Carbogno Ceneda Architects

Architecture Design Planning Sustainability Consultancy

Angle House, 48a Antill Road, London N15 4BA, [redacted]

London Borough of Camden

Planning and Building Development

5 Pancras Square

London N1C 4AG

13th July 2022

Broxwood View, 29 St Edmunds Terrace, London, NW8 7QH

Planning application ref: 2018/0645/P

Appeal reference: APP/X5210/W/19/3240401

Re: Discharge of Condition 16 _ Roof Feasibility Assessment

Dear Sir or Madam

We write in order to discharge Condition 16 of the above permission, relating to the feasibility of using blue or green roofs as part of the development, as follows:

Prior to commencement of development other than site clearance and preparation, a feasibility assessment for a hybrid blue-green roof should be submitted to the local planning authority and approved in writing. If a blue/green roof or green roof are considered feasible, details should be submitted to the local planning authority and approved in writing. The details shall include the following:

a) Detailed maintenance plan;

b) Details of its construction and the materials used;

c) A section at a scale of 1:20 showing substrate depth averaging 130mm with added peaks and troughs to provide variations between 80mm and 150mm;

d) Full planting details including species showing planting of at least 16 plugs per m2. The development shall thereafter be constructed in accordance with the approved details.

Feasibility Assessment

Feedback from Radmat UK was sought on the feasibility of incorporating blue or green roof systems and the following comments (shown in *italics*) were received in relation to the two roof areas – higher being above the third floor, flat 9, and lower being above the second floor, flat 6.

Higher Level Roof

We understand that you have attenuation under the ground, so we recommend that you utilise that and do not use any Blue roof as its simply adding significantly to your building costs.

Blue roof attenuation requires the roof structure to be upgraded to accommodate the additional weight of water at 1Ton / m3. Which could mean deeper foundations and changes to the entire structural framework.

Blue roofs are used in inner city developments where they have no opportunity of any attenuation tanks anywhere on the site but need to achieve set flow rates.

The M & E plant area would likely require bunding and separating from the Blue roof area due to the likely weights of the plant and M&E kit. This area would then require a separate drainage strategy.

The typical depth of a blue roof: 10mm waterproofing 250mm insulation 100mm Geocell Blue roof water storage (Could require deeper Geocell storage when calculations produced), 50mm pedestals, 50mm pavers plus 150mm upstand height to meet BS6229:2018 recommendations.

Overall 610mm from deck slab.

And for a green roof at higher level:

The PV's shown on the roof cover a large area of the roof and will require regular maintenance. They will also cast continuous shadow beneath them and shadow around them as the sun moves overhead.

There is a large screened area for plant which again casts shadow.

Clearly inside the screening will be M & E equipment which would requires maintenance and would likely be ballasted or paved. There is a lift overrun and a roof access hatch which further encroach on the space available on the roof. Foot traffic across the roofs for maintenance of the PV's and M & E plant would be best achieved by designated routes.

As you are aware green roofs require a fire barrier gravel / ballast margin of between 300 – 500 mm width around all perimeters and obstacles, such as the parapet wall, lift overrun, access hatch, mansafe posts, any penetrations etc.

The typical depth of a green roof would be as follows: 10mm waterproofing 250mm insulation 25mm drainage board. 80mm growing medium (soil) 25mm Sedum blanket, plus 150mm upstand height to meet BS6229:2018 recommendations.

Overall 540mm from deck slab.

On this basis neither a green roof or a blue roof system is considered appropriate for the higher level roof area owing to several factors:

- The use of the roof area for plant and solar panels, plus lift overrun, and access being required for maintenance resulting in minimal areas available for a green roof;
- Use of a blue roof system was not anticipated in the consented design and inclusion of one would force a redesign of the structure of the building, plus additional associated construction costs;
- Attenuation is being provided under the proposed car park which surface water will be discharged into before being released into the sewer system;

Therefore, it is proposed to use a paved roof system on the higher level roof as this better suits the purpose for location of plant equipment and solar panels and allows for safe access and use by maintenance personnel.

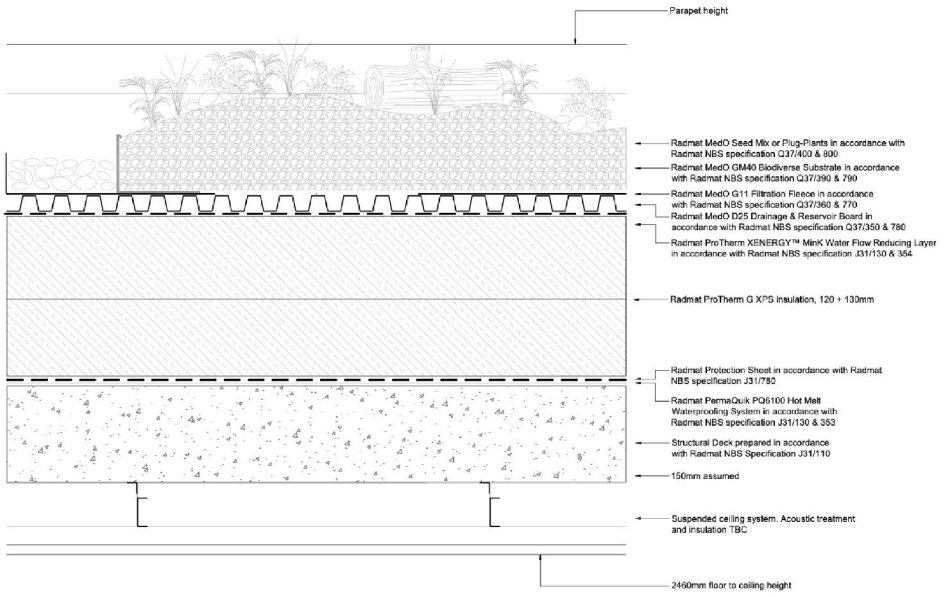
Lower Level Roof

The roof on the left hand side of [drawing] P106 [i.e. third floor level] would be suitable for a green roof.

The following typical detail illustrates a build-up that meets the criteria set out in Condition 16 regarding substrate depth and variations and it is proposed to use such a system on the lower level roof.

Planting is to be provided using a wildflower seed mix and/or plug-plants from Radmat. Both types are suited to the climate and as noted on page 1 of the maintenance document are to be planted at a rate of 10-20 plants per sqm which will satisfy part d of the condition.

Maintenance is to be undertaken according to the manufacturer's instructions, with access provided from the terrace of Flat 9. Refer to the enclosed document from Radmat. Occupants of the flat will not have access to the green roof.



Summary

In conjunction with the proposed below ground attenuation, which is incorporated into the scheme in order to satisfy Condition 21 (Sustainable Urban Drainage System), we believe that sufficient capacity for slowing surface water run-off into drainage systems is already provided and therefore a blue roof system is not necessary for this development, nor is it deemed appropriate for the building.

A green roof system is suitable for the lower level roof and a product that meets the criteria set out in Condition 16 has been put forward for consideration. This will provide wildlife habitat and planting suited to the local environment, and will also provide attenuation that is additional to that already proposed thereby reducing flow of surface water further.

We trust that we included enough information to validate this application and that it is sufficient to discharge the condition. If, during the course of the application, there are any queries or minor matters that might result in a refusal we would welcome the opportunity to address them.

Yours sincerely

Andrea Carbogno

for and on behalf of Carbogno Ceneda Architects Ltd

Encl.

PDS_MedO-Wildflower-Plug-Jan-2021

PDS_MeDO_S1-Wildflower-Seed-Mix-JAN-2021

PDS_MedO_S2-Wildflower-Seed-Mix-JAN-2021

MG MedO Wildlfower and Sedum Plug Extensive Green Roof Maintenance_Rev 1.pdf

Radmat email dated 27th May 2022

Royela Design Services email dated 16th June 2022

2113_P110 Roof Plan (Planning Stage)

2113_SK_BRF Proposed Detail