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Client:	**Fairview Ventures Limited**
Development:	**Centric Close, Camden**
Subject:	**Addendum to Energy and Sustainability Statements**

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INTRODUCTION

Low Energy Consultancy (LEC) produced an Energy Statement dated 10/01/2017 and a Sustainability Statement dated 10/01/2017 to support the full planning application for the Centric Close mixed-use development which included details of the development's proposed energy and sustainability strategies.

After submission of the planning application, Fairview Ventures Limited received the Energy and Sustainability Consultation Response document which included comments regarding the energy and sustainability strategy proposals. The relevant comments together with LEC's responses are provided in the following section of this document for ease of reference.

This document has been produced as an Addendum to the submitted Energy Statement and the Sustainability Statement aiming to address the comments included in the Energy and Sustainability Consultation Response document and should be read in conjunction with the Energy and Sustainability Statements and other relevant documents.

RESPONSE TO ENERGY AND SUSTAINABILITY CONSULTATION RESPONSE COMMENTS

Energy Statement

Be Lean

1. Statement/Comment – Low carbon technologies and building services: The section lists the proposed low carbon technologies and building services namely CHP, MVHR, efficient lighting, VRF, VSDs and PV.

Response

It should be noted that the energy strategy proposes to use a centralised mechanical extract ventilation system (MEV) for all the apartments, not a Mechanical Ventilation system with heat recovery (MVHR).

An MVHR system has only been assumed for the preliminary non-domestic energy modelling to demonstrate compliance. As the units will only be built to a shell, the ventilation strategy will be reviewed by the future tenant(s) to ensure compliance with the relevant requirements and standards. The future tenant(s) may vary the proposed specification for specific requirements and needs.

Be Clean

2. Statement/Comment - Opportunities to connect to a future network: The applicant should confirm the triggers for connecting to a network and also confirm the pipe routes and who will be responsible for installing the additional pipework should network connection be considered viable.

Response

The plant room will be designed to accommodate and connect to potential near site district heating networks (DHN) should this become available and feasible in the future.

Based on available information and discussions with Camden Council, it is unlikely that a DHN will be developed in the area in the foreseeable future. Therefore, the installation of the pipework to the boundary of the site in not recommended as connection may never occur given the very limited opportunities. Installation of this pipework to the boundary will add unnecessary complexity and costs to the design.

Should connection become available and viable in the future, the pipework can easily be installed at a later stage, see proposed route across the car park to the boundary in Appendix A. The installation of the pipework should be carried out by the DHN supplier or by the energy management company of the on-site communal heating system if and when this option becomes available.

3. Statement/Comment - Suitability for on-site CHP: The applicant has not provided the following information to support the justification of CHP in the development – this information should be provided as an addendum to the report:

- *Details of the proportion heat demand provided by CHP, thermal stores, boilers and other technologies, illustrated as a heat profile showing:*

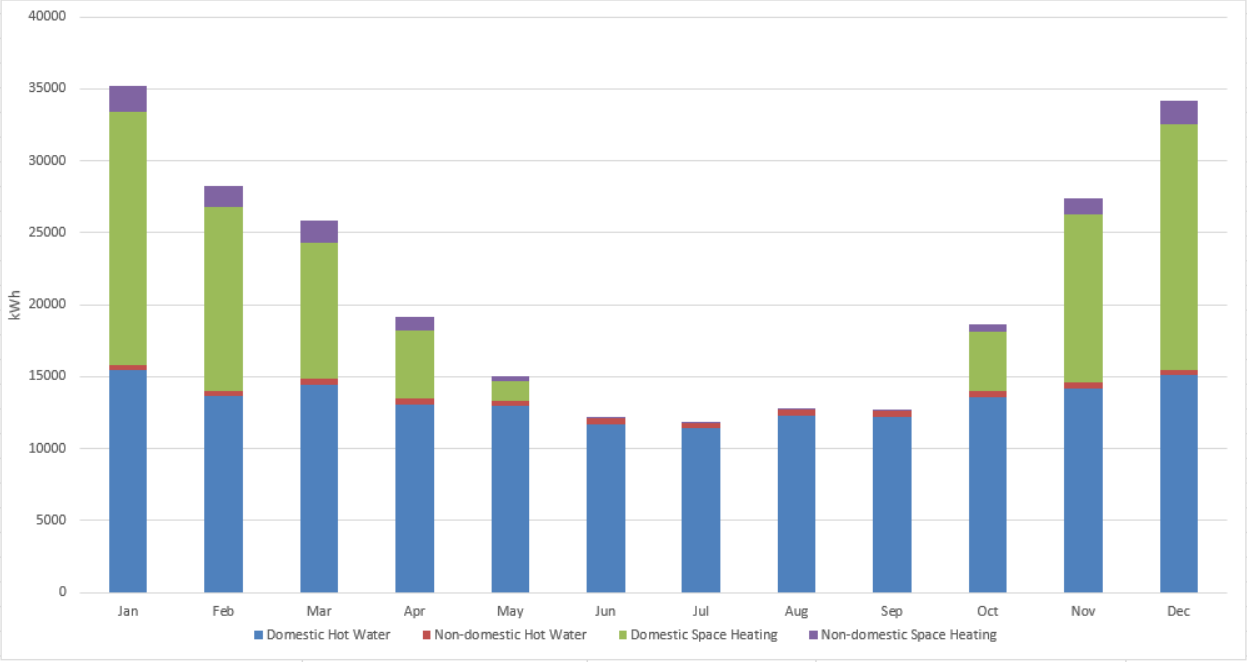
  - Monthly demand profiles
  - Typical monthly design day profiles
- *Details of other potential developments which could connect to the network and whether they have been included in the assessment. The developer should consider the potential for scheme extensions and new connections*

Response

The energy demand assessment has been carried out to estimate and evaluate the space heating and hot water demands using the SAP and SBEM methodologies. The estimated hot water and space heating demands are as follows:

- Hot water – 164,904 kWh/year
- Space heating – 88,423 kWh/year

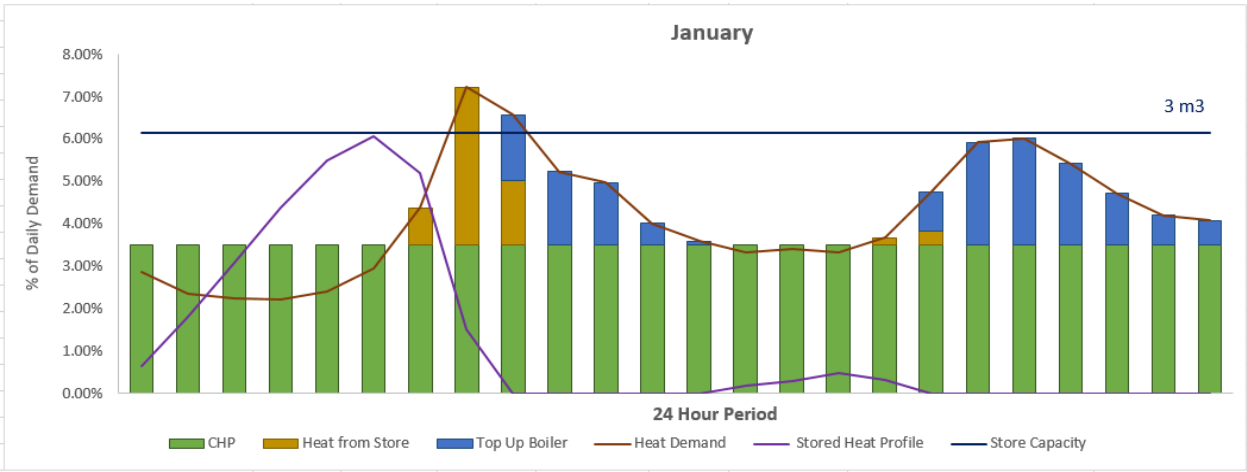
The annual hot water and space heating demand profiles for the entire development are illustrated in the figure below.



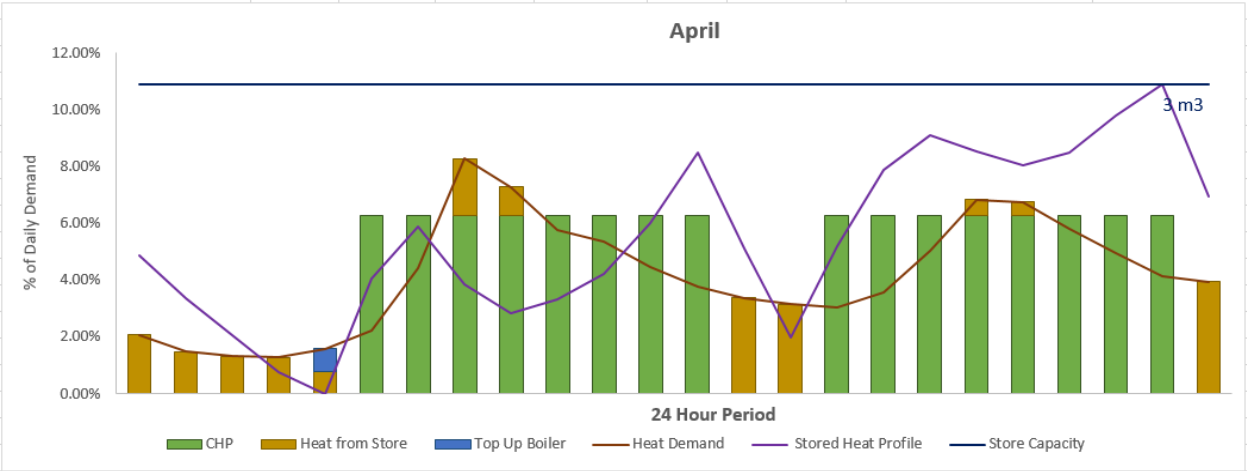
It is proposed that the CHP engine in combination with the thermal store will supply up to 75% of the total heat demand of the development. It is assumed that the CHP will supply all annual domestic water demand of the development and some of the space heating demand will also be supplied by the CHP.

The remaining space heating load will be met by energy efficient gas boilers, installed in parallel to the CHP unit. Indicative typical day profiles for January, April, July and October have also been developed to illustrate indicative operation of the CHP, thermal store and gas boilers.

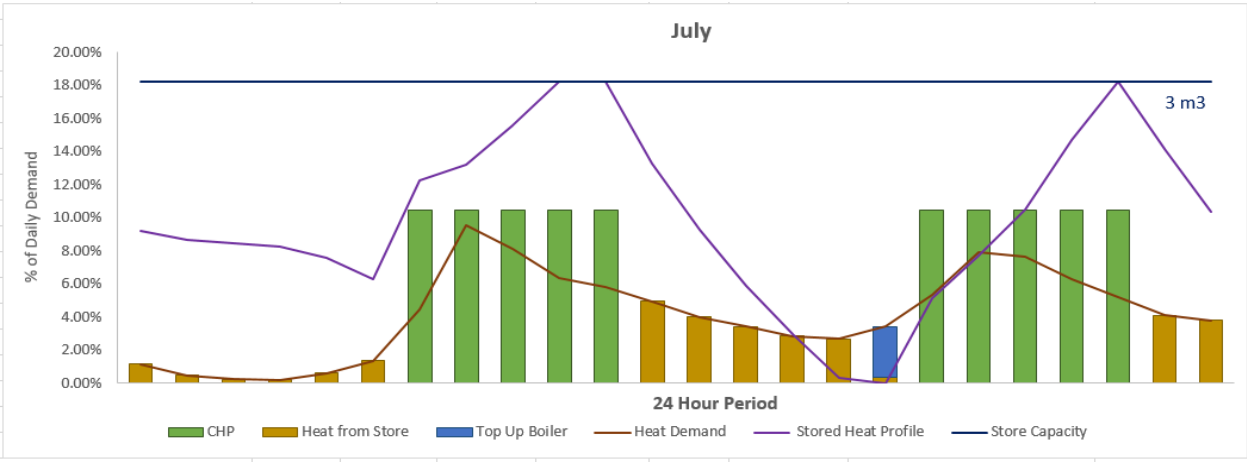
January Indicative Day Profile



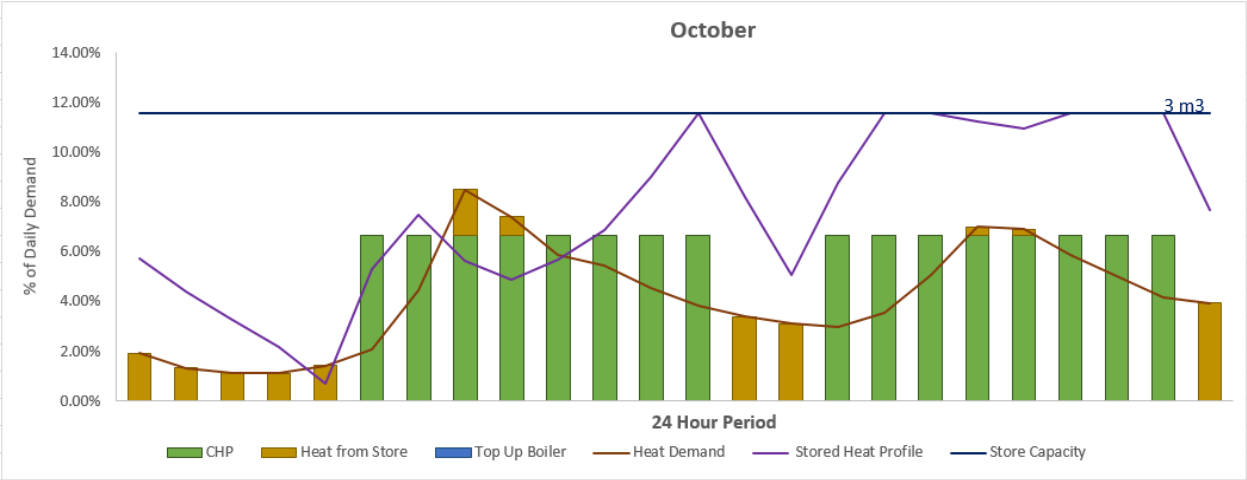
April Indicative Day Profile



July Indicative Day Profile



October Indicative Day Profile



The energy demand figures and the heat demand profiles are indicative and based on the preliminary energy assessment. A more detailed assessment will be carried out during the detailed design stage to inform final sizing and selection of the CHP system, thermal store and gas boilers.

The proposed development is a small residentially led mixed use development. It is considered that the size of the development is too small to become a supply hub for the neighbouring developments. Designing the development as a heat supply hub will significantly increase risks and costs to both the development and end user, jeopardising the development as a whole.

Investigation was carried out prior to the planning submission to identify existing and planned developments in close proximity to the site. The review established that the developments to the East and North of the site are low rise, low density residential developments, with low heat demands. These developments are assumed to have either individual boilers or electric heating systems. It is therefore considered to be unviable and impractical to extend the network to provide heat to these developments.

There are a few larger residential and mixed-use developments to the North of the site. Their heat demands and density may potentially be suitable for extension of the network. However, it is considered to be impractical to extend the heat network to these developments, as it is likely that they have their own on-site standalone communal heating systems which are unlikely to be compatible with the proposed low temperature flow and return heating system.

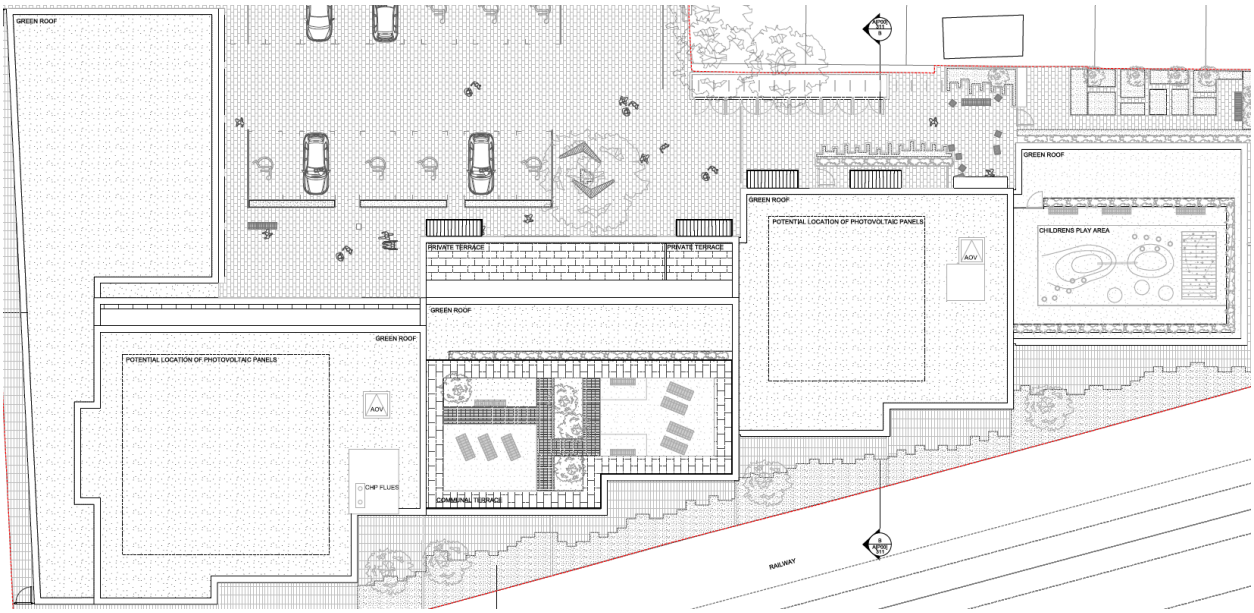
Be Green

4. <u>Statement/Comment - Solar PV:</u> Plans show there may be a third roof space which could incorporate PVs – applicant should confirm if this is feasible.

<u>Response</u>

The preliminary energy modelling indicates that 13.9kWp is sufficient to meet and exceed the 35% CO_2 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.



There are two other roof areas for consideration. However, these areas are unavailable as they have been allocated for communal terrace and children's play areas. The roof area above the commercial units is considered unsuitable as they will be largely overshaded. It is therefore impracticable to meet a 20% renewables contribution from renewable energy given the London Plan target has already been met alongside the limited available roof space.

Sustainability Statement

5. Statement/Comment - Cooling hierarchy: The applicant should provide details of the overheating assessment. Basic overheating compliance tests must be undertaken to demonstrate compliance with Building Regulation, however this test does not cover all factors which influence overheating. Therefore the GLA guidance states that developers should carry out additional design assessments e.g. dynamic thermal modelling.

Where cooling is provided in the non-domestic developments the applicant should provide details on the area weighted average building cooling demand (MJ/m2) (from the BRUKL) both actual and notional – the actual should be below notional.
Response

An overheating assessment has been carried out using the dynamic modelling method in accordance with the guidance and data sets provided in CIBSE TM49 and CIBSE TM52.

An Overheating Analysis report has been produced which will be issued as a separate document to support the planning application.

It is assumed for preliminary modelling purposes that cooling will be used by the non-residential units only. The future tenants may choose to vary the proposed energy efficiency measures/specification for specific requirements and needs.

BRUKL reports from the preliminary modelling for each stage of the energy hierarchy have been produced and included in Appendix E of the Energy Statement. The BRUKL reports include the area weighted average building cooling demand in kWh/m^2 in the Energy Consumption by end use section. The Notional Building cooling demand is 4.95 kWh/m^2 and the Actual building cooling demand is 2.72kWh/m^2.

6. Statement/Comment - Materials, sourcing and waste: There is a lack of detail in the report on specific targets and commitment in regards to sourcing of materials (e.g. Green Guide ratings) and reuse and recycling of demolition materials – the report should be updated accordingly.

Response

It is proposed to select materials for walls, floors and windows with a low environmental impact. The BREEAM pre-assessment puts forward specific targets for materials. It is currently assumed that circa 84% of the credits within the materials section can be achieved based on previous FNH sites, this will be confirmed following detailed design stage. The Green Guide to Specification will be used to inform the selection of materials for the non-residential units.

There are no specific targets for the residential part of the development but a number of proposed BREEAM credits are site related and will apply to both the residential and non-residential parts of the development.

Any opportunities to re-use and/or recycle demolition materials will be identified and pursued, where feasible.

Preference will be given to the use of local materials and suppliers where viable to reduce the transport distances and to support the local economy. The selection of suppliers will be undertaken during the next stages of the project.

It is not recommended to condition any specific credits or section scores of BREEAM as it will remove design flexibility and can make it difficult, costly and impractical to achieve BREEAM Excellent target. The client is committed to achieve BREEAM Excellent for shell only use.

7. Statement/Comment - Water efficiency and SuDS (including rainwater and greywater harvesting): The applicant should confirm if greywater and rainwater harvesting is feasible for this site.

Response

Drainage strategy for the site has been developed which does not require inclusion of rainwater and greywater harvesting to achieve complaint design. Also, it is not required to provide rainwater and greywater harvesting to achieve the suggested BREEAM credits or the overall BREEAM Excellent target.

APPENDIX A – Indicative Pipework Route from Energy Centre to Boundary of the Site

Building Outline Information	
Architect's Drawing No.	Date

INDICATIVE PIPEWORK ROUTE FROM ENERGY CENTRE (EC) TO BOUNDARY OF THE SITE FOR FUTURE CONNECTION TO POTENTIAL DISTRICT HEATING NETWORK (DHN).
THE PIPEWORK WILL NOT BE PROVIDED AS PART OF THE DEVELOPMENT BY FAIRVIEW BUT CAN BE INSTALLED AT A LATER STAGE BY A THIRD PARTY SHOULD DHN CONNECTION BECOME AVAILABLE AND VIABLE
A(P00) 310 A
A(P00) 311 B
B-L00-01
3B - 5P
89m2
B-L00-05
1B - 2Pwc
63m2
LOBBY
FFL +32.20
B-L00-02
3B - 4Pwc
95m2
B-L00-03
1B - 1P
44m2
B-L00-04
1B - 2P
56m2
LOBBY
FFL +32.20
A-L00-29
1B - 2P
50m2
A-L00-28
2B - 3Pwc
74m2
AOV
THERMAL STORES
BOILER
BOILER
BOILER
CHP
PUMPS
PLANT ROOM
WATER STORAGE
TANK BOOST

Rev.	Revision details	Chk'd	Date

Drawn by: SH | Checked: SB

Drawing Status: SKETCH

Client: FAIRVIEW VENTURES LTD.

Project: CENTRIC CLOSE

Drawing Title: INDICATIVE ENERGY CENTRE (EC) LAYOUT AND PIPEWORK ROUTE FROM EC TO BOUNDARY OF THE SITE

Scale: NTS @ | Date: MARCH 2017

Drawing Number: LEC2361-M-0002 | Rev: 0

DO NOT SCALE OFF THIS DRAWING