

**Client:** Sonic Star Properties Ltd  
**Project:** Proposed Hotel Development  
Friar Street, Reading  
**Date:** 11<sup>th</sup> January 2021  
**Job No:** 1252

The Old Barn, Bowes Offices  
Lambton Park, Co Durham,  
DH3 4AN  
T: 0191 385 3111  
F: 0191 3859111  
[www.jhpartners.co.uk](http://www.jhpartners.co.uk)

---

## **1.0 INTRODUCTION**

The following is an outline sustainability statement in connection with the proposed hotel development at Friar Street, Reading.

## **2.0 PLANNING POLICY**

The development will comply with the requirements of 'Reading Borough Local Plan' in respect of sustainable design and construction.

The development will target a BREEAM rating of 'Very Good'.

## **3.0 SUSTAINABILITY APPROACH**

### **3.1 General**

The approach to sustainability will include, but not be limited to:

- High quality design
- Design which is adaptable for the future
- Sustainable construction materials and techniques
- Measure to encourage sustainable travel
- Improved site biodiversity with the introduction of bat and bird boxes
- Measure to reduce crime

As a minimum, the proposed development will incorporate the following energy efficiency measures to reduce energy consumption and carbon emissions.

### **3.2 Building Fabric**

A 'fabric first' approach to design and construction will be adopted to reduce energy demand and carbon emissions. This will include the use of sustainable construction techniques, prioritising sustainable materials, minimising waste generation and maximising recycling.

The thermal properties of the building fabric will exceed the minimum standards stipulated in the Building Regulations.

A target air leakage rate will be set at 5m<sup>3</sup>/(h.m<sup>2</sup>) at 50Pa.

### **3.3 Natural Daylight**

The use of natural daylight will be optimised, whilst minimising passive solar gain.

---

**3.4 Waste Management**

Waste management during the construction stage will include the crushing and recycling of demolition material for re-use in the substructure.

Waste management in the operational stage will include waste segregation and recycling facilities.

**3.5 Non-Domestic Building Services Compliance Guide (HM Government)**

All energy consuming building services systems will exceed the minimum efficiency standards stipulated in the Non-Domestic Building Services Compliance Guide.

**3.6 Heat Source**

High efficiency heat generators will provide the heat source for both space and water heating, i.e. gas fired condensing boilers, air source heat pumps or a combination of both.

**3.7 Cooling Source**

The use of high efficiency heat pumps will provide a cooling source for space cooling, i.e. variable refrigerant flow (VRF) type system.

**3.8 Mechanical Ventilation**

Mechanical ventilation systems will incorporate high efficiency heat recovery (where appropriate) to conserve energy and heat.

**3.9 Specific Fan Power**

Mechanical ventilation systems will be designed to minimise specific fan power and reduce electricity consumption.

**3.10 Variable Speed Motors**

Circulating pump and fan motors will be provided with variable speed drives to optimise and reduce electricity consumption.

**3.11 Automatic Controls and Building Management System (BMS)**

Automatic controls and BMS will be provided to control / monitor heating, ventilation and air conditioning (HVAC) systems.

**3.12 High Efficiency Lighting**

High efficiency lighting will be provided throughout to minimise electricity consumption while maintaining the desired lighting levels.

In addition to efficient light source, luminaires with high light output ratio and incorporating high efficiency optic / reflector technology will be provided to optimise the usable output from lamps.

---

**3.13 Lighting Controls**

Appropriate lighting control will be utilised throughout to reduce electricity consumption, i.e. absence / presence detection, dimming and photocell / time switch control of external lighting.

**3.14 Energy Efficient Lifts**

Energy efficient lifts will be provided and selected to operate at maximum efficiency.

**3.15 Automatic Meter Reading (AMR)**

An AMR system will be provided to monitor energy consumption of the various building services systems.

**3.16 Water Efficiency**

High standards of water efficiency will be included, i.e. dual flush WC's, water efficient appliances, shut-off valves operated by PIR sensors, sub-meters to monitor consumption in different areas, leak detection, etc.

**3.17 Travel Plan**

A travel plan will be provided for occupiers of the hotel to promote the use of sustainable transport.

**4.0 LOW OR ZERO CARBON (LZC) TECHNOLOGIES APPRAISAL**

**4.1 General**

Compliance with 'Reading Borough Local Plan' may require incorporation of some form of decentralised energy within the proposed development.

Decentralised energy broadly refers to energy that is generated off the main grid and is usually referred to as renewable energy system. It can also refer to energy from waste plants and district heating / cooling systems.

The most popular renewable energy systems are:

- Air source heat pumps (ASHP)
- Ground source heat pumps (GSHP)
- Solar hot water
- Solar photovoltaics (PV)
- Combined heat and power (CHP)
- Biomass energy
- Hydro energy
- Wind energy

**4.2 Air Source Heat Pumps (ASHP)**

ASHP's efficiently convert electrical energy to heat or cooling energy; typically converting 1kW of electrical energy to circa 3kW of heat or cooling energy.

---

ASHP's are considered a suitable renewable energy system for space and water heating within the proposed development.

#### **4.3 Ground Source Heat Pumps (GSHP)**

GSHPs efficiently convert electrical energy to heat or cooling energy; typically converting 1kW of electrical energy to circa 5kW of heat or cooling energy.

Due to the lack of suitable external space for the installation of ground collectors (boreholes or ground loops), GSHP's are not considered a suitable for the proposed development.

#### **4.4 Solar Hot Water**

Solar thermal collectors convert solar energy to heat energy to supplement hot water systems.

Due to the lack of suitable roof area for the installation of solar collectors, solar hot water is not considered suitable for the proposed development.

#### **4.5 Solar Photovoltaics (PV)**

Solar PV collectors convert solar energy to electrical energy to supplement grid electricity.

Due to the lack of suitable roof area for the installation of solar collectors, solar PV is not considered suitable for the proposed development.

#### **4.6 Combined Heat and Power (CHP)**

CHP units convert fossil fuel to electrical energy and heat energy.

For CHP to be considered viable requires a relatively constant electricity load and heat load throughout the day / night and all year round.

Due to the intermittent nature of a hotel operation, CHP is not considered suitable for the proposed development.

#### **4.7 Biomass Energy**

Biomass boilers convert wood chip / pellets to heat energy.

For a number of reasons, biomass boilers are not considered suitable for the proposed development:

- High capital and maintenance costs
- Large amount of space required for boiler plant and fuel storage
- Fuel deliveries (particularly in a town centre location)
- Boiler flue requirements (particularly in a town centre location)

#### **4.8 Hydro Energy**

Hydro energy converts water flow to electrical energy.

---

For hydro energy to be considered viable requires a nearby flowing water source.

There is no nearby flowing water source so hydro energy is not considered viable for the proposed development.

#### **4.9 Wind Energy**

Wind turbines convert wind energy to electrical energy.

For wind turbines to be considered viable requires very specific wind conditions.

Wind conditions in town centre locations are not usually considered suitable for wind turbines.