Our reference C2526351

SMP Engineering
11 Chiltern Court
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HP5 2PX

24th November 2025

Dear Steve

Re: Proposed Development at Hillingdon Water Sports Facility and Activity Centre "As Designed" Part L Calculation

We have carried out a Part L calculation to the requirements of ADLV2 2021 Building Regulation calculation for the proposed development based on the layout provided on the drawings issued.

As can be seen from the results below, the 'as designed' buildings **pass** ADLV2 Criterion 1 with the Building Emission Rate more than the Target Emission Rate and the Building Primary Energy Rate more than the Target Primary Energy Rate.

The buildings **pass** ADLV2 Criteria 2 for flexibility of design

The buildings also **pass** Criteria 3 Limiting of solar gain.

As Designed SBEM Results – Main Building

Building Emission Rate	**6.46 kgCO_2/m^2**
Target Emission Rate	**9.97 kgCO_2/m^2**
Building Primary Energy Rate	**64.98 kWh$_{PE}$/m^2**
Target Primary Energy Rate	**106.68 kWh$_{PE}$/m^2**

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As Designed SBEM Results – Camp Zone

Building Emission Rate	**8.28 kgCO_2/m²**
Target Emission Rate	**12.54 kgCO_2/m²**
Building Primary Energy Rate	**83.90 kWh$_{PE}$/m²**
Target Primary Energy Rate	**134.77 kWh$_{PE}$/m²**

Design Specification

Construction U values

External walls	0.20W/m².K
Ground Floor	0.15 W/m².K
Roof	0.15 W/m².K
Crew Wellbeing Room Glazing	1.40 W/m².K Solar Trans 0.26, Light Trans 0.71
All Other Glazing	1.40 W/m².K Solar Trans 0.40, Light Trans 0.71
Personnel Doors (Opaque)	1.40 W/m².K

*Note. Glazing solar transmittance (g value) is for the glass only (not the whole window g value).

Air Tightness Test

A design air permeability of 5.0 m^3/m^2/annum at 50 Pascals has been assumed for both buildings.

Heating & Cooling

The buildings are heated by underfloor heating served by a Water Source Heat pump (WSHP) with a Seasonal Coefficient of Performance of 3.00.

*Please note if the plant efficiency cannot be achieved improvement will be required elsewhere.

DHW

DHW will be met by a Water Source Heat Pump with a Seasonal Coefficient of Performance of 3.00 and a storage capacity of 4000 litres for the Main Building and 1200litres for the Camp Zone.

Ventilation

The Observation Area, all Offices, Lounge, Reception & Training Room will have Mechanical Heat Recovery Ventilation with a SFP of 1.80 W/l/s and heat recovery efficiency of 75%

All Changing Rooms and Associated WCs/Showers will have Mechanical Heat Recovery Ventilation with a SFP of 1.80 W/l/s and heat recovery efficiency of 75%

The Laundry Room and WCs adjacent to the offices in the main building will have zonal extract ventilation with a SFP of 0.5 W/l/s

All other areas of the building are assumed to be naturally ventilated.

Lighting

The lighting efficacies have been assumed as 120lumens/watt

PIR presence detectors have been assumed in the WC, Circulation Areas and Store Rooms

PIR absence detectors with Photoelectric daylight dimming have been assumed in all Office Areas

All other areas have assumed manual controls.

Power Factor

Assumed power factor at <0.90

Out of Range Alarms

We have assumed that metering and out of range alarm systems (including lighting) **will** be installed.

Renewables

470m^2 of Photovoltaic Panels has been assumed for the Main Building - Approximately 94.5kWp

45m^2 of Photovoltaic Panels has been assumed for the Camp Zone – Approximately 9kWp

The Panel specification used is as follows;

- Panel Efficiency = 20.1%
- Orientation = Due East
- Inclination = 15°

We trust the enclosed is sufficient for your immediate requirements.

Should you wish to change any detail or if you have any other queries, please do not hesitate to contact us.

Yours sincerely

John White

John White
HIBEC Limited