



degadea
water, civils and environment

Flood Risk Assessment AEG9895_BN11_Worthing_01

Site Address: 8-9 South Street
Worthing
West Sussex
BN11 3AL

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

degadea
water, civils and environment

Document Issue Record

Project: Flood Risk Assessment

Prepared for: Alex Coombes

Reference: AEG9895_BN11_Worthing_01

Site Location: 8-9 South Street, Worthing, West Sussex, BN11 3AL

Issue	Date	Author	Check	Auth.	Comments
1	28/01/2026	Mace Latham	DMC	OH	First issue
2	28/01/2026	Mace Latham			Client Comments
3	11/02/2026	Mace Latham			WSP Comments regarding access / egress arrangements for pluvial scenarios.

Please Note:

This report has been prepared for the exclusive use of the commissioning party and may not be reproduced without prior written permission from Aegaea Limited. All work has been carried out within the terms of the brief using all reasonable skill, care, and diligence. No liability is accepted by Aegaea Limited for the accuracy of data or opinions provided by others in the preparation of this report, or for any use of this report other than for the purpose for which it was produced. Where reference has been made to probability events, or risk probability, it does not ensure that there is no risk or that there is no residual risk from an extreme, unlikely or unforeseen flood event over the lifetime of the development.

Table of Contents

Summary	1
1. Introduction.....	4
Site Overview.....	4
Planning Policy and Guidance.....	7
2. Planning Policy.....	8
National Planning Policy Framework (NPPF).....	8
Local Plan.....	11
Sequential and Exception Tests.....	12
Summary.....	13
3. EA Data and Document Review	14
EA Consultation.....	14
Documents and Online Mapping.....	14
4. Sources of Flood Risk.....	17
Tidal	17
Fluvial.....	20
Canals	21
Pluvial.....	21
Reservoirs.....	25
Groundwater.....	26
Sewers.....	27
5. Flood Risk Mitigation	28
All Analysed Sources of Flooding	28
Increase to Flood Risk Elsewhere.....	28
Access / Egress.....	28

6. Conclusions.....33

Appendix A - Development Proposals.....34

Appendix B - EA Consultation35

Summary

Development Description	Existing	Proposed
Development Type	The existing property consists of food sales across all floors (Class Eb).	The proposals include the change of use of the first and second floors to two residential units (Use Class C3) along with the reconfiguration of the shop front, window replacement to front elevation, window replacement and creation of new windows to rear elevation and rooftop photovoltaic panels.
EA Vulnerability Classification	Less Vulnerable (all floors)	Ground Floor is to remain as per existing (Less Vulnerable). First and Second Floors are to be More Vulnerable.
Ground Levels	<p>The topographic survey provided (Appendix A) shows the ground elevation of the site varies between approximately 9.85m to the northeast and 9.95m to the southwest. However, the datum is not known at this time.</p> <p>The EA LiDAR data shows ground elevation of the site varies between approximately 4.51m AOD (metres Above Ordnance Datum) and 4.63m AOD.</p>	<p>Based on the plans (Appendix A) Finished Floor Levels (FFLs) have been provided. The FFLs are as follows, ground floor is 10.01m; first floor is 14.10m; second floor is 17.41m.</p> <p>By using the above FFLs and EA LiDAR, FFLs have been calculated in m AOD which are as follows:</p> <p>Ground Floor: 4.76m AOD First Floor: 8.85m AOD Second Floor: 12.16m AOD.</p>
Level of Sleeping Accommodation	N/A ¹	First and Second Floors
Surface Water Drainage	N/A ¹	To drain as per the existing drainage arrangements.
Site Size	Approximately 120m ²	No change

Risk to Development	Summary	Comment
EA Flood Zone	Flood Zone 3	Site is affected in the 1 in 200 year + 2115 epoch event – however, given the proposals are located on the first and second floor, the change of use is situated above all modelled flood levels.
Flood Source	Tidal	
SFRA Available	Adur and Worthing Level 1 Strategic Flood Risk Assessment (Worthing Borough Council, 2024)	
Management Measures	Summary	Comment
Proposed floor levels above extreme flood levels	Yes	Given the proposed change of use is situated at the first and second floors, the development is considered to be above all modelled flood levels.
Safe Access/Egress Route	Prior evacuation recommended for tidal and pluvial scenarios.	See details in Section 5.
Flood Resilient Design	No mitigation measures required.	Proposed change of use is considered low risk from all analysed sources of flooding.
Site Drainage Plan	N/A ¹	To drain as per the existing drainage arrangements.
Flood Warning and Evacuation Plan	Yes	Recommended to sign up to the Rustington, Worthing and Lancing Environment Agency flood warning service.
Offsite Impacts	Summary	Comment
Displacement of floodwater	No	No increase in built footprint.
Increase in surface run-off generation	No	No increase in built footprint and therefore is to drain as per the existing drainage arrangements.
Impact on hydraulic performance of channels	No	No identified watercourses within 500m of the site.

¹ not required for this assessment

² data not available.

1. Introduction

- 1.1. Aegaea were commissioned by Alex Coombes to undertake a Flood Risk Assessment (FRA) to facilitate a planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.
- 1.2. This FRA 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 8-9 South Street, Worthing, West Sussex, BN11 3AL (Figure 1).

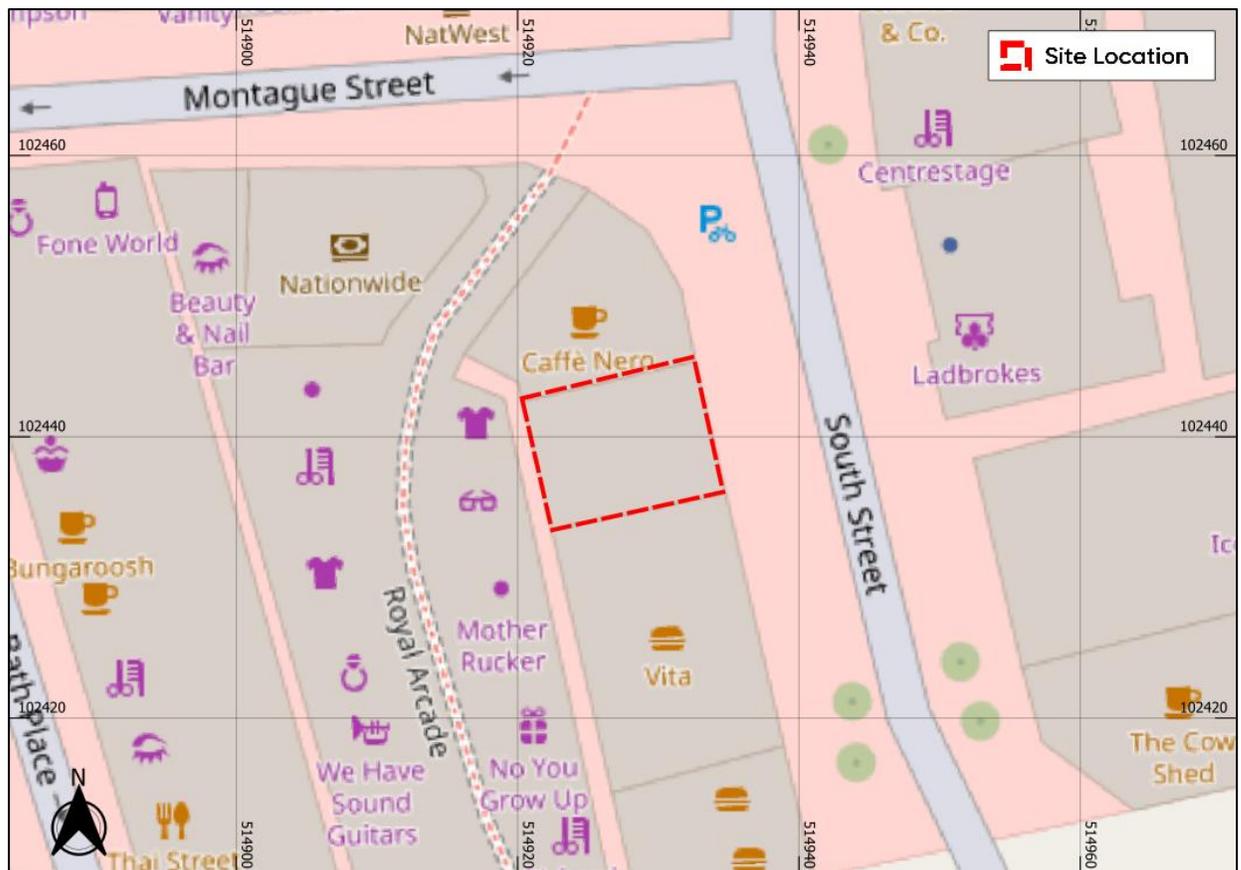


Figure 1: Site Location (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors)

- 1.4. It is understood that the proposals include the change of use of first and second floor from food sales onsite (Class Eb) to two residential units (Use Class C3) along with the reconfiguration of the shop front, window replacement to front elevation, window replacement and creation of new windows to rear elevation and rooftop photovoltaic panels. All proposed development plans can be found in Appendix A of this report.
- 1.5. A topographic survey has been provided and can be found alongside the proposed plans in Appendix A of this report. Based on the topographic survey provided, the ground levels of the site vary between 9.85m to the northeast and 9.95m to the southwest of the site. Thus, it is considered that the site is relatively flat; however, gently slopes in the northeast direction.
- 1.6. It is also noted that Finished Floor Levels (FFLs) have been provided as stated below:
- External Ground Level: 9.78m
 - Ground Floor FFL: 10.01m (+0.23m above external ground levels)
 - First floor FFL: 14.10m (+4.09m above ground floor)
 - Second floor FFL: 17.39m (+3.29m above first floor)
- 1.7. However, it is noted that the datum used within the topographic survey is unknown at the time of writing and as such Environment Agency (EA) Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to determine the FFLs of the property in metres Above Ordnance Datum (m AOD).
- 1.8. The EA LiDAR data shows ground elevation of the site varies between approximately 4.51m AOD to the northeast and 4.63m AOD at the southwest.
- External Ground Level: approx. 4.53m AOD
 - Ground Floor FFL: approx. 4.76m AOD
 - First Floor FFL: approx. 8.85m AOD
 - Second Floor FFL: approx. 12.16m AOD.
- 1.9. The EA LiDAR data has been visualised below in Figure 2.

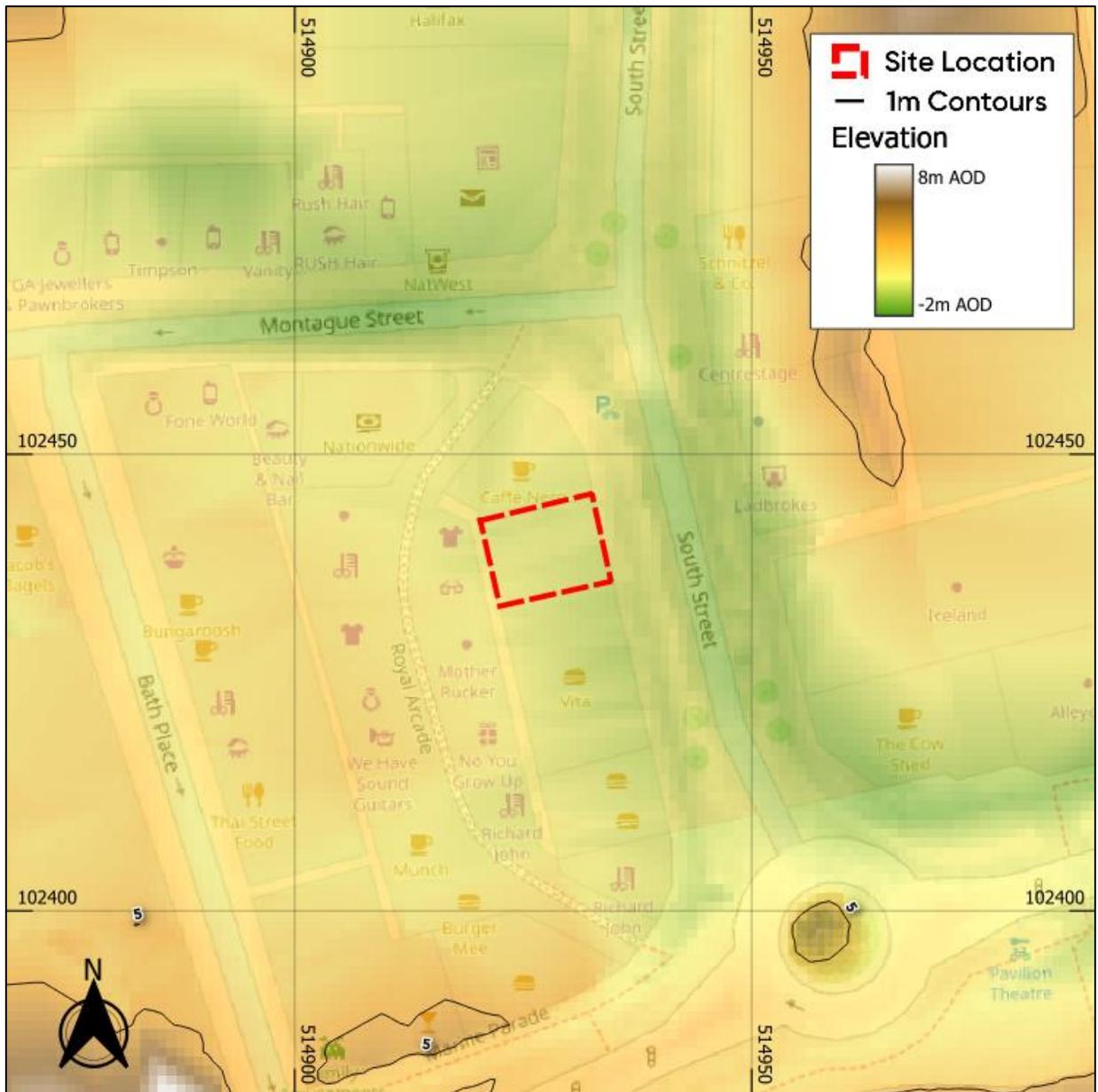


Figure 2: Site Topography (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

- 1.10. Worthing Borough Council is the Local Planning Authority (LPA) for the site and West Sussex County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's Solent and South Downs region.

Planning Policy and Guidance

1.11. UK government planning guidance states¹ that an FRA is required for developments which are:

- *in flood zones 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.12. The entirety of the site is situated within Flood Zone 3; therefore, an FRA is required to be submitted alongside the planning application in line with the NPPF.

1.13. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial/tidal flood risk
- Surface water flood risk
- Risk of flooding from other sources

¹ <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment>

2. Planning Policy

2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

2.2. The National Planning Policy Framework² (NPPF) (MHCLG, 2024) which includes UK Government policy on development and flood risk states:

170. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

176. Applications for some minor development and changes of use should also not be subject to the sequential test, nor the exception test [set out below], but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;

² <https://www.gov.uk/guidance/national-planning-policy-framework>, last updated Dec 2024

- b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
- c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*
- d) any residual risk can be safely managed; and*
- e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

2.3. Footnote 63 of the NPPF states:

A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

2.4. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	<p>This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise:</p> <p>land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or</p> <p>land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding).</p> <p>Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)</p>

- 2.5. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 2.6. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

Local Plan

- 2.7. The Local Plan prepared by the Local Planning Authority, Worthing Borough Council, sets out the policies for development in the local area.
- 2.8. Policy DM20 Flood Risk and Sustainable Drainage outlines the requirements for new development within the area. It states:

a) *The Council will work with relevant bodies to ensure that flood risk in Worthing is managed and reduced. Development should be directed away from areas of highest risk of flooding from any source and opportunities should be taken to reduce flooding through sustainable drainage systems and natural flood management to deliver multi-functional benefits for people and wildlife.*

Flood Risk Assessment

b) *A site specific Flood Risk Assessment must be submitted with planning applications for:*

- *sites of 1 hectare or greater in Flood Zone 1;*
- *all new development (including minor development and change of use) in Flood Zones 2 and 3;*
- *development that would introduce a more vulnerable class on land at increased flood risk in future or subject to other sources of flooding identified by the Strategic Flood Risk Assessment.*

c) *The Flood Risk Assessment should be proportionate to the degree of flood risk and appropriate to the scale, nature and location of development. It will need to demonstrate that:*

- *the site has passed the sequential test (this has already been undertaken for all sites allocated in the Local Plan) and within the site the most vulnerable development is located in areas at lowest flood risk from any source unless there are overriding reasons for not doing so;*

- *Where required by national policy, demonstrate both parts of the exception test have been passed: the development would provide wider sustainability benefits to the community that outweigh the flood risk; and the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*
- *current and future flooding from all sources including in-combination and cumulative effects, and any residual risk can be safely managed;*
- *ensure safe access and egress to and from the development, where necessary as part of an agreed flood warning and evacuation plan;*
- *development will not increase flood risk elsewhere, and where possible will reduce the overall level of flood risk; and*
- *development should be appropriately flood resistant and resilient so in the event of a flood it can be quickly brought back into use without significant refurbishment.*

Sequential and Exception Tests

- 2.9. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.
- 2.10. Under the NPPF, all new planning applications should undergo a Sequential Test in accordance with Paragraph 172. This test should be implemented by local planning authorities with a view to location; particularly vulnerable new developments outside of the floodplain.
- 2.11. However, Paragraph 176 of the NPPF states:

*176. Applications for some minor development and **change of use** should also not be subject to the sequential test, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.*

- 2.12. As such, a site-specific Sequential and Exception Test for the proposed change of use is not considered necessary in line with the NPPF.

Summary

- 2.13. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. EA Data and Document Review

EA Consultation

- 3.1. The EA have provided Product 6 modelled outputs from their Arun Coastal (2012) model which is considered the most appropriate data to fully assess the flood risk to the site and proposed change of use in this report.
- 3.2. The Covering Letter provided alongside the Product 6 data can be found in Appendix B of this report.

Documents and Online Mapping

- 3.3. Local Governments and Lead Local Flood Authorities 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 FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.
- 3.4. The following sources of information have been reviewed for this assessment:
 - Flood Map for Planning on the Environment Agency website <https://flood-map-for-planning.service.gov.uk/>
 - Long Term Flood Risk Information on the Environment Agency website <https://www.gov.uk/check-long-term-flood-risk>
 - National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2024)
 - Planning Practice Guidance - Flood Risk and Coastal Change (Ministry of Housing, Communities and Local Government, 2022)
 - Geindex Onshore (British Geological Survey, 2024)
 - Local Plan 2020-2036 (Worthing Borough Council, 2023)³

³ <https://www.adur-worthing.gov.uk/media/Media,169486,smxx.pdf>

- Preliminary Flood Risk Assessment Addendum (West Sussex County Council, 2017)⁴ and West Sussex Preliminary Flood Risk Assessment (West Sussex County Council, 2011)⁵
- Adur and Worthing Level 1 Strategic Flood Risk Assessment (Worthing Borough Council, 2024)⁶
- Local Flood Risk Management Strategy: 2025 - 2030 (West Sussex County Council, 2025)⁷

Preliminary Flood Risk Assessment (PFRA)

- 3.5. The PFRA, published in 2011 and 2017 (addendum), is a high-level appraisal of flood risk across Lead Local Flood Authority West Sussex County 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 is produced.
- 3.6. The PFRA summarises historical flood incidents in West Sussex County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

- 3.7. The SFRA, published in 2024, provides the evidence base for the Local Planning Authority Worthing Borough Council Local Plan and guidance for consideration when determining planning applications. The SFRA 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.
- 3.8. The SFRA mapping provided by Worthing Borough Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/698548/PFRA_West_Sussex_County_Council_2017.pdf

⁵ https://www.westsussex.gov.uk/media/1626/west_sussex_pfra.pdf

⁶ <https://www.adur-worthing.gov.uk/media/Media,171789,smxx.pdf>

⁷ https://www.westsussex.gov.uk/media/zxfdrex1/westsussex_lfrms.pdf

Local Flood Risk Management Strategy (LFRMS)

- 3.9. The Local Flood Risk Management Strategy sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.
- 3.10. The West Sussex County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Tidal

- 4.1. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.

Hydrological Environment

- 4.2. The coastline is located c.100m south of the site.
- 4.3. There is no watercourse within 500m of the site, as per OS mapping.

EA Flood Map for Planning

- 4.4. The entirety of the site is situated within Flood Zone 3 as per the EA Flood Map for Planning (Figure 3). Flood Zone 3 denotes land having a 1 in 200 or greater annual probability of sea flooding.
- 4.5. Further interrogation of the Flood Zone 3 extent shows that the extent is derived from sea / tidal models only.

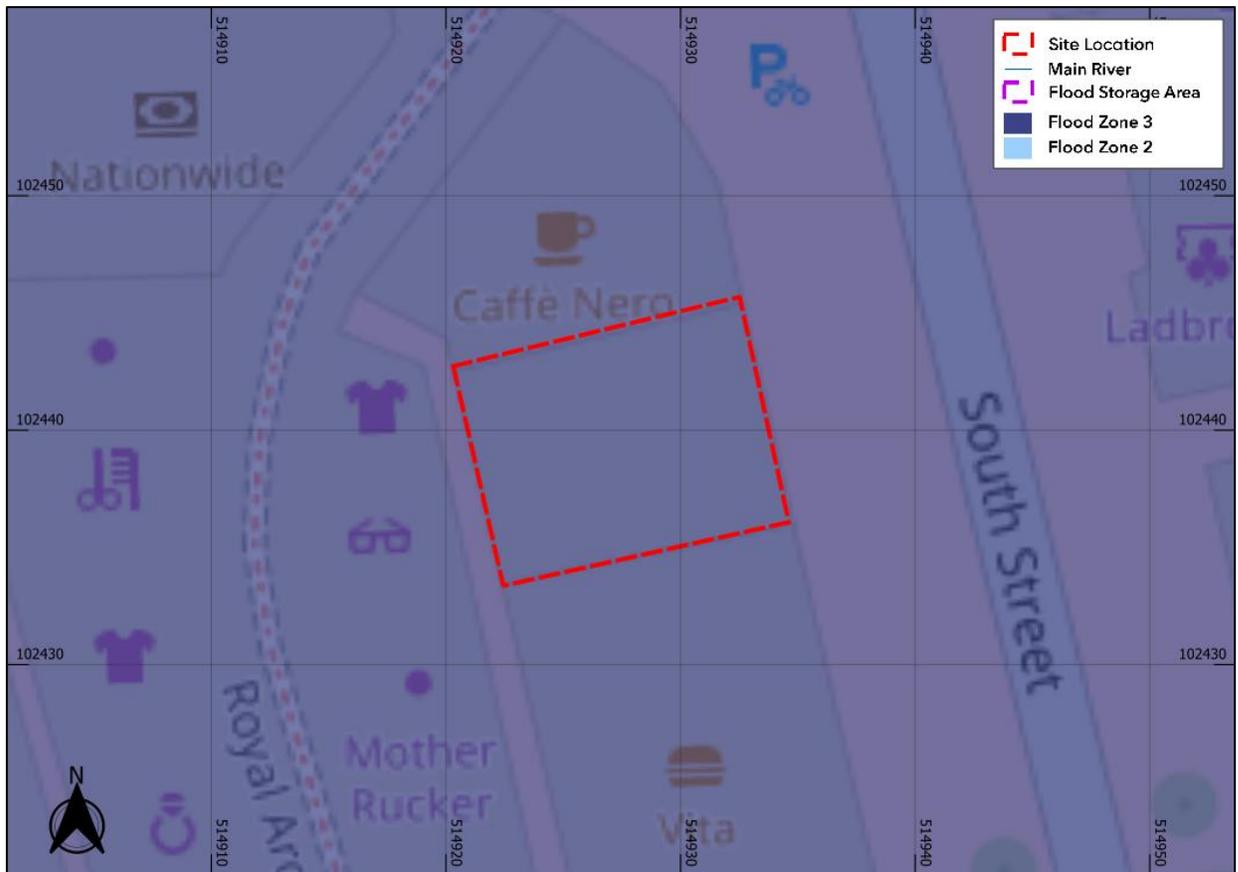


Figure 3: EA Flood Map for Planning (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Historical Fluvial Flooding

- 4.6. According to the EA Recorded and Historical Flood Mapping, there has been no recorded historical flood events on or in the vicinity of the site (Figure 4).

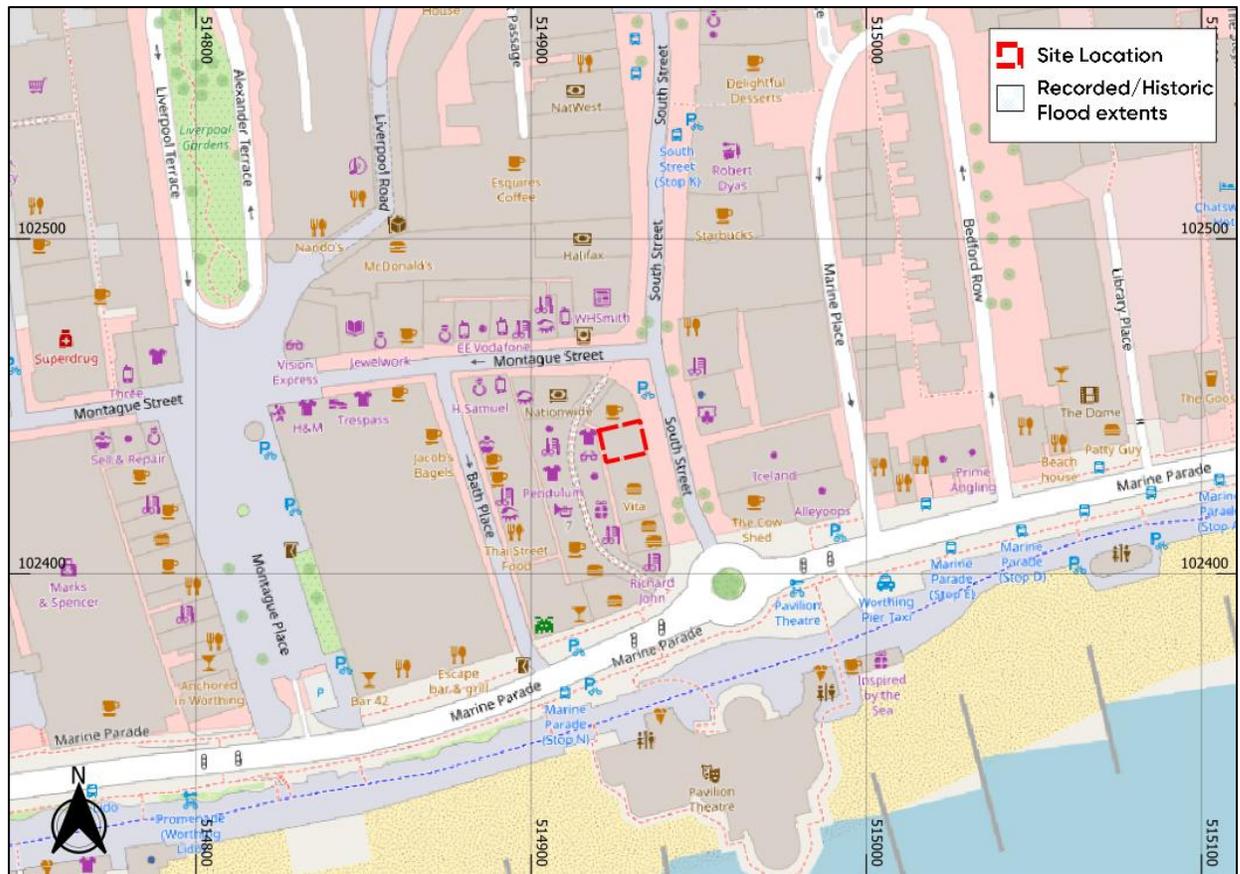


Figure 4: EA Historic Flood Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

EA Modelled Data

- 4.7. The EA have provided Product 6 modelled outputs from their Arun Coastal (2012) model which is considered the most appropriate data to fully assess the flood risk to the site and proposed change of use in this report.
- 4.8. Given the proposals only include the change of use to the first and second floors to residential units, the 'worst-case' 1 in 1000 year scenario has been assessed below.
- 4.9. The modelled flood depths show that during the 1 in 1000 year scenario (considered a modelled 'worst-case' scenario), the site could experience flood depths up to 0.80m. Given the first floor FFLs (8.85m AOD based on EA LiDAR) are situated 4.09m above the ground floor FFLs, it is considered that the proposed development is located approximately 3.29m above the maximum 1 in 1000 year flood depths.

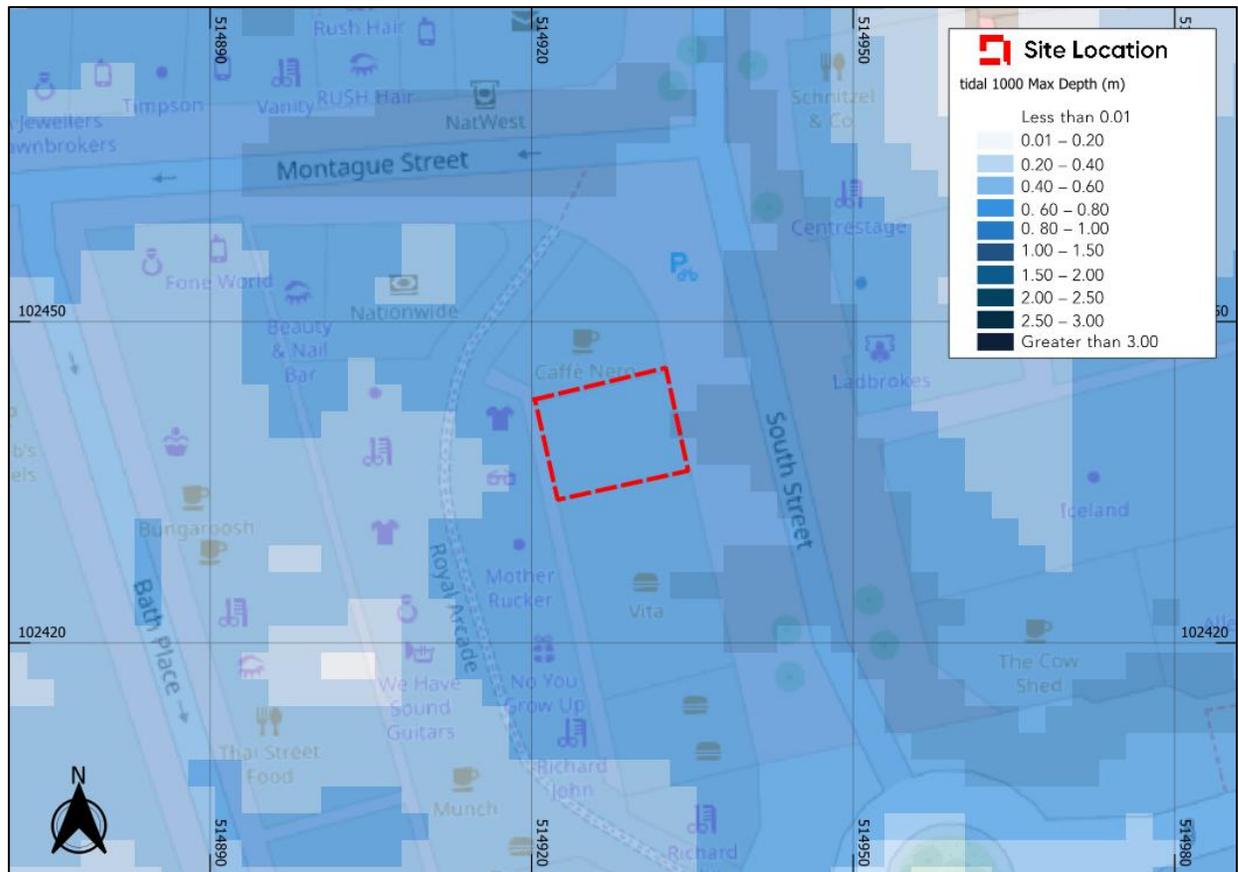


Figure 5: Modelled 'Worst-Case' 1 in 1000 Year Scenario Flood Depths (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.10. Given the proposals are located on the first and second floors, it is considered that the proposed development remains unaffected in this scenario.

Tidal Flood Risk Summary

4.11. Given the nature of the proposals being situated on the first and second floors, it is considered that the proposed development is situated above all modelled tidal scenarios including the 'worst-case' 1 in 1000 year scenario.

4.12. Thus, the tidal flood risk to the change of use is considered to be low.

Fluvial

4.13. The site is at risk of flooding from tidal sources rather than fluvial sources based on the EA Flood Map for Planning and there are no other mapped watercourses in the vicinity of the site.

4.14. As such, the risk of flooding from fluvial sources is considered to be low.

Canals

4.15. 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.

4.16. According to CRT mapping⁸ there are no canals identified within 1km of the site.

4.17. The risk of flooding to this site from canals is considered to be low.

Pluvial

4.18. 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.

Risk of Flooding from Surface Water Mapping

4.19. The National Flood Risk Assessment (NaFRA2) has updated the Risk of Flooding from Surface Water (RoFSW) products which show the chance of flooding from surface water to areas of land.

4.20. The RoFSW products are an assessment of where surface water flooding may occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. It includes information about flooding extents and depths including the potential impact of climate change on flood risk, based on the latest UK Climate Projections (UKCP18).

4.21. Risk is displayed as one of three likelihood categories:

- High - greater than or equal to 1 in 30 (3.3%) chance of flooding in any year.
- Medium – Less than 1 in 30 (3.3%) but greater than or equal to 1 in 100 (1%) chance of flooding in any given year.
- Low – Less than 1 in 100 (1%) but greater than or equal to 1 in 1000 (0.1%) chance of flooding in any given year.

⁸ <https://canalrivertrust.org.uk/canals-and-rivers>

- 4.22. The RoFSW depth mapping shows the annual chance of flooding (based on the three risk categories listed above) beyond a specific depth, for depths at the following intervals from 20cm to 120cm:
- 0.2m, 0.3m, 0.6m, 0.9m, 1.2m
- 4.23. As well as present day risk of flooding from surface water, climate change scenarios have been produced to indicate the predicted impacts of climate change on future flood risk. The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 “2050s” epoch) and central allowances are being used initially, to support short and medium-term decisions informed by the highest flood likelihood projections.
- 4.24. The site is shown to not be impacted in any of the present day scenarios, thus the ‘worst-case’ climate change scenario has been assessed below.

Climate Change Scenario

- 4.25. Examination of the EA's ‘Flood Risk from Surface Water – Climate Change’ mapping indicates that the entirety of the site is at high risk of experiencing surface water flooding when considering the effects of climate change (Figure 6).

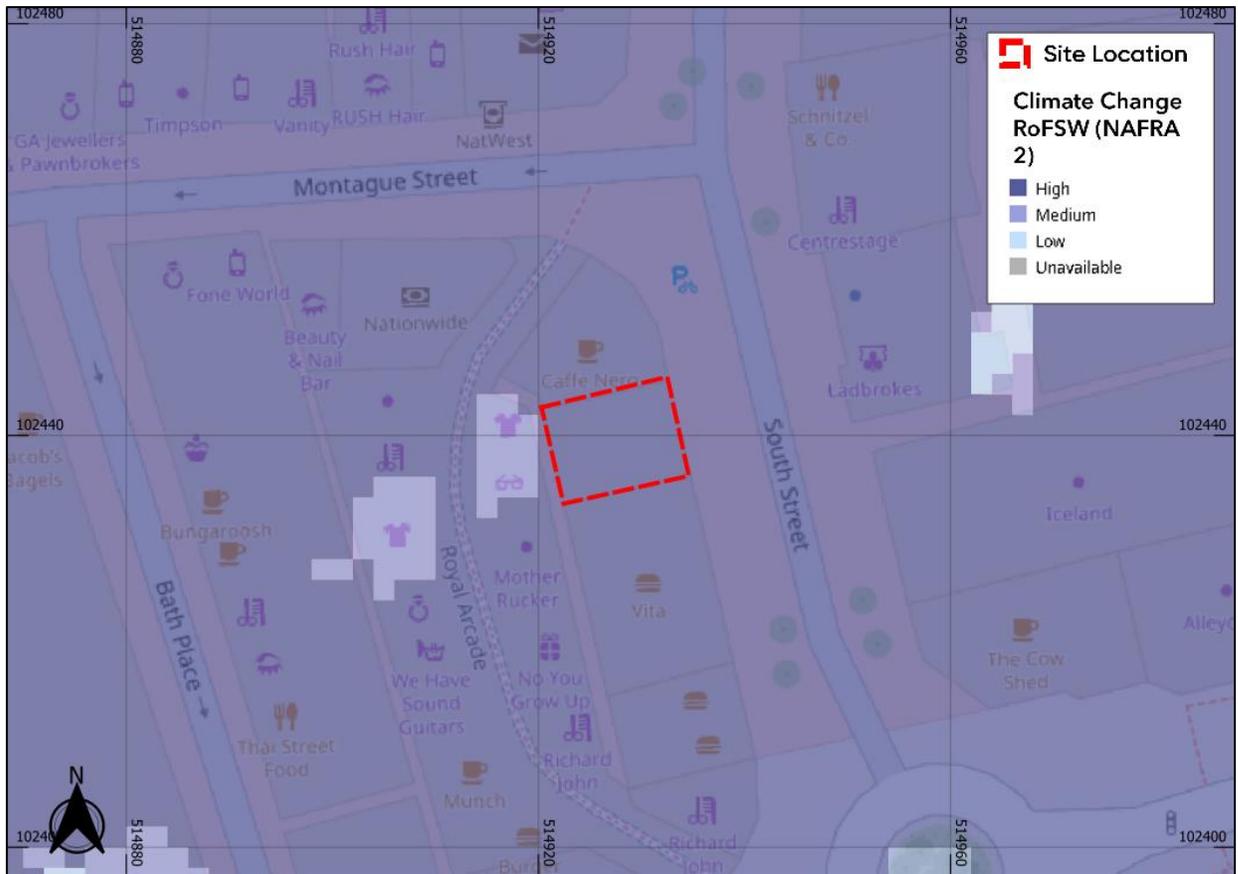


Figure 6: EA Surface Water Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.26. Analysis of the likelihood of flood depths exceeding 0.3m indicates that the site is at high risk (Figure 7). However, given the proposals are located on the first and second floors, the proposed development is considered to be located above the surface water flood depths.

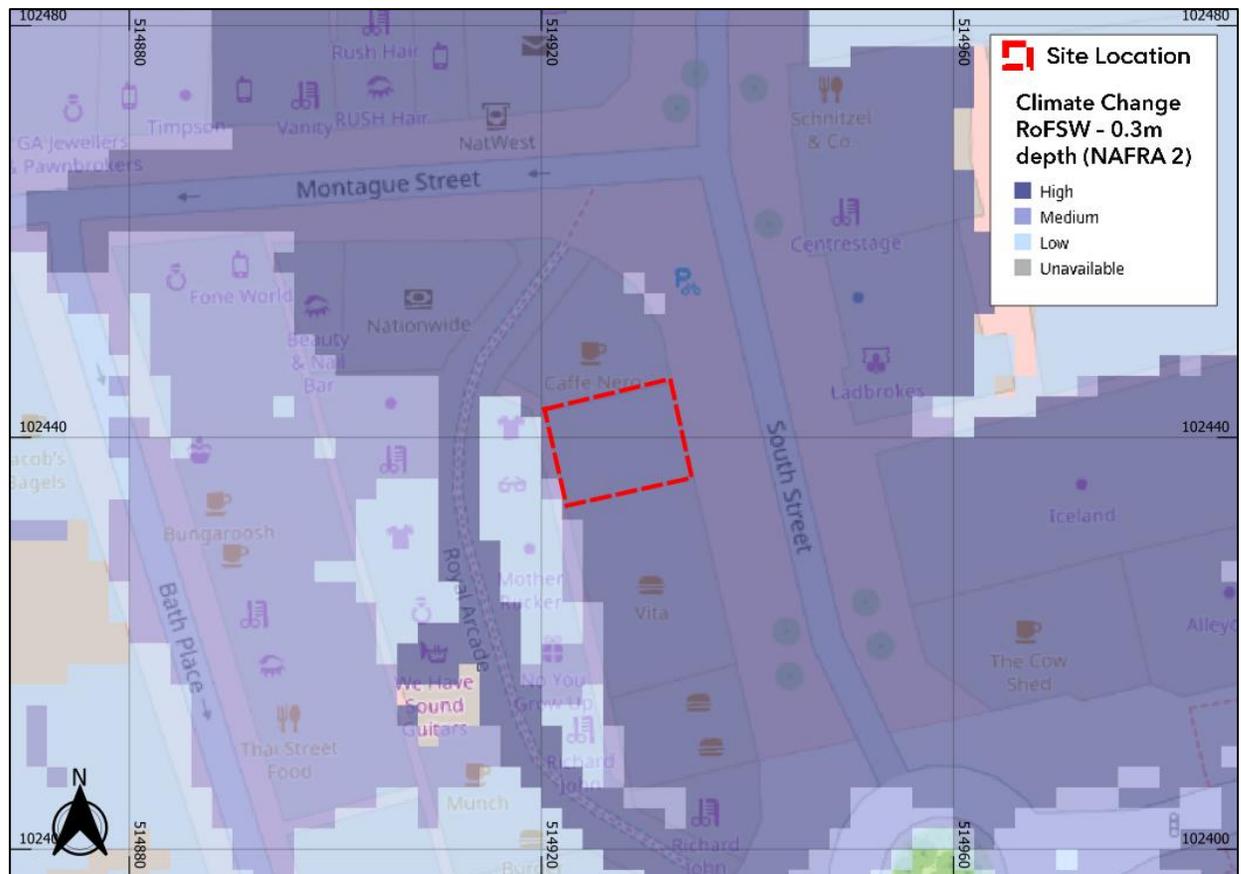


Figure 7: EA RoFSW Mapping Showing the Likelihood of Flood Depths >0.3m (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.27. Analysis of the likelihood of flood depths exceeding 0.6m indicates that the site is outside all likelihood categories of experiencing surface water flood depths greater than 0.6m (Figure 8).

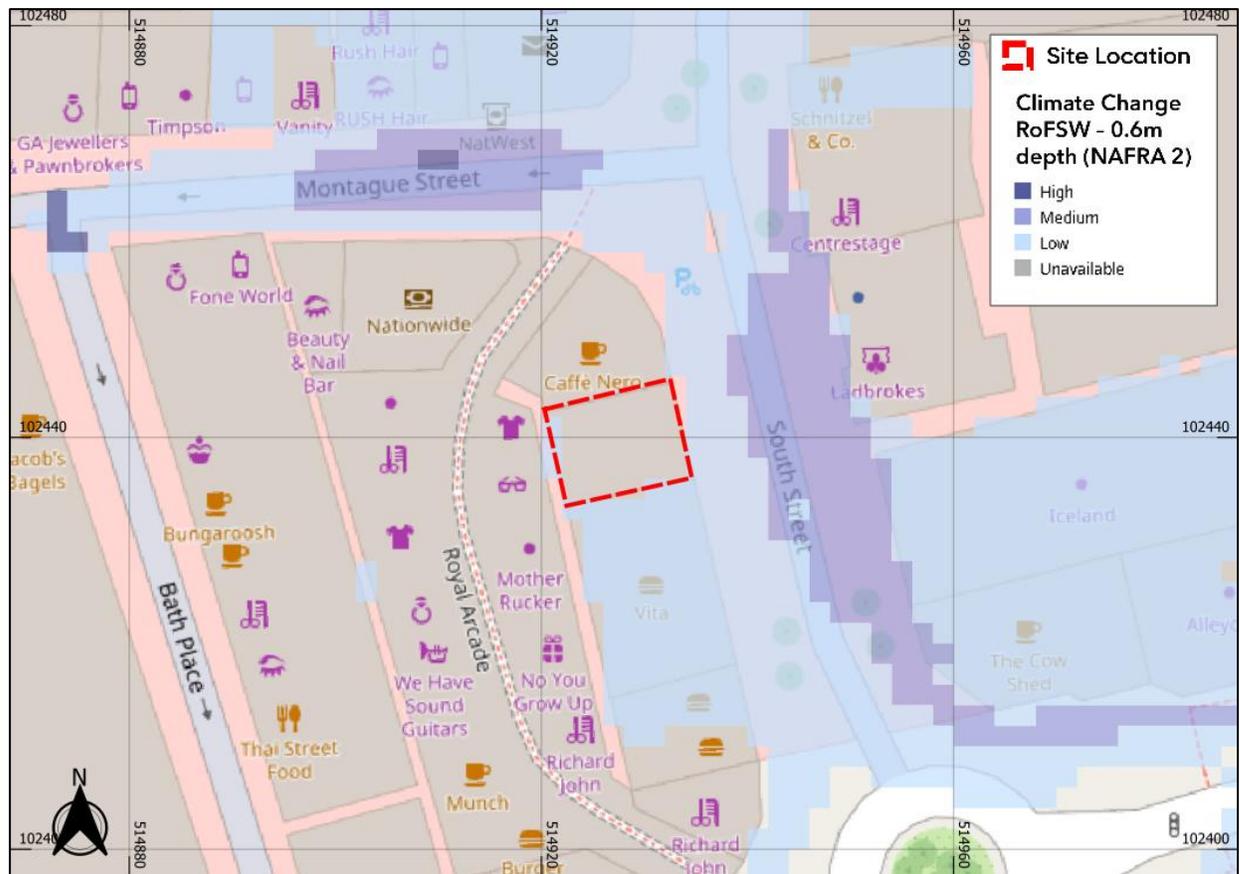


Figure 8: EA RoFSW Mapping Showing the Likelihood of Flood Depths >0.6m (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © <https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

Pluvial Flood Risk Summary

- 4.28. Given the nature of the proposals being situated on the first and second floors, it is considered that the proposed development is situated above all modelled likelihood pluvial flood depths.
- 4.29. Thus, the pluvial (surface water) flood risk is considered to be low.

Reservoirs

- 4.30. Large waterbodies or reservoirs that have walls built above the surrounding ground level pose a risk of flooding. Walls could fail due to old age, accident, or because excess flood water has been added to the reservoir. Although a breach is unlikely the consequences would be significant, leading to rapid inundation of the downstream floodplain.
- 4.31. According to the EA's Flood Risk from Reservoirs mapping the site is outside modelled flood extents in the event of reservoir flooding (Figure 9).

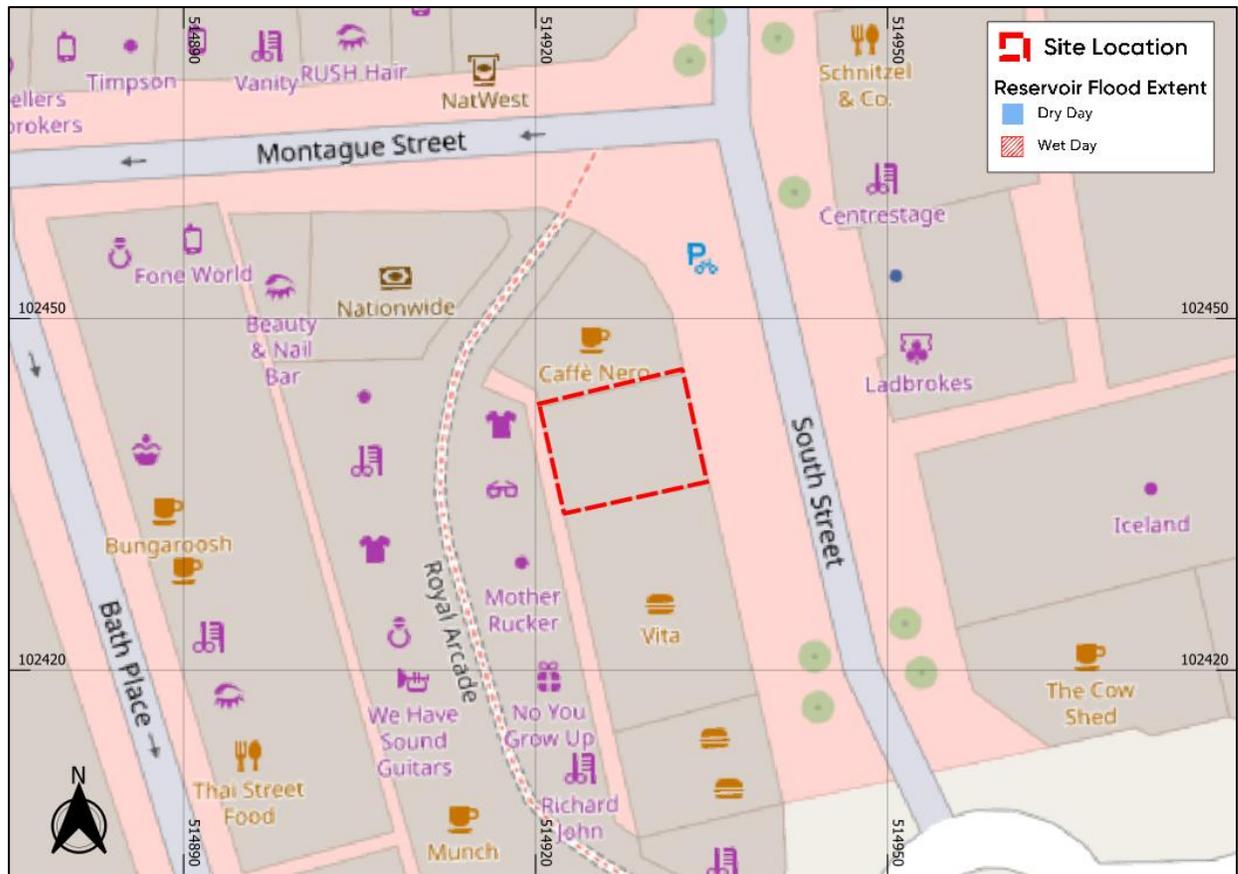


Figure 9: EA Reservoir Flood Risk Mapping (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©<https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

4.32. Thus, the site is considered to be low risk of reservoir flooding in the event of a reservoir breach.

Groundwater

4.33. Groundwater flooding occurs in areas where underlying geology is permeable and water can rise within the strata sufficiently to breach the surface.

4.34. The British Geological Survey's (BGS) mapping shows superficial deposits of River Terrace Deposits (Undifferentiated) comprised of sand, silt and clay underlying the site. The bedrock underlying the site is mapped as Lewes Nodular Chalk Formation.

4.35. The SFRA (2024) presents JBA Groundwater Flood Map product at the national scale. The 5m resolution JBA Groundwater map involves simulating groundwater levels for a range of return periods (including 75, 100 and 200- years). Groundwater levels are then compared to ground surface levels to determine the head difference in metres. The site is within an area where

ground water levels are estimated to be 'between 0.5m and 5m below the ground surface' (Figure 10).

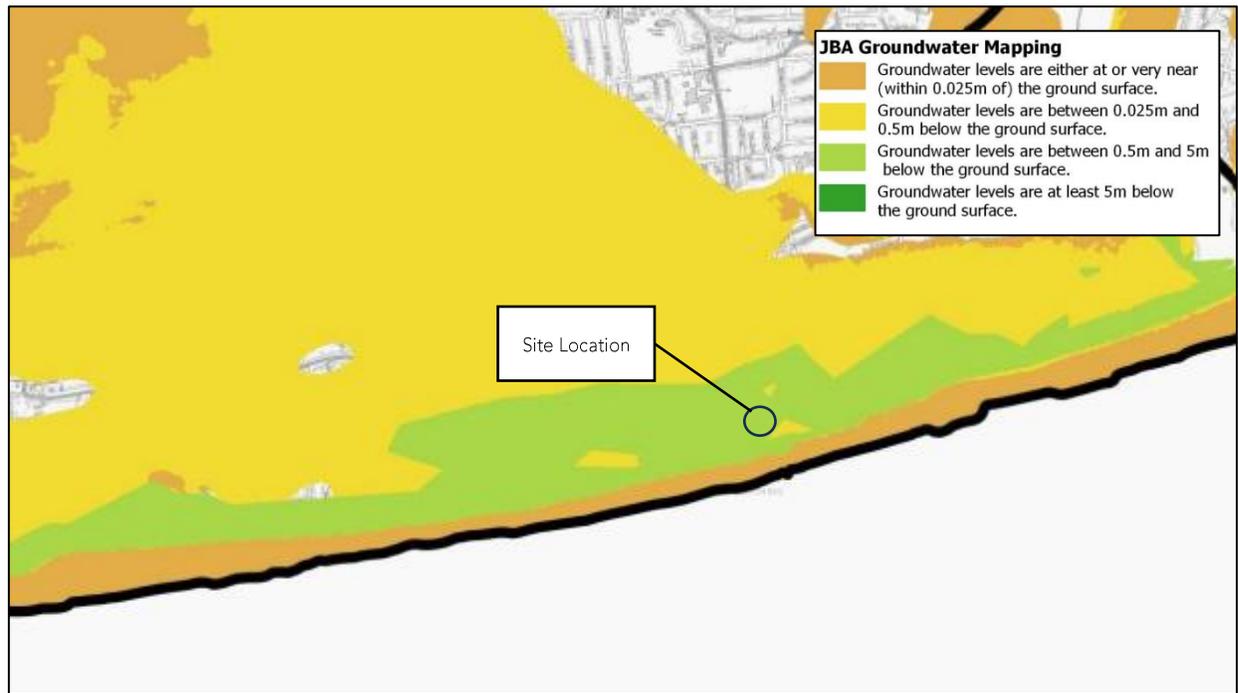


Figure 10: JBA Groundwater Mapping (Adur and Worthing Level 1 Strategic Flood Risk Assessment (Worthing Borough Council, 2024)

4.36. Given the above information from the SFRA (2024) and when considering the proposed development is located on the first and second floors, the groundwater flood risk is considered to be low.

Sewers

4.37. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.38. It is noted that the SFRA (2024) references a table showing Sewer Incident Report Form database for Adur District and Worthing Borough SFRA areas.

4.39. Within the sites 5-figure post code area (BN11 3), there has been 12 recorded sewer flood incidents. There is no evidence to suggest that these incidents have impacted the site. Given the wide area a 5-figure post code area covers it is unlikely that these events impacted the site.

4.40. The development is therefore considered to be at low risk of flooding from sewers.

5. Flood Risk Mitigation

All Analysed Sources of Flooding

- 5.1. Based on Section 4 of this report, the proposed development is considered to be low risk from all analysed sources including tidal watercourse, fluvial, canal, pluvial, reservoir, groundwater and sewers.
- 5.2. Therefore, there is no requirement for mitigation measures to be included within the development.

Increase to Flood Risk Elsewhere

- 5.3. The proposed development will see no increase in built footprint as the proposed development will be an internal change of use. Therefore, the proposed development would not increase the flood risk elsewhere through water displacement.

Access / Egress

Tidal

- 5.4. Given the flood extent and flood depths along South Street, it is considered that safe access / egress to and from the site is not possible in the 1 in 200 year + 2115 epoch (CC). Figure 11 shows that South Street directly adjacent to the site, has a recorded hazard rating of between 1.25 and 2.00 – which is considered to be a 'Danger for Most' in line with the EA Hazard Rating Chart (FD2321)⁹.
- 5.5. Given the modelled flood risk to the site and surrounding area, prior evacuation of the site is recommended to reduce the risk to life of occupants/ site users but also reduce the strain on the emergency services.

⁹ https://assets.publishing.service.gov.uk/media/602d04a98fa8f5037d371a08/FLOOD_HAZARD_RATING_AND_THRESHOLDS_explanatory_note.pdf

- 5.6. It is recommended that on receipt of a Flood Warning / Alert, residents evacuate and travel in the northern direction along South Street, travelling outside the maximum flood extents.

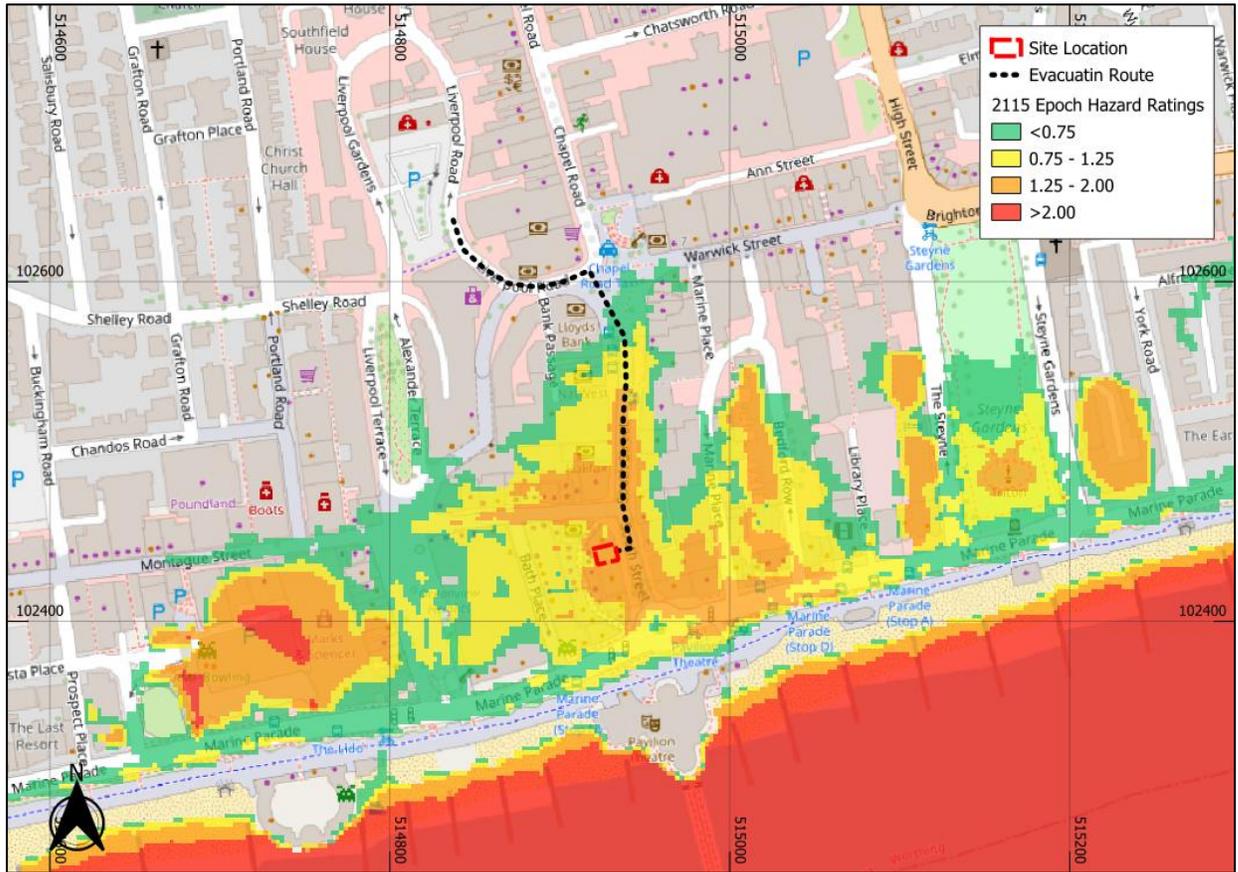


Figure 11: Hazard Ratings during the 1 in 100 year + 2115 epoch event (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©<https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

EA Flood Warnings

- 5.7. All occupants should sign up to the EA Flood Warning Service for the *'Rustington, Worthing and Lancing'*¹⁰.
- 5.8. This service allows site owners 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 site owner will be sent an alert

¹⁰ <https://www.gov.uk/sign-up-for-flood-warnings>

directly to their chosen method of contact. All property occupants should sign up to this and make this service available to all future tenants where applicable.

- 5.9. The EA aim to provide a minimum of 6 hours of lead time for Flood Warnings in tidal or coastal areas according to the EA Flood Warning Data Integrity Guide (EA, 2014)¹¹. The Flood Alert stage is used to warn of the possibility of flooding. It is issued earlier than a flood warning, to give advance notice of the possibility of flooding. The EA aims to provide between 2 and 12 hours lead time between a Flood Alert being issued and possible flooding occurring.
- 5.10. Furthermore, tidal flooding is a well understood and forecasted mechanism of flooding. It is expected that it would coincide with high tide and storm surge and therefore is easily predicted.
- 5.11. In addition, given the connection with tides, the water and flood levels are expected to recede once tide levels go down – which would allow for access / egress. Therefore, it is considered that the occupants may only have to seek refuge for short period of time (6-8 hours) or until water levels decrease.
- 5.12. If egress is to occur and flood depths are noted to be greater than 250mm along South Street (directly adjacent of site), with flood waters pooling and ponding, occupants should seek safe refuge at the proposed residential apartments on the first and second floors (above all modelled worst-case and climate change flood levels).

Pluvial (Surface Water)

- 5.13. Given the NaFRA2 hazard ratings are at high risk of exceeding 0.75 (which is considered safe as per the EA Hazard Rating Chart (FD2321), it is considered that safe access / egress is not achievable during pluvial flood events (Figure 12).
- 5.14. Given the pluvial flood risk to the site and surrounding area, prior evacuation of the site is recommended to reduce the risk to life of occupants/ site users but also reduce the strain on the emergency services.

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/297923/Flood_Warning_-_Data_Integrity_Guide_v2_0.pdf#:~:text=The%20EA%2FNRW%20aim%20to%20provide%20a%20minimum%20of,or%20coastal%20locations.%20Flooding%20of%20major%20tourist%2Frecreational%20attractions.

5.15. It is recommended that on receipt of a Met Office Weather Warning, residents evacuate and travel in the northern direction along South Street, travelling outside the maximum flood extents.

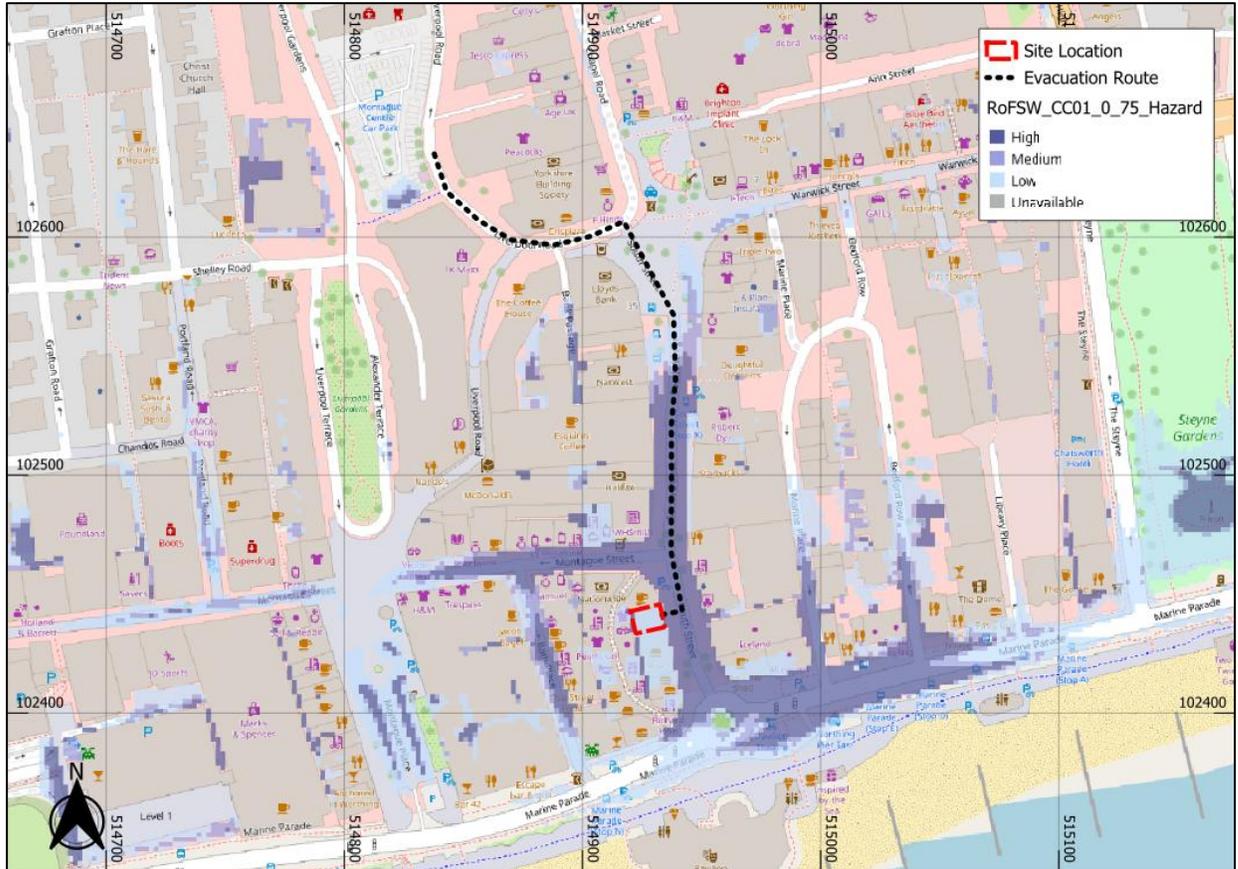


Figure 12: RoFSW Likelihood Mapping of the Pluvial Hazard Rating >0.75 (Safe Hazard) (Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). ©<https://www.openstreetmap.org> and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

The Met Office Weather Warnings

- 5.16. Residents of the proposed apartments should also monitor Met Office Weather Warnings to be prepared for extreme weather events as the site is not in an area where the EA provide specific flood alerts and warnings.
- 5.17. The Met Office issues weather warnings up to 5 days in advance, through the national Severe Weather Warning Service, when severe weather has the potential to bring impacts to the UK. These warnings are given a colour (yellow, amber or red) depending on a combination of both the impact the weather may have and the likelihood of those impacts occurring. This is shown through the 'Warning Impact Matrix'.

- 5.18. It is also possible to stay up to date with weather warnings through the Met Office app (available on both Apple or Android devices), social media e.g. X and Facebook or email alerts.
- 5.19. If egress is to occur and flood depths are noted to be greater than 250mm along South Street (directly adjacent of site), with flood waters pooling and ponding, occupants should seek safe refuge at the proposed residential apartments on the first and second floors (above all modelled worst-case and climate change flood levels).

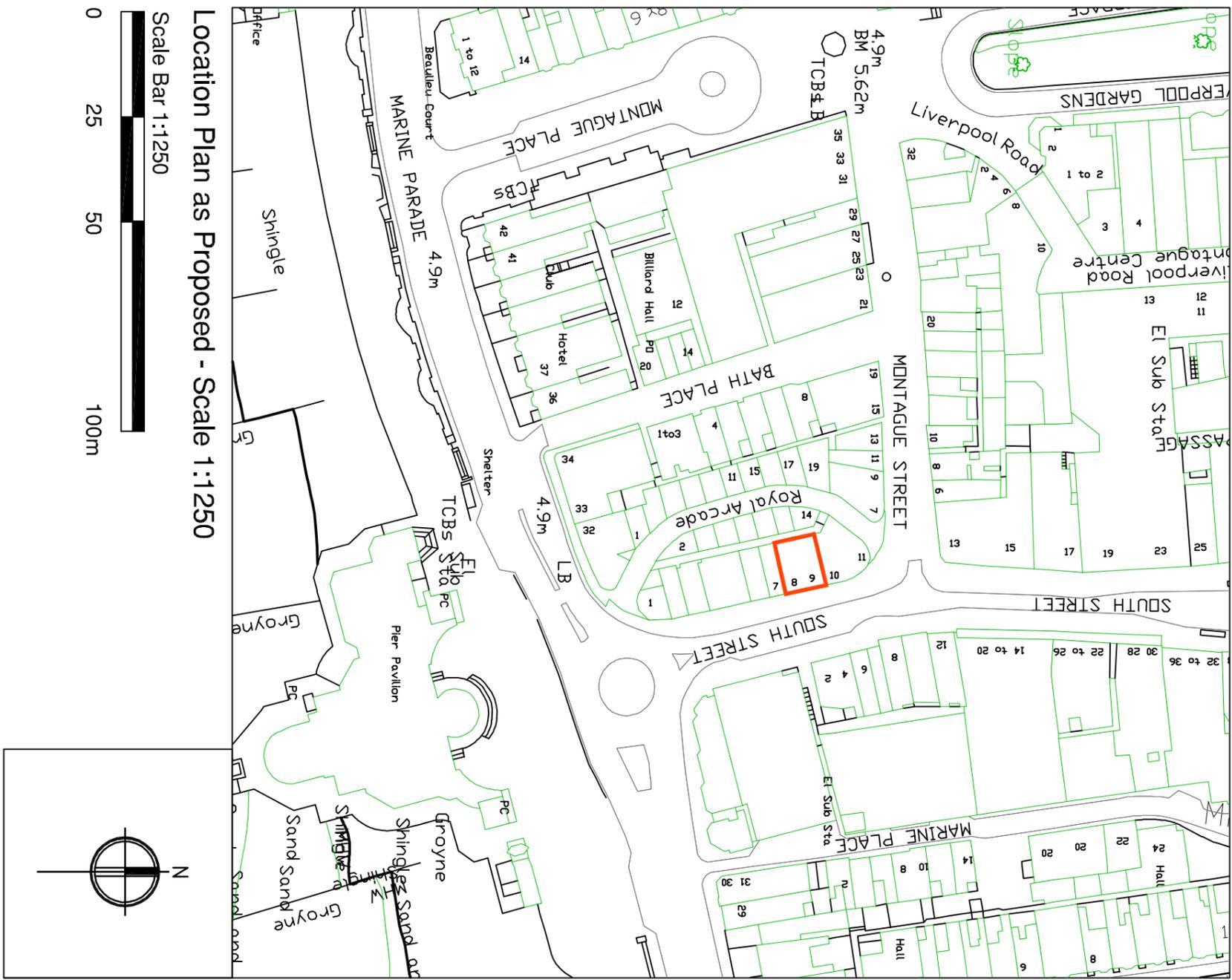
6. Conclusions

- 6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at 8-9 South Street, Worthing, West Sussex, BN11 3AL. It has been written to support a planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.
- 6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Fluvial Pluvial Tidal Reservoirs Groundwater Sewers Canals	Given the proposals are located on the first and second floors of the building, the proposed change of use is considered to be low risk from all analysed sources of flooding.

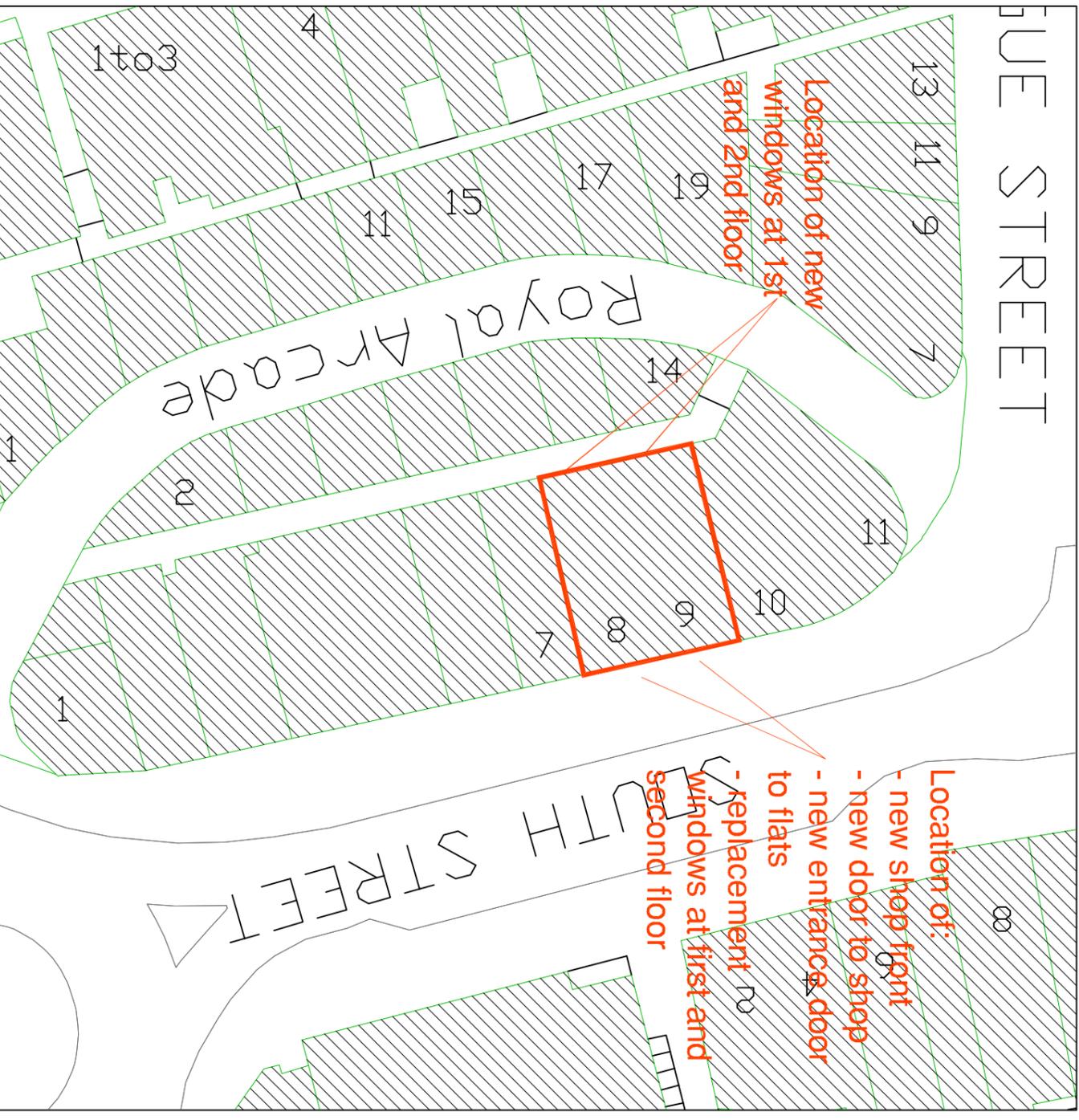
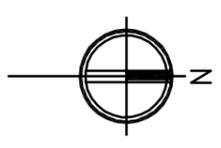
- 6.3. The FRA supports the planning application and demonstrates that there is an acceptable level of flood risk to the site. The development does not increase flood risk off site or to the wider area.
- 6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals



Location Plan as Proposed - Scale 1:1250

Scale Bar 1:1250



Block Plan as Proposed - Scale 1:500

Scale Bar 1:500



PLANNING

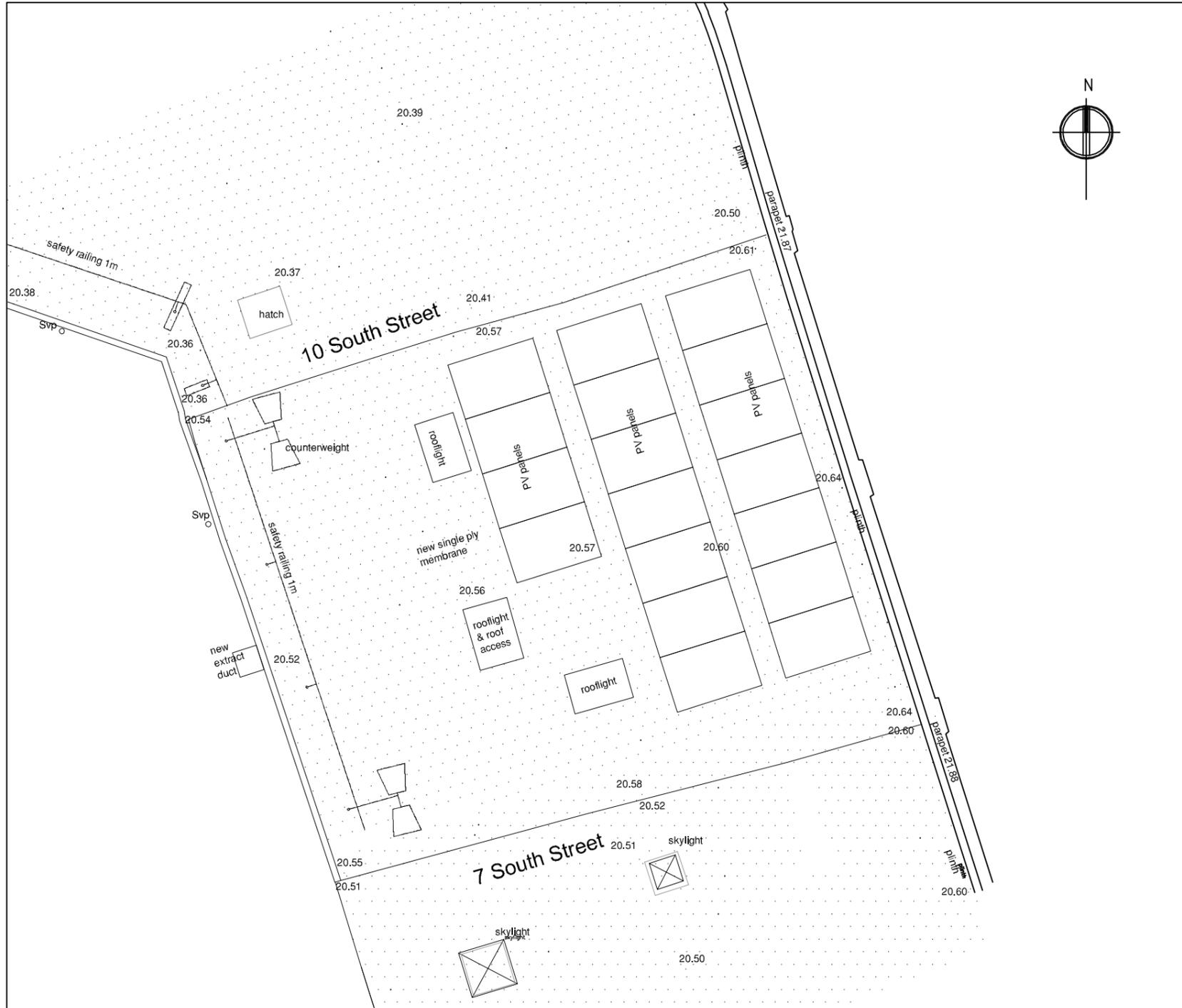
Conversion at 8-9 South Street, Worthing Location Block and Block Plan as Proposed

saville jones | architects

date:	October 2025	25015	SK	27
scale:	as shown @A3			

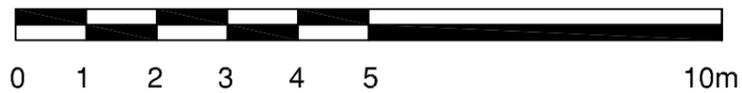
© This drawing is copyright and must not be reproduced without the written consent of the Architect.

REV	DATE	DESCRIPTION
A	10.10.25	PV panels altered



1:100 Roof Plan as Proposed

Scale Bar 1:100



Conversion at
8-9 South Street, Worthing

PLANNING

Roof Plan as Proposed

saville jones | architects

date: October 2025

scale: 1 : 100 @A3

25015

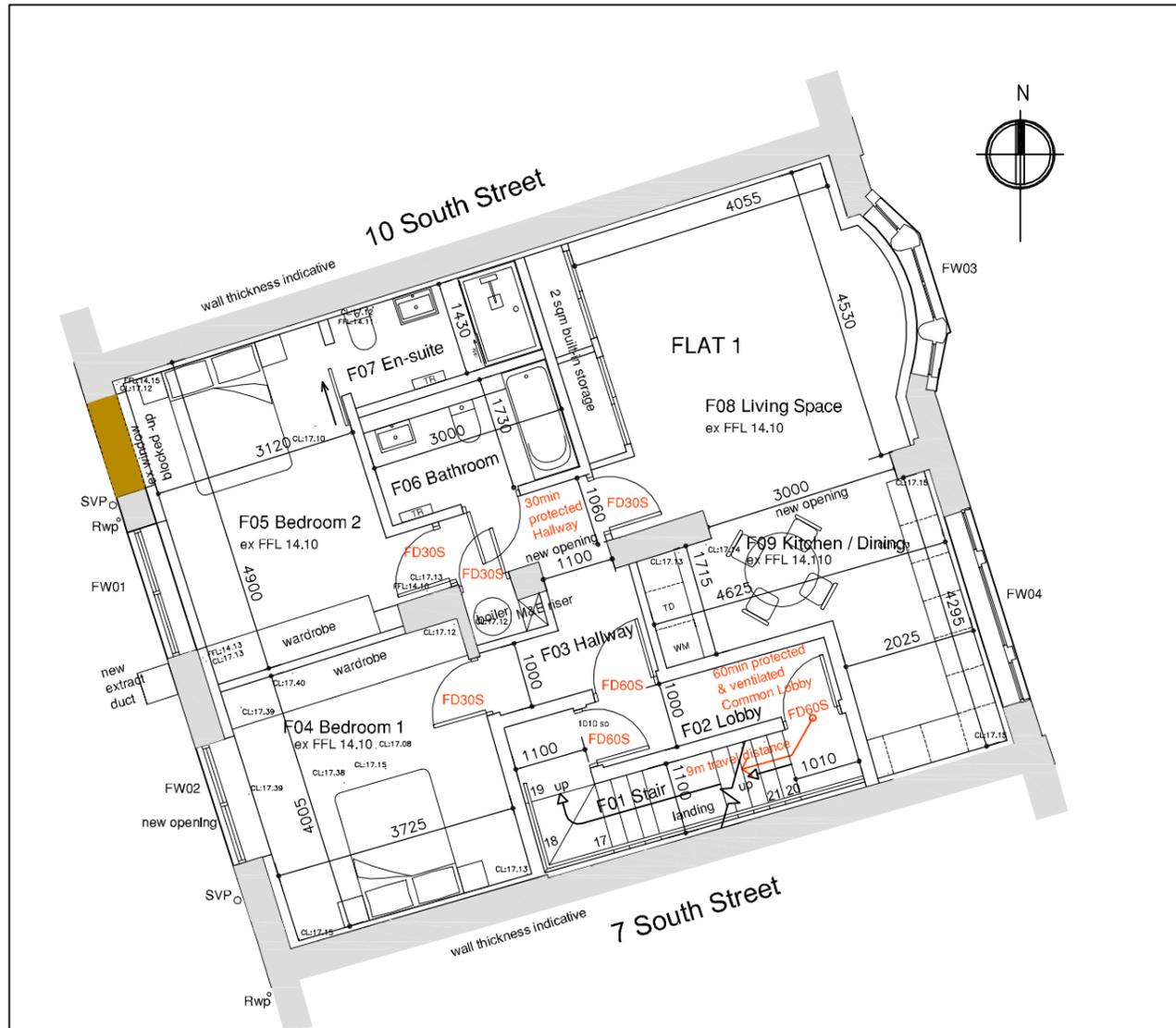
SK

31A

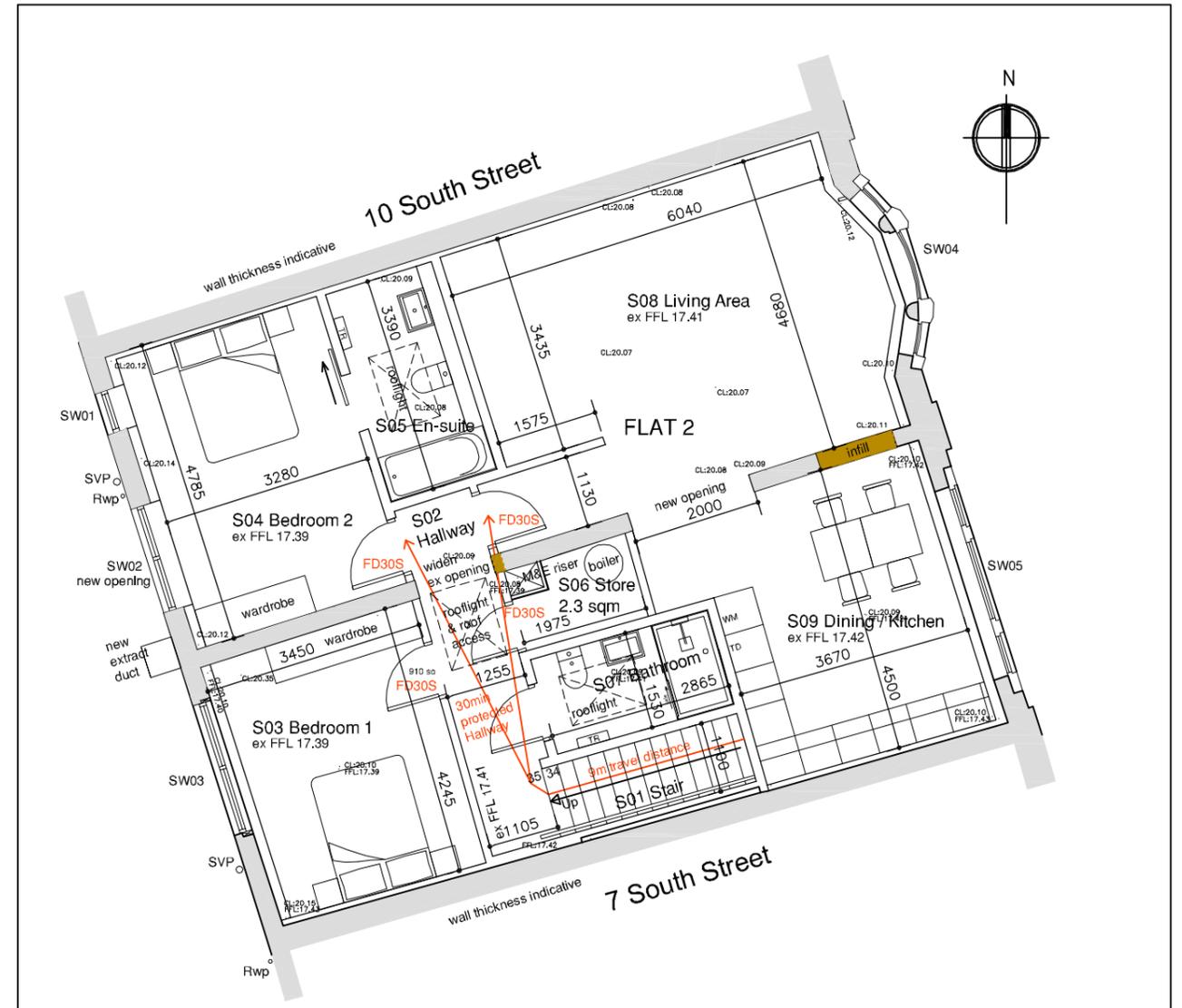
DWG: \DRAWINGS\PROFORM\SJA_A1_200.DWG

© This drawing is copyright and must not be reproduced without the written consent of the Architect.

REV	DATE	DESCRIPTION
A	10.10.25	Flat 1 kitchen altered

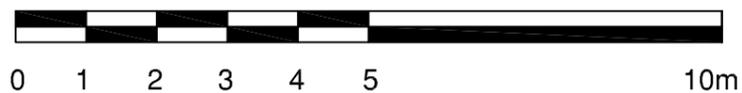


1:100 First Floor Plan as Proposed



1:100 Second Floor Plan as Proposed

Scale Bar 1:100



PLANNING

Conversion at 8-9 South Street, Worthing First and Second Floor Plan as Proposed

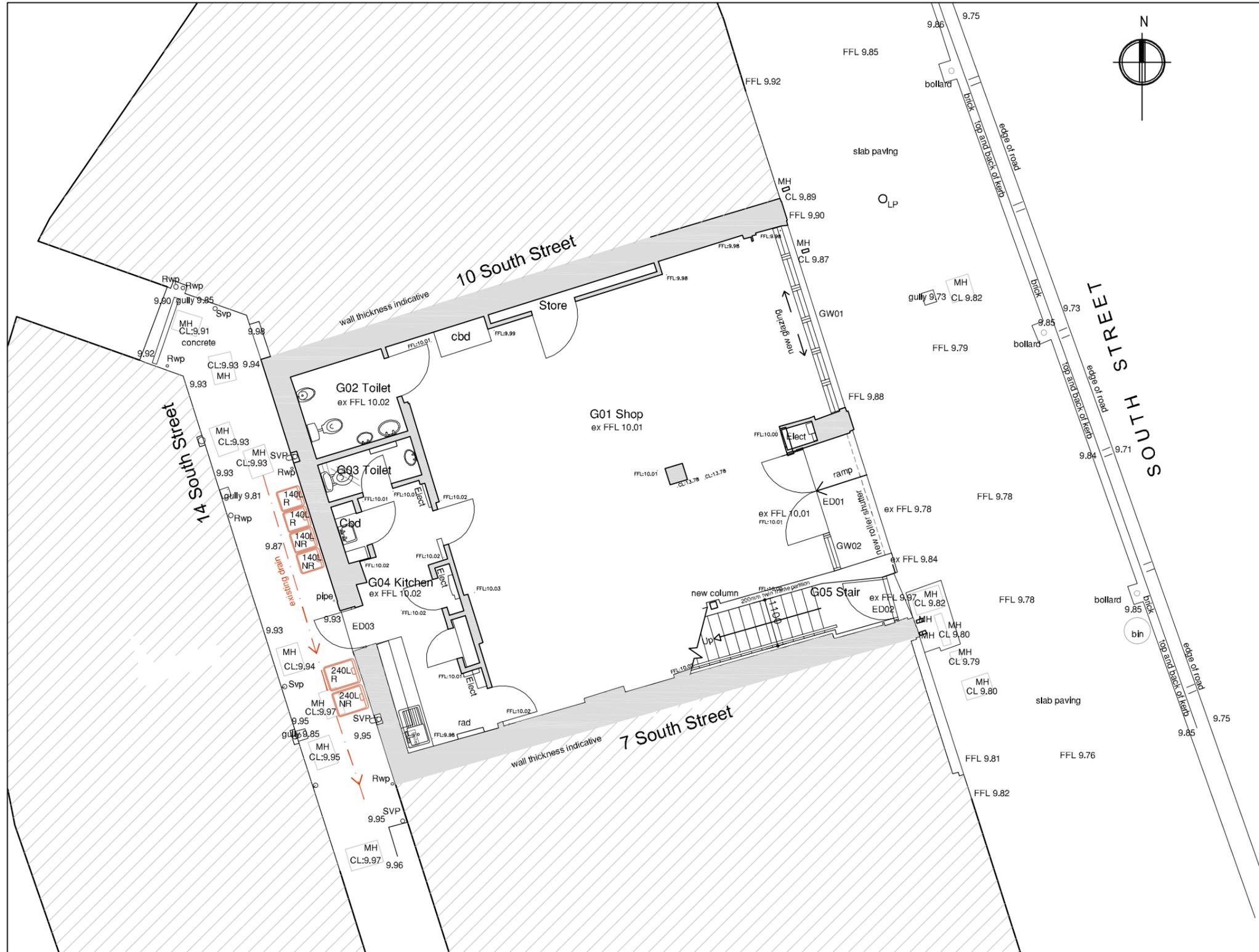
saville jones | architects

date: October 2025

scale: 1 : 100 @A3

25015 SK 30A

DWG: \DRAWINGS\PROFORM\SJA_A1_200.DWG



1:100 Ground Floor Plan as Proposed

Scale Bar 1:100



Conversion at
8-9 South Street, Worthing

saville jones | architects

DWG: \DRAWINGS\PROFORM\SJA_A1_200.DWG

PLANNING

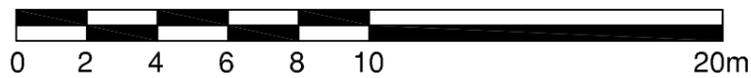
Ground Floor Plan as Proposed

date: October 2025	25015	SK	29
scale: 1 : 100 @A3			



1:200 Site Plan as Proposed

Scale Bar 1:200



Conversion at
8-9 South Street, Worthing

 saville jones | architects

DWG: \DRAWINGS\PROFORM\SJA_A1_200.DWG

PLANNING

Site Plan as Proposed

date: October 2025

scale: 1 : 200 @A3

25015

SK

28

Appendix B - EA Consultation

Lisa Slater

Our ref: EIR2025/47468

Date: 06/01/2026

Dear Lisa,

Enquiry Regarding Product 5, 6 & 7 for the site at 8-9 South Street, Worthing, West Sussex, BN11 3AL

Thank you for your enquiry which was received on 26/11/2025.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. The information is attached.

[FRA advisory text](#)

Name	Product 5, 6, 7 & 8
Description	Arun Coastal, 2012
Licence	Environment Agency Conditional Licence
Conditions	<p>1.0 You may use the Information for your internal or personal purposes and may only sublicense others to use it if you do so under a written licence which includes the terms of these conditions and the agreement and in particular may not allow any period of use longer than the period licensed to you.</p> <p>2.0 Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of 5 years at the end of which it will terminate automatically without notice.</p> <p>3.0 We have restricted use of the Information as a result of legal restrictions placed upon us to protect the rights or confidentiality of others. In this instance it is because of third party data. If you contact us in writing (this includes email) we will, as far as confidentiality rules allow, provide you with details including, if available, how you might seek permission from a third party to extend your use rights.</p> <p>4.1 The Information may contain some data that we believe is within the definition of "personal data" under the Data Protection Act 1998 but we consider that we will not be in</p>

	<p>breach of the Act if we disclose it to you with conditions set out in this condition and the conditions above. This personal data comprises names of individuals or commentary relating to property that may be owned by an individual or commentary relating to the activities of an individual.</p> <p>4.2 Under the Act a person who holds and uses or passes to others personal data is responsible for any compliance with the Act and so we have no option but to warn you that this means you have responsibility to check that you are compliant with the Act in respect of this personal data.</p> <p>5.0 The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km². Information about the operation of flood assets should not be published.</p> <p>6.1 Where we have supplied model data which may include model inputs or outputs you agree to supply to the Environment Agency copies of any assessments/studies and related outputs, modifications or derivatives created pursuant to the supply to you of the Information, all of which are hereinafter referred to as “the Data”.</p> <p>6.2 You agree, in the public interest to grant to the Environment Agency a perpetual royalty free non-exclusive licence to use the Data or any part thereof for its internal purposes or to use it in any way as part of Environment Agency derivative products which it supplies free of charge to others such as incorporation into the Environment Agency's Open Data mapping products.</p>
Information Warnings	<p>The flood risk data provided is based on existing EA hydraulic models with an allowance for climate change. Please note the climate change allowances provided are not up to date. These were updated on 27 July 2021.</p> <p>You should refer to 'Flood risk assessments: climate change allowances' for the most up to date allowances. You will need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.</p>
Attribution	<p>Contains Environment Agency information © Environment Agency and/or database rights.</p> <p>May contain Ordnance Survey data © Crown copyright 2022 Ordnance Survey 100024198.</p>

Data Available Online

Many of our flood datasets are available online:

- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Yours sincerely,

Richard Gregory

Partnership and Strategic Overview East Sussex, Solent and South Downs

Environment Agency | Teville Gate House, Teville Road, Worthing, West Sussex,
BN11 1UR