

PROJECT: 205 - NIDO WEST HAMPSTEAD

DATE

[25 NOV 2020]

REF:

205.INT.251120.DN.01

DESIGN NOTE: SUMMARY OF HEATING LOADS AND WATER CONSUMPTION

1. SUMMARY OF EXISTING HEAT GENERATION PLANT

EXISTING PLANT	COMMENTS
1No. CHP (Viessmann ESS EM 50/81)	51kW electrical and 83kW thermal
Thermal Store	5000 litres
2No. Gas fired boilers	560kW each
2No. Domestic Hot Water Calorifiers	3500 litres each
POTENTIAL NEW HOT WATER STORAGE	TBC during Stage 4 detailed design
1No. Domestic Hot Water Calorifier	1000 litres

2. HEATING AND DOMESTIC HOT WATER LOADS SUMMARY

The table below summarises the heating and hot water generation capacity for existing demand (347 rooms) and future demand (new extension with 41 additional rooms).

	Heating Load, kW	Domestic Hot Water Load, kW	Total Load, kW
Existing bedrooms and common areas	415.8	443	858.8
Common Areas Extension	56.4	0	56.4
Bedroom Extension (41 new rooms)	31.2	52	83.2
Total requirement	503.4	496	998.4

PLANT CAPACITY AND DEMAND	kW
Existing plant capacity	1203
Total demand (with 41 new rooms)	998.4
Spare Capacity	204.6

3. WATER CONSERVATION AND RE-USE

Although not within the current design, on-site rainwater collection and re-use for non-potable water uses such as WC flushing can be considered.

Rainwater can be collected from the roof of the new extension where existing hardstanding and photovoltaics is proposed to be reinstated. This roof area is approximately 250m².

A rainwater collection calculation has been undertaken (based on BS 8515 – Intermediate approach), which concludes that a storage capacity of **5800 litres** would be required to service **41 WC cisterns**. The cisterns are assumed to be dual flush (4.5l / 3.0l), hence resulting in a total daily consumption reduction of **15 litres per person per day**.