CDC Studio

17 Comberton Rd, Barton, Cambridge, CB23 7BA
www.cdcstudio.co.uk info@cdcstudio.co.uk T 01223 262413

Client:	London Borough of Hillingdon
Project:	MHS Harefield
Project number:	4266
Revision:	-
Title:	Water Use Note
Date:	18 Aug 2022

File Note 11

WATER USE NOTE

The project requires a change of use from a residential boarding block to a SEND special school use for 90 pupils and 35 staff.

The residential boarding block – built in 2011 to Part G building regulations current at the time - has been designed with an occupancy of 58 people. In terms of water use this equates to:

58 x 125litres/person/day = 7250 litres/ day **= 2,646,250 litres per annum**

A school use uses less water than a residential use. RIBA 2030 challenge suggests a 'Business as Usual' water use of 4500 litres/ pupil/ year. See attached graphic:

RIBA 2030 Climate Challenge target metrics for non-domestic (new build schools)

RIBA Sustainable Outcome Metrics	Business as usual (new build, compliance approach)	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m²/y	130 kWh/m²/y	<70 kWh/m²/y	<60 kWh/m²/y	Targets based on GIA. Figures include regulated & unregulated energy consumption irrespective of source (grid/renewables). Refer to Department for Education Output Specifications for schools: 2025: Primary <55 kWh/m²/y, 2030: Primary <45 kWh/m²/y 1. Use a 'Fabric First' approach 2. Minimise energy demand. Use efficient services and low carbon heat 3. Maximise onsite renewables
Embodied Carbon kgCO₂e/m²	1000 kgCO₂e/m²	<675 kgCO₂e/m²	<540 kgCO₂e/m²	Use RICS Whole Life Carbon (modules A1-A5, B1-B5, C1-C4 incl sequestration). Analysis should include minimum of 95% of cost, include substructure, superstructure, finishes, fixed FF&E, building services and associated refrigerant leakage. 1. Whole Life Carbon Analysis 2. Use circular economy strategies 3. Minimise offsetting & use as last resort. Use accredited, verifiable schemes (see checklist). RAI aligned with LETI band F; 2025 target aligned with LETI band C and 2030 target aligned with LETI band B.
Potable Water Use m³/pupil/year	4.5 m³/pupil/y	<1.5 m³/pupil/y	<0.5 m³/pupil/y	Refer to Department for Education Output Specifications for schools.

In terms of water use this equates to:

90 x 4500 litres/ pupil/ year **= 405,000 litres per annum**

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BREEAM WAT01 FITTINGS

BREEAM WAT01 makes provision for specifying water-efficient fittings as noted in the table below. Targeting a 2-point BREEAM score indicates fittings which provide a nominal 25% water use improvement against the base line:

Table 41: Water efficient consumption levels by component type

Component		Performance levels (quoted numbers are minimum performance required to achieve the level)						
		Base	1	2	3	4	5	Unit
WC		6	5	4.5	4	3.75	3	Effective flush volume (litres)
Wash hand basin taps		12	9	7.50	4.50	3.75	3	litres/min
Showers		14	10	8	6	4	3.50	litres/min
Baths		200	180	160	140	120	100	litres
Urinal (2 or more urinals)		7.50	6	3	1.50	0.75	0	litres/bowl/hour
Urinal (1 urinal only)		10	8	4	2	1	0	litres/bowl/hour
Greywater or rainwater system	Precipitation zone 1	0%	0%	0%	25%	50%	75%	% of WC or urinal flushing demand met using recycled non-potable water
	Precipitation zone 2	0%	0%	0%	0%	25%	50%	
	Precipitation zone 3	0%	0%	0%	0%	0%	15%	
Kitchen tap: kitchenette		12	10	7.50	5	5	5	litres/min
Kitchen taps: restaurant (pre-rinse nozzles only)		10.30	9	8.30	7.30	6.30	6	litres/min
Domestic sized dishwashers		17	13	13	12	11	10	litres/cycle
Domestic sized washing machines		90	60	50	40	35	30	litres/use
Waste disposal unit		17	17	0	0	0	0	litres/min
Commercial-sized dishwashers		8	7	6	5	4	3	litres/rack
Commercial or industrial sized washing machines		14	12	10	7.50	5	4.50	litres/kg

It is proposed to target the water use of the indicated fittings to approach a nominal water use of 3000 litres/ pupil/ year.

As a special school, all pupil-operated taps will be sensor-controlled. Additionally, two hygiene rooms are provided which will contain showers and flushing sluice units.

Based upon this methodology, a nominal 25% water saving against 'business as usual' equates to nominally 3000litres/ pupil per annum = **270,000 litres/ annum**

In total, this suggests that the water usage of the proposed school will be approximately 11% of the current use rate.