should not be permitted.

Vulnerability Classification

Use	TAN15 Vulnerability	Location
Retail (Shop)	Less Vulnerable	Ground floor
Residential (Flats 1-5)	Highly Vulnerable	First, second and loft floors
Cycle/Refuse Storage	Less Vulnerable	Ground floor

3.5 The site is located in Flood Zone 3 (Sea) and is not within a TAN15 Defended Zone. For new development on greenfield land, TAN15 would not permit highly vulnerable development in this zone. However, as this is redevelopment of previously developed land involving a change of use, conversion and minor extension, the more flexible approach under Sections 11.7 and 11.8 applies.

3.6 The following material considerations further support the acceptability of this development:

- The site has an existing lawful residential use on the upper floors. The proposals represent an intensification of an existing use, not the introduction of a new vulnerable use.

- The site is previously developed land within the established urban area of Pillgwenlly, contributing to housing delivery within a sustainable settlement.
- All residential accommodation is at first floor and above. No sleeping accommodation is provided at ground floor level. The ground floor is retained as a less vulnerable commercial use.
- The consequences of flooding are demonstrated to be manageable and acceptable, as set out in Section 5.

Climate Change Allowances

3.7 The Welsh Government climate change allowances for flood consequence assessments (September 2021) set out the allowances to be applied to account for the effects of climate change over the development lifetime. For residential development with a 100-year lifetime, the assessment must consider sea level rise to the year 2121. The NRW Newport Model v8 applies FCDPAG3 climate change allowances of +0.76m (2096 epoch) and +1.12m (2121 epoch).

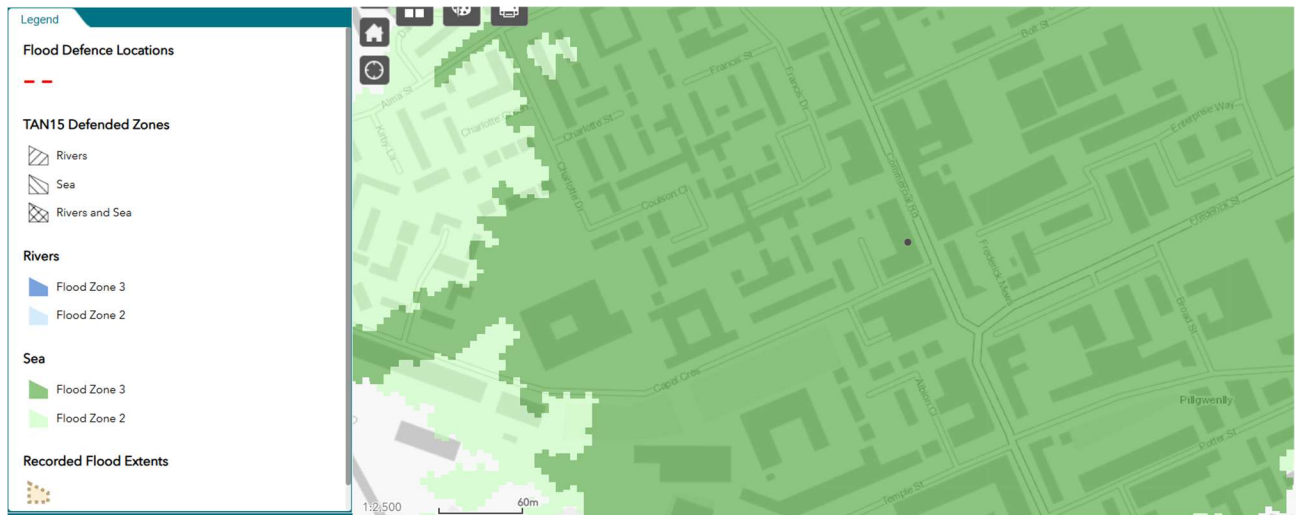
Newport Local Development Plan

3.8 The Newport Local Development Plan (Adopted January 2015) includes Policy SP3 (Flood Risk) stating that development will not be permitted in areas of flood risk unless the consequences of flooding can be managed to an acceptable level, and Policy GP1 requiring adequate provision for surface water drainage.

4.0 FLOOD RISK ASSESSMENT

Tidal Flood Risk

4.1 The site is within NRW Flood Zone 3 for Sea on the Flood Map for Planning. The site is not within any flood zone for rivers. The source of flood risk is exclusively tidal flooding from the Severn Estuary, propagating via the River Usk.



4.2 The NRW Newport Model v8 (October 2021), an ESTRY/TUFLOW model with QMED fluvial inflows and varying tidal return periods, confirms that tidal risk is the governing mechanism. The model indicates that in the defended present-day (2021) scenario, tidal flooding from the Severn Estuary propagating via the River Usk is largely contained within the river channels up to the 1 in 30-year tidal event. Defences along the west bank of the River Usk provide significant protection. The Flood Zone 3 designation on the Flood Map for Planning is driven by the undefended scenario as required by TAN15.

4.3 With FCDPAG3 climate change allowances applied (+0.76m for 2096, +1.12m for 2121), the 1 in 200-year defended flood extent increases significantly. By the 2096 epoch, the existing Crindau defences no longer provide a 1 in 200-year standard of protection, and flooding extends into parts of Pillgwenlly on the west bank.

Estimated Flood Levels at Site

4.4 The following flood levels have been estimated from the NRW Newport Model v8 summary report and NRW published flood mapping. Ground levels are from NRW LiDAR data.

Scenario	Level (mAOD)	Ground (mAOD)	Depth (m)	Source
1 in 200yr Defended (2021)	~7.80	~7.50	~0.30	Newport v8
1 in 200yr Def + CC (2096)	~8.56	~7.50	~1.06	Newport v8
1 in 200yr Def + CC (2121)	~8.92	~7.50	~1.42	Newport v8
1 in 1000yr Undefended	~9.20	~7.50	~1.70	FMfP

Surface Water Flood Risk

4.5 The site is within NRW Flood Zone 3 for surface water. This is consistent with the low-lying, flat topography and the combined sewer system which can become surcharged during intense rainfall. The proposed development will not materially increase the impermeable area of the site.



Groundwater Flood Risk

4.6 Given the Tidal Flat Deposits and proximity to the River Usk, groundwater levels may be relatively high. No recorded incidents of groundwater flooding have been identified. The risk is considered low and no basement structures are proposed.

Sewer Flood Risk

4.7 The site is served by a Dwr Cymru Welsh Water combined sewer. Combined sewers are susceptible to surcharging during intense rainfall. The risk of sewer flooding is considered moderate. The drainage strategy will not increase the rate or volume of discharge to the combined sewer.

Reservoir Flood Risk

4.8 The NRW Flood Risk Assessment Wales (FRAW) interactive map confirms that the site is not at risk of reservoir flooding.

Historic Flooding

4.9 The NRW Flood Risk Assessment Wales interactive map confirms that there are no recorded flood extents affecting the site. The Pillgwenlly area has a documented history of tidal flooding, most notably the 1607 flood event. However, no site-specific records of

flooding at 149 Commercial Road have been identified from NRW data or publicly available sources.

5.0 FLOOD CONSEQUENCE ASSESSMENT

TAN15 Compliance - Redevelopment on Previously Developed Land

5.1 As established in Section 3, this development is classified as redevelopment under TAN15 (Section 10). The 2025 TAN15 explicitly recognises that appropriate redevelopment and regeneration activities are not incompatible with the overarching principles of the TAN. For redevelopment, changes of use, conversions and extensions, TAN15 Sections 11.7 and 11.8 provide that the flood consequence thresholds (Figure 5) are applied as guidance rather than prescriptive requirements.

5.2 This development falls squarely within this flexible category, being a change of use and conversion of an existing building with a minor rear extension on previously developed land. It is not necessary to satisfy the stricter justification test that applies to new highly vulnerable development on greenfield land in Flood Zone 3.

Consequences of Flooding

Ground Floor (Shop, Cycle/Refuse Storage) - Less Vulnerable

5.3 The ground floor is retained as a retail unit (less vulnerable). In the 1 in 200-year defended present-day event, the ground floor could experience flood depths of approximately 0.30m, increasing to approximately 1.06m in the 2096 climate change scenario and 1.42m in the 2121 scenario. The consequences of ground floor flooding are manageable. The retail use can tolerate temporary flooding, and flood resilience and resistance measures are recommended (Section 5.5).

First Floor and Above (Flats 1-5) - Highly Vulnerable

5.4 All residential accommodation is at first floor level and above. Based on typical floor-to-floor heights for Victorian/Edwardian terraced commercial properties (approximately 3.0 to 3.5m from ground to first floor), the first floor level is estimated at approximately 10.0 to 11.0 mAOD. This is significantly above the estimated 1 in 1000-year undefended flood level of approximately 9.20 mAOD, providing a freeboard of approximately 0.8 to 1.8m. Even under the most extreme climate change scenario (1 in 200-year + CC to 2121, approximately 8.92 mAOD), the residential accommodation would remain dry with a freeboard exceeding 1.0m.

Flood Resilience and Resistance Measures

5.5 The following measures are recommended for the ground floor:

- Flood-resistant construction to ground floor walls using water-resistant materials (concrete block, closed-cell insulation, cement render) to at least 1.5m above ground floor level

- Electrical sockets, consumer units and utility meters raised to at least 1.5m above ground floor level
- Non-return valves fitted to all ground floor drainage connections to prevent sewer surcharging
- Demountable flood barriers available for deployment at ground floor door openings
- Registration with the NRW Flood Warning Service for the River Usk at Newport

Access and Egress

5.6 During a flood event, Commercial Road may be affected by tidal or surface water flooding. In the 1 in 200-year defended present-day scenario, depths on Commercial Road are estimated to be shallow (approximately 0.30m). In climate change scenarios, depths may increase to 1.0 to 1.4m. However, residents would be able to shelter in place at first floor level and above, where they would remain safe and dry. The building has an existing internal staircase providing access between all floors. The site is within the NRW Flood Warning Service area for the River Usk at Newport, providing advance warning of tidal flood events.

Flood Warning and Evacuation

5.7 A Flood Warning and Evacuation Plan should be prepared and maintained. The plan should include NRW Flood Warning Service details, actions upon receipt of warnings, emergency contacts, and evacuation procedures. All residents should receive a copy upon taking occupation.

6.0 DRAINAGE STRATEGY

Drainage Hierarchy

6.1 The drainage hierarchy has been assessed in accordance with TAN15 and the Statutory National Standards for SuDS (Wales):

- Priority 1 - Infiltration to Ground: Not viable. Tidal Flat Deposits (clay/silt) over Mercia Mudstone. Very low permeability. Discounted.
- Priority 2 - Discharge to Surface Water Body: Not viable. No watercourses within or adjacent to the site. River Usk is approximately 500m east.
- Priority 3 - Discharge to Surface Water Sewer: Not available. No separate surface water sewer serves the site.
- Priority 4 - Discharge to Combined Sewer: Proposed. Surface water will discharge to the existing Dwr Cymru Welsh Water combined sewer, consistent with existing drainage arrangements.

Proposed Surface Water Drainage

6.2 The proposed rear extension (19.05 square metres) will be served by a SuDSpod rainwater downpipe treatment and attenuation unit. The SuDSpod has been modelled in Flow+ v16.0 (Causeway Technologies) as a tank with multiple orifice controls providing staged attenuation of surface water runoff from the extension roof area prior to restricted discharge to the combined sewer.

SuDSpod Design Parameters

- Catchment area: 0.002 ha (20 square metres roof area from rear extension)
- Storage volume: 0.4 square metres tank, porosity 0.80
- Control: 4 No. orifice controls (8 to 9mm diameter) with flap valves, providing staged attenuation
- Overflow: Weir control (320mm width) at 0.87m depth
- Rainfall methodology: FEH-22
- Climate change: +40% on the 1 in 100-year rainfall event
- Time of entry: 5 minutes

SuDSpod Simulation Results

6.3 The following results confirm that the SuDSpod provides adequate attenuation for all design events with no flooding:

Return Period	Critical Storm	Peak Depth (m)	Stored Vol (m3)	Status
1 in 1 year	120 min winter	0.101	0.032	OK - No flooding
1 in 30 year	60 min winter	0.337	0.108	OK - No flooding
1 in 100yr + 40% CC	60 min winter	0.580	0.186	OK - No flooding

6.4 The SuDSpod attenuates peak flows from the extension roof area with no surface flooding for all tested return periods up to and including the 1 in 100-year event plus 40% climate change allowance. The maximum stored volume is 0.186 cubic metres (100yr+CC), which is within the available storage capacity. The half-drain time of 37 minutes confirms satisfactory drawdown between storm events.

Existing Building Drainage

6.5 The remainder of the site (existing building roof and hardstanding) will continue to drain as existing to the combined sewer. There is no change in the impermeable area or drainage arrangements for the existing building, and therefore no change in the rate or volume of surface water discharge.

Foul Water Drainage

6.6 Foul water from the 5 residential flats and ground floor retail unit will discharge to the existing Dwr Cymru Welsh Water combined sewer via the existing connection.

SAB Approval

6.7 Under Schedule 3 of the Flood and Water Management Act 2010 (as implemented in Wales from 7 January 2019), SAB approval is required for new developments of more than 1 dwelling or where the construction area is 100 square metres or more. The proposed rear extension has a construction area of 19.05 square metres, which is below the 100 square metres threshold. The change of use and internal conversion works do not constitute construction work with drainage implications that would trigger the SAB requirement. SAB approval is therefore not required for this development.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

7.1 The site is in NRW Flood Zone 3 for Sea, and Flood Zone 3 for surface water. The dominant source of flood risk is tidal flooding from the Severn Estuary via the River Usk.

7.2 The development is classified as redevelopment on previously developed land under TAN15 (March 2025). TAN15 affords significantly greater flexibility to redevelopment, changes of use, conversions and extensions, with the flood consequence thresholds applied as guidance rather than prescriptive requirements.

7.3 The site has an existing lawful residential use on the upper floors. The proposals represent an intensification of an existing use, not the introduction of a new vulnerable use.

7.4 All residential accommodation (Flats 1 to 5) is at first floor and above, well above the estimated 1 in 1000-year flood level. Even under the most extreme climate change scenario, the residential accommodation would remain dry with over 1.0m freeboard.

7.5 The ground floor retail use is less vulnerable and can tolerate temporary flooding. Flood resilience and resistance measures are recommended.

7.6 The NRW FRAW map confirms no recorded flood extents at the site and no reservoir flood risk.

7.7 Surface water from the rear extension (19.05 square metres) will be attenuated via a SuDSpod unit with restricted discharge to the combined sewer. Flow+ modelling confirms no flooding for all events up to 1 in 100yr + 40% CC.

7.8 SAB approval is not required as the construction area (19.05 square metres) is below the 100 square metres threshold.

7.9 The consequences of flooding are acceptable and manageable. The development will not increase flood risk elsewhere.

Recommendations

7.10 Implement the flood resilience and resistance measures set out in Section 5.5.

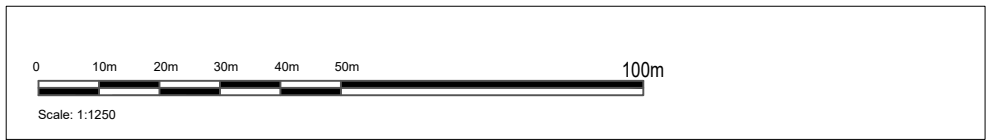
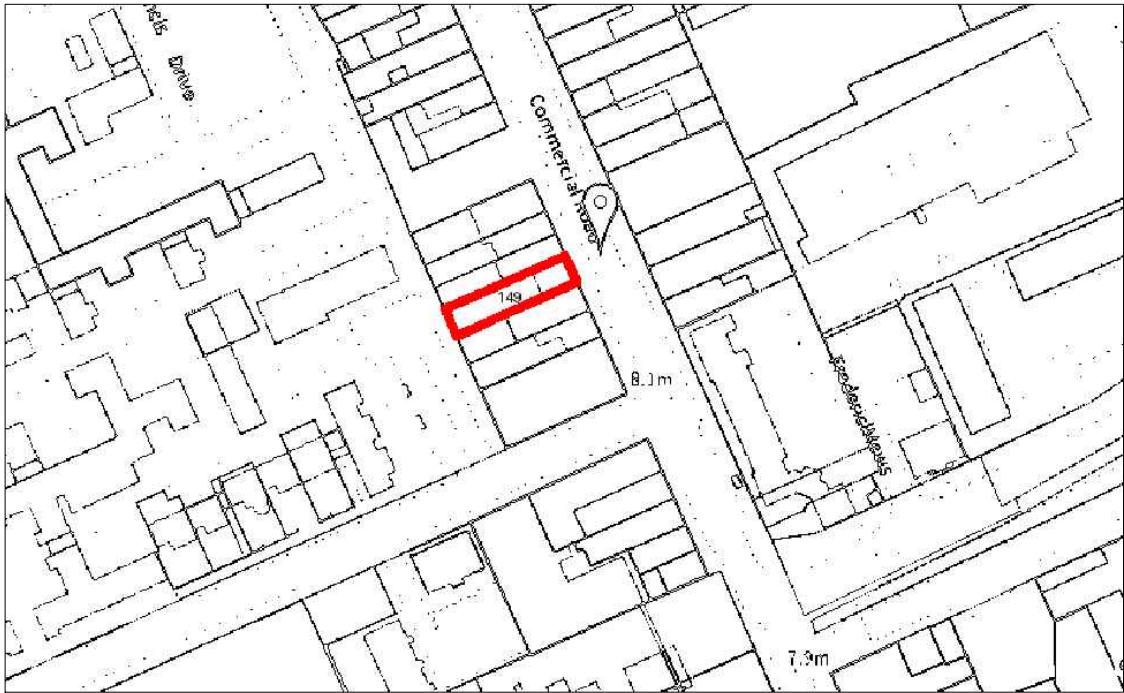
7.11 Prepare and maintain a Flood Warning and Evacuation Plan. Register with the NRW Flood Warning Service.

7.12 Install non-return valves on all ground floor drainage connections.

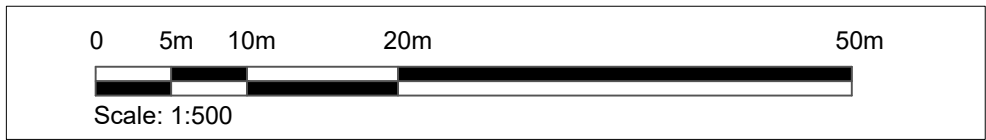
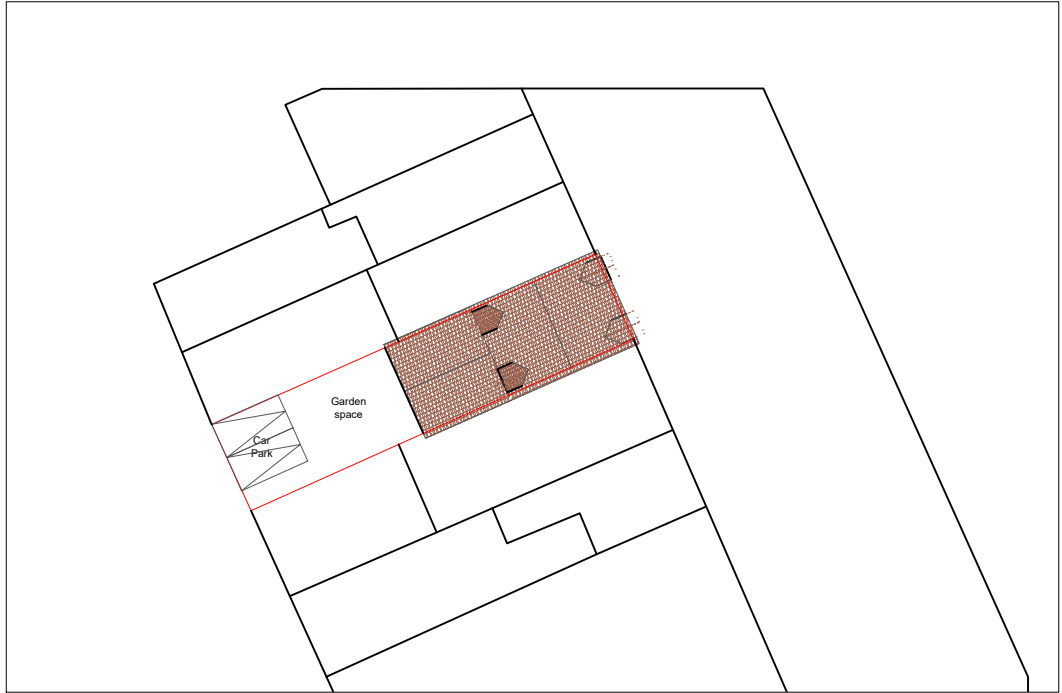
7.13 Install the SuDSpod unit as detailed in the drainage strategy and Flow+ calculations (Appendix C).

APPENDICES

- Appendix A: Site Plans



1 LOCATION PLAN
A101 SCALE: 1:1250



2 PROPOSED BLOCK PLAN
A101 SCALE: 1:500

NOTES

Owner

Mrs Shahnaz

Project Address

**149 Commercial Road,
Newport,
NP20 2PJ**

Project No. **MRS. SHAHNAZ**

Status **PLANNING APPLICATION**

Date **JAN 2026**

Drawn **KM**

Checked **RS**

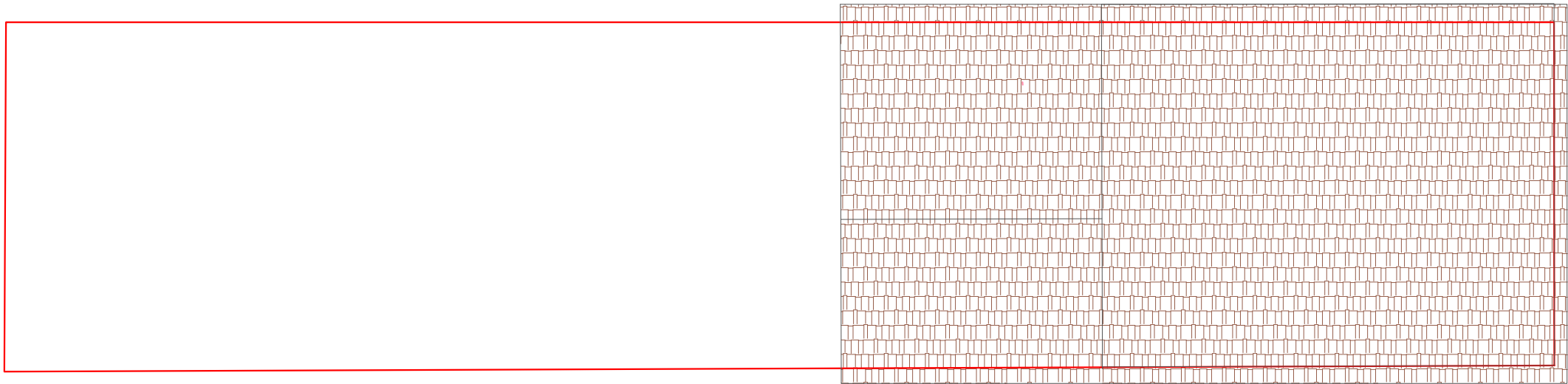
Scale **@ A3**

Sheet Title

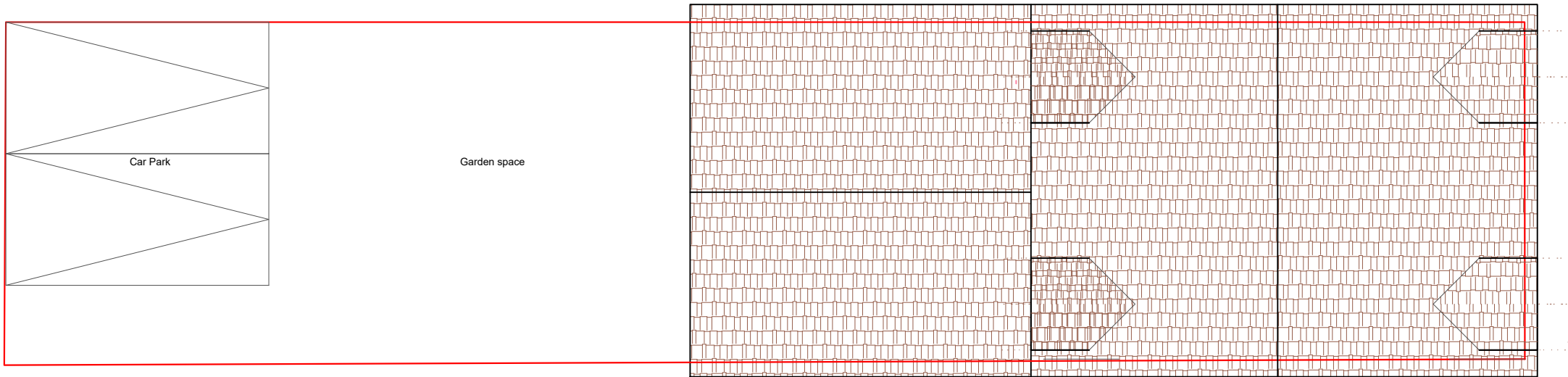
**LOCATION & BLOCK
PLAN**

Sheet No

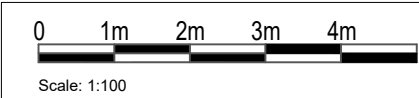
A101



1 EXISTING SITE PLAN
A102 SCALE: 1:100



2 PROPOSED SITE PLAN
A102 SCALE: 1:100



Owner

Mrs Shahnaz

Project Address

149 Commercial Road,
Newport,
NP20 2PJ

Project No. MRS. SHAHNAZ

Status PLANNING APPLICATION

Date JAN 2026

Drawn KM

Checked RS

Scale @ A3

Sheet Title

EXISTING & PROPOSED
SITE PLAN

Sheet No

A102

Owner

Mrs Shahnaz

Project Address

149 Commercial Road,
Newport.
NP20 2PJ

Project No. MRS. SHAHNAZ

Status: PLANNING APPLICATION

Date: JAN 2026

Drawn: KM

Checked: RS

Scale: @ A3

Sheet Title

PROPOSED FLOOR
PLANS

Sheet No

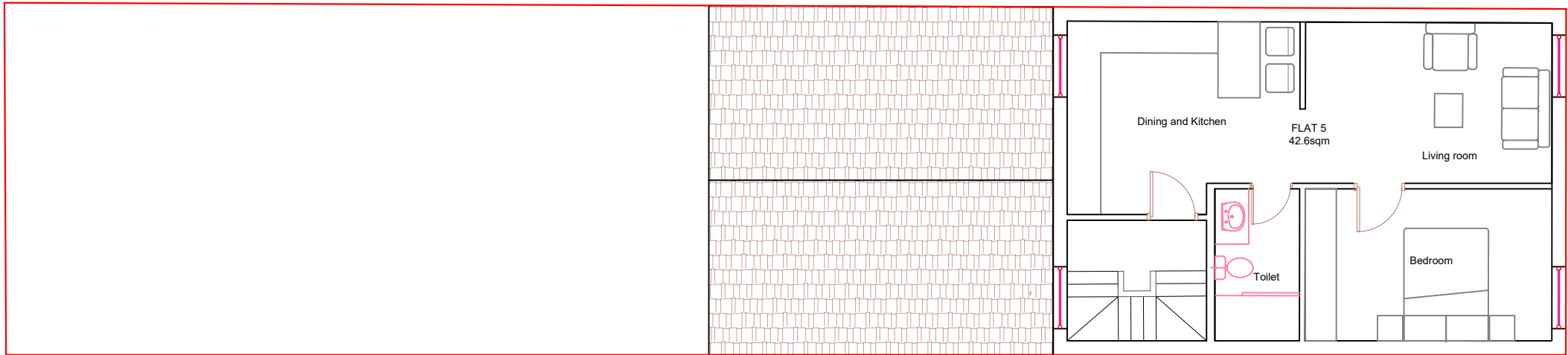
A103.1



3
A103

PROPOSED SECOND FLOOR PLAN

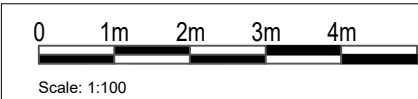
SCALE: 1:100

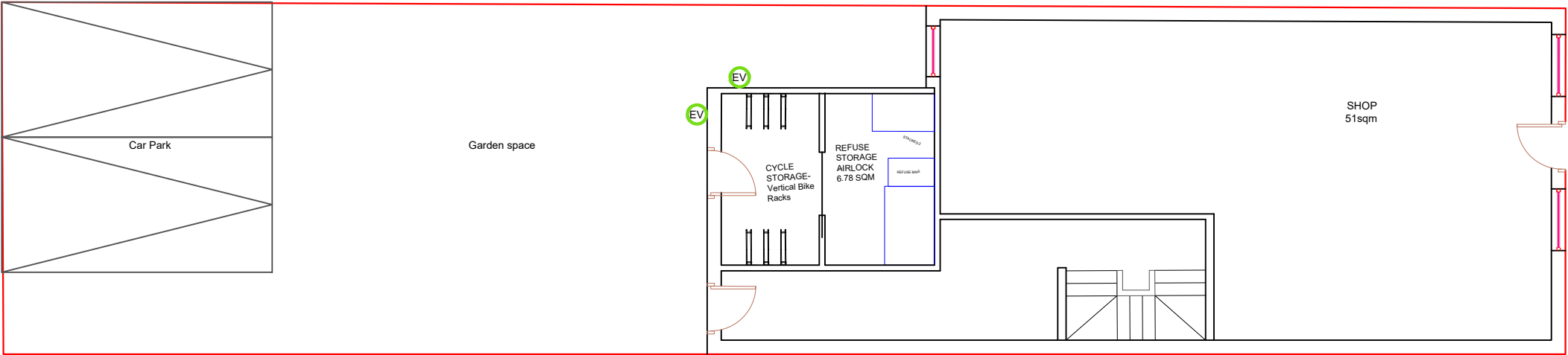


4
A103

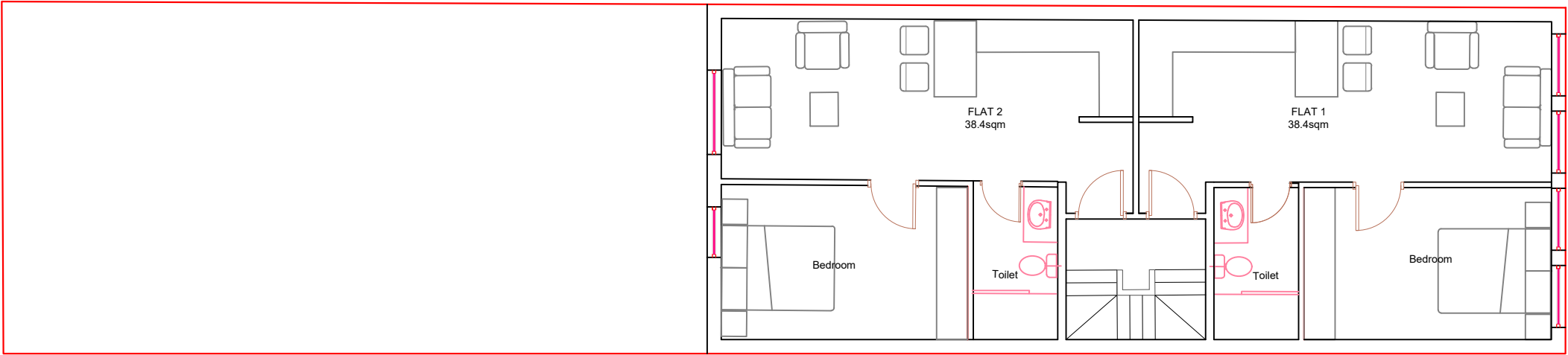
PROPOSED LOFT PLAN

SCALE: 1:100

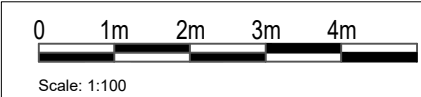




1 PROPOSED GROUND FLOOR PLAN
A103 SCALE: 1:100



2 PROPOSED FIRST FLOOR PLAN
A103 SCALE: 1:100



Owner

Mrs Shahnaz

Project Address

**149 Commercial Road,
Newport,
NP20 2PJ**

Project No. **MRS. SHAHNAZ**

Status **PLANNING APPLICATION**

Date **JAN 2026**

Drawn **KM**

Checked **RS**

Scale **@ A3**

Sheet Title

**PROPOSED FLOOR
PLANS**

Sheet No

A103

- Appendix B: Dwr Cymru Welsh Water Sewer Records

149 Commercial Road, Newport,
Monmouthshire, NP20 2PJ



LEGEND(Representative of most common features)

Waste networks:		
Foul chamber	VC 6 IN.	Outfall
Surface water chamber	VC 100 mm.	Lamp hole
Combined chamber	VC 150 mm.	Storm Overflow
Combined sewer overflow	VC 225 mm.	Rising main
Special purpose chamber	VC 300 mm.	Gravity sewer
Treatment works	VC 36 x 20 IN.	Private sewer
Pumping station	VC 450 mm.	Private sewer subject to Sect. 104 adoption agreement
	VC 600 mm.	Private Sewer Transfer
	VC 900 mm.	Lateral Drain
	VC 1200 mm.	Inspection Chamber

NB: Sewer symbol colour indicates the type:
 RED - Combined
 GREEN - Surface Water
 BROWN - Foul
 Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

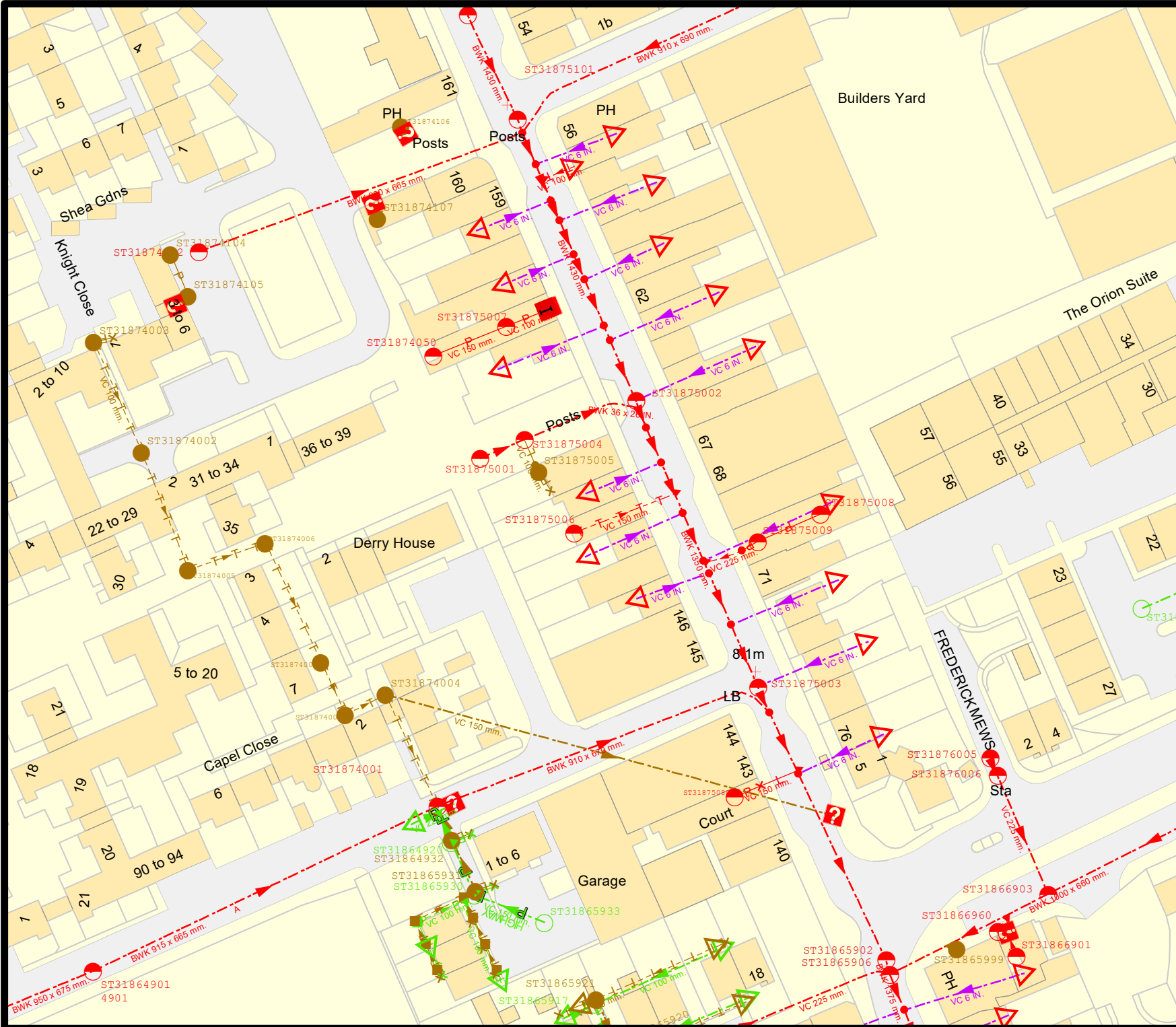
Dŵr Cymru Cympany (The Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and no warranty as to its correctness is made in the event of excavations or other works made in the vicinity of the Company's apparatus. The user of this information is advised to carry out any excavations made with care. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 105 and 106 of the Water Industry Act 1991 which in turn gives the user the right to rely on the information. The Company does not accept any liability for any loss or damage arising from the use of this information. It is the user's responsibility to ensure that the information is used in accordance with the relevant legislation and that the information is used in accordance with the relevant legislation and that the information is used in accordance with the relevant legislation.

Service pipes are not generally shown but their presence should be anticipated.

**EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.**

Reproduced by permission of the Ordnance Survey on behalf of
HMSSO. © Crown copyright and database right 2017.
All rights reserved.
Ordnance Survey Licence number 100019534

Map Ref: 331524,187063
 Map scale: 1:1000
 Printed by: Cecile Leston
 Printed on: 14 Jan 2026



- Appendix C: SuDSpod Flow+ Attenuation Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	5.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)	Notes
Depth/Area 1	0.002	5.00	100.000	Junction	-6.344	59.306	0.830	99.170	Auto-design is off

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.170	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.330	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.008		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.470	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Orifice Control

Flap Valve	x	Invert Level (m)	99.630	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.009		

Node Depth/Area 1 Online Weir Control

Flap Valve	x	Invert Level (m)	99.870	Discharge Coefficient	0.590
Replaces Downstream Link	✓	Width (m)	0.320		

Node Depth/Area 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	99.170
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.80	Time to half empty (mins)	37

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.4	0.0	0.830	0.4	0.0	0.831	0.0	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	Depth/Area 1	76	99.271	0.101	0.1	0.0322	0.0000	OK

Link Event (Velocity)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)
120 minute winter	Depth/Area 1	Orifice	0.0	0.1
120 minute winter	Depth/Area 1	Orifice	0.0	0.0
120 minute winter	Depth/Area 1	Orifice	0.0	0.0
120 minute winter	Depth/Area 1	Orifice	0.0	0.0
120 minute winter	Depth/Area 1	Weir	0.0	0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	Depth/Area 1	44	99.507	0.337	0.4	0.1078	0.0000	OK

Link Event (Velocity)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute winter	Depth/Area 1	Orifice	0.1	0.4
60 minute winter	Depth/Area 1	Orifice	0.1	0.1
60 minute winter	Depth/Area 1	Orifice	0.0	0.0
60 minute winter	Depth/Area 1	Orifice	0.0	0.0
60 minute winter	Depth/Area 1	Weir	0.0	0.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	Depth/Area 1	43	99.750	0.580	0.7	0.1857	0.0000	OK

Link Event (Velocity)	US Node	Link	Outflow (l/s)	Discharge Vol (m ³)
60 minute winter	Depth/Area 1	Orifice	0.1	0.6
60 minute winter	Depth/Area 1	Orifice	0.1	0.2
60 minute winter	Depth/Area 1	Orifice	0.1	0.2
60 minute winter	Depth/Area 1	Orifice	0.1	0.1
60 minute winter	Depth/Area 1	Weir	0.0	0.0