



Twyford Barn
Upper Twyford
Hereford HR2 8AD

01981 542111
hereford@architype.co.uk

www.architype.co.uk

Managing Director

Jonathan Hines
BSc(Hons) BArch FRSA

Directors

Ben Humphries
BA BArch(Hons) RIBA FRSA

Mark Barry
BA(Hons) DipArch RIBA

Associate Director

Mark Lumley
BSc(Hons) DipArch RIBA

Architype Limited
trading as Architype
Registered in England
at London Office
Registered No. 4732075
VAT No. GB 420 4722 90

David Peres de Costa
Regeneration and Planning Development
Management
London Borough of Camden
2nd Floor, 5 Pancras Square
c/o Town Hall, Judd Street
London
WC1H 8ND

Ref: 2018/6388/P
8575-Agar Grove Phase 2

25th September 2019

Dear David,

Please find some clarification information to illustrate best endeavours have been carried out on phase 2 of the Agar Grove development in relation to condition 3 (f). The aim of our overview is to bring some context and clarification to the correspondence across various planning conditions that directly or indirectly have an impact on each other (3f, 25b, 41, 43).

CONDITION 3 (f)

Before the relevant parts of the works within the relevant phase (a) phase 1; b) phase 2; c) phase 3; d) phase 4; e) phase 5; f) phase 6) of the development commences, other than site clearance and preparation, relocation of services, utilities and public infrastructure and demolition associated with that phase, detailed drawings, or samples of materials as appropriate, in respect of the following, shall be submitted to and approved in writing by the local planning authority.

3f) photovoltaics / solar thermal panels

1. CONTEXT: BUILDING AND SAP REGULATION CHANGES

The previous description on this original submission may have caused concern in its interpretation. The aim of this letter is to clarify this statement and provide / evidence supporting documentation in an appendix to reassure planners that this condition is still being fully complied with. The previous statement from the original cover letter is below with the area of clarification highlighted in italics:

“The PV requirement is designed in conjunction with the recommendations laid out in the Energy Statement for Phase 2 (see compliance condition 43 as part of this submission). *There is a reduction in the requirement for PV due to the enhanced performance standards intended in the construction. Block G is now the only roof containing PV panels.* This leaves the living roofs of H more visually pleasing as the whole of the living roofs of H are not obstructed by the PV panels indicated on the approved planning drawings”.

The interpretation above may have been that there had been a reduction beyond that what was included in the Building Regulations requirements for renewables. This is an incorrect interpretation and was not the intention of the statement above. The planning approved energy strategy from Max Fordham states (in relation to Part L states:

‘The design for Agar Grove has achieved Part L plus 32%. While this falls short of the London plan requirement of 40%, it is the maximum possible for this site, given the limitations of the roof area and competing design agendas’.

At planning it was clearly identified that there was competing design agendas which limited the planning approved design achieving 32%. This was developed further in detailed drawing and

energy analysis which occurred for phase 1 and phase 2 of the Agar estate against the 2013 Part L Regulations, which also included work on living roofs and satisfying the other part of condition 43, ensuring Passivhaus Certification is met. These competing design agendas will be explored in further detail below.

Phase 1 of the Agar Grove Estate Regeneration Scheme was discharged against the 2013 Part L Regulations. The 32% requirement became 27% with differing primary energy factors between SAP software being the main change in relation to how emissions are interpreted in energy performance. Please see attached

Agar Grove - Phase 1a - Energy Statement Addendum - With Appendices_1702.pdf

This equated to equated to 27% in the SAP reporting when the next part L was released, of which the Planning Energy strategy refers to in the context of the performance reporting (see excerpt below):

'The energy statement Part L 2013 will come into force in April 2014. A decrease overall in the CO₂ emissions limit has been confirmed at 6% with respect to 2010 levels. New fabric energy efficiency standards (FEES) will also be introduced, and a new version of the Standard Assessment Procedure (SAP); the full methodology is yet to be released'.

Following on from the precedent set in phase 1 phase 2 (current ref 2018/6388/P) the same methodology was applied by the energy consultant which arrived at the value proposed in the current SAP reporting. The same principles were set out by NGR on the energy statement requirements for phase 2. Please see attached

Agar Grove Phase 2 - Energy Statement - October 2018 - Rev A with Appendices.pdf

In order to achieve 32% if the equivalent 27% is still not satisfactory, this would require another 4 modules, which would need to be fitted on to the living roof of block H as the better optimized roof on this phase apart from block G (south facing aspect roof). However, the additional 4 panels create a design agenda challenge which had already been identified at planning approval originally (section 1 above). For more information please see section 2 below.

2. DESIGN AGENDAS: LIVING ROOF AND COMPARISON OF ROOF PLANS

The pre commencement conditions 43 was submitted in June 2018. Condition 3(f) was submitted January 2019. They were submitted 6 months apart when more development had taken place to establish the energy requirements on the scheme. Also, through detailed design development of the original scheme some discoveries were made about potential conflicts with Passivhaus compliance and the living roofs pre commencement condition. The delay was also due to the supplier not being procured by the contractor and therefore uncertainty over the performance of panel, number of modules etc. Please see attached:

T14011-ART-DR-A-1bG00-PL-111 initial copy submitted 43.pdf

This is the previously submitted condition 43 with a *typo* on the efficiency required from the SAP calculation and therefore an *over count* on the PV panel requirement.

The current corrected roof plan needs to be re-submitted under condition 43 to match condition 3(f). Please see attached

T14011-ART-DR-A-1bG00-PL-111 corrected text 3f and 43.pdf

This roof plan also should be re submitted for condition 43 so that the Energy statement the SAP and the PV allocation are all in alignment. We believe this may have caused discrepancy and confusion due to the separated nature of submitting the two documents.

The full extent of the main roofs on block H are planted and are discharged under condition 24b. Please also see attached:

T14011-ART-DR-A-1b-S-00-PL-005.pdf

The original approved site roof plan showing living roof extents also showed PV panel array on this roof. Upon liaising with the industry, a 'through living roof solution' as suggested by the previous planning drawing is not possible on roofs with a pitch greater than 5 degrees.

This at the time of approval was a lightweight ballasted option like the Bauder Bio Solar roof installation support system which allows the living roof to continue growing under it and therefore the area of living roof is representative of that outlined at planning (i.e. full living roof). The light weight solution also minimizes / mitigates thermal bridging which is critical to reduce/eliminate where possible to achieve the Passivhaus Certification required as part of Condition 43.



01. Indicative Section A-A
Scale 1:10

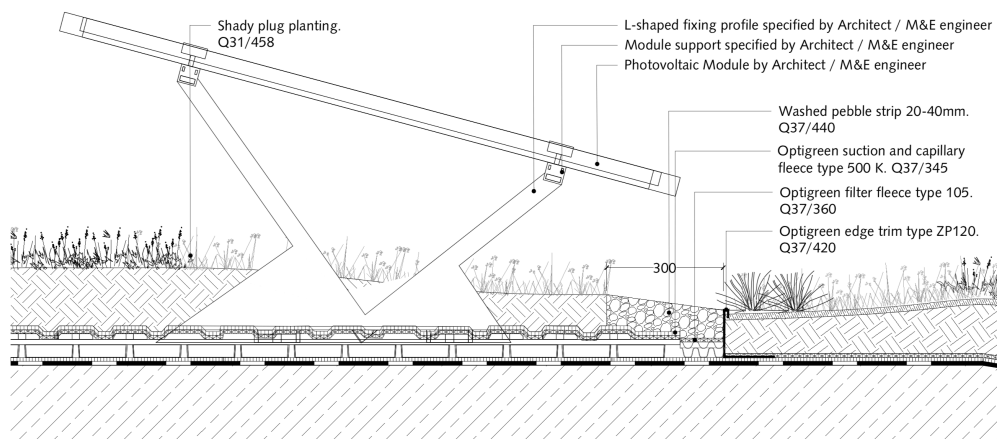


Fig 1 and 2 showing the lightweight Bauder Bio Solar roof support for PV panels

Block H roof has a flat roof pitch of 11 degrees, so this system was never possible without significant detriment to living roof or significant risk added to Passivhaus compliance. This risk is concerning increased thermal bridging with heavy weight mechanical fixings through the roof to fix the PVs robustly on an 11-degree roof pitch which would increase fabric heat loss and be of

further detriment to overall Passivhaus SAP and area weighted average targets for the building (required as part of the solutions to achieve compliance for conditions 41 and 43). Please see email correspondence below as an appendix to this document.

A ballasted solution such as the one shown (fig 3 below) reduces drastically the extents of the living roof extents and would require the living roof condition to be re-visited / varied. The living roof also stops underneath the panels in this location so achieving compliance with (3)f) puts the roof in non-compliance with condition 25(b). A heavy mechanically fixed option could be fitted to the > 5 degree pitch roof if but would require direct fixings through the insulation to the slab, which the planning approved 2014 drawing sought to avoid.



Fig 3 ballasted option which is closer to the roof substrate and therefore reduces the extent of green roof significantly

The additional heavy weight fixings would penetrate the insulation layer on the roof and add to the heat loss penalty beyond what was estimated at planning stages (via a lightweight system) and therefore put the compliance for Passivhaus very much at risk. It is noted that this scheme in early 2018 went in for an NMA application to make subtle adjustments to the design:

- to give more certainty that Passivhaus certification can be achieved
- to give confidence for the Passivhaus Certifier to submit their support letter when seeking to discharge condition 43.

3. CONCLUSIONS

It is this balance of design agendas outlined in section 1 and 2 above that lead the team to strive towards reducing the number of PVs with enhanced performance and more modern modules than what was merely indicated in the 2014 approval. Efficiencies of PVs have moved on significantly since this original planning approval.

If a best endeavours is required to at least make 32% (which will be a higher figure when compared against current Part L building regulations) this would require approximately 4 more PV panels of the same specification. Due safe access and maintenance requirements on block G roof, this would mean that 4 panels would need to be located on the roof of block H which is currently living roof as per original requirement.

As outlined in section 2 above, in order to be fixed adequately to the 11-degree roof substrate the author would also parallel need to submit to vary the discharged condition for living roofs and assess wider estate ecological impacts as well as increase risk to Passivhaus Certification. We would seek that the planners look in balance at this approach as achieving overall best endeavours between clashing conditions on the scheme.

In relation to solar thermal: no space provided within planning design for the storage units required this conflicted with a number of other conditions such as amenity space, waste strategy, services storage strategy (cold water provision) and landscaping/play area. Research indicated more heat losses keeping 3 large solar tanks and this has already been detailed in the NRG energy statement:

Agar Grove - Phase 1a - Energy Statement Addendum - With Appendices_1702.pdf

Please note Architype are not services engineers but the lead consultant architect and Passivhaus designers on this scheme (under the contractor) in relation to delivery. We are writing a response to this condition as we are in a position to evaluate the relationships between planning conditions and undertake a more thorough review in terms of design agenda delivery rather than respond purely on the terms of one planning condition.

I am also aware that since our initial correspondence on this that there are further information request queries on condition 41 of the scheme to do with Code for Sustainable Homes: this will be responded to separately.

I trust this clarifies uncertainty and confusion around the issue and would seek further guidance from the Planners on this matter in order to conclude/discharge.



Ann-Marie Fallon Associate & CEPH Designer

www.architype.co.uk

Cc: David Peres Da Costa – London Borough of Camden
Cc: Gabriel Berry-Khan - London Borough of Camden
Cc: Sam Faraday - Hill Partnership Ltd
Cc: Michelle Christensen - London Borough of Camden

Tom Raftery

30 May 2018 at 14:24

TR

RE: Agar Grove Estate Regeneration Bauder Ref: B140946/3 - Phase 1B - H - Roof [Scanned]

[Details](#)

To: Ann-Marie Fallon, Mike Jones, Cc: Lee Townend, Andrew Harper

Hi Ann-Marie,

Looking at the details, you would need to use a mechanically fixed solution on the pitched roof as our BioSolar solution cannot be used on pitches over 5 degrees.

We have a number of options but it would be good to chat it through if you are free at all this afternoon?

Kind regards,

Tom Raftery
Product Manager BauderSOLAR

Bauder Limited

United Kingdom

70 Landseer Road, Ipswich, Suffolk IP3 0DH

Ireland

O'Duffy Centre, Cross lane, Carrickmacross, Co.Monaghan.

M: +44 (0) 7788 311602

T: +44 (0) 1473 257671

E: t.raftery@bauder.co.uk

www.bauder.co.uk



From: Ann-Marie Fallon [mailto:ann-marie.fallon@architype.co.uk]

Sent: 30 May 2018 08:56

To: Mike Jones <m.jones@bauder.co.uk>

Cc: Tom Raftery <t.raftery@bauder.co.uk>; Lee Townend <l.townend@bauder.co.uk>; Andrew Harper <a.harper@bauder.co.uk>

Subject: Re: Agar Grove Estate Regeneration Bauder Ref: B140946/3 - Phase 1B - H - Roof [Scanned]

Hi all,

It is the specification but also the installation on the 11 degree pitch roof to be incorporated with the Bauder sloped roof that we are also concerned about.