

# M D Howlett Associates Ltd

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## ENERGY EFFICIENCY STATEMENT

in respect of a new basement flat with a new rear extension at

**48 Watlington Street, Reading, Berkshire RG1 4RS**

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### 1. ENERGY EFFICIENCY

#### 1. Optimising energy from the sun:

The new apartment is oriented so that many of its principal door and window openings face south-west, the direction of afternoon sunshine, with just a bedroom window and the front door opening on the north-east elevation. In this way the sun's energy will be allowed to augment the space heating system, thereby reducing reliance upon fossil fuels. Inevitably, to maximise enjoyment of the large rear garden to the west of the new house there are a number of windows and doors facing that direction. Many of the internal walls are of brickwork or other dense materials with a relatively high thermal storage capacity that should retain heat energy received from the sun within the structure, even when airborne energy is dissipated by ventilation openings, open doors and the like.

#### 2. Optimising natural daylight:

Similarly daylight should penetrate well from the south-west direction, augmented by a 300 x 300mm Sun Tube or similar, conveying daylight to the basement living room. In addition, the front basement window would be enlarged, allowing morning sun greater entry into the bedroom there.

#### 3. Optimising Controlled Natural Ventilation:

All windows are openable to varying degrees, and most natural ventilation will be from these sources. Mechanical ventilation to bathrooms, shower rooms and kitchens required by Building Regulations will be effected by extraction controlled by humidistats which should only operate when humidity reaches levels likely to cause condensation.

#### 4. Efficient Use of Energy:

The fabric of the new building will be constructed to accord with Building Regulations, which limit heat loss from a building. New walls are of cavity construction with full-filled cavity insulation, and insulated returns where windows and doors are formed. The new ground floor contains insulated layers in its construction. The principal sources of heat loss in a building will usually be through door and window openings, and this would be minimised by double glazing new windows, and by having no openings facing the vulnerable north-west direction, the property being mid-terrace.

Building Regulations also require the provision of a number of light fittings only capable of receiving low-energy light bulbs.

It is not currently proposed to provide renewable supplementary power sources from within the site, but the south-facing pitched roofs over the rear part of the house offer an ideal site for future solar panels, whether for preheating hot water or for the photovoltaic generation of electricity. The chosen method of space and water heating is by an efficient gas-fired condensing boiler whose performance could be improved at a later date by such solar panels preheating water.

## **2. RENEWABLE ENERGY**

### **5. Energy Generation from Renewable Sources:**

The consideration of energy generation from renewable sources is expected only for major developments involving the construction of 10 or more residential units, and it is therefore not applicable to the construction of a single apartment as is here being considered.

## **3. WATER**

### **6. Water-Saving Devices:**

The building owner is proposing the installation of automatically disengaging mixer taps to reduce unnecessary water losses should taps be left open.

### **7. Harvesting and Re-using Rainwater:**

It is proposed to install water butts fed from proprietary diverters located in some of the rear rainwater downpipes to store harvested water for use in the garden, particularly useful in times of drought.

### **8. Grey Water:**

It is not proposed to collect, treat or re-use grey water.

### **9. Sustainable Drainage Systems:**

Rainwater disposal will be to a new soakaway on site. The chalky substrate should effectively absorb rainwater run-off from the house without specialist mitigation and with little or no risk of causing flooding further downstream.

A sustainable foul drainage system is not proposed in the development.

## **4. WASTE AND RECYCLING**

### **10. Audit of Re-usable materials:**

Consisting of an existing domestic garden, the site has no identifiably recyclable materials which could be feasibly used within the construction of the new extension.

### **11. Construction and Demolition Waste:**

The development involves demolition of the small existing rear extension which should provide sufficient hardcore as a substrate below a groundbearing floor slab.

### **12. Recycled Materials:**

No other materials on site are to be recycled during construction, but most of the materials would be recyclable upon eventual demolition of the new house.

### **13. Storage and Recycling Waste for All Users of the Site:**

An area would be set aside for all waste materials used by all members of the construction team to be stored on site, namely the front hardstanding where it is easily accessible for those who wish to recycle materials off-site, but far enough away from the entry point so as not to obstruct site access. The amount of materials available would not warrant separating them into recyclable categories.

## **5. POLLUTION**

### **14. Reduction of Need to Travel; Promotion of alternative & Sustainable Modes of Transport:**

No car parking provision is proposed due to existing site constraints. Attention is drawn to the availability of public transport nearby in London Road and Eldon Road, Queen's Road and King's Road. Air pollution should not therefore be a local issue, and no mitigation measures should be necessary.

In addition the existing undercroft beneath the front steps has been identified as providing a secure lockable bicycle store for the basement flat, while bespoke secure bicycle storage is proposed for each of the six HMO occupants.

### **15. Minimising Noise Pollution:**

Noise pollution resulting from vehicular manoeuvres on site would similarly not be an issue.

The two neighbouring properties would be separated from the new basement apartment by the existing party walls, while the effect of noise being transmitted by door and window openings would be mitigated by their only facing the rear garden or front area.

### **16. Minimising Light Pollution:**

Similarly light pollution would be minimised by doors and windows not facing neighbouring properties. Being a domestic development with no unusual light-transmitting devices, the amount of pollution caused by light should be within acceptable norms.

## **6. MATERIALS**

### **17. Low Environmental Impact Materials Retaining Local Character:**

The local vernacular consists of brick walls, often stucco rendered, and surmounted by timber-framed pitched slate roofs, and it is proposed to match these. They are of robust nature, the tiles can generally be recycled, and the brickwork provides useful hardcore on eventual demolition, presumed to be some time from now. As with all traditional forms of construction, the new building is of a loose-fit long-life characteristic. All timber may be Woodmarked or otherwise obtained from traceably sustainable sources.

## **7. BIODIVERSITY**

### **18. Retention, Protection and Enhancement of Wildlife Habitats and Natural Features:**

The proposed apartment would be constructed as infill development on a site between two existing houses in a line of houses along Watlington Street, a site that can be considered as brownfield development minimising its impact upon wildlife habitats. Most of the existing flora on site is far enough away from the new house to remain unaffected by its construction.

The site being located within Reading town centre, the impact of the new apartment upon wildlife should be minimal in any event.

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