27-29 SHORTS GARDEN & 7-8 MATTHEWS YARD
CAMDEN COOLING HIERARCHY COMMENTARY

CPG Cooling Hierarchy Reference	Option Considered	Viability
1	Layout	Office and comms room locations will be provided by the incoming tenant in the basement away from windows & solar gains, therefore confining the areas that require the greatest level of cooling to the coolest areas of the floorplate.
1	Reduce Heat Gains	The retail unit is a shell and core fit-out only but the incoming tenant will be required to provide a lighting design with 100% low energy consuming LED fittings with occupancy sensing reduce energy consumption.
1	Seal / Insulate	Offices and comms rooms will be provided by the incoming tenant in the basement away from windows & solar gains, therefore confining the areas that require the greatest level of cooling to the coolest areas of the floorplate. The building fabric is existing and has limited scope to improve thermal performance/air tightness.
1	Reduce Distances	All refrigerant pipework will be thermally insulated to maximise efficiency of their respective systems. The condensing units will be located in the rear Matthews Yard courtyard area, which is the shortest practicable route for refrigerant pipework, therefore minimising uncontrolled heat losses from pipework
1	Layout Design	The building is existing, and it is therefore not possible to alter the internal layouts significantly.
1	Evaporative Cooling	This type of cooling is not suitable for this property due to insufficient external plant space allowances for such a system
1	Night Cooling	Night cooling via openable windows is not considered a viable strategy in this location due to security risks. Installed mechanical ventilation systems could be utilised through the night to reduce reliance on air conditioning however this will not be sufficient to eliminate the requirements during peak times due to the high internal loads that cannot be reduced further. The tenant will configure the retail ventilation systems to utilise free daytime cooling where practicable (dependant on the external ambient temperature being lower than the internal temperature).
2	Sun angle	The building is existing, and it is therefore not possible to alter the angle of sun into the property.

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2	Orientate and Recess Windows	The building is existing, and it is therefore not possible to alter the orientation nor recess the windows into the property.
2	G Values and Window Details	The existing gazing to the retail areas will be retained. This could be provided with solar film to reduce direct solar gains, but this will not eliminate the requirement for active cooling and could impact on the visibility of the unit. There is minimal glazing on East, South and West elevations, and the shopfront will be shaded for large parts of the day from adjoining properties and the existing trees on Shorts Garden. The building is existing, and it is therefore not viable to alter the proportion, size or location of the windows at the property.
2	Shadowing	The building is existing, and it is therefore not possible to utilise additional shading from other buildings.
2	Shading	Blinds are not suited to retail use preventing view in and view out of the space. The incoming tenant could potentially install an awning on the Shorts Garden elevation which will provide a small reduction in direct solar gain to this small area of the unit. Awnings will have no impact on internal loads. The internal loads are greater than can be dealt with via natural ventilation and therefore overheating is still a problem. A brise soleil is not suited to the ground floor windows of this unit. There is already existing vegetation externally (due south) to the unit on Shorts Garden which will provide considerable shading during summer months.
2	Albedo Effect	There is no opportunity to implement a reflective roof over the retail unit to reduce cooling loads as there are other floors above. The external walls impacted by solar gains on the Shorts Garden elevation are 100% existing shopfront.
2	Green Roof	No opportunity to implement a green roof over the retail unit to reduce cooling loads due to the other floors above.

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3	Thermal Mass	The available thermal mass of the existing building will be utilised in the retail unit space by utilising any mechanical ventilation systems through the night to reduce reliance on air conditioning. However, this will not be sufficient to eliminate the requirements during peak times due to the high internal loads that cannot be reduced further.
4	Natural Ventilation	Windows & Doors. The existing shopfronts at ground floor have minimal opportunities for opening sections and these would potentially be considered a security risk where stock is displayed in windows.
4	Design Layouts	The building is existing, and it is therefore not possible to alter the internal layouts significantly, including no possibility to increase floor to ceiling heights.
4	Evaporation Cooling	This type of cooling is not suitable for this property due to insufficient external plant space allowances for such a system
4	Night Cooling	Night cooling via openable windows is not considered a viable strategy in this location due to security risks. However, mechanical ventilation systems could be utilised through the night to reduce reliance on air conditioning but will not be sufficient to eliminate the requirements during peak times due to the high internal loads that cannot be reduced further.
5	Mechanical Ventilation	The retail unit is a shell and core fit-out only but the incoming tenant will be required to provide mechanical ventilation systems (with heat recovery where practicable) in order to comply with Building Regulations. The units will be modern equipment with optimum specific fan powers and heat recovery efficiencies to reduce energy consumption. MVHR units will have summer bypasses to provide free cooling. Natural ventilation will be utilised by the tenant (wherever practicable) in conjunction with the mechanical ventilation systems to provide a ‘mixed mode’ ventilation strategy.

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5	Heat Recovery	The retail unit is a shell and core fit-out only but the incoming tenant will be required to provide mechanical ventilation systems (with heat recovery where practicable) in order to comply with Building Regulations. The units will be modern equipment with optimum specific fan powers and heat recovery efficiencies to reduce energy consumption. MVHR units will have summer bypasses to provide free cooling. Natural ventilation will be utilised by the tenant (wherever practicable) in conjunction with the mechanical ventilation systems to provide a 'mixed mode' ventilation strategy.
6	Lowest Carbon Options	The existing reused heat pump is modern equipment with variable speed compressors, with amongst the highest EER/COPs possible to ensure these are the lowest carbon solutions.
6	Reversible Heat Pumps	The existing heat pump is reversible and will provide space heating during winter as well as cooling during peak summer conditions.
6	Water Based System	There is insufficient external space to incorporate a water-based air conditioning system, therefore water-based cooling systems of this type are not considered viable for this scheme.
Additional	Load Shedding	The use of natural ventilation in the retail unit is limited due to potential security risks, therefore load shedding is limited to utilising free cooling via mechanical ventilation systems where practicable.
Additional	PV	No opportunity to implement a PV array on the roof to assist in powering the air conditioning plant as there is no available roof space allocated to the retail tenant