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**From:** [REDACTED]  
**Sent:** 16 April 2018 10:36  
**To:** Litherland, Jenna  
**Subject:** RE: 2017/6325/P & 2018/0701/P- Centric Close Conditions 16 (PVs), 17 (CHP), 18 (Mechanical Ventilation)  
**Attachments:** Renewable Site Summary 3.1 Windows 1.3 G 0.45 - 13.9KWP to residential u....pdf; Centric Close Design and Schematic Issued for Approval (28-09-17).pdf

Jenna,

Please see our response below and attached:

Condition 16 – PV capacity

The PV schematic shows 4 strings of 14 modules to give 56 modules in total with a peak capacity of 14kWp (56 x 0.25kW). This is sufficient to satisfy the planning requirements as indicated from the design SAP calculations (see summary sheet attached for reference).

PV layout – draft design shows 56 panels (modules) arranged on the roof of block A. If required - we can provide sections showing modules fixed using the mounting system, the angle of tilt, separation distances, inverter and generation meter locations.

Condition 17 – CHP

The air quality report (Jan18) confirms that there are no additional mitigation measures required to ensure AQNA is met, given proposed locations for flue stacks and flue velocities. Supply inlets and extract outlets have been taken into account when modelling the air quality impacts. The predicted NO<sub>2</sub> concentration at all gridded receptors at all floors was below the objective for the annual mean NO<sub>2</sub> concentration. The flue stack is 1.75m above roof level and located ~2.5m from the SW façade.

Condition 18 – Mechanical Ventilation

The air quality report confirms that NO<sub>x</sub> emissions are not an issue, where pollution from CHP/Boilers are not predicted to have any significant adverse impact on receptors within the development as well as existing receptors nearby. NB additional receptor points have been modelled in the form of gridded points around the development at all floor levels, to represent the points where MVHR supply inlets will be located (at the request of LB Camden air quality officer).

Units facing the railway will all be specified with MVHR systems with G3 filtration. Additional G4 (NO<sub>x</sub>) filters can be specified if this is considered necessary, albeit there are no NO<sub>x</sub> mitigation requirements. NB G4 and G3 filters are fitted inside the dwellings on the supply side of the ducting system. It is not necessary to move the supply inlets or extract outlets from the railway façade (as confirmed by the air quality report).

Although all windows on the railway façade will be openable, MVHR systems are used to ensure fresh air can be supplied to meet all acoustic, ventilation and overheating requirements without opening windows. Occupants will be made aware of this in their Home User Information, along with details of any maintenance requirements (filter changes etc.).

The notation on the elevations (purple rings) are the mechanical extract grills on the lift shaft, which are located above lift shafts and away from the railway façade. The flue stack is shown in reference 35.27 05 on the elevation drawing 3 Rev A. They are also looking at the wrong elevation (the drawing referenced shows the SE façade – ref: Elevation 2 Rev A). The correct elevation drawing to reference is Elevation 3 Rev A, where this shows Supply inlets and extract outlets away from the flue stack location, and which have been used to model air quality impacts in the form of gridded receptors.

Let me know if you require further information or if the above is sufficient to enable to the Conditions to be discharged.

Any update on the other outstanding items ?

David

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**From:** Litherland, Jenna [mailto:Jenna.Litherland@camden.gov.uk]  
**Sent:** 12 April 2018 13:52  
**To:** David Chalmers  
**Subject:** 2017/6325/P & 2018/0701/P- Centric Close Conditions 16 (PVs), 17 (CHP), 18 (Mechanical Ventilation)

Hi David,

Sorry for the delay in getting back to you on these matters. I have now received comments from the Sustainability team and require some additional information.

If you want to discuss any of this let me know, as some of its quiet technical I may need assistance from the sustainability team in terms of answering queries.

Thanks, Jenna

#### **Condition 16**

*No development (other than site clearance and preparation, relocation of services, utilities and public infrastructure and demolition) shall take place until detailed plans showing the location and extent of photovoltaic cells to be installed on the building shall have been submitted to and approved by the Local Planning Authority in writing.*

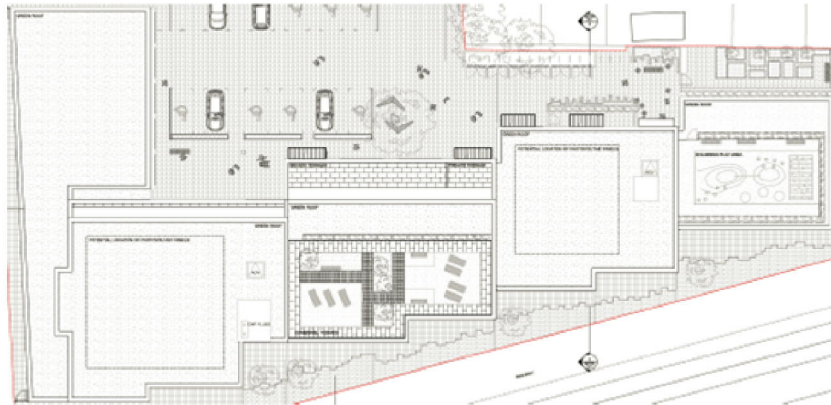
*The measures shall include the installation of a meter to monitor the energy output from the approved renewable energy systems. The cells shall be installed in full accordance with the details approved by the Local Planning Authority and permanently retained and maintained thereafter.*

*Reason: To ensure the development provides adequate on-site renewable energy facilities in accordance with the requirements of policies G1 and CC1 of the Camden Local Plan 2017.*

**Officer comments:** The submission 'PV electrical schematic' and 'Roof Plan' show 56no. 250Wp solar PV panels, arranged in two electrical strings of equal capacity (5.75 kWp) giving a total capacity of 11.5 kWp. The strings feed into a 15kW inverter with twin 'maximum power point tracking' capability.

Concern 1 This capacity is not sufficient to implement the approved scheme. The document 'Centric Close Energy and Sustainability Addendum' dated 9 March 2017, prepared by Low Energy Consultancy Ltd states that:

The preliminary energy modelling indicates that 13.9kWp is sufficient to meet and exceed the 35% CO<sub>2</sub> reduction target onsite. It is proposed to locate the PV panels on the highest roof of the building which is considered the most suitable for PV installation. The lower roof identified below is less suitable but could be used if the highest roof does not provide enough space to accommodate the PV requirement.



If energy yield were uniform across the array, the proposed downsizing would lead to a theoretical 17% shortfall in CO2 reduction against the approved scheme. This change risks causing it to miss its approved overall CO2 target of 35% (and is likely to affect compliance with the separate Be Green renewables 20% target). However no calculations or updates were submitted to update the Energy Statement accordingly. Likewise to no variation has been approved to permit this material change.

Concern 2 The cross-section drawings 'Roof details' show the makeup of the flat roof but do not show any sample PV equipment in cross-section eg to demonstrate the frame height, tilt and separation distances. This would demonstrate the design thought given to avoiding self-shading effects.

**Therefore the following additional information sought:**

- Details to demonstrate the extent of any PV shortfall and details of how compliance will be achieved – e.g. additional PV on site or carbon offset payment, see above.
- PV typical cross-section, see above
- Product data sheets (PV, frame, inverter)
- Location of inverter(s) and generation meter
- Site specific maintenance schedule including responsibilities and safe roof access arrangements

**Condition 17**

*Prior to commencement of development (excluding demolition and site preparation works), full details of the combined heat and power unit (CHP) stack and its height relative to the mechanical ventilation air inlet locations shall be submitted to and approved by the local planning authority in writing. Air inlet locations should be located away from roads and the CHP stack to protect internal air quality.*

*Reason: To safeguard the amenities of the adjoining premises and the area in accordance with the requirements of policies CC1, A1 and A4 of the Camden Local Plan 2017*

**Officer Comments:** The submissions 'Roof details' and 'Roof Plan' show the locations and maximum heights (1.7m above flat roof level) of the boiler and CHP flues.

Concern The drawings do not show the locations of the building's supply grilles i.e. air intakes for the mechanical ventilation as required by this condition. These comments should be read in conjunction with the comments in respect of condition 18 (Mechanical ventilation)

**Additional information sought:** Please supply adequate drawings to discharge the condition.

**Condition 18**

*Prior to commencement of development (excluding demolition and site preparation works), full details of the mechanical ventilation system including air inlet locations shall be submitted to and approved by the local planning authority in writing. Air inlet locations should be located away from busy roads and the boiler stack and as close to roof level as possible, to protect internal air quality. The development shall thereafter be constructed and maintained in accordance with the approved details.*

*Reason: To safeguard the amenities of the adjoining premises and the area in accordance with the requirements of policies CC1, A1 and A4 of the Camden Local Plan 2017.*

**Officer Comments:** The submissions of most relevance are the elevation drawings showing the proposed air extract and supply locations, and the following section of the covering letter:

An MVHR system shall be used within all railway facing flats. The MVHR unit shall provide a heat recovery efficiency of no less than 85% and shall have summer time bypass damper and changeover switch.

The fresh air intake and the exhaust will be secured by common ventilations ducts served by extract and intake fans, which shall be attenuated, based on the acoustic specialist advice. A G3 filter shall be provided to the intake duct. Both ducts shall be protected with externally mounted louvre and bird mesh or air brick.

#### System details

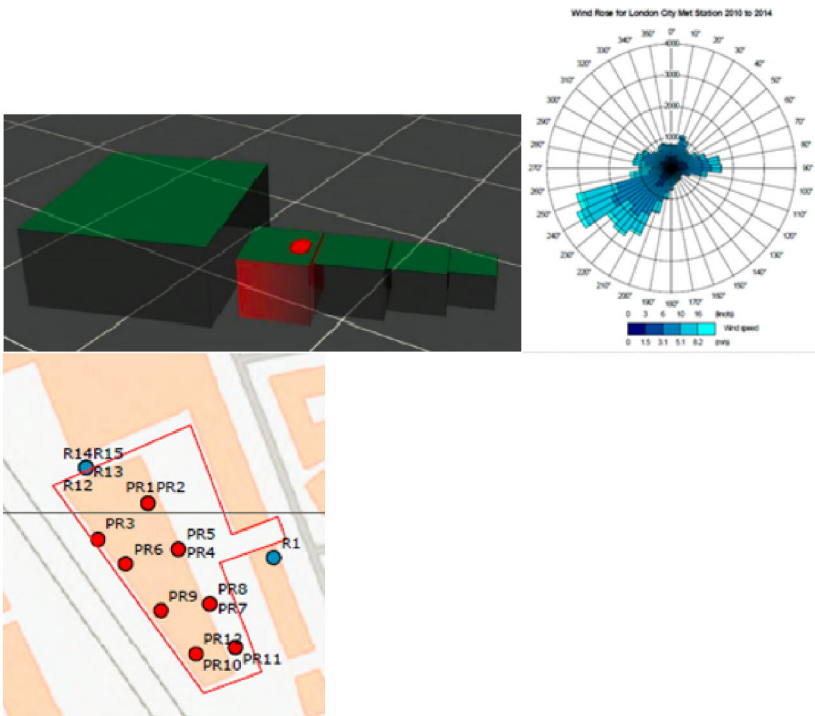
The information provided is sparse. The principle of using high-efficiency MVHR with intakes fitted with G3 filters is acknowledged. However

1. no further product details or site-specific maintenance plans are supplied. These would be expected within the submission to help demonstrate the effectiveness and durability of the proposed systems.
2. a key pollutant of concern is assumed to be NO<sub>x</sub>, therefore NO<sub>x</sub> (activated carbon etc.) filters would have been expected (instead of or) in addition to the proposed particulate (G3) filters.
3. no information is provided about whether windows are non-openable in the flats supplied by MVHR (this should be the case for system efficiency and air quality reasons).
4. finally, little mitigation is gained by installing mechanical ventilation systems which have air intakes on the elevation adjacent to the main pollution sources – see discussion below on location of intake vents.

Please rectify the four issues above.

#### Location of vents

The following are extracted from the planning stage AQ Assessment (revised). They show the proposed boiler stack location, the wind rose for the area, and the scheme in plan as relating to the adjacent railway line.



It would be advisable that the air intakes be located away from the railway line side as a key emissions source. The submitted elevation drawings show many supply grilles being located on the railway side – examples circled in green below from ‘Elevations 3 Rev A’:



Any intakes on the railway side should be relocated to the least polluted available points. The chosen locations should take account of the predominant wind direction and dispersion patterns, and this should be demonstrated.

They also appear to show fresh air supplies (circled green below) apparently located near to boiler stacks (circled purple below). The drawings may have been misread and if so, additional labelling of elements and plan drawings to aid our understanding are requested:



Any and all intakes which may be affected by downward or upward plumes from boiler stacks should be relocated to the least polluted available position.

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