Design & Access Statement

1-40 Dudley Court
Endell Street
London WC2H 9RA

Roof Renewal

Prepared on behalf of
London Borough of Camden
Temporary & Supported Housing
Development Regeneration & Sustainability
33-35 Jamestown Road
London NW1 7DB

Job No: 23441
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1-40 Dudley Court
Design & Access Statement for Planning & Listed Building Applications

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1.0 Introduction

This Design and Access Statement has been prepared by Baily Garner on behalf of the London Borough of Camden. It accompanies the full planning application for the replacement of the existing concrete roof tiles with an extensive green roof covering. It should be read in conjunction with the application drawings.

This report responds to the requirements of the Town and Country Planning (General Development Procedure) (Amendment) (England) Order 2006 (the GDPO) for planning applications (with some exceptions) to be accompanied by a Design and Access Statement.

The structure and content of the statement has been informed by DCLG Circular 01/2006 *Guidance on Changes to the Development Control System* (12 June 2006) and *Design and Access Statements: How to Write, Read and Use Them* (CABE, 2006). Together these provide advice on what a Design and Access Statement should include.

Structure of the Statement

Based on the Circular 01/2006 and CABE advice, the following sections of the Statement comprise:

- **Section 2.0 Understanding the Context:**
- **Section 3.0 Design**
- **Section 4.0 Access**
- **Section 5.0 Planning Policy**
- **Section 6.0 Conclusion**

2.0 Understanding the Context

2.1 Strategic Context

1-40 Dudley Court is located within the London Borough of Camden approximately 250m from Covent Garden London Underground station. It is in close proximity to many London landmarks i.e. Covent Garden, Oxford Street and the West End.

With its central location, transport links are very good with regular bus and tube routes connecting to most of London.

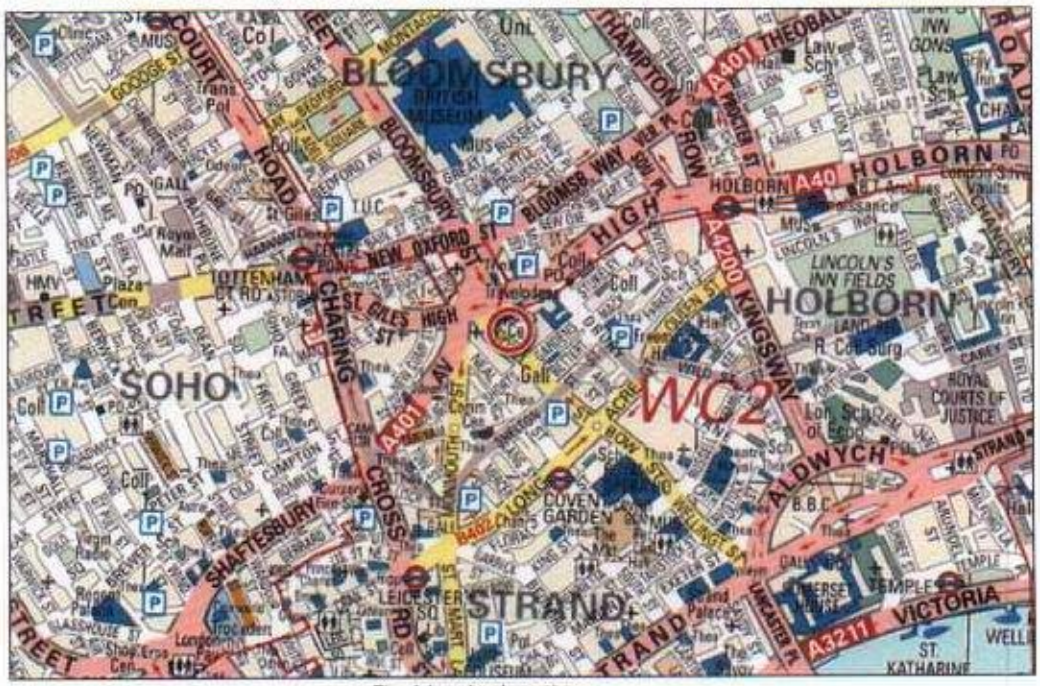

Fig. 1 London Location

2.2 Local Context

Dudley Court is situated on the corner of Endell Street and Shorts Gardens. The block provides a mixture of residential and office accommodation.

The block is not a listed building or within a conservation area. However it is closely located to the 7 Dials (Covent Garden) and the Bloomsbury conservation areas as shown below.

Fig. 2 Conservation Areas

2.3 Site Description

Dudley Court is a 1970's residential building of various storey heights. 1-40 Dudley Court forms part of the residential block and is located along Endell Street. The building is bordered by an office development to the north, a leisure centre and pool to the east and Endell Street to the west.


Fig. 3 1-40 Dudley Court Roof

Fig. 4 1-40 Dudley Court East Elevation

Fig. 5 1-40 Dudley Court West Elevation

The building is 4 storeys and is in use as follows:-

Ground floor – office area for leisure centre (Oasis)

First floor – residential

Second floor – residential

Third floor – residential

This planning application will only apply to the roof area of 1-40 Dudley Court, all other areas of the block are unaffected by the proposed works.

3.0 Design

3.1 Description of Proposal

The proposal is to renew the existing concrete tiled roof covering with an extensive green roof, consisting of a sedum blanket. Currently water ingress is occurring to top floor flats which is caused by the incorrect installation of the concrete tiles. Other works will include refurbishment and upgrading of the internal and external features. This will include:-

- The replacement of fascias and rainwater goods;
- Provision of a man safe access system;
- Concrete repairs and redecoration;
- Cavity wall injection;
- Internal and external redecoration.

3.2 Use

The existing residential units within 1-40 Dudley Court provide sheltered accommodation. The properties within the block consist of one bedroom single storey flats.

The proposed works will not increase or reduce the number of residential units to the block or affect the buildings current use.

3.3 Layout

The proposed works will not alter the current layout of the building or residential property contained within.

The current entrances to the blocks are to be retained and unaltered.

3.4 Scale

No change in scale is proposed as the profile depth of the proposed green roof does not exceed the current concrete tile construction profile. There have been preliminary discussions of the proposals with the adjoining owners of the leisure centre.

3.5 Appearance

The proposed changes that will affect the appearance of the building are:-

- Installation of green roof covering
- Provision of access door and ladder to the flank wall (located to the south of the roof).

Please refer to the indicative photomontage of the green roof appearance and please note that a greening element will also be provided to the roof's ridge.

Fig. 6 Photomontage of Proposed Green Roof

Whilst the proposed new roof covering material differs from the existing, there will be minimal effect on the appearance of the roof from street level, due to the low pitch of the roof (see Fig. 7 below).

Fig. 7 View of roof from Endell Street

The refurbished roof will be visible to surrounding high level buildings. However, the proposed sedum blanket finish will improve the visual appearance and increase the ecological diversity of an otherwise low diversity area.

The sedum blanket contains 11 species of sedum (please refer to drawing 23441/P003 for species list) and the appearance of these plants (and therefore the roof) will change throughout the seasons. Please refer to the photographs below, which provide a representation of the likely appearance of the roof at various stages throughout the year.

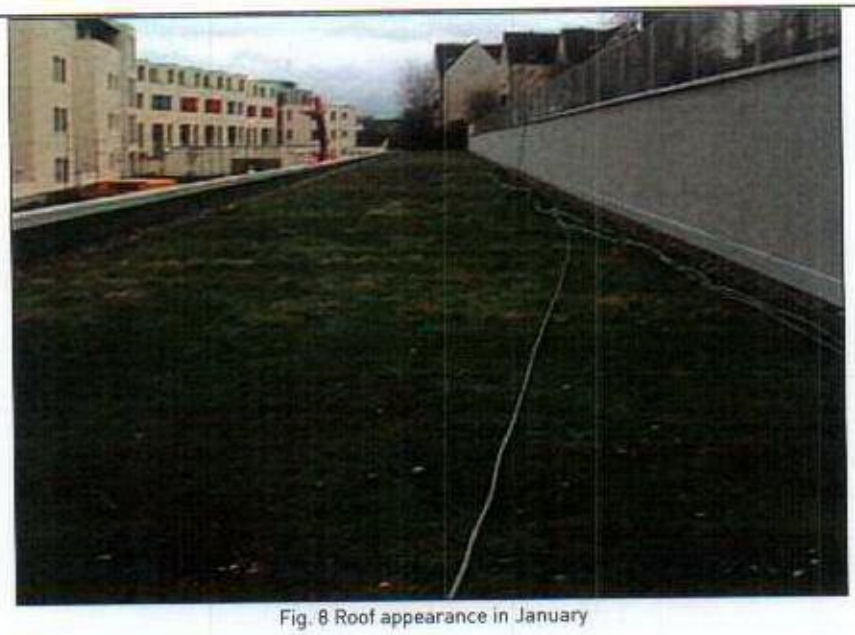

Fig. 8 Roof appearance in January

Fig. 9 Roof Appearance in April

Fig. 10 Roof appearance in October

4.0 Access

The residential units within 1-40 Dudley Court can currently be accessed via the communal entrance along Endell Street. This entrance leads onto a communal hall, stairs and lift and provides access to the rear courtyard of the building. A secondary entrance to the block is located along Short Gardens. The proposed roof works will not affect the access to the block by residents. No public or private routes will be affected by the proposal.

Access will need to be provided to the roof to undertake annual maintenance. A copy of the maintenance works to be undertaken is included in appendix A. Access to the roof will be provided via an access door and ladder to be located to the flank wall, to the south of roof area. Currently this area contains plant for the block including water tanks. To ensure safe access to the roof, for all operatives a Guided Fall Restraint (EN785 class C) will be installed to the roof. This consists of a permanent horizontal stainless steel wire based system, positioned to suit rainwater outlets for periodic maintenance etc.

5.0 Planning Policy

In preparing our proposals, we have referred to:-

- Camden's unitary development plan 2009
- Conservation areas – a guide for property Owners (LB Camden)

6.0 Conclusion

The proposals to refurbish the roof to 1-40 Dudley Court will rectify the current water ingress issues and will greatly improve the appearance of the block.

To improve the buildings sustainability, we will be improving its energy efficiency by upgrading insulation to the roof and injecting the cavity walls.

The proposed green roof system will provide the following benefits:

- Creation of habitat in an urban area low in biodiversity;
- In addition to the benefits of traditional insulation, green roofs have been shown to improve summer cooling (mitigating the urban heat island) and winter insulation. In a sheltered block, these effects become more 'socially' relevant and could have benefits to health (Please refer to Camden's climate adaption strategy for further information).
- Water run off at times of flash flooding is reduced along with water pollution.
- Increased life of the water proof membrane.
- Removal of air pollution in an area with poor air quality.

In summary the proposals promote an attractive, sustainable and ecologically diverse environment. The roof will provide habitat creation and enable potential energy savings of up to 24.15kWh/m2 in comparison to standard roofs. Energy savings of 6kWh/m2/yr (winter) and 4.15 kWh/m2/yr for summer cooling may also be achievable. The building owner will also benefit from an increased value to the property.

Finally it is important to emphasise the critical time constraints in relation to this project and ensuring it is made weatherproof as soon as possible. To this extent we would request consideration be given to reducing the application process down from 8 to 6 weeks as raised by the Project Officer at various discussions with the Planning Department, prior to this submission.

Appendix A

Proposed Maintenance Information

BAUDER

MAINTENANCE PROCEDURE

BAUDER EXTENSIVE GREEN ROOF SYSTEMS

What to Expect From A Bauder Extensive Green Roof System

There is a common misconception that extensive green roofs and sedums plants in particular are always green, or that from ground level appear to resemble grass. This is not accurate. They consist mainly of low growing drought tolerant Sedum plants, but may also include other species such as Saxifrage, wild grasses, moss and even herbs.

The appearance of planting will change along with the seasonal weather cycles and this is perfectly natural. It is also expected that more grass or moss may be present during the wetter months, simply because the conditions exist for these species of plant to exist. However, they will tend to die off during the dry summer months, because the shallow free-draining substrate in the blanket does not hold sufficient moisture for these plants to survive.

There are approximately 8-10 different plant species in Bauder XF301 Sedum blanket, some being very similar in appearance to others, but perhaps being more 'drought tolerant' under certain conditions. Not every type of species will survive and the more dominant will be expected to prevail with time, simply because they adapt better to any given location. However, we would expect at least 50% of species to flourish regardless.

Another misconception is that extensive roofs are maintenance free. This is incorrect. They are 'low maintenance', but not 'no maintenance'. The Sedum blankets for example, contain little in the way of natural nutrient and so fertiliser must be applied at the required time to help the plants become resistant to weather and temperature extremes.

Extensive roofs that have a deeper substrate growing medium, with the vegetation provided from specifically chosen Plug plants or hydro-planting, will generally exhibit a greater variety of plant species that may also include grasses and herbs. Here it is expected that an increased amount of dead vegetation following flowering will occur and therefore the need for more maintenance to remove the dead seed heads.

Sedum plants absorb and store water in their leaves. They use this water to survive during times of drought. A moisture retention fleece is incorporated into the system beneath the blanket, but the function of this is to hold water after rainfall for sufficient time for the plants to take on the water via the roots. It is not a long-term water storage medium; so don't be too concerned if it is dry. Just check the leaves to see if they are fleshy and don't appear dried out. In winter, the plant appears to shrink back and the leaves become small and tight. This is because the plant has sufficient water present in the substrate, but will hold little so it is able to withstand frost.

General Maintenance

General maintenance is normally carried out annually during springtime. However, certain tasks e.g. the removal of weeds or accumulated leaf litter, may need to be done during the Autumn, depending to some extent upon the surrounding environment i.e. trees, dependent upon the location of the roof.

The following procedures should be carried out as indicated below, in order to ensure the roof is maintained in good condition and to protect the validity of the guarantee.

Basic roof related maintenance procedures:-

1 Ensure safe access can be gained to the roof and that relevant Health and Safety procedures are followed when working at roof level. Safety harness attachment points or man safe systems should always be used where provided.

2 Remove all debris and leaves from the roof surface, rainwater outlets, chutes, gutters, etc. All debris must be removed from the roof and not simply flushed down rainwater pipes. Roofs in the vicinity of taller trees will need more frequent maintenance.
We recommend removing dead leaves during the spring and again in the autumn, to ensure that fallen leaves to not cover and suffocate the sedum plants.

3 Open the lid of the Inspection chambers and ensure that all rainwater outlets (including down pipes) are free from blockages and that water can flow freely.

4 Ensure that any protective metal flashings or termination bars remain securely fixed and in place.

5 Examine all mastic sealant and mortar pointing for signs of degradation, and repair or renew as necessary.

6 Where promenade tiles or paving slabs exist, ensure that they remain secure in position and in good condition.

7 Please ensure that any items of plant/equipment that may have been introduced to the roof, are sited on a suitable isolated slab and that any fixings that may have been used to secure them do not penetrate the waterproofing. Please contact Bauder for advice regarding suitability of slabs.

8 Report any signs of damage or degradation to Bauder immediately, so that arrangements can be made for remedial work to be carried out if necessary. It is recommended that a roof plan marked with co-ordinates be used to record the findings of the inspection. This will avoid confusion and provide an on-going record of roof performance, which can be compared year on year.

9 Works to adjoining areas - When carrying out maintenance to adjoining areas, care must be taken not to damage the system. For example, any solvent-based product allowed to wash down into the system will seriously de-stabilise the molecular structure of the bitumen causing it to fail. If this thought to be likely, then Bauder should be contacted so that they may advise. Chemical damage will invalidate the guarantee.

10 Alterations - Any alterations to the system that may affect its integrity will invalidate the guarantee. If such a situation should arise, then Bauder should be contacted so that they may advise on the alteration and how it should be incorporated without affecting the guarantee.

Plant related maintenance tasks required:-

1 Plant encroachment.

Any planting, which has encroached into drainage outlets, walkways and the vegetation barriers (pebbles), should be removed. This removed vegetation can be used to repair any bare patches if required (see below). If movement/settlement of the pebble vegetation barrier has occurred, then additional washed stone pebbles (similar to the existing) should be added.

2 Monitor the colour and rate of growth.

The colour and rate of growth should be examined, to establish the health of the plants. It must be stressed that many things can affect the growth and colour of the sedum plants. Generally, plants tend to be greener in wetter mild conditions (springtime) and where the roof pitch is shallow.

During May, June and July the plants flower and you will see a mixture of colours - whites, pinks, yellows and even some purple. Some species of sedum blush red naturally during the summer and autumn, (e.g. Sedum album 'coral carpet') and so the roof takes on a more 'red/brown appearance. This is particularly the case once plants have flowered, leaving remnants of dry brown seed heads. The best visible indication of health is if the leaves are fleshy and contain plenty of water.

When exposed to extreme conditions, sedum plants have a tendency to turn a deep red colour. Please note that that this is a natural phenomenon and that this behaviour is important to the plant to acclimatise for surviving through a cold winter or hot summer. This usually occurs during climate extremes e.g. extreme hot or cold weather, prolonged drought or in very exposed conditions or when the plants are in distress, for example through lack of nutrient (fertiliser).

Plants affected by a severe lack of water shrink back and the leaves will tend to be small and very tight. In distress the plants change gradually to a deep crimson red. If an

Irrigation system is fitted, it is best to run it only during prolonged dry weather for limited periods – see 'Irrigation' information below,

If the plants are in this condition, but have received regular rainfall, then the likely problem is lack of nutrient and fertiliser should be applied.

In shade, Sedums tend to grow greener and leggier. In general, sedums do not like permanent shade, so either avoid areas under larger trees or surrounded by buildings, or make it possible for more natural light to reach the roof. There may be noticeable differences in the growth of similar sedums in a different area of the same roof. This emphasises the living nature of each individual roof.

If problems are suspected, Bauder may be contacted for advice and if necessary, a suitable course of action.

3 Weeding.

Sedum blankets will at times include moss and grass. If considered excessive, provision should be made to remove any unwanted vegetation, e.g. weeds/ grasses/ saplings. These can be removed manually by hand, or by using a 'spot weed wipe', although care should be taken to follow specific instructions regarding the use of any proprietary products. Weeds are a problem of aesthetics rather than damaging the roof, but large areas of weed or grass should be removed, as should saplings. After removal of weeds treat area as if it were a bare patch (see below).

4 Repairing Bare Patches.

Bare patches can be repaired easily, but only during the growing season (ideally during March/April or late August until the end of September). Take clumps of Sedum from areas of abundant growth and place on bare patches pressing gently into the soil. They can then have a light sprinkling of sand mixed with compost or Bauder substrate to improve uptake of cuttings.

The Sedum cuttings will grow best if this is carried out during spring maintenance and kept moist and free of temperature extremes (frost and intense sun). Compost or topsoil can be used for smaller bare patches, but contact Bauder for advice or to buy specialised substrate.

5 Fertiliser for Bauder XF301 sedum blankets

Bauder Sedum Blankets are grown in a very shallow growing medium that contains very little nutrient, so the annual application of fertiliser is crucial to ensure that the plants remain healthy. Fertiliser should be applied during March/April. It is important to carry out this task during this time, because it helps to prepare the plants for extreme weather conditions and flowering and also because it allows the different species to gain all their nutrients without competing against each other.

A good organic fertiliser called Fertigrün can be obtained direct from Bauder in 25kg bags (each bag sufficient for covering 312.5m). This should be applied at the rate of 80gm/m². Small areas (up to 30m²) can be applied using a hand held spreader or strewn by hand from a bucket. Fertilising larger roofs should be done using a trolley applicator, which can be purchased direct from Bauder. Apply fertiliser at the given rate written on bag.

Fertiliser pellets settling on damp leaves may have a detrimental effect i.e. burning the leaves. It is therefore recommended that the fertiliser is lightly 'watered in' immediately after application. Dung based organic fertilisers should be avoided.

6 Fertiliser for either plug planted or hydro-planted extensive green roofs

Use a 6-month slow release chemical fertiliser with an NPK ratio of 15, 9, 14 respectively, such as Plantacote Plus 6M, applied at a coverage rate of 50gm/m².
Application: Small areas (up to 30m²) can be applied using a hand held spreader or strewn by hand from a bucket. Fertilising larger roofs should be done using a trolley applicator, which can be purchased direct from Bauder. Apply fertiliser at the given rate written on bag. This product can also be used on sedum blankets.

7 Irrigation

Sedum plants absorb and store water in their leaves. They use this water to survive during times of drought. A moisture retention fleece is incorporated into the system beneath the blanket, but the function of this is to hold water after rainfall for sufficient time for the plants to take on the water. It is not a water storage medium; so don't be concerned if it is dry. Check the leaves to see if they are fleshy and not dried out.

Generally speaking, sedum roofs require no artificial watering following establishment. However, for sedum blanket systems only, we recommend provision for installing a 'leaky pipe' or drip line irrigation system where the following conditions apply: -

All south facing roof slopes exceeding 25° pitch.
Very windy or exposed site locations (wind accelerates drying out of the blanket)
Sites up to 50 miles inland of the east coast of the UK mainland (due to less frequent rainfall), where the roof pitch exceeds 9 degrees.

Cont...

Leaky pipe or drip line irrigation systems are relatively inexpensive and considering the unpredictable weather patterns over the past 15 years and the extremely dry year experienced in 2003, we feel that this small additional cost is a really worthwhile investment to maintain your sedum roof finish in top condition.

Irrigation should only be activated during prolonged periods of hot, dry weather, or if the sedum plants are showing signs of distress. The irrigation system is best activated for 2-3 hours, preferably at dawn or dusk to minimize unnecessary evaporation. Then once every 4-6 days for the duration of the hot weather conditions. This can be achieved using an inexpensive battery powered programmable timer

Please note - continuous daily watering is neither recommended or necessary, as this will only promote weeds and other unwanted plant species.

Advice and Supply of Irrigation Equipment

Access Irrigation Ltd is one of the country's longest established irrigation specialists and has considerable experience in many types of irrigation, including green roofs. They are happy to provide irrigation advice on any Bauder project and can supply a wide range of irrigation products. Please contact:-

Access Irrigation Ltd
Crick
Northampton
NN6 7XS

T: 01788 823811 F: 01788 824256 E: sales@access-irrigation.co.uk
www.access-irrigation.co.uk

Support

Extensive roofs require only minimal maintenance and we are happy to offer advice on issues concerning your green roof and how to keep it in good order. We believe our products and systems are of the highest standard and we are happy to talk through any queries or concerns. It can help greatly to provide a photograph to accompany any such queries.

Please note: In the event of any query arising which it is thought may affect the condition of the system, then Bauder should be contacted at the address below. We cannot accept responsibility for any problem or failure due to use outside those parameters for which the system was designed or 'acts of god' beyond our control e.g. extreme weather conditions or damage through pests.