



## **READING INTERNATIONAL BUSINESS PARK**

### **PLANNING STATEMENT**

Project No: **7/8161**

Date: **12/12/19**

Revision: P1

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## Report Origin

| Revision | Date                                 | Revision Description |          | Name     | Signature       |
|----------|--------------------------------------|----------------------|----------|----------|-----------------|
| P1       | 12 <sup>th</sup><br>December<br>2019 | Original             | Prepared | G. Hirst | <i>G. Hirst</i> |
|          |                                      |                      | Checked  | S. Lydon | <i>S. Lydon</i> |
|          |                                      |                      | Approved | S. Lydon | <i>S. Lydon</i> |

## 1 INTRODUCTION

This document is intended to show the client's commitment in relation to energy, carbon and low or zero carbon technologies.

The development is for 4 No warehouse Units which contain a portion of mezzanine office area in each unit. The building will have the following approximate gross floor areas

- Unit 1: 3550 sq m
- Unit 2: 6450 sq m
- Unit 3: 2200 sq m
- Unit 4: 2500 sq m

The site location is at Reading International Business Park, Reading.

## 2 BREEAM

The client is committed to meeting BREEAM 'Very Good' rating. A pre assessment will be completed at the next stage of design.

## 3 LOW OR ZERO CARBON TECHNOLOGY

A low carbon energy study has been complete (7\_8161-CCL-ZZ-XX-RP-M-300001) in which the following technologies were considered.

- Solar thermal
- Air Source Heat Pumps
- Ground Source Heating
- Biomass Heating
- Gas Fired CHP
- Photovoltaic System

The report showed that photovoltaic panel system provided the best solution for energy savings and the technology suits the flexibility for the shell and core proposal. The technology has low maintenance requirements and associated costs.

The payback period calculated in the report was shown to be approximately 9 to 10 years for a 22 kWp system on unit 1 installed costs of approximately £20,000 + Vat. Units 2 (39kWp) should have a marginally better payback and Units 3 (13.5kWp) & 4 (15.5 kWp) may have a slightly longer payback.

The buildings with the assumed building services meets the requirement of the Part L (2013) Building Regulations with the photovoltaic panel system excluded. If the BREEAM pre assessment targets ENE04, then the photovoltaic panel system would need to be included and would lower the carbon emissions further.

## 4 CARBON EMISSIONS AND ENERGY

Carbon emissions have been assessed against Part L (2013) of the Building Regulations. A fabric first approach has been adopted and the following building performance parameters proposed.

|                           |                                                              |
|---------------------------|--------------------------------------------------------------|
| Walls                     | 0.26 W/m <sup>2</sup> .K                                     |
| Ground Floor              | 0.22 W/m <sup>2</sup> .K                                     |
| Roof                      | 0.20 W/m <sup>2</sup> .K                                     |
| Windows                   | 1.6 W/m <sup>2</sup> .K                                      |
| Doors                     | 2.2 W/m <sup>2</sup> .K                                      |
| Vehicle Access            | 1.5 W/m <sup>2</sup> .K                                      |
| Building Air Permeability | 5 m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa (Office Areas) |

Building Air Permeability      5 m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa (Warehouse)

The main energy features for the building services was for the interior lighting to achieve 80 luminaire lumens per circuit Watt and a multi split heating and cooling system with an efficiency of 4.5 (SCOP) for heating and 5.5 (SEER) for cooling.

The buildings achieved compliance with building regulations with a 1.8% -14.1% margin on the target emission rate (TER). All buildings achieve an EPC rating of B.

Should photovoltaic panel systems be included then carbon emissions would improve further.

## **5 CONCLUSION**

The buildings will meet Part L and BREEAM 'Very Good' rating. If BREEAM ENE04 credit is targeted in the pre assessment, then photovoltaic panel systems will need to be included and carbon emissions would be lowered further as a result.