

106-109 Saffron Hill – Sustainability Statement

INTRODUCTION:

This report forms part of the Full Planning Application for the proposed re-development of No. 106-109 Saffron Hill, an existing un-listed office use building within the Clerkenwell-Barbican area of London close to Farringdon Train Station.

The existing building consists of a three storey building with basement level dating back to circa 1900. The site is found within the Hatton Garden Conservation Area with the Saffron Hill elevation consisting of yellow stock brickwork above a render clad ground floor plinth. A planning application submission for the re-development of the site was made in August 2010 with planning consent being formally granted by Camden on 8th August 2011 (Application Ref: 2010/4669/P).

The above named planning consent consisted of the demolition of the existing building with the retention of the existing front (Saffron Hill) façade. A new structure was proposed behind the front façade providing equal number of floors plus extension of the existing basement floor to the rear party wall line (west elevation). The basement, ground, first and second floors would comprise of new B1 office space for the applicant CIWEM, with the erection of new third and fourth floor levels with associated external terraces creating 4 No. residential flats (2 No. 2-Bedroom flats plus 2 No. 1-bedroom flats).

The new planning application encompasses all of the design principles and proposals as described above with various specific design changes introduced, all of which have been submitted to Camden Planning for Pre-application advice on 19th July 2011 (Ref: CA\2011\ENQ\04474).

BREEAM & CODE FOR SUSTAINABLE HOMES:

CIWEM has encouraged the design team to pursue and develop their aspirations in achieving a highly sustainable development that matches their organisation's philosophies. The development has been designed by the design team to achieve a BREEAM 'Excellent' rating for the offices plus Code for Sustainable Homes Level '4' for the residential accommodation. To achieve these sustainable aspirations on a tight urban site, the new application proposals have resulted in internal layout developments for the office and residential accommodation plus a new rooftop plant room that is required to accommodate the necessary mechanical plant equipment. In order to achieve the aforementioned ratings, a series of PV panels will also be located on the brown roof serving the office and residential accommodation.

In order to achieve the aspired Code For Sustainable Homes Level 4 rating plus BREEAM Rating Excellent for the development, the scheme has been designed to accommodate good quality sustainable mechanical plant equipment comprising of Heat Pump Condensers (whole house ventilation) for the residential accommodation and VRF air conditioning / space heating combined system with heat recovery for the office accommodation. Due to the nature of the tight urban site, the resultant internal space limitations have been reviewed extensively by the entire design team, with the priority being to maximise the amount of usable office space and residential space in order to comply with the applicant's space needs plus Camden's space standards and lifetime home requirements. It was assessed at an early stage by the design team as to how to accommodate the aforementioned plant equipment with the most efficient solution in maximising internal accommodation was creating a small rooftop plant enclosure on the roof of the building. This

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reasoning was in addition to the free-air ventilation requirements that both the heat pump condensers and the VRF plant equipment both require to function efficiently (plant equipment needs to be cooled), a requirement that meant the plant equipment could not be accommodated internally within the building. This has resulted in the rooftop enclosure being designed as an acoustic louvered enclosure, a principle that has allowed the design team to minimise the size of the enclosure in comparison to a 'solid' enclosure. In addition to the rooftop plant enclosure, a further response to the sustainability aspirations of the building was to provide a series of PV panels on the brown roof serving the office and residential accommodation.

PV Panels

As stated above the proposals are for a mixed use development of office and residential use. To meet Part L of the Building Regulations, and the applicant's heating/cooling needs, low/zero carbon technologies are required on this site. Having examined various alternatives scenarios on this very tight site, including the use of chilled beams and under-floor heating in the offices, the applicant's energy and services engineering consultants have advised that roof mounted photo-voltaic cells will be required to offset the electrical requirements of the services systems. The area required is determined by the mechanical plant. To meet the cooling requirements of the mechanical plant free air flow is required; this in turn can only be achieved via the use of acoustic louvres. As stated above a solid roof would require the plant room to be greatly enlarged, and reduce the area of main roof available for photo-voltaic panels and brown roofs, therefore this option is not being considered.

PV panels have been proposed on the brown roof (see drawing 10100(L)104). In order to maximise their efficiency (i.e. to avoid over shading) plus to ensure that the panels are not visible at street level, the panels have been set back from the roof parapet with a low zinc clad parapet wall located on the front (east) and side (south) elevations. This low parapet wall will further conceal the top of the angled panels from street level. These issues have been discussed via the recent pre-application advice application with Camden.

Brown Roof

As part of the BREEAM assessment, the design team sought advice from the appointed Ecologist on an alternative brown roof specification that would maximise the ecology credentials of the building. The design team was advised that a brown roof would afford a greater biodiversity benefit for priority species (e.g. black redstart) compared to a green roof. With the introduction of PV panels located on the roof to allow the building to meet the applicant's aspired sustainability credentials (as discussed above); the benefits of specifying a brown roof for the building coincided well due to the fact that a reduction in the green roof's growth/performance would occur by having PV panels located above. The proposed brown roof will be a brown / sedum roof with a 2/3:1/3 ratio located above the main waterproof membrane.

It is recognised that in many circumstances brown roofs can contribute to ecosystems, supporting rare species of plants, animals and invertebrates. "Brown roofs", are also known as "biodiverse roofs", and by proposing to cover the main flat roof of the new developments with a layer of locally sourced material, the applicant will be creating habitats where none are existing, as well as re-using existing materials. The construction specifications for brown roofs are similar to those used to create flat green roofs. The principal difference is specification of growing medium. Rubble and gravel, sourced from the site demolitions are re-used materials, lowering the carbon impact.

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The main roof here will be seeded to increase its biodiversity potential in the short term, and will be allowed to self-colonise. This type of roof encourages invertebrates (many of which are becoming extremely rare in the UK) and will provide a valuable feeding site for birds. It should also be noted that brown roofs typically provide the same water attenuation function as green roofs but with superior biodiversity value.

WASTE REDUCTION

The proposed development retains the front façade of the building (with the exclusion of the windows) along Saffron Hill. In addition to this the existing stock bricks which form the current rear elevation are being retained/re-used post demolition to form the new rear and side external wall constructions. It is also proposed to re-use a portion of the existing floor boards found within the building plus re-use a number of the existing steel columns within the various reception and basement areas. Where possible concrete is to be made from crushed demolition materials on-site.

Of those materials which are not re-used or recycled on-site, a significant portion of these will be re-used and recycled off-site, thus seeking to minimise the amount of waste that is required to be sent to landfill.

A Waste Management Plan has been prepared by Walcot MASCo Architectural Salvage, and will be used and referred to during the development works.

CO2 REDUCTION

In regards to CO2 reductions, the development has been designed to meet CFSH Level 4 – this corresponds to a 25% CO2 reduction compared to the Target Emission Rate (TER) within the new 2010 Part L Approved Document. In comparison to the 2006 Part L AD, Code 4 corresponds to a 44% CO2 reduction. For the Offices, the development will meet the new 2010 Part L Approved Document, which corresponds to a 25% reduction compared to the 2006 Part L Approved Document Target Emission Rate (TER). The offices will achieve a BREEAM 'Excellent' rating, which requires the commercial accommodation to achieve a CO2 index (Energy Performance Certificate rating) of less than 40. This is equivalent to a mid-B rated EPC.

In addition to this it is important to note that the development is to be car-free with secure cycle-storage provided at ground floor level for both the office and residential accommodation, thus seeking to further minimise emissions and the impact of the development on environment as a whole.

WATER CONSUMPTION

In regards to water consumption, with the offices achieving a BREEAM Excellent rating, the maximum water consumption rate will be 1.5 – 4.4 m³ per person per year. This will be achieved via dual flush systems for WC's plus low flow rates for taps and showers. For the residential units, CFSH Level 4 requires water consumption to be limited to 105 litres / person / day. This will be achieved via the specification of dual flush WC's plus low flow rate taps and showers. Water efficient appliances will also be fitted, with washing machines not exceeding 49 litres/cycle and dishwaters achieving 13 litres/cycle. The development will also be fitted with a water leak detection system (as required by BREEAM) to reduce the impact of major water leaks that may otherwise go undetected. The development will also comply with Surface Water management requirement within CFSH, which

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states that the amount of surface water run-off should not be higher than it was for the previous site condition. The development will consist of a brown roof at fourth floor level which will control surface water run-off (i.e. attenuation system) to ensure that this requirement is met.