

**FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT AT
KYBES LANE, READING**

FINAL REPORT

ECL1405/PHILIP BROWN

DATE DECEMBER 2024

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DISCLAIMER

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1.0 INTRODUCTION

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of Philip Brown in respect of obtaining permanent planning permission for an existing development that consists of eleven gypsy/traveller pitches and ancillary operational development at Kybes Lane, Reading.

Planning permission was granted for a temporary period of 3 year in July 2018. A planning application to make the development permanent has been submitted by Philip Brown Associates Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is situated on land known as The Paddocks, Kybes Lane, Reading, Berkshire, RG7 1NG. The National Grid Reference of the site is 46943/16789.

The location of the site is shown on Figure 1.



Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the western side of Kybes Lane. The site consists of eleven gypsy/traveller pitches and the access routes within the site. The site is surrounded by agricultural land. The area of development is 0.15 hectares.

Environment Agency LiDAR data shows that ground levels within the site vary between 42.1m AOD and 40.8m AOD. The highest ground levels are close to the eastern boundary of the site (42.1m AOD to 41.7m AOD) and the ground levels slope down to the western boundary of the site (41.2m AOD to 40.8m AOD).

An ordinary watercourse that is a tributary of the Burghfield Brook forms the western boundary of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by London Clay Formation – Clay, Silt and Sand. The superficial deposits at the site are River Terrace Deposits – Sand and Gravel.

2.3 Development

The development consists of the permanent permission of 11 eleven gypsy/traveller pitches and ancillary operational development. Each pitch will typically comprise two caravans / mobile homes and a dayroom. A Site Plan is provided in Attachment 1.

2.4 Local Development Documents

The development plan for Wokingham Borough is made up of a collection of local plan and neighbourhood development plan documents. The Core Strategy is a high-level document setting out the strategy for managing development until 2026. Work is underway for a new local plan which will put in place a new planning strategy for the period to 2040.

A Gypsy and Traveller and Travelling Showperson Accommodation Assessment was undertaken in 2023. In 2015 a consultation was undertaken on the Gypsy and Traveller Local Plan Preferred Options.

A Level 1 Strategic Flood Risk Assessment (SFRA) for the Borough was prepared in May 2023 and a Level 2 SFRA in August 2023.

2.5 Flood Zones

An extract from the Environment Agency Flood Map for Planning is provided in Figure 2. The site is partly located within Flood Zone 2, an area with a medium probability of flooding.

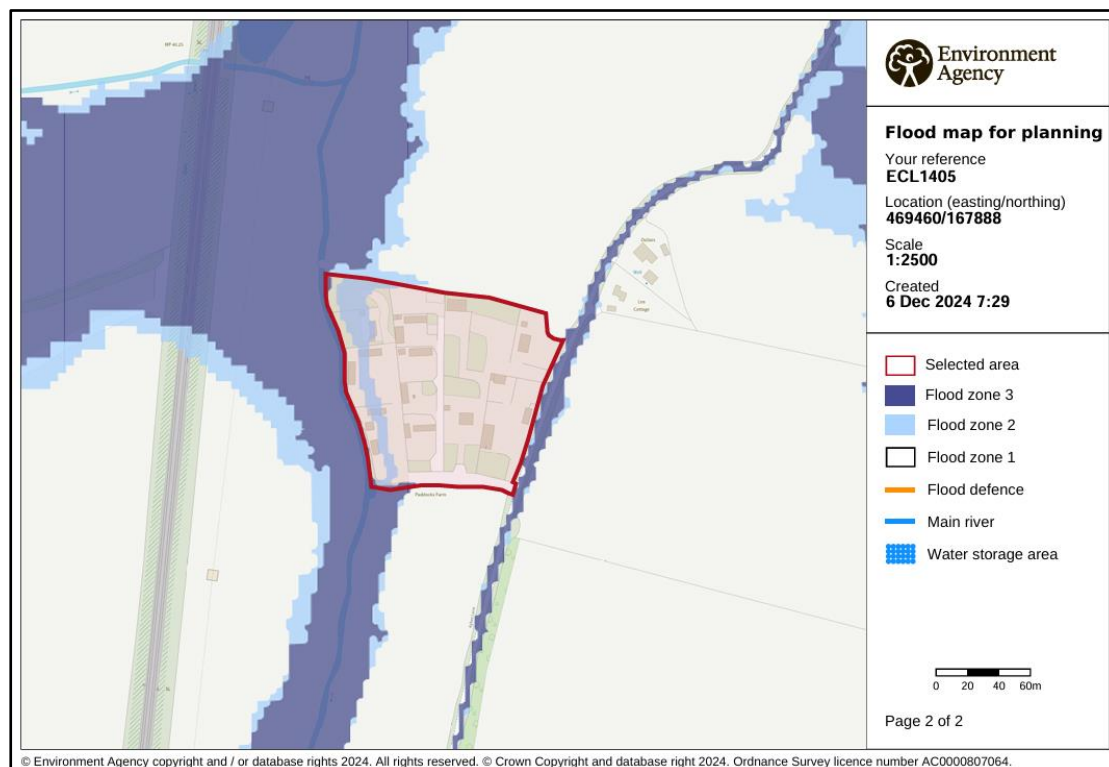


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps show that:

- the site has a very low risk of flooding from rivers or the sea (annual probability less than 0.1%) apart for one strip on the western side of the site which has a low risk (annual probability between 0.1% and 1%);
- the western part of the site has a low risk of surface water flooding (annual probability between 0.1% and 1%) and one strip of land has a medium risk (annual probability between 1% and 3.3%); and
- the site is not at risk of reservoir flooding when there is also flooding from rivers.

The SFRA includes maps covering the Borough. These show:

- the site is predominantly in Flood Zone 1 and partly in Flood Zone 2;
- the risk of surface water flooding is the same as indicated on the Environment Agency Long Term Flood Risk Map;
- the site is in an area with a risk of ground water flooding between 50% and 75%;
- the site is not at risk of reservoir flooding; and
- there is no record of historic flooding at the site.

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The development is covered by the description of mobile homes intended for permanent residential use and is classified as 'Highly Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. Although part of the site is in Flood Zone 2 the caravans / mobile homes and dayrooms are located within Flood Zone 1. When considering the vulnerability and flood zone compatibility the development is considered to be in Flood Zone 1. For Flood Zone 1 and a 'Highly Vulnerable' classification the development is appropriate and it is not necessary to undertake the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

The caravans / mobile homes and dayrooms are located in Flood Zone 1 and therefore it is therefore not possible to undertake the development at an alternative site with a lower probability of flooding. The site is considered to pass the Sequential Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The nearest main river is approximately 900m east of the site. This watercourse, the Foudry Brook, is the responsibility of the Environment Agency. The site is not at risk from the Foudry Brook.

An ordinary watercourse that is a tributary of the Burghfield Brook forms the western boundary of the site.

4.2 Sources of Flooding

The single source of flooding that have been identified as a result of this assessment is flooding from the ordinary watercourse alongside the site.

4.3 Probability of Flooding

The Environment Agency Long Term Flood Risk Maps indicate the probability and depth of flooding. During:

- high risk (annual probability 3.3%) events the site is not at risk of surface water flooding;
- medium risk (annual probability 1%) events a strip of land close the western boundary of the site is at risk with depths below 0.3m; and
- low risk (annual probability 0.1%) events the western part of the site is at risk of surface water flooding with depths below 0.3m and a strip of land close the western boundary of the site is at risk with depths below between 0.3m and 0.9m.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded.

4.5 Climate Change

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the riparian and IDB drainage network.

Without the results of flood modelling to determine the 1% annual probability (1 in 100 chance each year) with climate change water level the Environment Agency Long Term Flood Risk Maps have been used. When considering climate change, if no model data exists, the 0.1% annual probability flood map can give an indication of the 1% annual probability with climate change flood map. The extent and depths of flooding during the 0.1% annual probability (1 in 1000 chance each year) event are shown in Figure 3.

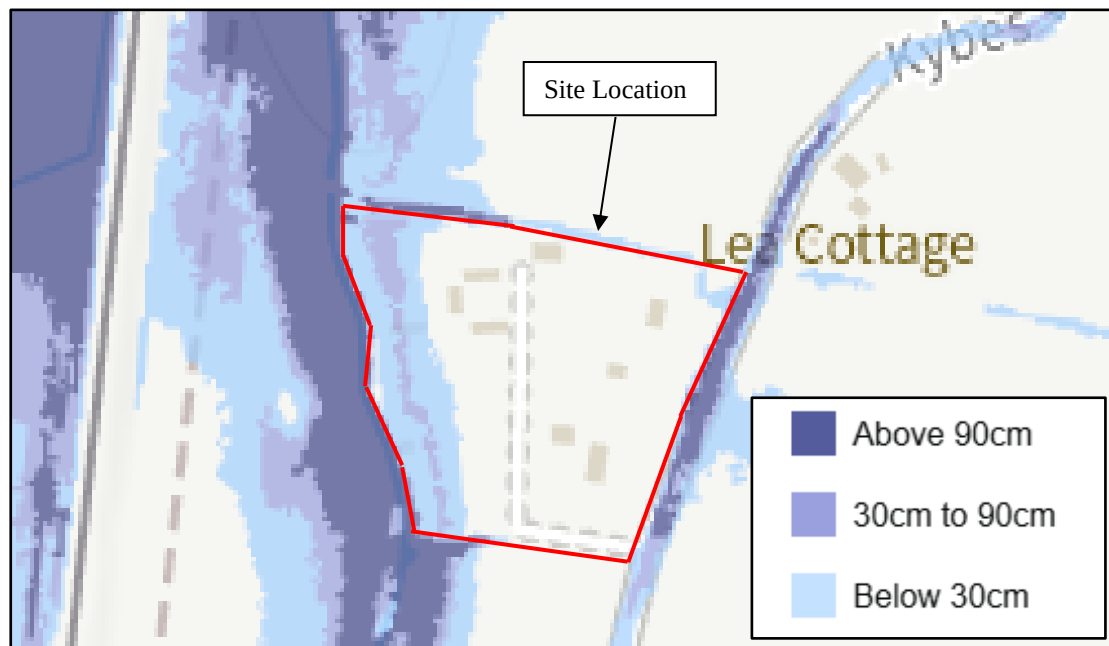


Figure 3 – Environment Agency Surface Water Flood Risk Map
– 0.1% Annual Probability

Using LiDAR and the flood extent and depths in Figure 3 the maximum flood depth within the site is estimated to be 0.4m.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The site is potentially at risk of flooding from an ordinary watercourse on the western boundary of the site.

The caravans / mobile homes and dayrooms within the site are located within Flood Zone 1.

The Environment Agency Long Term Flood Risk Maps show that the site is at risk of surface water flooding. Based upon the maps and LiDAR, the maximum flood depth within the site during the 1% annual probability (1 in 100 chance each year) event with climate change event is 0.4m.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment it is recommended that the caravans / mobile homes have a finished floor level not less than 0.5m above ground level and will be restrained by ground anchors.

The vulnerability of people at a site at risk of flooding should be lowered where possible. The occupants of the site should be made aware of the risk of flooding. Due to the nature of the flooding, current flood warning systems are unlikely to provide a reliable indication of when the site is at risk.

6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

- The development consists of the permanent permission of 11 eleven gypsy/traveller pitches and ancillary operational development on land known as The Paddocks, Kybes Lane, Reading.
- Part of the site is in Flood Zone 2 however the caravans / mobile homes and dayrooms within the site are located within Flood Zone 1.
- The site is at risk of surface water flooding. The flood depth during the 1% annual probability (1 in 100 chance each year) event including climate change is estimated to be 0.5m.
- It is recommended that the mobile homes will have a finished floor level not less than 0.5m above ground level and they will be restrained by ground anchors.
- The development passes the Sequential Test and is therefore suitable for the location.

ATTACHMENT 1

SITE LAYOUT PLAN

KEY:

182702

Site Layout – Caravan



Dayroom



Hardstanding - gravel/limestone chippings



- tarmacadam



Landscaping – existing hedgerow



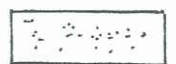
- hedgerow reinforcement



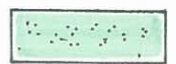
- proposed hedgerow/tree planting



- existing grass



- restoration of grass



Boundary Treatment – 1.4 - 1.8 metre c.b. timber fence



- 1.2 metre post & rail fence



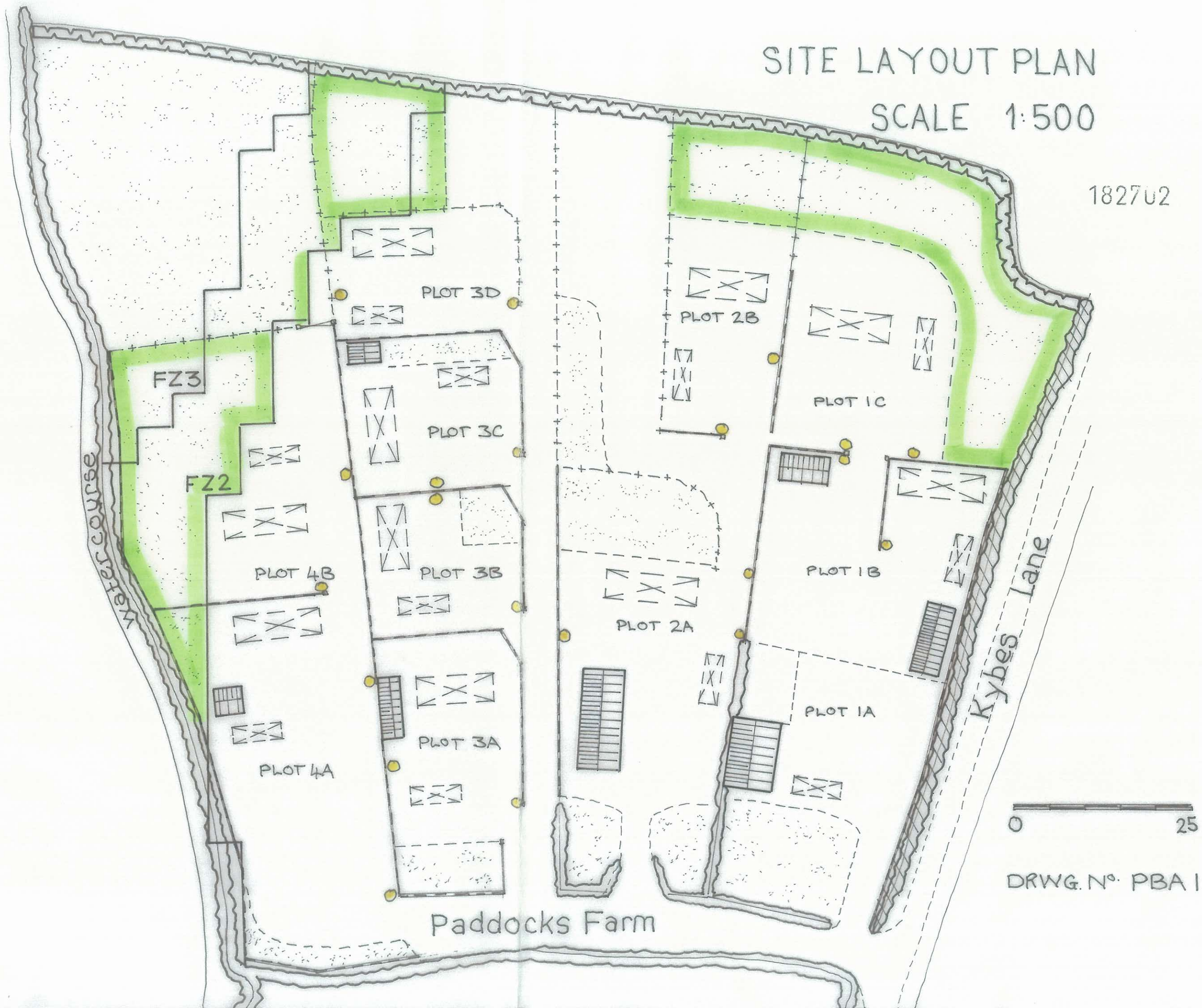
External lights



SITE LAYOUT PLAN

SCALE 1:500

182702



DRWG. N° PBA 1