



THE OLD FORGE

Upper Woodford, SP4 6NU

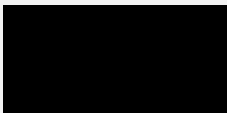
FLOOD RISK ASSESSMENT

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Control Sheet

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CONTENTS

1	INTRODUCTION	3
2	EXISTING SITE AND HYDROLOGY CHARACTERISTICS	4
3	PROPOSED DEVELOPMENT	8
4	FLOOD RISK	9
5	IMPACT ON LOCAL DRAINAGE	15
6	SUMMARY	18

Tables

Table 5-1	Flood Zone Classification	9
Table 5-2	Flood Risk Vulnerability	14
Table 6-1	Water Quality Indices (as per C753 The SuDS Manual)	16
Table 6-2	Planter Maintenance	16

Figures

Figure 3-1	Local Context	4
Figure 3-2	Site Context	5
Figure 3-3	Topography	6
Figure 3-4	BGS Geology	7
Figure 5-1	Flood Map for Planning	10
Figure 5-2	Flood Map for Planning – Undefined Climate Change Scenarios	11
Figure 5-3	Recorded Flood Outlines	12
Figure 5-4	RoFSW + 20% Climate Change Extents	13

1 INTRODUCTION

1.1 Background

1.1.1 Calibro has been appointed to undertake a Flood Risk Assessment (FRA) for renovation and conversion of the existing Old Forge building for residential use.

1.1.2 The National Planning Policy Framework (NPPF) requires that the planning system takes full account of flood risk. This requires that:

- 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;
- 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;
- It incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;
- Any residual risk can be safely managed;
- Safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

1.1.3 Footnote 63 of the NPPF states that a site-specific FRA will be required for proposals:

- a) that are greater than 1 hectare in area within Flood Zone 1;
- b) that are located in Flood Zones 2 and 3;
- c) in an area within Flood Zone 1 which has critical drainage problems;
- d) in an area within Flood Zone 1 identified in a Strategic Flood Risk Assessment (SFRA) as being at flood risk now or in the future;
- e) in an area in Flood Zone 1 that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

1.1.4 The site falls within Flood Zone 1 but abuts Flood Zone 2 and is an area of mapped groundwater flood risk as identified by the Wiltshire Strategic Flood Risk Assessment (SFRA). Therefore, a proportionate FRA is required.

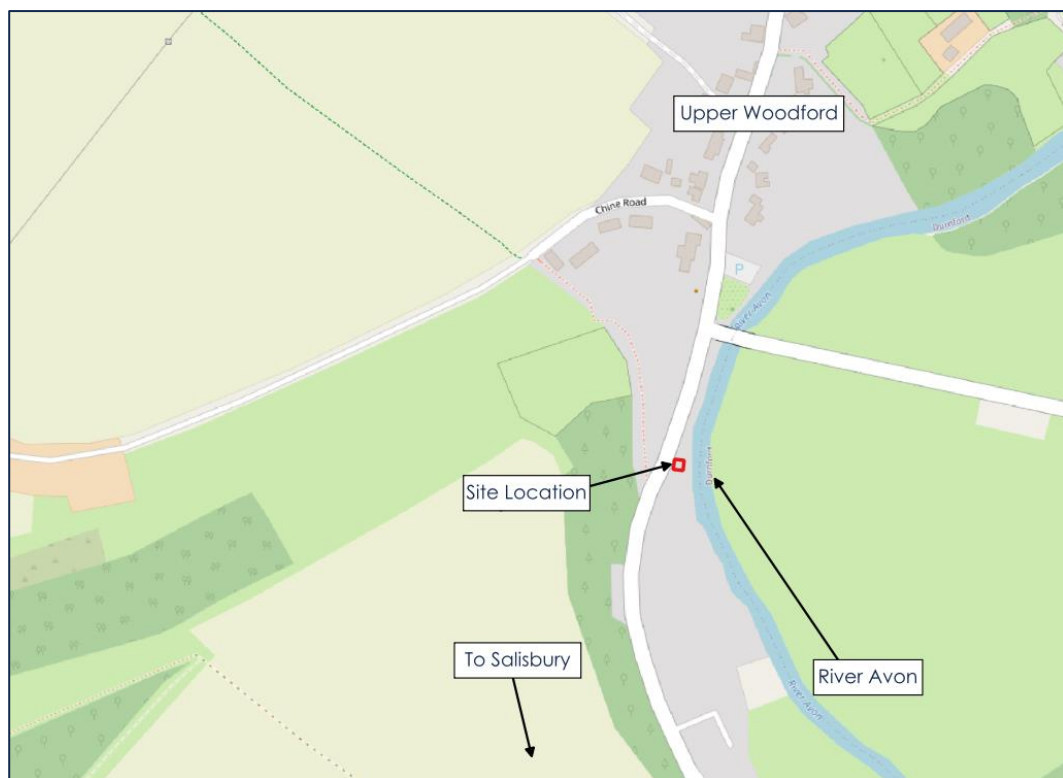
1.1.5 This assessment considers the risks of all types of flooding to the site for the lifetime of the development and assess if there would be an impact of flooding to third parties, recommending mitigation if a risk is identified.

2 EXISTING SITE AND HYDROLOGY CHARACTERISTICS

2.1 Site Description

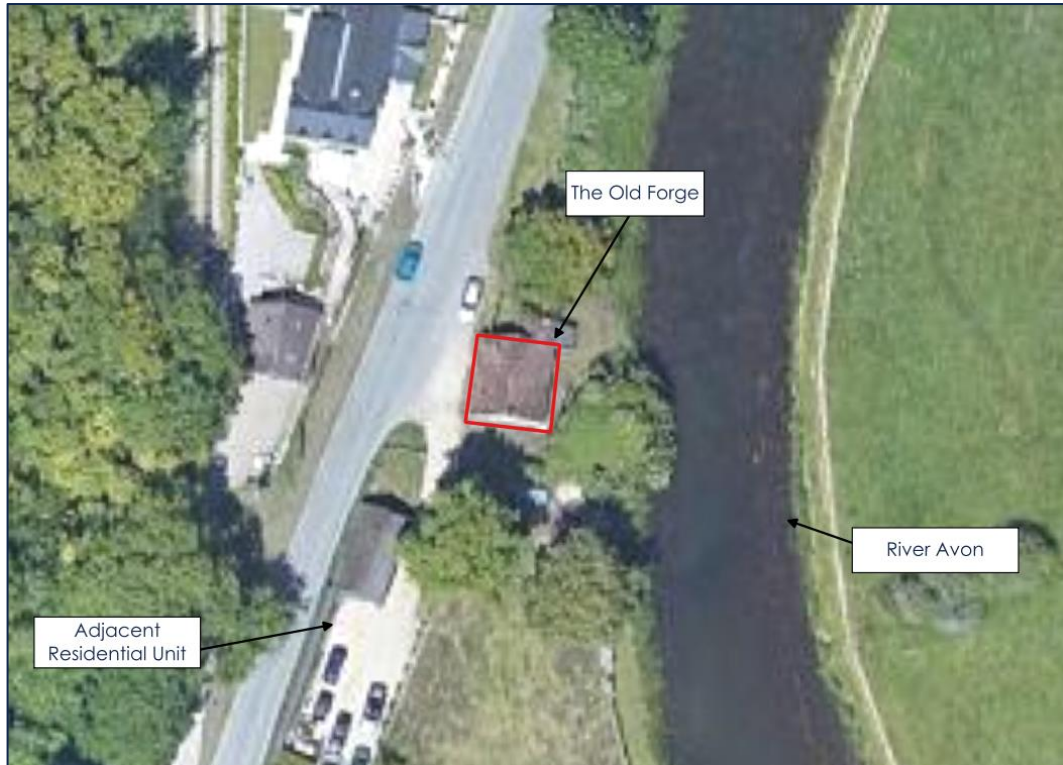
- 2.1.1 The site is located to the south west of the village Upper Woodford and to the north of Salisbury, Wiltshire. The approximate coordinates at the centre of the site are 412400, 137030 and the closest postcode is SP4 6NU. Figure 2-1 shows the local context of the site.

Figure 2-1 Local Context



- 2.1.2 The site is currently occupied by existing the existing Old Forge building with a residential unit to the south and the River Avon to the east. Figure 2-2 shows the context of the site.

Figure 2-2 Site Context



2.2 Hydrology and Topography

- 2.2.1 The River Avon is located to the east of the site and is the only known watercourse within the vicinity of the site.
- 2.2.2 In the absence of a Topographic Survey, LiDAR data has been used to determine the topography of the site.
- 2.2.3 As shown in **Error! Reference source not found.**, the slopes in an easterly direction towards the western bank of the River Avon. Levels range from approximately 59.3mAOD along the western edge of the building to approximately 58.7mAOD along its eastern edge. Land to the east of the building continues to fall to a level of approximately 57.7mAOD at the western bank of the River Avon.
- 2.2.4 Land on the opposite (eastern) bank of the River Avon is relatively flat and lower lying than the site, at 58.0mAOD.

Figure 2-3 Topography



2.3 Geology and Soils

- 2.3.1 Geological data held by the British Geological Survey (BGS) shows that the site and surrounding area is underlain by 'Lewes Nodular Chalk Formation – Chalk' bedrock. Geological data also shows that the site and its surrounding areas are underlain by 'Alluvium – Clay, Silt, Sand and Gravel' superficial deposits. Figure 2-4 shows the superficial geology at the site and surrounding areas.

Figure 2-4 BGS Geology



- 2.3.2 The BGS Hydrogeology aquifer classification (625k) records the bedrock geology under the site and immediate surrounding areas being a *'Highly Productive Aquifer'*.
- 2.3.3 There are no known BGS borehole records located in vicinity of the site.
- 2.3.4 No springs are identified by relevant OS mapping within the vicinity of the site.
- 2.3.5 SoilScapes Mapping records the soil type beneath the site as being *'Loamy and clayey floodplain soils with naturally high groundwater'*.

3 PROPOSED DEVELOPMENT

3.1 Site Proposals

- 3.1.1 The proposals are for the renovation and conversion of the existing Old Forge building to provide a residential dwelling. No basement accommodation is proposed.
- 3.1.2 The redline boundary comprises the building only with no external areas included. In the event that external works such as access roads or parking areas are proposed, they would be formed with permeable materials at this stage.
- 3.1.3 The site measures approximately 71m². The impermeable area of the site is not expected to change.
- 3.1.4 As the proposals are for a change of use, the development is outside the scope of the Sequential and Exception tests.

4 FLOOD RISK

4.1 National Planning Policy Framework (NPPF)

4.1.1 In accordance with the NPPF, this FRA considers the following sources of flooding:

1. Tidal Flooding – from the sea;
2. Fluvial Flooding – from rivers and streams;
3. Surface Water Flooding – from intense rainfall events;
4. Groundwater flooding – from elevated groundwater levels or springs;
5. Flooding from sewers – from existing sewer systems; and
6. Artificial sources – from reservoirs, canals etc.

4.2 Flood Zones

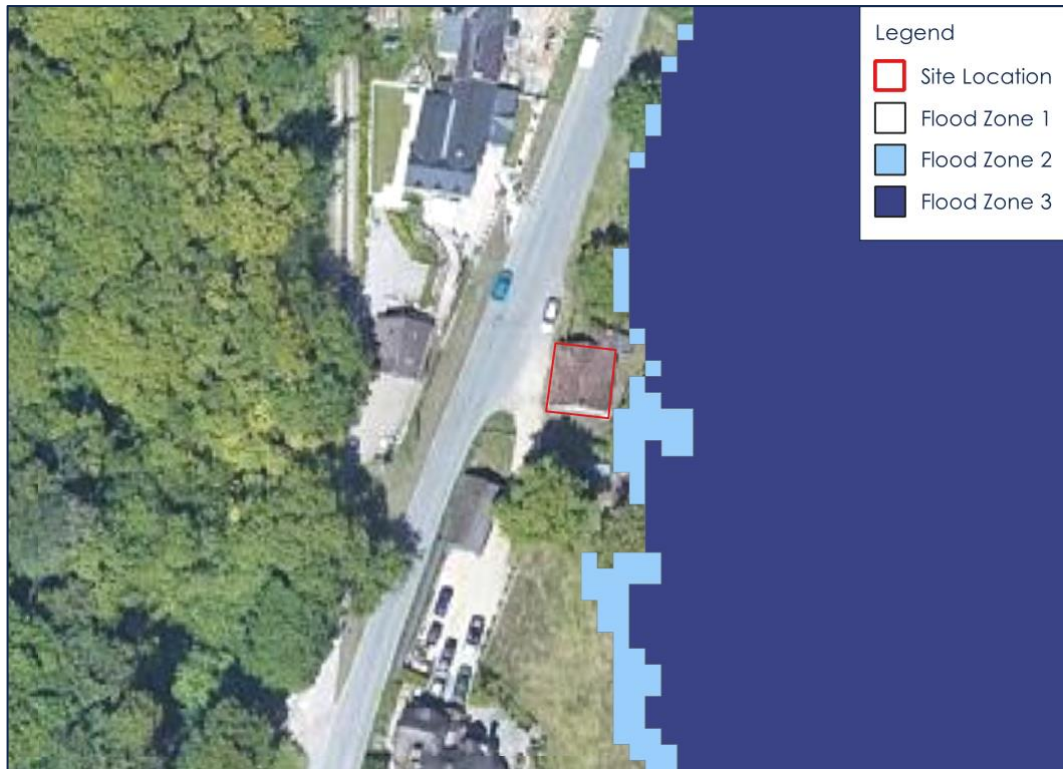
4.2.1 The Flood Zones are based on the assessed probability of the site flooding from rivers and the sea, ignoring the presence of flood defences. The flood zone classifications from the PPG are presented in Table 4-1 below.

Table 4-1 Flood Zone Classification

Flood Zone	Risk	Fluvial Flooding Chance	Tidal Flooding Chance
1	Low	> 1 in 1,000 year	
2	Medium	Between 1 in 100 and 1 in 1,000 year	Between 1 in 200 and 1 in 1,000 year
3	High	Up to 1 in 100 year	Up to 1 in 200 year
3b	Functional Floodplain	Land where water has to flow or be stored in times of flood. This is defined in the relevant SFRA.	

4.2.2 The 2025 iteration of the Flood Map for Planning defines the site as falling within Flood Zone 1 and is therefore at a Low risk of undefended flooding. However, the site abuts Flood Zone 2.

Figure 4-1 Flood Map for Planning



4.3 Fluvial Flooding

- 4.3.1 The site is located adjacent to the River Avon, which is a fluvial watercourse beyond tidal limits.
- 4.3.2 As shown above in Figure 4-1, the site is located within Flood Zone 1 but abuts Flood Zone 2. It is understood there is no detailed modelling available within the vicinity of the site. As a result, this assessment is informed by analysis of the Flood Map for Planning.
- 4.3.3 The Flood Map for Planning includes outputs for climate change scenarios. As shown below in Figure 4-2, the site is located outside of the undefended 1 in 100 year plus climate change extent and abuts the undefended 1 in 1,000 year plus climate change extent.

Figure 4-2 Flood Map for Planning – Undefended Climate Change Scenarios



- 4.3.4 As shown above, the site lies outside of the extent of the undefended 1 in a 1,000 year event and is therefore assessed as being at a **Low** risk of fluvial flooding.

4.4 Recorded Flooding

- 4.4.1 The EA 'Recorded Flood Outlines' dataset shows extents from flooding from the River Avon in 2013/14, which is a known significant event in the area, however it is understood that only the eastern bank was affected as it is situated lower than the western bank of the river.
- 4.4.2 There are isolated extents near the site which were recorded in 2013/2014, but these extents are dispersed and the fact that the extents for the Avon event on the eastern bank are discontinuous despite very flat land suggests that these extents are not accurate. The isolated events are likely to be a result of local drainage issues and not fluvial flooding

Figure 4-3 Recorded Flood Outlines

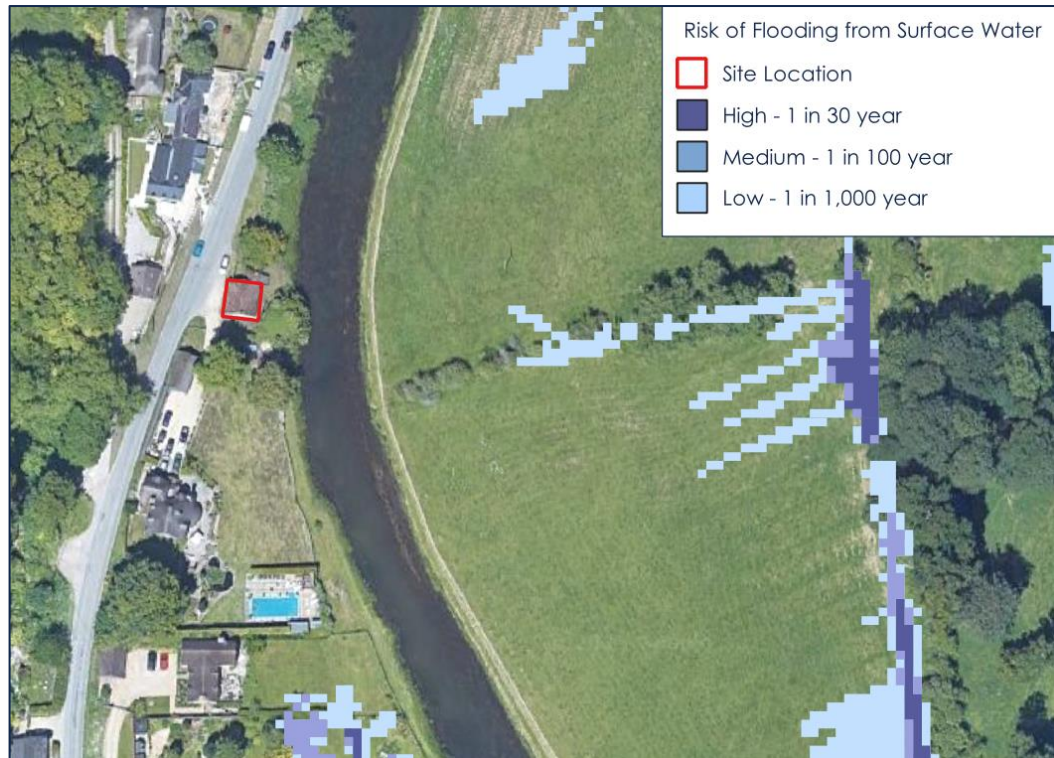


- 4.4.3 A search of British Hydrological Society's Chronology of British Hydrological Events (CBHE) yielded no relevant flood records.

4.5 Surface Water Flooding

- 4.5.1 The January 2025 iteration of the Risk of Flooding from Surface Water (RoFSW) dataset indicates areas where surface water is likely to flow and accumulate. The mapping is derived by simulation of rainfall events over a digital terrain model (DTM) and includes an uplift of 20% to account for climate change.
- 4.5.2 The RoFSW dataset, shown in Figure 4-4, demonstrates that the site is not predicted to flood during a 1 in 1,000 year rainfall event. Therefore, the site has been assessed as being at a **Very Low** risk of surface water flooding.

Figure 4-4 RoFSW + 20% Climate Change Extents



4.6 Groundwater Flooding

- 4.6.1 The Wiltshire SFRA and its accompanying online Data Explorer contains a groundwater emergence, this map shows the areas where groundwater flooding may be likely to emerge.
- 4.6.2 The site is located in an area where *'There is a risk of flooding to subsurface assets, but surface manifestation of groundwater is unlikely'*.
- 4.6.3 There are no subsurface elements in the proposed development, therefore the proposals have been assessed as being at a **Low** risk of groundwater flooding.

4.7 Flooding from Sewers

- 4.7.1 The area upstream of the site is predominantly rural and therefore unlikely to be served by a significant sewer network. The risk of sewer flooding is therefore considered to be **Negligible**.

4.8 Flooding from Artificial Sources

- 4.8.1 The Environment Agency 'Reservoir Flood Extents – Wet Day' national dataset does not predict flooding in the vicinity of the site. No other artificial sources of flood risk have been identified in the vicinity of the site.
- 4.8.2 The risk of flooding from artificial sources is concluded to be **Negligible**.

4.9 Development Vulnerability

- 4.9.1 Table 2 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) defines which types of development are acceptable in each flood zone and is reproduced in Table 4-2. In accordance with Annex 3 of the NNPF, the proposals are considered to be More Vulnerable. All forms, including More Vulnerable, of development are appropriate in Flood Zone 1.

Table 4-2 Flood Risk Vulnerability

Flood Zone	Flood Risk Vulnerability				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
1	✓	✓	✓	✓	✓
2	✓	Exception Test Required	✓	✓	✓
3a	Exception Test Required	✗	Exception Test Required	✓	✓
3b	Exception Test Required	✗	✗	✗	✓

5 IMPACT ON LOCAL DRAINAGE

- 5.1.1 The existing site is understood to discharge roof runoff unattenuated although the destination is unknown.
- 5.1.2 The proposals would result in a negligible alteration to the impermeable footprint of the site. It is therefore proposed to retain the same general drainage arrangements for the site.
- 5.1.3 However, in order to ensure the proposals result in betterment in terms of runoff, it is proposed to discharge the building downpipes to raised beds sustainable drainage (SuDS) planters. These are simple, prefabricated raised beds that accommodate flows from downpipes, slowing the flow of water before discharging to the existing discharge arrangements at low rates. They are planted to provide additional biodiversity and amenity benefits and provide water cleansing.
- 5.1.4 According to the CIRIA SuDS Manual, typically the surface area of bioretention areas such as SuDS planters should be 2 – 4% of the roof area it is draining. The existing and proposed roof area measures a total of approximately 71m² and therefore, the total surface area of the planters should be at least 2.8m² (4% of the total area).
- 5.1.5 If space allows, water butts could be installed to provide further betterment, promoting the reuse of water collected from rainstorms in order to maintain garden areas. However, the capacity provided in water butts cannot be relied upon to provide attenuation storage as they may be at capacity when storms occur.
- 5.1.6 The proposed planters would be considered a betterment compared to the existing drainage situation of the building and therefore strongly align with the core aims of the NPPF.
- 5.1.7 The specific distribution and location of the SuDS planters is subject to detailed design considerations. For example, they will need to be located so as to not impede access.

5.2 Design for Exceedance

- 5.2.1 The proposed planters would provide more storage and would result in betterment even in exceedance events when compared to the existing site. In the unlikely event the capacity of the SuDS planters and filter drain was exceeded, water would gradually flow onto surrounding landscaped areas where it would percolate to the ground, as per the existing site and antecedental conditions.

5.3 Water Quality

- 5.3.1 The SuDS Manual (CIRIA C753) states that the design of surface water drainage should consider minimising contaminants in surface water runoff discharged from the site. The level of treatment required depends on the proposed land use, according to the pollution hazard indices. To provide adequate treatment, the SuDS mitigation

indices for the development must be equal to, or exceed, the pollution hazard indices.

- 5.3.2 Surface water runoff from 'residential roofs' are considered by Table 26.3 of the SuDS Manual to present a Very Low hazard to water quality (see Table 5-1).
- 5.3.3 Table 26.4 of the SuDS Manual provides SuDS mitigation indices for various SuDS methods discharging to the ground, as summarised in Table 5-1. This shows that the bioretention system (SuDS planters) will provide sufficient mitigation of the likely pollutants expected alone.

Table 5-1 Water Quality Indices (as per C753 The SuDS Manual)

		Pollution Hazard Level	Total suspended solids	Metals	Hydro-carbons
Land Use	Residential roofs	Very Low	0.2	0.2	0.05
SuDS Mitigation Indices	Bioretention system	-	0.8	0.8	0.8

5.4 Operation and Maintenance

- 5.4.1 Maintenance of the proposed drainage infrastructure is essential for their operation. The maintenance responsibility will lie with the site owner. The proposed maintenance activities outlined below in Table 5-2 has been sourced from the CIRIA SuDS Manual.

Table 5-2 Planter Maintenance

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Inspect surface for silting or ponding, assess outflow and overflow for evidence of blockage	Quarterly
	Assess plants for disease infection, poor growth, invasive species etc. and replace as needed	Quarterly
Occasional Maintenance	Remove litter, surface debris and weeds	Quarterly/as required
	Replace plants to maintain density	Quarterly/as required
Remedial actions	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required if above does not improve performance

	Replace damaged or clogged media or geotextiles	As required
	Repair or improve erosion controls if required	As required
Monitoring	Initial inspection should be provided as post construction survey.	Immediately after construction
	Inspect for evidence of poor operation via water level and if required, take remedial action	3 monthly, 48 hours after large storms in first 6 months
	Inspect silt/debris accumulation rates and establish appropriate sediment/debris removal frequencies	Annually

6 SUMMARY

- 6.1.1 It is proposed to renovate and convert the existing Old Forge building to provide a residential dwelling. There would be negligible change to the impermeable footprint of the site
- 6.1.2 The site is situated on land that slopes in an easterly direction towards the western bank of the River Avon.
- 6.1.3 The site is located in Flood Zone 1 and therefore at Low risk of fluvial or tidal flooding.
- 6.1.4 The site has been assessed as being at a Very Low risk of surface water flooding.
- 6.1.5 Due to the rural position of the site, together with absence of nearby artificial water bodies, it is at Negligible risk from sewers or artificial sources.
- 6.1.6 Consequently, the risk posed to the proposed dwellings is assessed as being very low.
- 6.1.7 The Wiltshire SFRA defines the site to be located in an area where *'There is a risk of flooding to subsurface assets, but surface manifestation of groundwater is unlikely'*. As there are no subsurface element of the proposals, they have been assessed as being at a Low risk of groundwater flooding.
- 6.1.8 The proposals would result in a negligible alteration to the impermeable footprint of the site. It is therefore proposed to retain the same general drainage arrangements for the site. However, in order to ensure the proposals result in betterment in terms of runoff, SuDS planters have been proposed.
- 6.1.9 This Flood Risk Assessment shows that the development will be safe for its lifetime, with minor reduction of flooding elsewhere, and therefore meets the requirements of the NPPF.



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