

Block E1

Land at The Chocolate

Factory

Clarendon Road, Wood Green, London, N22 6XJ

PLANNING CONDITION REPORT – HEATING & HOT WATER SYSTEM

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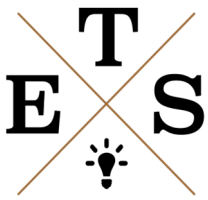


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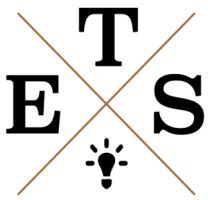
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1. Executive Summary

This report has been prepared to satisfy the planning condition requiring an appraisal of the available heating strategies for the proposed residential development.

The planning condition requires consideration of:

- A gas boiler solution for each block.
- A communal Air Source Heat Pump (ASHP) solution serving each block.

Following a review of the technical feasibility, environmental impact, capital costs and operational costs, neither option is considered technically viable due to site constraints. The proposed solution comprises individual Vaillant aroSTOR Air Source Heat Pump Water Heaters for domestic hot water, Rointe Kyros Digital Electric Radiators for space heating, and thermostatically controlled electric towel radiators in bathrooms. The proposed strategy achieves a SAP Band B energy rating.

2. Background

The development has no available gas infrastructure, limited roof space due to a proposed photovoltaic array, structural loading constraints and no suitable location for a central energy centre. These constraints prevent the installation of either a communal gas boiler system or a communal air source heat pump system.

3. Site Constraints

- No gas allocation is available for the development.
- Roof space is occupied by photovoltaic panels leaving insufficient area for communal ASHP plant.
- Structural loading limits prevent installation of heavy communal plant.
- No internal plant room is available for an energy centre.

4. Option Assessment

Option 1 – Gas Boiler System

Advantages: Proven technology and moderate capital cost.

Disadvantages: No available gas supply, fossil fuel use, flue requirements, higher carbon emissions and future decarbonisation concerns.

Conclusion: Not technically feasible.

Option 2 – Communal Air Source Heat Pump

Advantages: Low carbon technology and centralised maintenance.

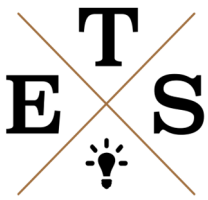
Disadvantages: No roof space, structural limitations, lack of plant room, distribution losses and increased maintenance.

Conclusion: Not technically feasible.

5. Recommended Heating Strategy

Domestic Hot Water

- Vaillant aroSTOR Air Source Heat Pump Water Heaters.
- 200 litre cylinders for 1–4 person apartments.
- 260 litre cylinders for larger apartments.



Space Heating

- Rointe Kyros Digital Electric Radiators with programmable digital controls.

Bathrooms

- Thermostatically controlled TowelRad electric towel rails.

6. Environmental Assessment

The proposed all-electric strategy removes fossil fuel use, eliminates combustion emissions and flues, complements the rooftop photovoltaic array and achieves SAP Band B.

7. Capital and Running Costs

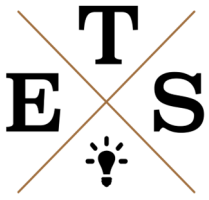
The recommended solution avoids the need for a central energy centre, distribution pipework, HIUs, structural strengthening and communal maintenance. Efficient domestic hot water heat pumps, intelligent electric heating controls and onsite photovoltaic generation help minimise operating costs.

8. Planning Condition Compliance

- a) No central energy centre is required as heating plant is located within each apartment.
- b) Equipment comprises Vaillant aroSTOR heat pump water heaters, Rointe Kyros electric radiators and TowelRad electric towel rails installed to current Building Regulations and British Standards.
- c) No combustion appliances are proposed; therefore no flues or local emissions are generated.
- d) Each apartment has independently controlled heating and hot water.
- e) Provision can be safeguarded for a future Wood Green District Energy Network connection through a reserved connection point and service route.
- f) Future connection can be assessed if the District Energy Network becomes available within five years.

9. Conclusion

The proposed all-electric strategy is the most practical, sustainable and technically appropriate solution for the development. It overcomes the site's physical constraints, provides efficient domestic hot water via heat pump technology, delivers independent occupant control, supports onsite renewable generation and satisfies the intent of the planning condition.



10. Product Data Sheets

aroSTOR domestic hot water air source heat pump cylinder



The aroSTOR range of domestic hot water heat pump cylinders include 200 and 270 litre models. It is perfect for additional hot water requirements in larger homes or small businesses where there is a high hot water demand.

This heat pump cylinder is incredibly efficient and sustainable, using thermal energy to heat hot water. This thermal energy can be collected via an external air duct, or it can recycle hot air from within the room where it's installed, provided there is sufficient ventilation. The only other energy needed is the electricity to run the appliance.

	aroSTOR domestic hot water heat pump
Heat source	Air
Usage	New buildings, renovation, replacement
Size	200 and 270ltr
Amount of usable hot water	367 and 495ltrs *based on stored water at 65°C
Energy efficiency	A+

The benefits of aroSTOR

- Highly efficient heat pump cylinder has the best possible ErP label of A+
- The stainless steel tank comes with a five year guarantee (two years for other components)
- A small footprint and range of 360° air duct accessories offers flexible options for siting of the appliance
- Extremely quiet operation, advance insulation and use of rubber on the compressor for quiet operation
- Self managing hot water comfort with electrical back up heater for hot water boost (and Legionella protection)
- aroSTOR heat pumps cylinders come with their own control fixed to the unit. This is a simple turn dial and push button control that has been specifically designed for the aroSTOR.



KYROS WIFI

Adaptive energy efficient inverter radiator with WiFi & AI

Radiador inverter adaptativo de bajo consumo con WiFi y IA

Radiador inverter adaptativo de baixo consumo com WiFi e IA

EN

INSTALLATION AND USER MANUAL

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ES

MANUAL DE INSTALACIÓN Y USO

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PT

MANUAL DE INSTALAÇÃO E DE UTILIZAÇÃO

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GUARANTEE
GARANTÍA / GARANTIA

10

YEARS
AÑOS / ANOS

3

YEARS
AÑOS / ANOS

ON THE BODY
EN EL CUERPO
NO CORPO

ON ELECTRONICS
EN ELECTRÓNICA
NA ELECTRÓNICA

