



Civil Engineers & Transport Planners

Parrot Inn,
Shalford

Flood Risk Assessment
& Drainage Strategy

April 2024

241790/FRA/OR/KBL/01



Civil Engineers & Transport Planners

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DOCUMENT STATUS

Project: Parrot Inn, Shalford
Title: Flood Risk Assessment & Drainage Strategy
Client: Pearmain Pubs Ltd
Reference: 241790/FRA/OR/KBL/01

Produced by: OR Date: 17/04/2024
Checked by: KBL Date: 17/04/2024
Approved by: KBL Date: 17/04/2024

<u>Issue/revision</u>	<u>Date</u>	<u>Status</u>	<u>Issued by</u>
First	17/04/2024	For Approval	KBL

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- Drawing 3177.P1.100.00. – Existing Site layout
- Drawing 3177.P1.105.00. – Proposed Site Layout

1 INTRODUCTION

1.1 Scope

1.1.1 Lanmor Consulting Ltd has been appointed to produce a Flood Risk Assessment & Drainage Strategy report for The Parrot Inn, Broadford Rd, Broadford, Shalford, Guildford, GU4 8DW.

1.1.2 This report describes the sites existing conditions, development proposals and implications of flooding on the site in accordance with the government's guidance document: The National Planning Policy Framework (NPPF), with specific reference to its Planning Practice Guidance (PPG).

1.1.3 This report will consider the following:

- Development proposals
- Sources of flooding and flood defences
- Flooding extents, depth and climate change predictions
- Impact of flooding on the development
- Dangers presented by flooding

1.1.4 This report has been prepared in accordance with the requirements of the governments National Planning Policy Framework (NPPF) and its planning practice guidance and will demonstrate that the proposed development will be safe and will not increase the risk of flooding in the surrounding area.

1.1.5 This report will also consider the proposed drainage regime for the site. It will assess the site's current runoff regime and set the drainage strategy for the proposed development, including discharge rates and any requirements for attenuation.

1.2 Site Location

1.2.1 The site is located on Broadford Rd, Broadford, Shalford, Guildford, GU4 8DW; just outside the village centre of Shalford. The site is located to the west of Shalford village centre, it is surrounded by mainly open fields and to the south of the site there are number of commercial buildings.

1.2.2 The site is located close to the River Wey approximately 80m to the west. Figure 1.1 below shows the location of the application site.

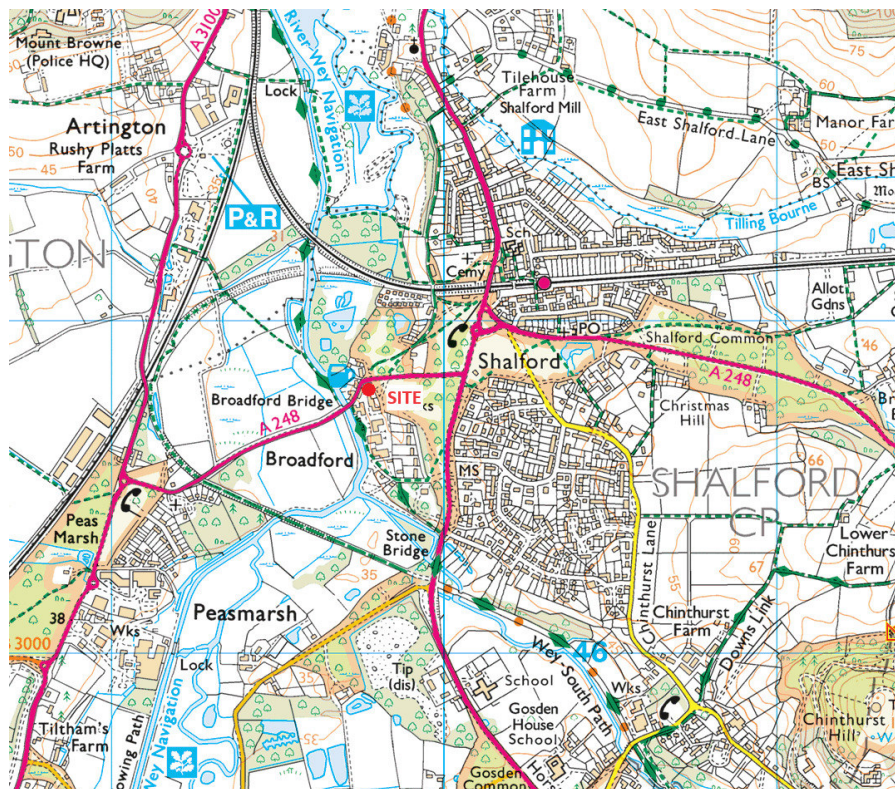


Figure 1.1 – Location Plan

1.3 Existing Site

1.3.1 The existing site contains a single building with parking to the front. The building has been used as a public house with letting rooms above. There is also a connected residential property in the northwest corner of the building that is not included within this application.

1.3.2 The building consists of single and two storey elements, the letting rooms and public house are spread over both floors. The existing site plan is included in Appendix A drawing 3177.P1.100.00.

1.4 Proposed Site

1.4.1 The proposed development consists of interior remodelling to create a large open trading space on the ground floor and 6 en-suite letting rooms at first floor.

1.4.2 The proposals seek approval for a small rear / side extension of the existing building at ground floor and new covered entrance to the enlarged ground floor trading area.

1.4.3 Drawing 3177.P1.105.00 included in Appendix A shows the proposed site layout post construction.

1.5 Site Geology

1.5.1 The sites soil consists of the Weald Clay Formation, containing layers of mudstone. The sedimentary bedrock was formed between 133.9 and 126.3 million years ago during the Cretaceous period.

1.5.2 The site also contains superficial deposits of River Terrace Deposits, with layers of sand and gravel. The sedimentary superficial deposit was formed between 2.588 million years ago and the present during the Quaternary period.

2 SOURCES OF FLOODING

2.1 Fluvial / Tidal Flooding

2.1.1 Detailed flood information was requested from the Environment Agency (EA) for this site. National Planning Policy Framework (NPPF) defines the flood zone as follows:

- Zone 1: 'Low Probability' This zone comprises land assessed as having a less than a 1 in 1000 annual probability of river or sea flooding (<0.1%) in any year.
- Zone 2: 'Medium Probability' – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year.
- Zone 3a: 'High Probability' – This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- Zone 3b: 'The Functional Floodplain' – This zone comprises land where water must flow or be stored in times of flood. SFRAs should identify this Flood Zone (land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood, or at another probability to be agreed between the LPA and the Environment Agency, including water conveyance routes).

2.1.2 The proposed site is shown on the EA flood maps for planning to be within Flood Zone 2. This is defined as land assessed as having between 1 in 100 to 1 in 1000 annual probability of river flooding or tidal flooding in any year. Figure 2.1 below shows the location of the site with regards its proximity to the flood zones.

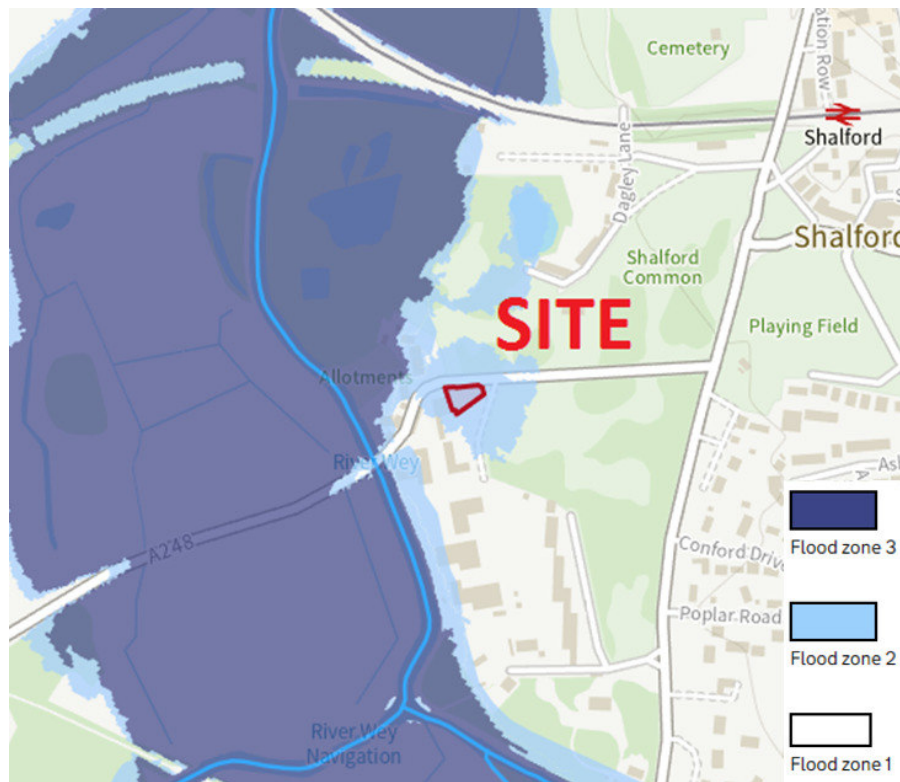


Figure 2.1 – Fluvial Flood Mapping

2.1.3 The dark blue areas indicate the extent of flood risk zone 3, and light blue areas indicate a zone 2, the unshaded areas indicate flood zone 1. The above map shows that the site lies within Flood Zone 2.

2.2 Surface Water Flooding

2.2.1 The surface water flood mapping prepared by the EA is the best available source of national information on surface water flooding. It is a starting point for understanding patterns and probability of surface water flooding. The EA accept that the mapping has limitations and state *“that these maps cannot definitely show that an area of land or property is, or is not, at risk of flooding, and the maps are not suitable for use at an individual property level”*.

2.2.2 The existing building is not indicated to be at risk of surface water flooding on the EA flood map, the car park to the east is however shown to be a medium risk of surface water flooding. Figure 2.2 below shows the depth of flooding that might occur in the area from an event with a probability of 1.0%.

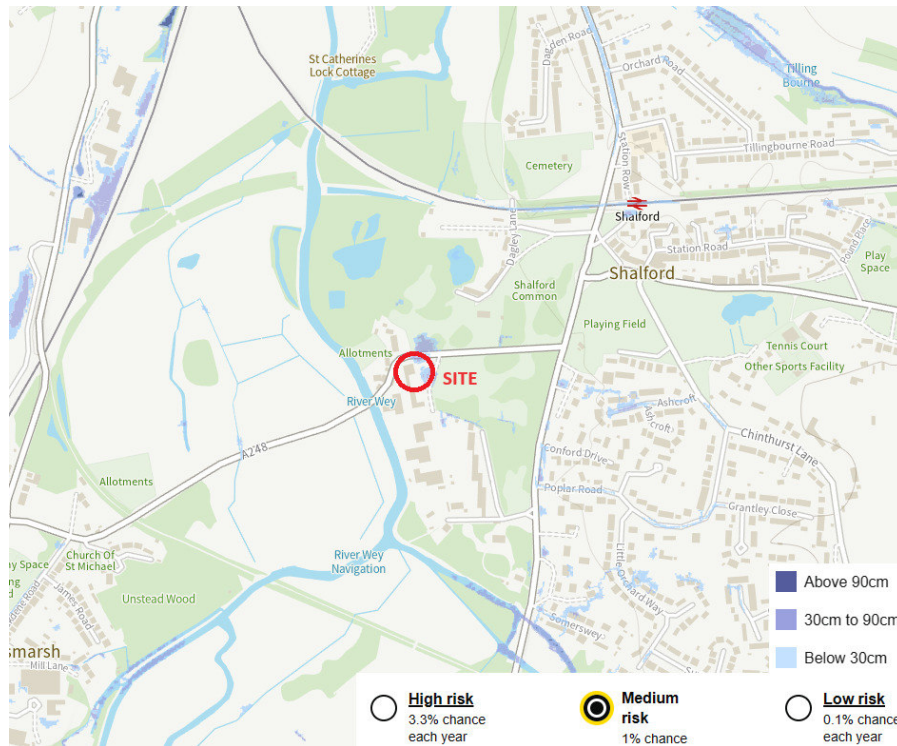


Figure 2.2 – Surface Water Flood Mapping

2.2.3 The figure 2.2 clearly shows the building is not at risk of flooding and that the northern part of the car park might be subject to flooding depths of 30-90cm.

2.3 Groundwater Flooding

2.3.1 Guildford Borough Council (GBC) published Strategic Flood Risk Assessment (SFRA) which provides details of the areas that could be susceptible to groundwater flooding. The area around the site is shown to be at potential risk for groundwater flooding of properties situated below ground level.

2.3.2 An extract of the groundwater flood mapping can be found below as figure 2.3, the site has no history of ground water flooding and risk is considered low.

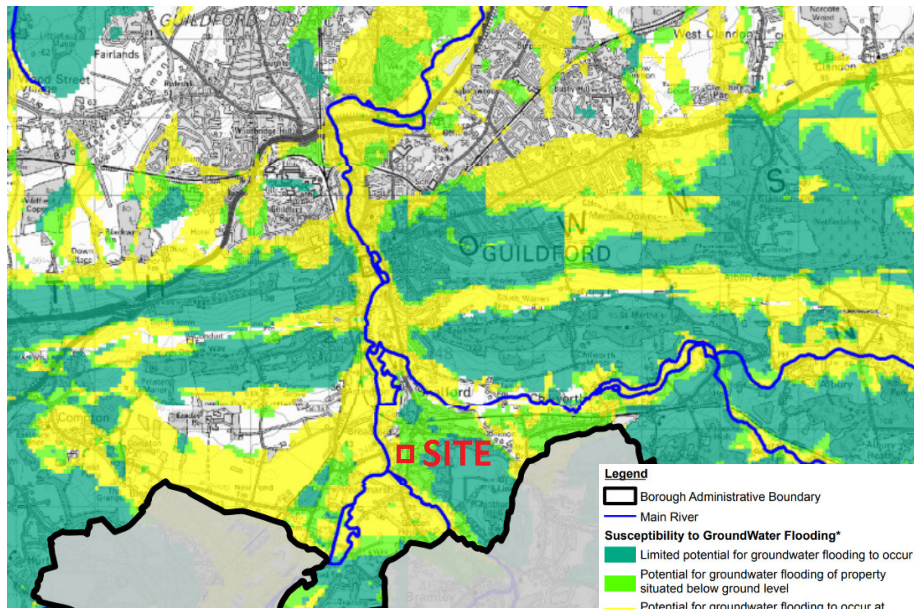


Figure 2.3- Groundwater Flood Mapping

2.4 Sewer Flooding

2.4.1 The SFRA provided by GBC demonstrates also shows the number of sewer flooding incidents recorded within the postal code. The postal area is very large and there are 16 incidents recorded, given the area this is considered to be low. Figure 2.4 shows an extract of SFRA sewer flood mapping.

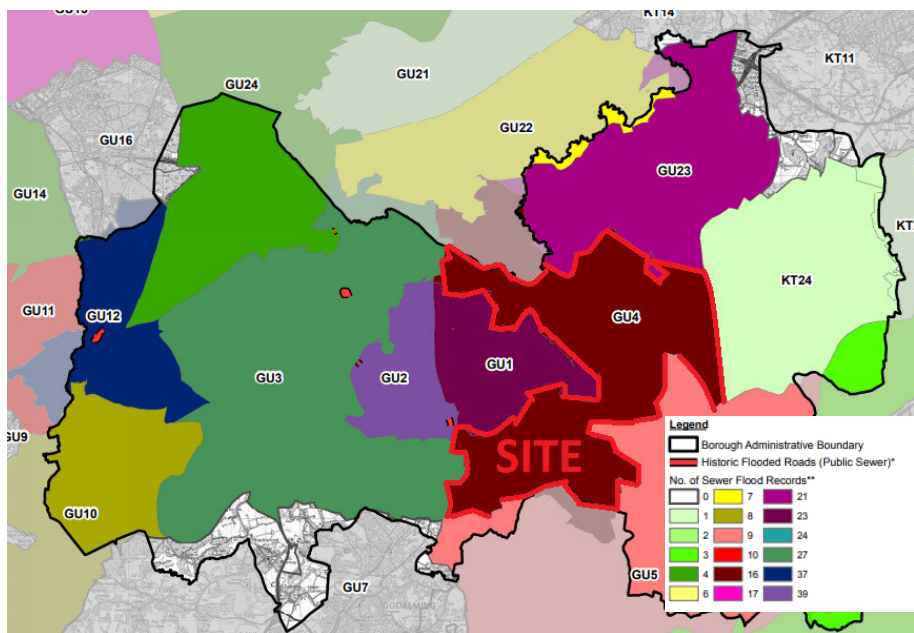


Figure 2.4 – Sewer Flood Mapping Incidents

2.5 Reservoir Flooding

2.5.1 The website for the EA flood mapping shows that the site may be at risk from reservoir flooding when there is also a flooding incident associated with river flooding. The extent of reservoir flooding is shown in figure 2.5 below.

2.5.2 Reservoirs in the UK have a high safety record and with introduction of the Reservoirs Act 1975, dams and reservoirs must keep a strict maintenance schedule. This means that it is incredibly unlikely for dam and reservoir failure to occur.

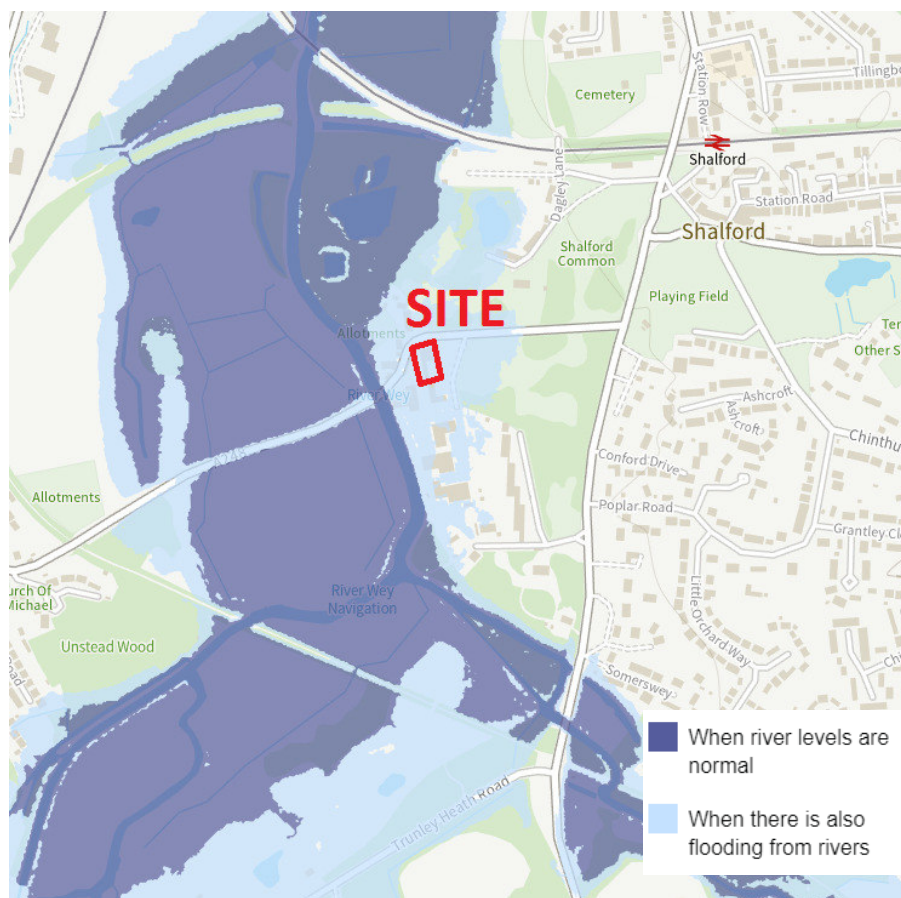


Figure 2.5 – Reservoir Flood Mapping

3 MODELLED FLOOD EVENTS AND CLIMATE CHANGES

3.1 Modelled Flood Levels

3.1.1 The principal source of flooding to the site is from the River Wey located to the west of the site approximately 80m. The site is shown to be in a Flood Zone 2 as indicated on the Environment Agency (EA) flood mapping.

3.1.2 Flood zone 2 is predicted to have between a 0.1 to 1.0%, therefore site is considered to have 1.0% or less risk of flooding. Detailed flood modelling data has been obtained from the Environment Agency (EA), consisting of Product 5, 6 and 7 data. The flood data provided from their Middle Wey 2020 model shows the estimated flood depths and hazards associated with flood events for different return periods. Figure 3.1 below shows an extract from the product 6 model for a range of flood events for different return periods.

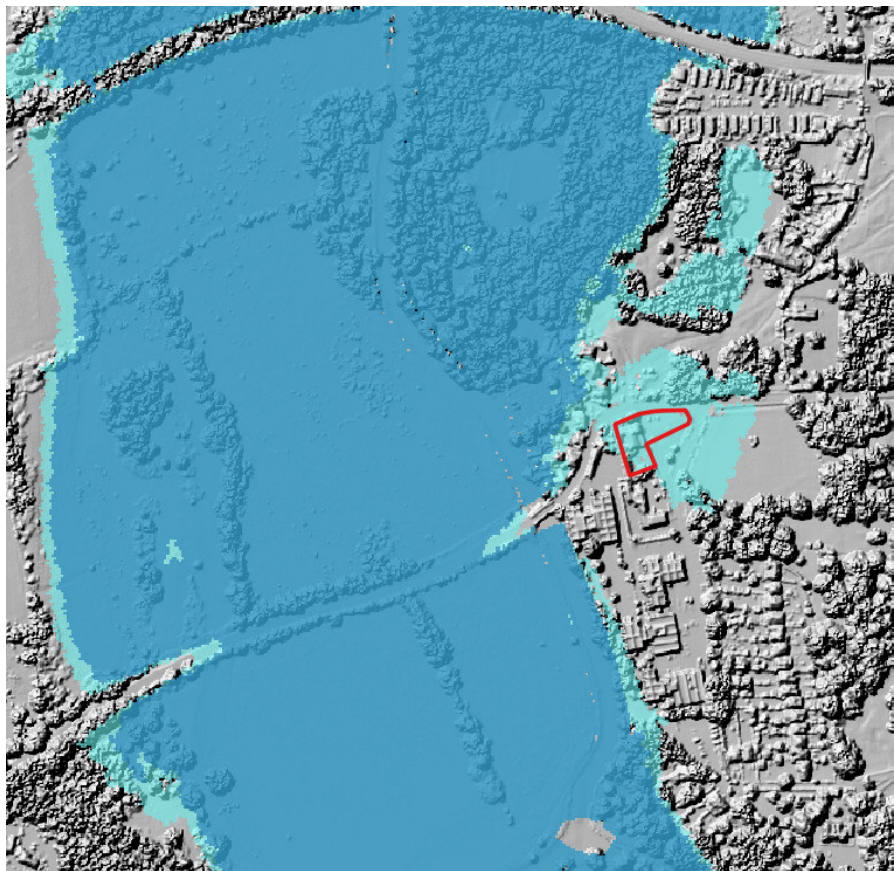


Figure 3.1 – Flood Extents from Middle Wey Model

3.1.3 The dark blue areas show the flood extents for an event with a probability of 1.0% (zone 3) and the light blue a probability of 0.1% (zone 1). The application site is indicated to be within Flood Zone 2.

3.2 Climate Change Allowances

3.2.1 Past, present, and future emissions of greenhouse gases are expected to cause significant global climate change during this century – the nature of climate change at regional level will vary. The NPPF recommends that FRA’s should consider the future flood levels and the impact climate change may have on rising sea levels, increased rainfall etc.

3.2.2 The climate change allowances are based on the River Management Catchment Area, the flood vulnerability and the life expectancy of the development. Under Flood Risk Assessments: Climate Change Allowances published on the gov.uk website it sets out the level of allowance to be applied to peak river flows depending on the flood zone and use.

3.2.3 The application site is a drinking establishment with letting rooms so under Annex 3 of the PPG for NPPF it is categorised as a “More Vulnerable” use, it is located in Flood Zone 2 so under “Flood Risk Assessment: Climate Change Allowances” the central allowance for climate change should be applied. The application site is located in the Wey and tributaries Management Catchment area and as it is a commercial use it will have a 50-year life expectancy, based on the DEFRA website for climate changes for the central allowance a 9% increase in the peak river flows should be allowed.

3.2.4 The EA have not modelled this climate change impact on this stretch of the river, but they modelled a 20% allowance. Figure 3.2 below shows the extent of flooding from an event with a probability of 1.0% plus a 20% allowance for climate change which overestimates the risk of flooding to the site.

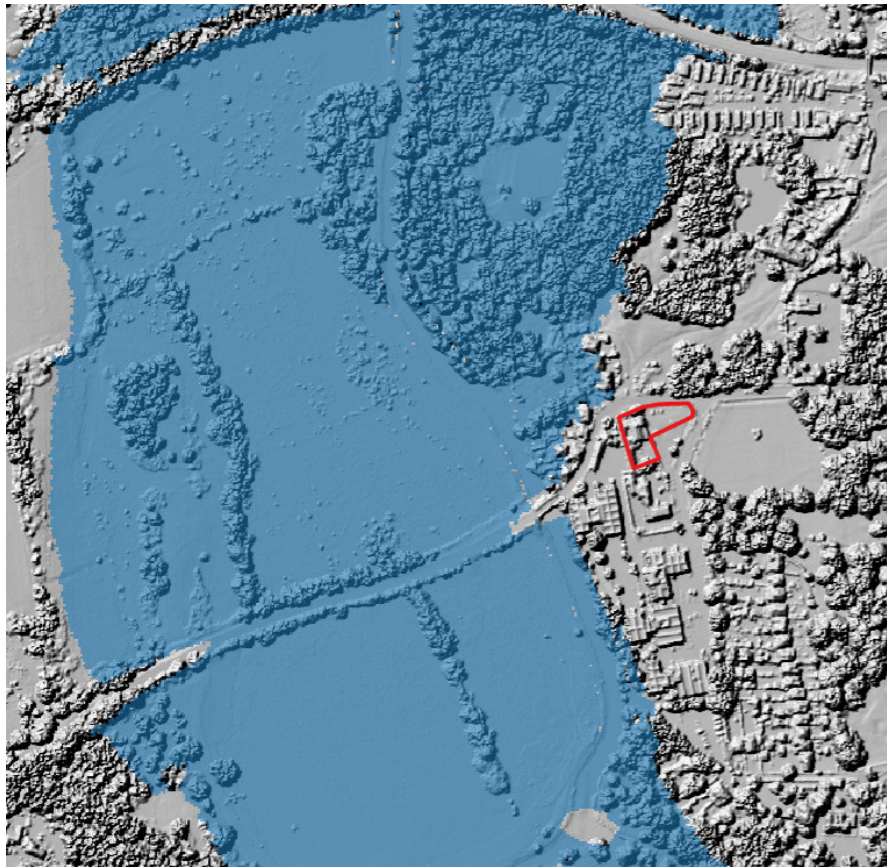


Figure 3.2 – Flood Extents for 1.0% Probability Event with Climate Change

3.2.5 The proposed shows that the application site will not be at risk of flooding with a 1.0% +CC probability.

3.3 Impact of Development on Fluvial Flooding

3.3.1 The proposed development seeks permission to redevelop the site existing property to provide a public house with letting rooms, involving a rear extension to enlarge the ground floor trading area and 6 letting rooms at first floor.

3.3.2 The site is in Flood Zones 2 so has a between a 1.0% to 0.1% probability of flooding, the details flood model shows the site will not present any restriction to the flow of flood waters for an event with a probability of 1.0% or greater including allowances for climate change.

3.3.3 The site will not be at risk of flooding from an event with a probability of 1.0% plus allowance for climate change, therefore the proposals will not result in the loss of flood storage volumes for such an event.

3.4 Impact of Development on Flood Storage

3.4.1 The above assessment has considered the impact of flooding on the development and also how climate change may affect flooding of the site. The site is located in Flood Zone 2 so the development will not be subject to flooding with a probability of 1.0% including climate change allowances so will be safe and should not suffer damaged resulting from a flood event.

3.5 Safe Access from Development

3.5.1 The site is located in Flood Zone 2 with the nearest flooding to the site to the west, so a safe and dry access can be provided to and from the site to the east along Broadford Road at all times during an extreme flood event.

3.5.2 As part of the EA flood model, they have provided flood hazards based on a 1 in 100 year plus CC allowance. Figure 3.3 shows the flood hazard associated with the area for such an event. This clearly shows that there is a safe route out of the site on to the west along the road to an area not at risk of flooding.

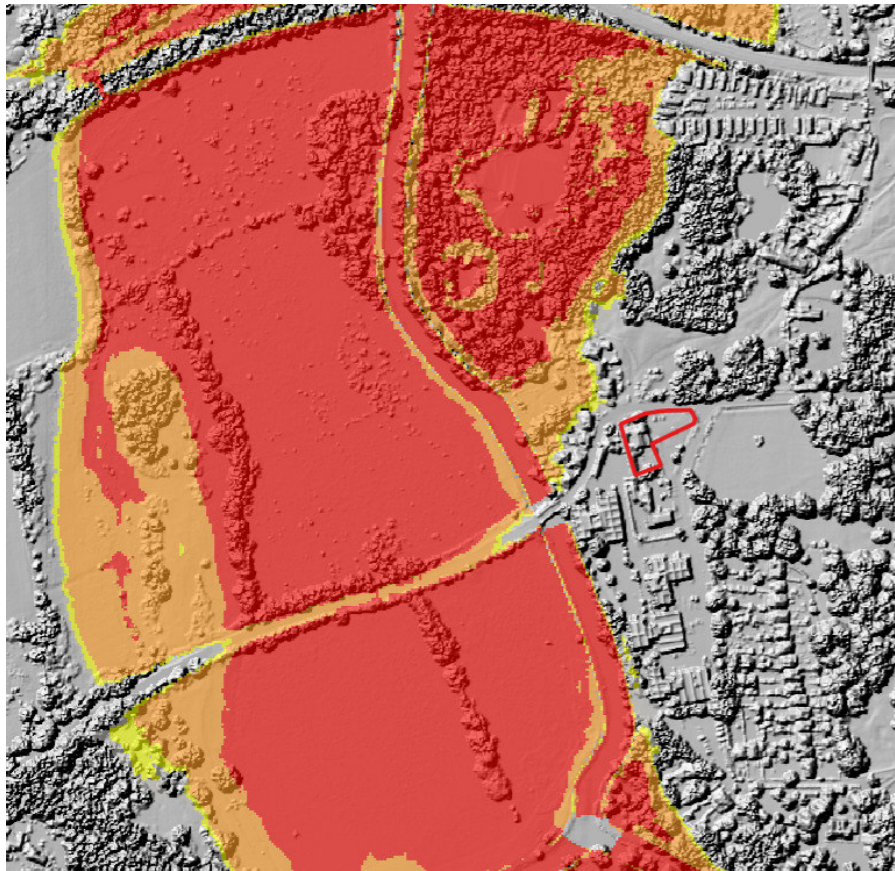


Figure 3.3 – Flood Hazard for 1.0% Probability Event with Climate Change

3.5.3 The red shading shows the areas that presents “danger for all”, the orange “danger for most”, and the yellow “danger for some”. As can be seen from the above the application site access to the east is not in a shaded area and therefore a safe dry access can be provided to and from the site at all times.

4 SEQUENTIAL TEST AND EXCEPTION TEST

- 4.1.1 The proposed commercial usage is classified as ‘More Vulnerable’ according to the National Planning Policy Framework (NPPF). The aim of a sequential test is to demonstrate that development is firstly located to low flood risk areas.
- 4.1.2 The proposals involve the reconfiguration of the existing property with a small extension to provide a public house and lettings rooms. There is no change of use, the facility was trading as a public house and will resume as such after redevelopment. Given the nature of the development to refurbish the property there are no other suitability available sites in the borough or local area that the proposals could be located at. Similarly, the extension to the trading area on the ground floor could not be located elsewhere in the area as it would not be able to serve the extended the trading area.
- 4.1.3 The inability to locate the extension elsewhere in the borough, and the refurbishment of the existing property, it is not possible to allocate this development to an area at lower risk of flooding, so the sequential test has been met.
- 4.1.4 Table 2 in the PPG reproduced below as table 4.1 shows that the proposed type of development within Flood Zone 2 is considered compactible and that the exception test is not required.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

Table 4.1 – Flood Risk Vulnerability and Flood Zone ‘Compatibility’

5 DRAINAGE

5.1 Foul Water Drainage

5.1.1 There are existing facilities within the building that currently discharge to external drainage network in the wider area.

5.1.2 The proposals will involve the reconfiguration of the currently facilities and refurbishment, changes will be made to the internal fittings and they will be connected to the existing pipework on site.

5.2 Surface Water Drainage

5.2.1 The current property is served by a number to rainwater pipes and external gullies that collect runoff from the buildings roof and surrounding hardstanding's. The proposals will retain the existing building with a small extension at ground floor to the south of the building.

5.2.2 The area of the extension currently forms part of the public house beer garden and has an impermeable surface. The proposals will therefore not result in an increase in the impermeable area on site as the area is currently draining to the nearby sewers.

5.2.3 The proposed drainage strategy for the site is therefore to utilise the existing rainwater downpipes and gullies to drain the roof and hardstanding's as per the current situation will minor adjustment of the drains in the area of the extension to cater for the development proposals.

6 SUMMARY AND CONCLUSION

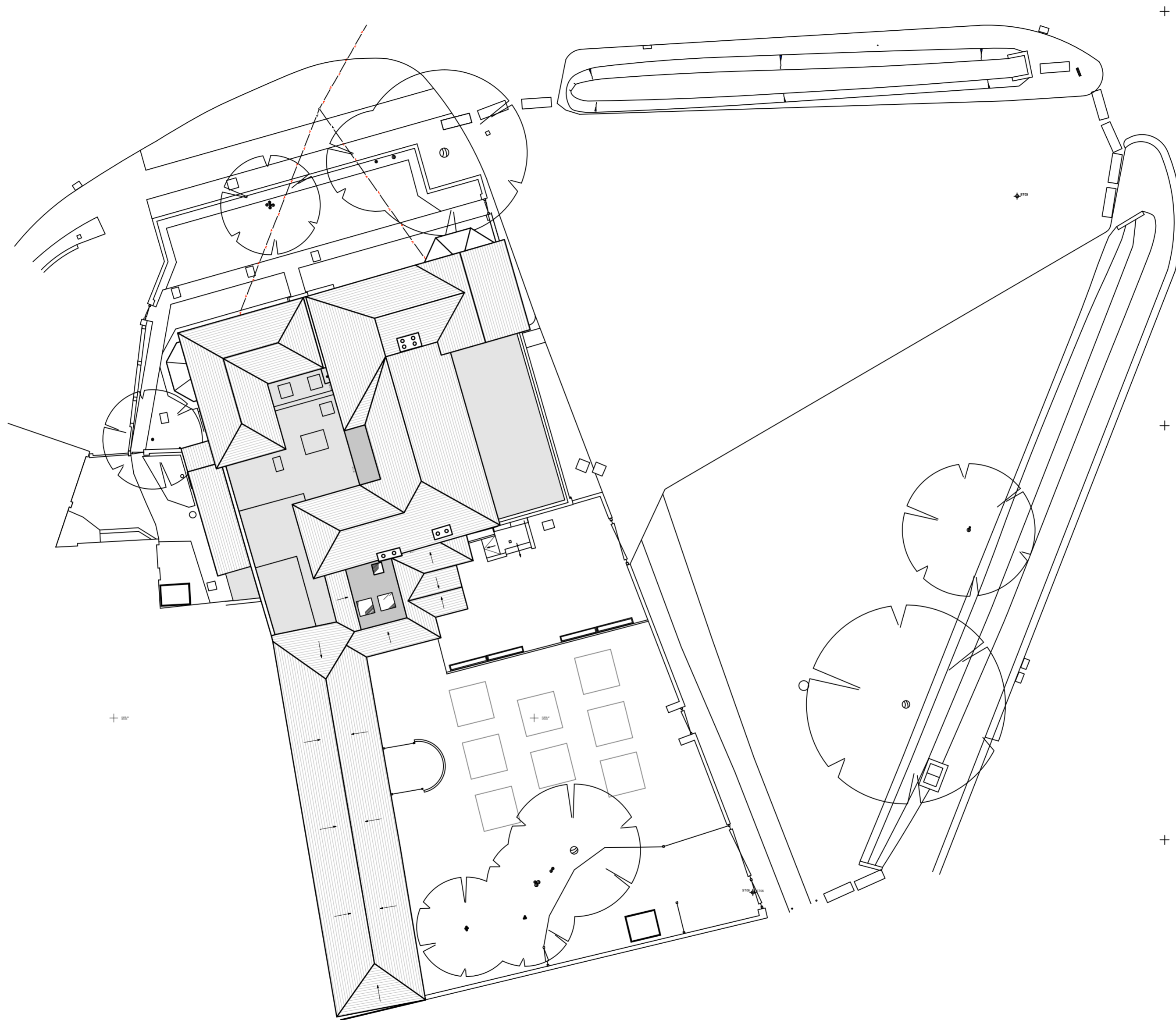
- 6.1.1 The proposed development is the refurbishment and extension of the Parrot Inn, Shalford. The development proposals will involve the retention and refurbishment of the public house to provide a large trading area on ground floor via a southern extension and 6 letting rooms at first floor.
- 6.1.2 The site is located in Flood Zones 2 so the property has between 1.0% to 0.1% risk of fluvial flooding, the site has been sequential tested and it has not been possible to locate the development to an area at low flood risk, it therefore meets the requirements of the sequential test and is compatible with flood zone 2 so the exception test is not required.
- 6.1.3 The proposals involve a small extension of the existing building and the flood modelling provided demonstrates that the site is located in flood zone 2 and will not be subject to flooding from an event with a probability of 1.0% plus allowance for climate change. Given the application is not at risk from a 1.0%+CC event it will not restrict the free flow of flood waters or result in the loss of flood storage volumes on site.
- 6.1.4 The drainage strategy for the development will be to use the existing network as there will only be minor alterations to the building, there will be no increase in the impermeable area on site so there will no increase discharge from the proposals that would increase the risk of flooding in the area.
- 6.1.5 The access to and from the site has been assessed and a safe dry access can be provided from the east for all event with a 1.0%+CC probability, the site is also not at risk of flooding from an event with 1.0%+CC probability so will be safe and should not suffer damage from an event.
- 6.1.6 For the reasons outlined within this report we see no reason to refuse planning permission on the grounds of flood risk or there being insufficient capacity to discharge runoff from the development.

APPENDIX A

Drawing 3177.P1.100.00. – Existing Site layout

NOTES:
Contractors must verify all dimensions on site before commencing any work. Figured dimensions to take precedence over scaled dimensions. Contractors must not scale from this drawing unless express instructions are given by Sampson Associates. The copyright of this drawing is reserved. The drawing must not be disclosed without authority.

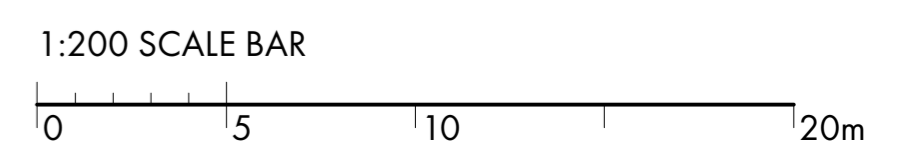
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Site: PARROT INN, SHALFORD	First Issued: JAN 2024	Scale @ A2: 1:200	
Title: EXISTING SITE PLAN	Issue: PLANNING		

SAMPSON ARCHITECTS
ASSOCIATES | INTERIOR DESIGNERS

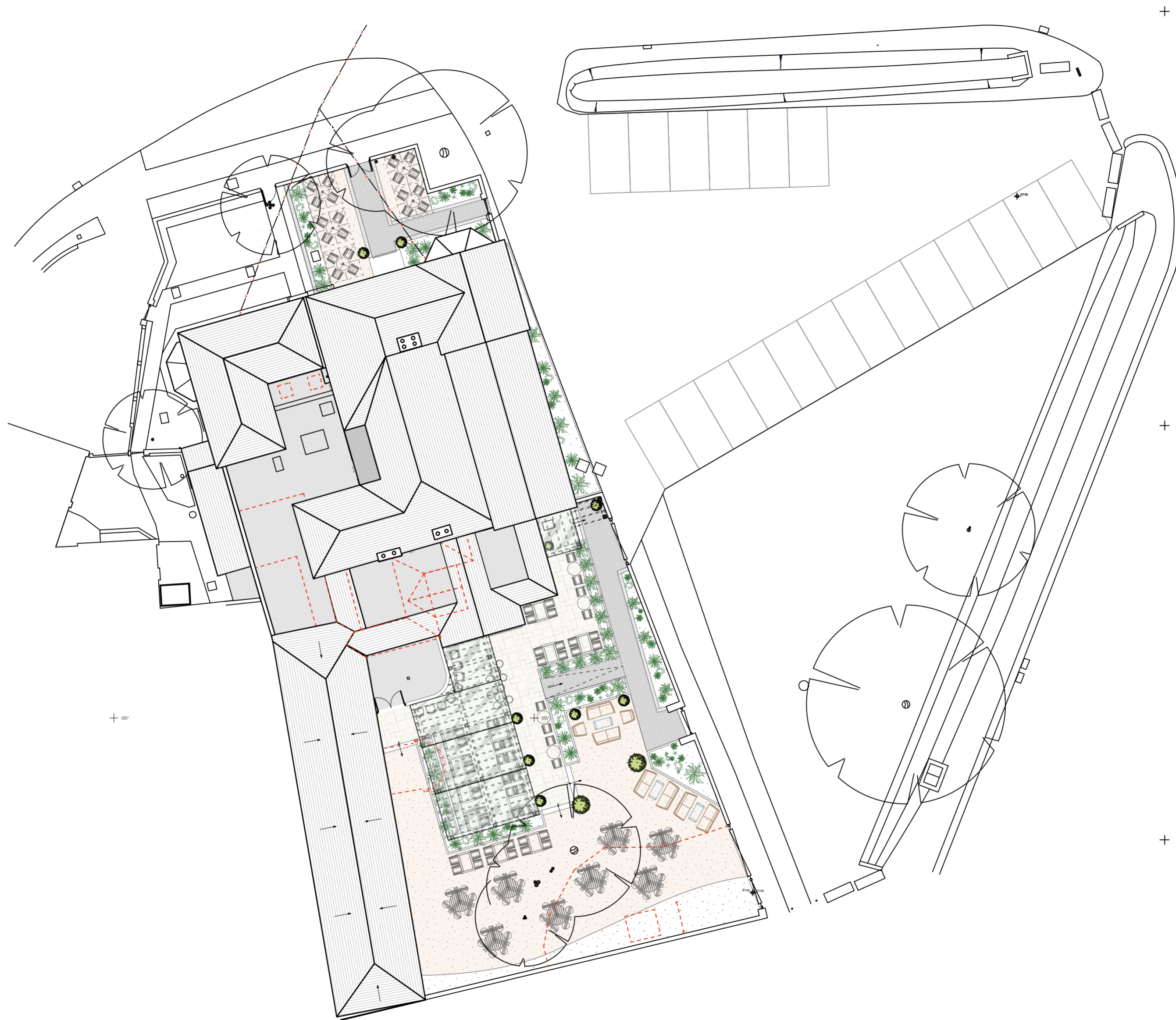
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Drawing 3177.P1.105.00. – Proposed Site Layout

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Site: PARROT INN, SHALFORD	First Issued: JAN 2024	Scale @ A2: 1:200	
Title: PROPOSED SITE PLAN	Issue: PLANNING		

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