LATOS Manchester Limited

Summary Note: Energy Use and Water Consumption

Introduction

This Summary Note has been prepared by LATOS Manchester Limited along with Sudlows Limited and seeks to summarise the energy use and water consumption associated with the proposed Data Centre development which would be located off Bower Street and Ten Acres Lane in the ward of Miles Platting and Newton Heath.

Water Consumption and Cooling Strategy

Cooling system

The proposed development does not employ evaporative or adiabatic cooling. Both the liquid and air-cooling systems reject heat through dry mechanical cooling and operate as closed-loop systems. Consequently, water is not consumed as a continuous input to the cooling process.

Operational demand is limited to normal low-occupancy welfare, cleaning and minor maintenance requirements, together with infrequent treatment of the sealed cooling loop. The only material one-off requirement is the initial commissioning fill, currently estimated at approximately 300,000 litres across both buildings, which is introduced gradually and retained within the closed-loop system.

This is materially different from water-intensive data-centre designs that use cooling towers or evaporative heat rejection. It is important to make this distinction at the outset because much of the concern regarding data-centre water consumption arises from cooling approaches more commonly associated with other markets.

Operational water demands

The operational water demands can be summarised as follows:

- Initial closed-loop fill: approximately 300,000 litres across both buildings, subject to final M&E confirmation. This is a one-off commissioning charge retained within the system rather than an ongoing cooling demand.
- Fill rate: expected to be controlled through the treatment/filling arrangement at less than approximately 1 litre per second, allowing filling to take place over an extended period and avoiding a short-duration peak draw.
- Domestic/welfare use: limited toilets, sinks and welfare facilities serving a low-occupancy / largely unmanned operation.
- Cleaning and plant wash-down: small ancillary demand, comparable to other low-occupancy commercial/industrial premises.
- Closed-loop treatment: minor and infrequent dosing/bleed volumes required to maintain water quality. These do not scale directly with IT load or external temperature.
- Landscaping: where irrigation is required, a small rainwater/grey-water collection system can be considered to reduce potable-water demand.

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Water Usage and Canal Protection

On the current design basis, the site Water Usage Effectiveness ("WUE") is expected to be negligible and potentially below 0.05 litres/kWh, subject to final confirmation by the M&E designer. Importantly, the operational cooling does not create a water demand proportional to IT load.

The rear boundary adjoins the Rochdale Canal. The design position is that no discharge from cooling-system treatment, domestic wastewater or surface-water drainage is proposed to the canal. In tandem with this the project team is in active dialogue with the Canal & River Trust.

Energy Efficiency, Renewables and Carbon

The proposed facility is designed to operate at a PUE of approximately 1.18, significantly outperforming conventional air-cooled data centres and ensuring that the vast majority of energy consumed is directed to productive IT equipment rather than cooling and ancillary systems.

Latos' commitment to an energy efficient and low-carbon operation can be summarised as follows:

- Target PUE of 1.18, reflecting a high-efficiency liquid-cooling-led design.
- Significant rooftop solar PV is proposed across both buildings.
- Latos proposes renewable electricity procurement through a sleeved Power Purchase Agreement, with traceability through REGO certificates.
- The development is designed to be 100% fossil-fuel free, using electricity for all heating, cooling and hot water.
- The scheme achieves a 15% reduction in regulated CO_2 emissions compared with the Part L 2021 compliant baseline.
- Target Emission Rate ("TER"): 81.24 tCO_2/year**.**
- Proposed Building Emission Rate ("BER"): 68.68 tCO_2/year.
- Annual carbon saving: 12.56 tCO_2/year.
- Both buildings are predicted to achieve BREEAM Outstanding, exceeding the project's target of Very Good.

Electricity Usage and Capacity

Proposed Facility Demand

The proposed Data Centre has been designed to minimise non-IT energy demand, with a target Power Usage Effectiveness ("PUE") of 1.18, high-efficiency liquid cooling and significant rooftop solar generation.

Current M&E information describes two data halls with a combined maximum IT design/contracted capacity of 9 MegaVolt-Amperes ("MVA") - 4.5MVA per hall - and a target PUE of 1.18.

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Approximately 83% of facility electricity use is expected to be attributable to the IT equipment itself, with the balance associated with power conditioning, cooling and other supporting systems.

Under colder ambient conditions, the cooling-related overhead falls further due to free-cooling performance.

Housing Capacity Comparison

Latos acknowledges the importance of ensuring that the proposed development would not prejudice the delivery of planned housing growth or other priority development. To assess this matter, Latos has obtained information regarding the total electrical capacity available within the relevant network area, committed capacity, the contracted import requirement of the proposed data centre, and the residual capacity that would remain following connection of the proposed development[1].

The evidence indicates that, within the network area centred on Bower Street, approximately 151MVA of capacity is currently available. The proposed data centre would require a contracted import capacity of 12MVA, representing approximately 8% of the available capacity. Consequently, around 139MVA of capacity (92%) would remain available following connection of the proposed development.

This demonstrates that the proposal would utilise only a relatively small proportion of the available electrical capacity within the relevant network area and would not materially diminish the significant residual capacity available for future growth.

By way of illustration, if a notional requirement of 3MVA per 500 homes is applied, the remaining 139MVA of capacity could theoretically support the equivalent electrical demand of approximately 23,000 additional homes within the area, before any network reinforcement is required. Whilst this comparison is illustrative only, it demonstrates the substantial scale of residual capacity that would remain following implementation of the proposed development.

[1] Sourced from the SPENW heat map system