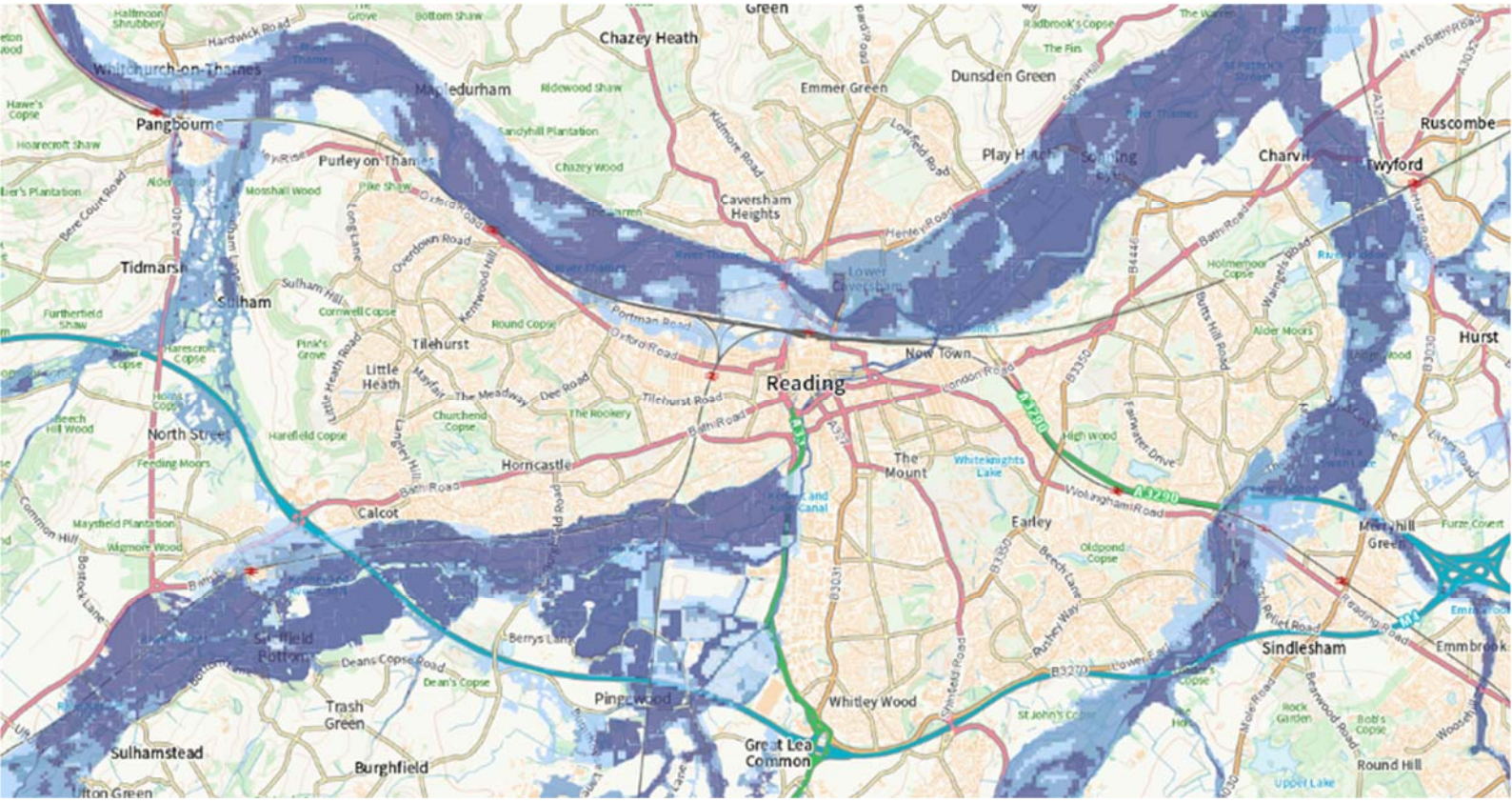
Date: **Monday, 02 March 2026**
Address: **90 Stone Street, Reading, RG30 1HU**
Project Title: **Flood Risk Assessment**

Full Planning Application – Reinstatement of Lapsed Permission PL/02/0654 for Two Semi-Detached Dwellings, 90 Stone Street



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This Flood Risk Assessment (FRA) has been prepared to support the full planning application submitted to Reading Borough Council for the construction of two semi-detached residential dwellings on land adjacent to 90 Stone Street, Reading, RG30. The purpose of this report is to provide a clear and detailed assessment of flood risk to and from the proposed development site, in accordance with national planning policy and local guidance. It demonstrates how flood risk has been considered at all relevant stages, how it will be safely managed over the lifetime of the development, and how the proposal will not exacerbate flood risk elsewhere.

The FRA follows the Environment Agency's guidance on flood risk assessments for planning applications, which outlines when an FRA is required, what information it should include, and how flood risk should be addressed for development sites located in areas of medium or high risk. The report also takes into account the Reading Borough Council Strategic Flood Risk Assessment (SFRA), which provides additional context on local flood risk considerations and expectations for site-specific assessments.

1. Site Location and Description

The development site is situated within the RG30 postcode area, in the town of Reading, Berkshire. The land is currently vacant and lies adjacent to the existing residential property at 90 Stone Street. The surrounding area is predominantly characterised by residential terraces and other houses typical of an established urban neighbourhood.

A key part of understanding flood risk is determining the site's location relative to recognised flood zones. National flood risk mapping is provided through the Environment Agency's Flood Map for Planning, which categorises land into Flood Zones based on the probability of fluvial (river) and tidal flooding. Zone classifications are defined as follows:

- Flood Zone 1: Low probability of flooding — land having less than a 0.1% annual chance of flooding from rivers or the sea.
- Flood Zone 2: Medium probability — land with between a 0.1% and 1% annual chance of river flooding, or between a 0.1% and 0.5% annual chance of tidal flooding.
- **Flood Zone 3:** High probability — land with a 1% or greater annual chance of river flooding, or a 0.5% or greater annual chance of tidal flooding.

Pre-application assessments indicate that portions of the site fall within a mixture of Flood Zone 1 and Flood Zone 2, meaning that parts of the site are at low risk while other areas are at medium risk of flooding. This circumstance triggers the need for a full FRA in accordance with Environment Agency and Council expectations.

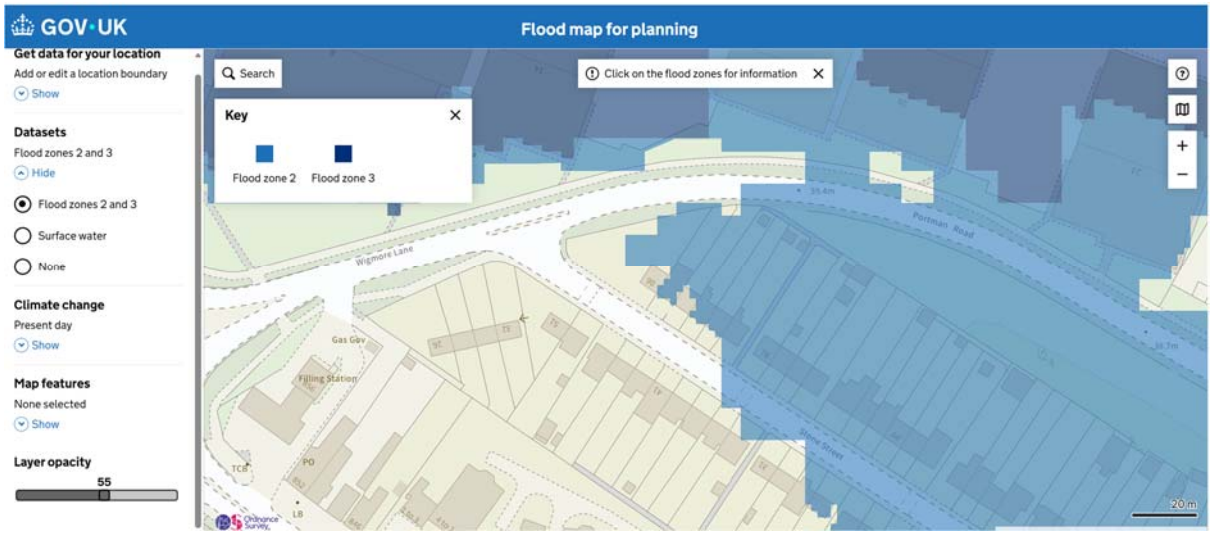

Fig 2. Flood Map for Planning – sourced from GOV.UK

2. National and Local Policy Context

The National Planning Policy Framework (NPPF) requires that flood risk is considered at all stages of the planning process, particularly for sites in Flood Zones 2 or 3 or those that may be subject to surface water, groundwater, or other sources of flooding. An FRA must demonstrate that development is safe throughout its lifetime, will not increase flood risk elsewhere, and where possible reduces overall flood risk.

Reading Borough Council's Strategic Flood Risk Assessment (SFRA) confirms that flood risk within the borough varies, with higher risks associated with main river corridors such as the River Thames and River Kennet. It also emphasises the need for site-specific FRAs where development is proposed in areas of medium or high risk, or where national or local mapping indicates potential surface water flood risk. The SFRA outlines expectations for FRA content, stressing that assessments must be commensurate with the actual level of risk, and should consider all relevant sources of flooding.

3. Sources of Flood Risk

3.1. River and Tidal Flooding

Based on initial analysis using the Environment Agency's Flood Map for Planning, the proposed development site is not located within the highest risk flood areas (Flood Zone 3). Instead, the site is largely within Flood Zone 1 (low probability), with some areas extending into Flood Zone 2 (medium probability). This suggests that while there is a non-zero risk of fluvial flooding, especially in more extreme events, the overall exposure is moderate and manageable with appropriate mitigation measures.

The presence of Flood Zone 2 indicates that under certain moderate flood scenarios, defined by a 1 in 100 chance of river flooding annually, there is potential for floodwater influence on part of the site. An FRA must therefore consider this and demonstrate how the proposed design will ensure safety for future residents.

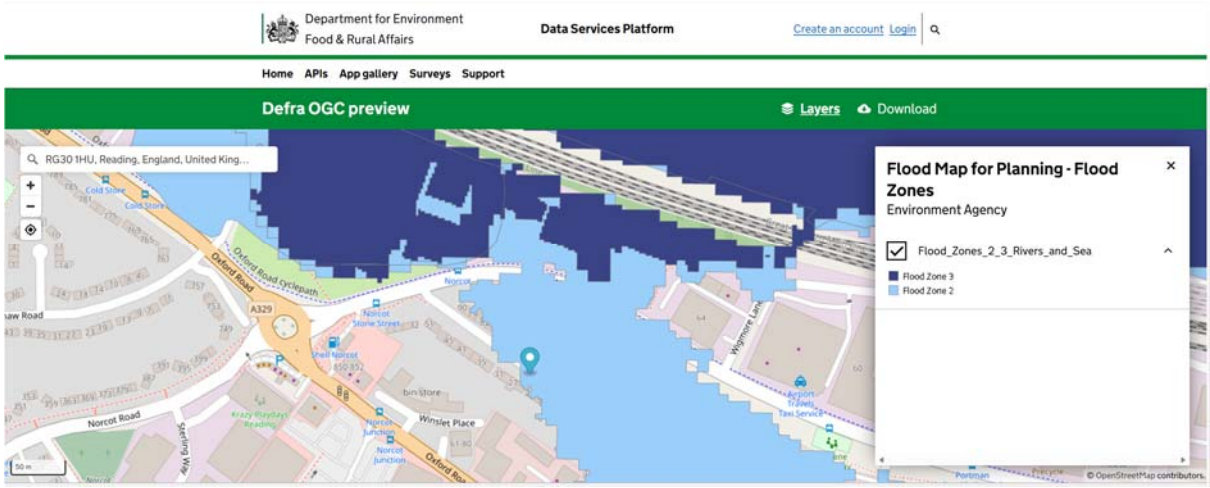

Fig 3. Flood Map for Planning – sourced [Flood Map for Planning - Flood Zones]

3.2. Surface Water and Other Flood Sources

In addition to river risk, surface water flooding - caused by intense rainfall events overwhelming drainage systems - can pose a risk even in areas outside designated flood zones. Reading Borough Council's SFRA encourages site-specific consideration of surface water risk, particularly where the mapping shows potential vulnerability. This assessment acknowledges that surface water risk may exist and addresses it through sustainable drainage design and appropriate finished floor levels. Groundwater and sewer flooding are other potential contributors to flood risk but are not indicated as significant for this location based on available strategic data. Nonetheless, appropriate drainage planning will address any such considerations as part of the detailed design process.

4. Flood Risk Assessment and Mitigation Measures

4.1. Flood Risk Classification

The mixed Flood Zone classification required this FRA to consider both medium and low risk scenarios. The development design adopts a precautionary stance, ensuring that residential elements are located as far from the higher probability areas as is practicable within the site boundary, with detailed surface water drainage and flood mitigation integrated into the layout.

4.2. Finished Floor Levels and Site Layout

To reduce the risk of floodwater entering habitable spaces, all proposed dwellings will be set at finished floor levels above existing external ground levels where necessary. This approach aligns with Environment Agency guidance on flood-resistant design and is commonly recommended to mitigate medium flood risk exposure.

4.3. Sustainable Drainage Systems (SuDS)

SuDS will be incorporated into the site design to manage surface water run-off. These systems will be designed in accordance with the latest *Government non-statutory technical standards* and local policy requirements, ensuring that the rate of run-off does not exceed existing greenfield conditions. SuDS features will aim to promote infiltration, reduce rapid surface flow, and enhance biodiversity where possible. A detailed SuDS and maintenance plan will accompany the final detailed design submission.

SuDS measures, in addition to conveying excess surface water, will ensure that surface water is not discharged to foul sewers, reducing the risk of sewer flooding and aligning with local drainage expectations.

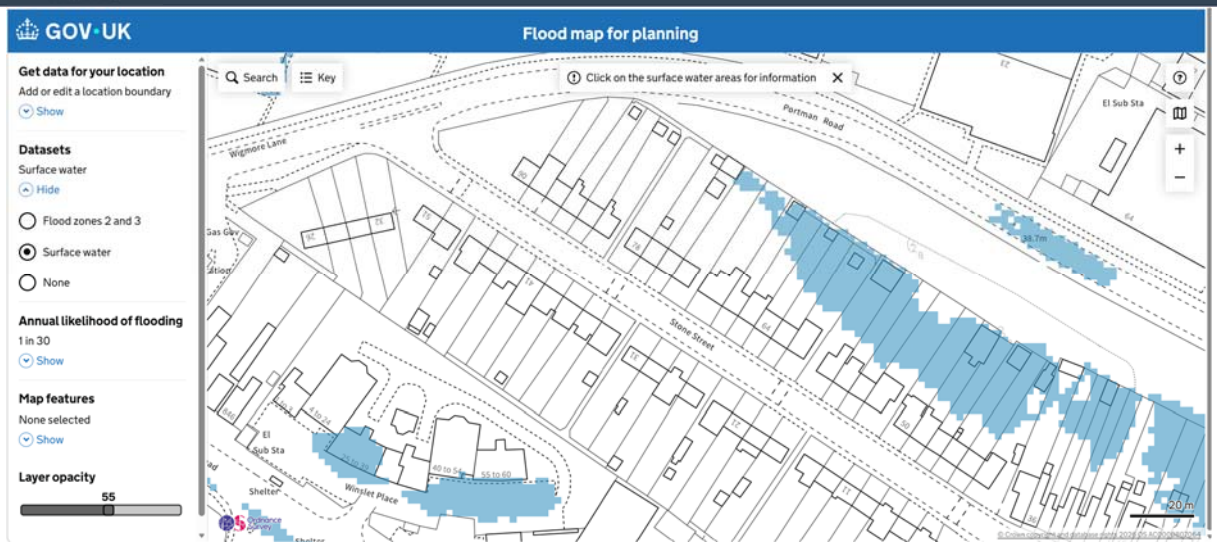

Fig 4. Surface Water Map – sourced [Flood Map for Planning - Flood Zones]

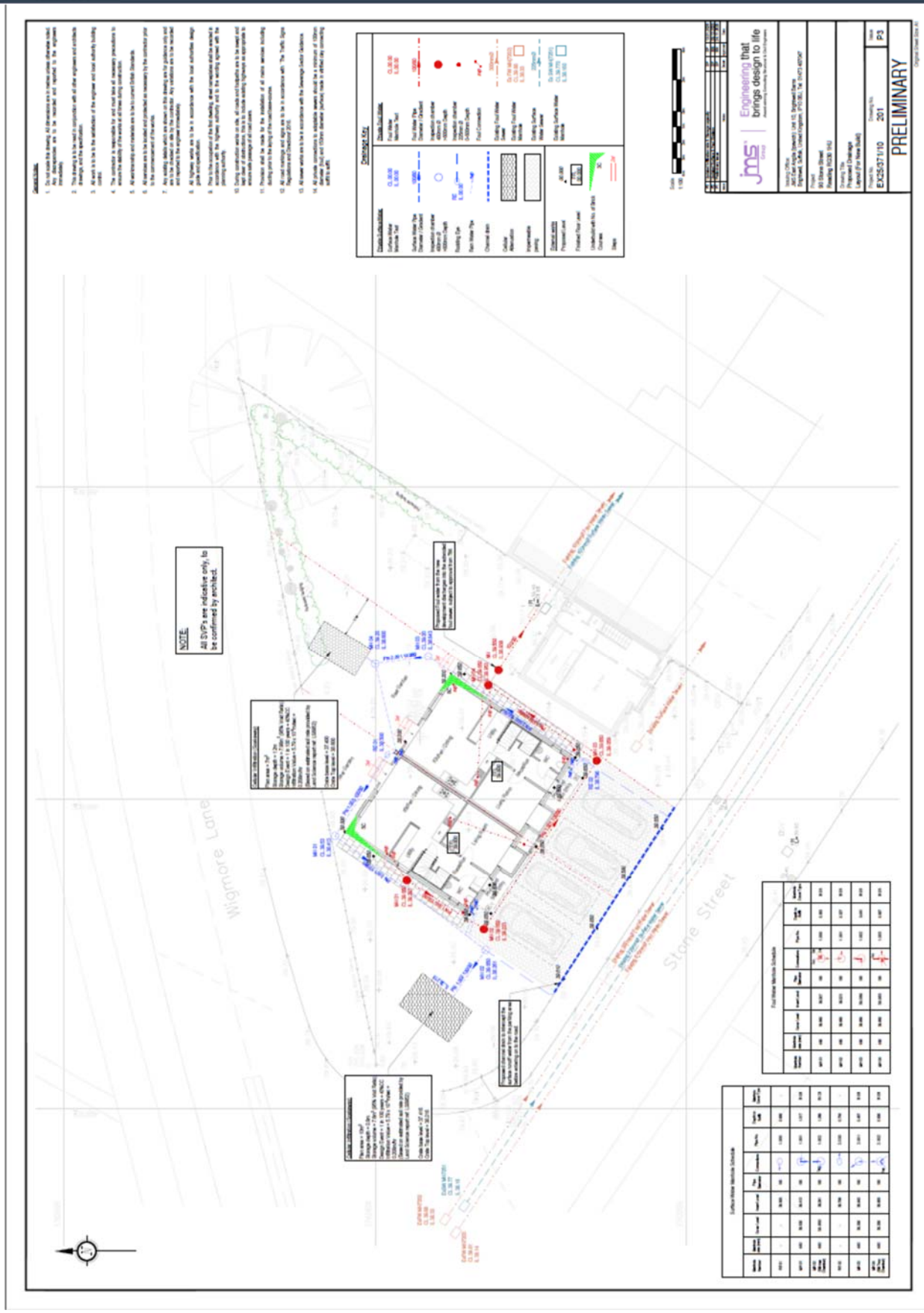

Fig 5. Drainage Layout – EX25_371_10 - 202 Construction Details (New Build) P2

(attached within this application)

5. Climate Change Considerations

Climate change introduces additional uncertainty in future flood risk through increases in rainfall intensity and river flow volumes. National guidance requires that climate change allowances are considered as part of the FRA. For a development of this nature, allowances appropriate to the planning horizon and vulnerability classification will be factored into surface water design calculations and flood resilience planning.

See Drainage Layout EX25_371_10 - 202 Construction Details (New Build) P2
See Access Design EX25_371_10 - 205 Access Design P2

6. Safety, Access, and Lifetime of Development

To ensure that the development remains safe throughout its lifetime, the design incorporates:

- Finished floor levels above predicted surface water levels;
- SuDS that reflect greenfield run-off rates and manage excess rainwater securely;
- Access and egress that are not compromised in medium flood events, maintaining future resident safety.

The FRA demonstrates that, even accounting for medium probability river flood scenarios and evolving climate conditions, the development can be realised without unacceptable flood risk to occupants or neighbouring properties.

7. . Conclusion

This Flood Risk Assessment demonstrates that the proposed development at 90 Stone Street, Reading, RG30 has been designed with full consideration of flood risk, in accordance with both national guidance and Reading Borough Council's Strategic Flood Risk Assessment.

- The site spans areas of Flood Zone 1 and Flood Zone 2;
- All sources of flood risk have been considered, including fluvial, tidal, and surface water;
- Appropriate mitigation measures, including elevated floor levels and sustainable drainage design, have been incorporated;
- The proposal does not increase flood risk elsewhere and provides a safe environment for future residents.

This FRA supports the full planning application and provides a robust foundation for Reading Borough Council to assess flood risk implications confidently.

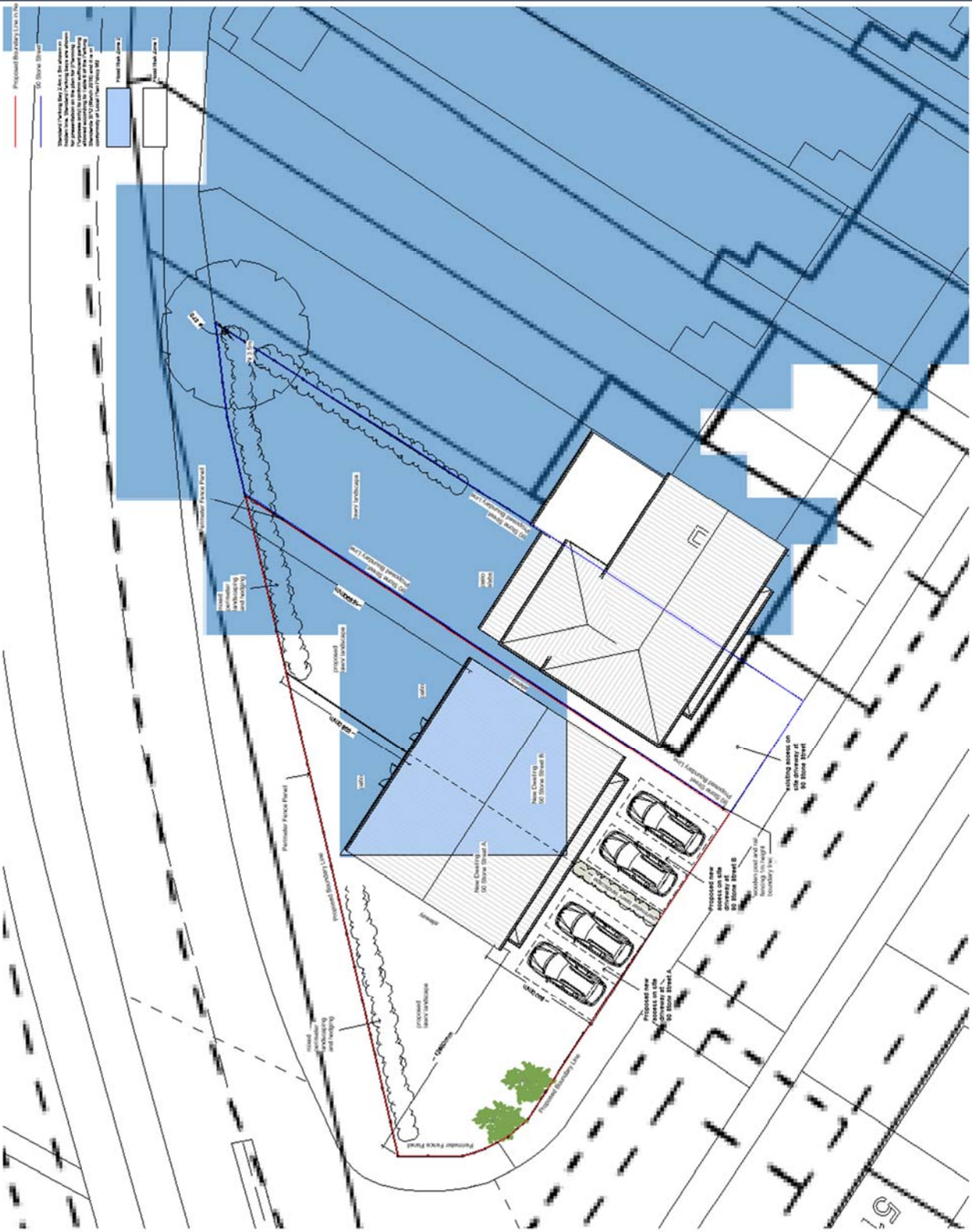

Fig 6. Flood Risk Assessment Layout – HB_008 – Flood Risk Assessment
(attached within this application)