

2024/1288/P 50-52 MONMOUTH STREET COOLING HIERARCHY NOTE

CPG Cooling	Option Considered	Viability
Hierarchy		
Reference		
1	Layout	Restaurant cold rooms will be provided in the basement and
		comms room of the office space will be provided away from
		windows, keeping the zones that require the greatest level of
		cooling to the coolest areas of their respective floorplates.
1	Reduce Heat Gains	The restaurant is a shell and core fit-out only but the incoming
		tenant will be required to provide a lighting design with all low
		energy consuming LED fittings with occupancy sensing reduce
		energy consumption.
		The office will be designed with LED lighting with processes
		detection and deviget beneating to reduce operation
		as for as passible
1	Sool / Inculato	as fail as possible.
1	Seal / Insulate	commo room of the office space will be provided away from
		windows keeping the zenes that require the greatest level of
		windows, keeping the zones that require the greatest level of
4	Dadaa Distance	cooling to the coolest areas of their respective hoorplates.
1	Reduce Distances	All refrigerant pipework will be thermally insulated to maximise
		efficiency of their respective systems. The roof is the only viable
		location for the comfort cooling plant and therefore the distance
		heat needs to travel have been minimised.
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 to internal zones as is proposed
		at 50-52 Monmouth Street. No external cooling is proposed.
1	Night Cooling	Night cooling via openable windows is not considered a viable
		strategy in this location due to security risks. However, restaurant
		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.
2	Sun angle	The building is existing and it is therefore not possible to alter the
		angle of sun into the property.
2	Orientate and Recess	The building is existing and it is therefore not possible to alter the
	Windows	orientation nor recess the windows into the property.
2	G Values and Window	Replaced glazing at the restaurant level will be provided with a low
	Details	g value to reduce solar gain but does not affect the high internal
		gains which will still require active cooling.

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		Existing glazing to the office level could be provided with a film to reduce solar gain but does not affect the high internal gains which will still require active cooling. A film will also change the colour of the glazing which will look different to adjacent windows. The building is existing an 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	Typically for a Cat-A speculative office fit-out solar blinds are not installed as the tenant typically provides their own fit-out and finishes to suit their business use. Any blinds installed may therefore be removed or replaced so not ideal from a sustainability perspective. In addition, if good quality blinds are down in the office space (on the facade with the high solar gain) to control solar gain entering, natural cross ventilation will be almost completely eliminated, with only single sided ventilation being of use, which significantly impacts the effectiveness of ventilation to mitigate overheating. Likewise blinds are not suited to restaurant use preventing view in and view out of the space. Awnings are existing and proposed (under ref. 2024/1235/P) which provide some shading of the ground floor. Awnings and blinds will only be useful in controlling solar gain into the spaces and 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. In addition, brise soleil is not suited to current streetscape and is a significant change to the external façade. The building is existing and there is no viable external space to introduction vegetation.
2	Albedo Effect	There is no opportunity to implement a reflective roof over the
		office or restaurant areas to reduce cooling loads. The external walls are and will continue to be to painted in a light reflective colour to maximise the effect.
2	Green Roof	No opportunity to implement a green roof over the office or restaurant areas to reduce cooling loads.
3	Thermal Mass	The available thermal mass of the existing building will be utilised



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		in the restaurant space by utilising their 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, Stack effect
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 to internal zones as is proposed
		at 50-52 Monmouth Street. No external cooling is proposed.
4	Night Cooling	Night cooling via openable windows is not considered a viable
		strategy in this location due to security risks. However, restaurant
		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 restaurant is a shell and core fit-out only but the incoming
		tenant will be required to provide mechanical ventilation systems
		with heat recovery. The units will be modern equipment with
		optimum specific fan powers and heat recovery efficiencies to
		reduce energy consumption.
		Within the office space the ceiling heights are not sufficiently high
		enough to allow for ductwork services to run at high level through
		the space and hence natural ventilation only is proposed.
5	Heat Recovery	The restaurant is a shell and core fit-out only but the incoming
		tenant will be required to provide mechanical ventilation systems
		with heat recovery. The units will be modern equipment with
		optimum specific fan powers and heat recovery efficiencies to
		reduce energy consumption.
		With the star office encoded by colling beights are not sufficiently high
		Within the office space the ceiling neights are not sufficiently night
		enough to allow for ductwork services to run at high level through
	Lawaat Carbon Ontiona	the space and hence natural ventilation only is proposed.
6	Lowest Carbon Options	The heat pumps proposed and that will be required from tenant
		Installations will be modern equipment with variable speed
		complessors, with he nighest EEN/COFS possible to ensure these
	Powersible Heat Pumps	The heat number proposed are reversible and will provide space
6	Reversible mean rumps	The neat purity's proposed are reversible and will provide space
		neating during winter as well as cooling during peak summer
	Mister Deced Quotom	Conditions.
6	Water Based System	Chilled ceilings require close control over the numidity of the
		ventilation systems. This is not possible in the naturally ventilated



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		office and the restaurant generates a high level of latent heat
		which would cause a concern for condensation formation.
		Therefore water based cooling systems of this type are not
		considered viable for this scheme.
Additional	Load Shedding	The office has openable windows which will be used for load
		shedding to provide cooling outside of peak periods where air
		conditioning will supplement the natural ventilation.
Additional	PV	No opportunity to implement a PV array on the roof to assist in
		powering the air conditioning plant as the available roof space
		allocated to the office and restaurant tenants is only sufficient to
		house their external condensing units.