Jorge Nash 13 July 2023 15:51 Sent: To: Kate Henry; Eleanor Leach

RE: 2023/1437/P - Highgate Centre - ASHP's Subject:

Attachments: NRB-0282-0754-HP\_Y\_UN50\_09.pdf

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Dear Kate,

From:

We have discussed this with our M&E consultant who has since had further discussions with manufacturer.

They have been advised that the figure previously quoted (COP - 2.88) is not correct for use in the way it has been presented and discussed.

The COP - 2.88 figure relates to the worst case operational efficiency during the design minimum winter conditions. It is not therefore the correct or accurate figure for the purposes of the condition.

The correct figure is COP - 4.1 which meets the policy requirement and complies with the CPG guidance below.

Accordingly, the COP for the proposed unit is 4.1 at EN 14511:2018; System side water heat exchanger 30°C / 35°C; External air 7°C d.b / 6°C w.b.

The technical data to confirm this is in the attached document and an extract is shown below for ease of reference.

I trust this is sufficient to break the impasse and the Council is able to discharge the condition.

Thanks,

## NRB HE

Size		0282	0302	0332	0352	0502	0552
Cooling performance 23 °C / 18 °C (1)							
Cooling capacity	kW	76,4	85,7	96,8	111,4	126,2	137,
Input power	kW	20,4	23,1	25,7	31,2	35,9	41,0
Cooling total input current	A	35,0	40,0	45,0	51,0	61,0	67,0
EER	W/W	3,74	3,72	3,77	3,57	3,51	3,36
Water flow rate system side	I/h	13219	14836	16740	19268	21829	2376
Pressure drop system side	kPa	43	55	50	66	44	52
Heating performance 30 °C / 35 °C (2)							
Heating capacity	kW	60,5	70,2	78,9	90,4	104,2	114,0
Input power	kW	13,8	16,1	18,2	21,1	25,2	27,6
Heating total input current	A	26,0	30,0	35,0	40,0	46,0	49,0
COP	W/W	4,38	4,36	4,34	4,28	4,14	4,16
Water flow rate system side	I/h	10456	12125	13636	15617	18004	1979
Pressure drop system side	kPa	27	37	33	43	30	36

Data EN 14511:2018; System side water heat exchanger 23 °C/ 18 °C; External air 35 °C

(2) Data EN 14511:2018; System side water heat exchanger 30 °C / 35 °C; External air 7 °C d.b. / 6 °C w.b.

## Jorge Nash

Associate Director

From: Kate Henry < Kate. Henry@camden.gov.uk>

Sent: 12 July 2023 17:06

To:

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

CAUTION: This email originated from outside of RPS.

Dear Jorge,

Notwithstanding the different ways of calculating the efficiency, the key issue here is that the proposed ASHP's aren't efficient enough. The aim of the condition is to ensure a system that is better than a conventional heating system. Paragraph 5.16 of CPG Energy Efficiency and Adaptation notes the following:

# WHAT DOES THE COUNCIL EXPECT FOR THIS TECHNOLOGY?

 Consider how much electricity is required to work the pump versus the energy savings of providing heat or cooling. We will expect carbon calculations to show that that their use for heating is more efficient than gas. Otherwise they will not be acceptable. The calculations will be based on the co-efficient of performance (COP) and the carbon content of electricity and gas. ASHPs need to have a COP of more than 4 to be more efficient than a conventional heating system.

23

Camden Planning Guidance I Energy efficiency and adaptation

- When considering the carbon efficiency of a heat pump system
  the Council will take into account research and evidence of past
  performance of heat pumps and the seasonable performance.
- · Noise assessment and mitigation report to be submitted
- · A meter on the system for monitoring

The COP of 2.88 is far below the figure of 4 which is why it's not acceptable.

I would suggest that you look into providing more efficient ASHP's, in order to be able to discharge the condition.

Kind regards

Kate Henry Principal Planning Officer

Telephone: 020 7974 3794



From: Jorge Nash

Sent: 27 June 2023 10:50

To: Kate Henry < Kate. Henry@camden.gov.uk >

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

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Hi Kate.

We have discussed the points raised by the Sustainability Officer with our M&E consultant, who in turn has raised the various points with the manufacturer and other colleagues within industry.

It is our view, in consultation with the manufacturer and other colleagues outside of their firm that the interpretation below is incorrect. The proposed system is an "ambient loop system".

The A+ referred to below are for ERP rated products which covers up to 45kW heating capacity machines. The larger ASHP's fall outside of this but are given SCOP ratings.

Seasonal performance factor SPF can be calculated for the system using the SAP guidance note from BRE included in the Zeroth tech sub (attached for ease).

The document from BRE dwells on the internal WSHP to a larger extent than on the ASHP, but it acknowledges this is part of a wider system. It would appear that this is the only validated method of calculating SPF's.

The above is all information and guidance from the designers of the methodologies for calculating SPF's (BRE). The BRE document clearly states the assumptions that were made, how uncertainties were modelled and to come up with generic SPF's for the Glen Dimplex system.

Having spoken to the manufacturer, Aermec, we understand that what you require does not apply to ASHP's with a capacity beyond 45kW.

As suggested previously we would suggest a meeting may be the best way to move beyond this impasse because at present, in consultation with the manufacturer, we cannot see a way to provide the detail requested below. Alternatively, we would suggest the Council should provide some clear guidance on how to calculate/ convert into SPE figures.

If you could pass the above on to the sustainability and seek further clarification and/ or confirmation for a meeting that would be helpful.

Thanks,

Jorge Nash Associate Director

RPS | Consulting UK & Ireland

D F

From: Kate Henry < Kate. Henry@camden.gov.uk>

Sent: 14 June 2023 16:53

Γo: I

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

CAUTION: This email originated from outside of RPS.

Hi Jorge,

I spoke again to the Sustainability Officer today. The condition requires an SPF of at least 2.5. Instead you've provided the SCOP figure which is 3.38. A SCOP of 3.4 equates to A rating, so you're not even meeting that requirement. If you are going to provide a SCOP instead of the SPF, it needs to be at least 4 (i.e. A+ rated).



From what I understand, the SPF figure looks at the <u>whole</u> system efficiency whereas the SCOP is looking only at the <u>individual unit</u>, which is why we need it to be very efficient as we don't know the efficiency of the wider system.

I hope this makes sense.

Kate

Kate Henry Principal Planning Officer

Telephone: 020 7974 3794



From: Jorge Nash

Sent: 08 June 2023 09:25

To: Kate Henry <a href="mailto:Kate.Henry@camden.gov.uk">Kate.Henry@camden.gov.uk</a>
Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

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Hi Kate,

Please can you provide an update in response to the below – we really need to try and discuss this direct with the Council's EHO because it is not possible to provide the detail requested.

Thanks,

Jorge Nash

Associate Director RPS | Consulting UK & Ireland

D E

**From:** Jorge Nash **Sent:** 31 May 2023 14:26

To: Kate Henry < Kate. Henry@camden.gov.uk >;

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

Hi Kate,

I have discussed this with our client and consultants and they are unable to reconcile the request below. The technical specification of the system we are proposing meets the requirement of the condition, however, it is not possible to calculate the required metric.

I see the best way forward on this would be to arrange a call between your sustainability officer and our M&E consultant so we can agree a way forward.

As we see it, our scheme is meeting the necessary requirements and we'd like the opportunity to talk this through and potential identify specifically what the Council requires.

Can you send through some dates/ times for this?

Thanks,

#### Jorge Nash

Associate Director
RPS | Consulting UK & Ireland

From: Jorge Nash Sent: 24 May 2023 11:51

**To:** Kate Henry < <u>Kate. Henry@camden.gov.uk</u>>

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

Thanks Kate - we'll review and respond shortly.

Please can you provide an update on the S73 application - specifically:

- · Can you determine the application under delegated
- Are you waiting for any consultee responses
- Do you have any concerns etc.

Are you're aware our client is on site, but they will soon have to down tools as they require certainty from the S73 to construct the superstructure and order bricks etc. The determination of the S73 is therefore time critical and it would be helpful to understand where we sit asap.

Thanks,

### Jorge Nash

Associate Director

RPS | Consulting UK & Ireland

D

From: Kate Henry <Kate.Henry@camden.gov.uk>

Sent: 24 May 2023 11:18

To:

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

CAUTION: This email originated from outside of RPS.

Dear Jorge,

Thank you for your email. Whilst I can see that you followed the same approach, the difference between the two applications is that the SCOP for the Tottenham Court Road scheme was much higher (better) and it was clear from the SCOP figure that the unit was rated A+ and therefore sufficiently efficient, whereas in the Highgate Centre case the SCOP is lower and the unit is a whole efficiency class lower (at A), which is why the SPF is required.

I hope this makes sense. I look forward to receiving the required information from you.

Kate

Kate Henry Principal Planning Officer

Telephone: 020 7974 3794



**From:** Jorge Nash **Sent:** 18 May 2023 09:23

**To:** Kate Henry < <u>Kate.Henry@camden.gov.uk</u>>;

Subject: RE: 2023/1437/P - Highgate Centre - ASHP's

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Dear Kate,

We modelled this submission on the approved details (attached) which were found acceptable by Camden Council and discharged on the basis of the SPF of the ASHP's.

Please can you confirm why in this case, our approach is now unacceptable?

The wording of the conditions for both sites is identical.

Thanks,

Jorge Nash

Associate Director RPS | Consulting UK & Ireland

From: Kate Henry < Kate. Henry@camden.gov.uk >

Sent: 18 May 2023 09:06

To:

Subject: 2023/1437/P - Highgate Centre - ASHP's

CAUTION: This email originated from outside of RPS.

Good morning,

Re: 2023/1437/P - Highgate Centre - Air source heat pump details required by condition 27 of planning permission 2022/1603/P, dated 02/03/2023 (which itself amended 2013/5947/P, dated 18/06/2014) (for: demolition of existing buildings and redevelopment to provide a Centre for Independent Living at Greenwood Place and a mixed-use development at Highgate Road comprising residential units and social enterprise space; associated works)

I've now spoken to the Sustainability Officer who has noted the following:

The condition requires an SPF of at least 2.5. The design SPF is calculated based on the system designed for the building and demonstrates how the heat pump should perform given both the

average temperatures for the location and other details such as the underfloor heating or size of radiators.

The information provided stated that the COP/SCOP is 2.88/3.38. The COP/SCOP is usually a measure of the ASHP unit only not the heating system as a whole.

2.3 Seasonal Performance Factor

The seasonal performance factors for the ASHP's are as follows:

SCOP=3.38 COP = 2.88

Please request the Design SPF for the ASHP which should be available from the heat pump installer based on the system design for the building.

Please could you provide the required information.

I look forward to hearing from you.

Kate Henry Principal Planning Officer Regeneration and Planning London Borough of Camden

Telephone: 020 7974 3794 Web: camden.gov.uk

5PS

London N1C 4AG

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