



Sustainability Completion Report

Application reference: DM/25/2616

Site: 1–4 Malthouse Cottages, Malthouse Lane, Hurstpierpoint, Hassocks, BN6 9PE

Development: Four staff dwellings at Hurstpierpoint College with associated access, parking and external works

Submission: Condition 12 — implementation of the Sustainability Statement

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Company: Building Solutions Consultants Ltd

Date: 5 October 2026

1 Purpose and scope

I have prepared this report in support of the discharge of Condition 12 of planning permission DM/25/2616. It sets out the sustainability measures incorporated into the four completed staff houses, now known as 1–4 Malthouse Cottages, and brings the supporting certificates and calculations together in one submission.

The report covers the energy, water, materials, construction resources, drainage and travel measures in Section 8 of the Planning and Design and Access Statement dated 9 October 2025. Biodiversity is addressed separately and is outside the scope of this report.

The houses combine an insulated timber frame and tested airtight construction with air-source heat pumps, mechanical ventilation with heat recovery, water-efficient fittings, permeable external hard surfaces and electric-vehicle charging. The College's maintenance information covers the continued operation of these systems.

2 Condition requirement

Condition 12 of the decision dated 24 December 2025 states:

“The development shall be carried out in accordance with the Sustainability Statement submitted as part of the application. On completion of the development, an independent final report shall be prepared and submitted to the Local Planning Authority to demonstrate that the proposals in the Statement have been implemented.”

The following sections address those measures. The issued as-built SAP calculations, BRE compliance reports and energy performance documentation are adopted as the basis of the energy assessment. The attached evidence provides the detailed calculations, test results and commissioning records supporting the report.

3 Building fabric and airtightness

The houses are built with an insulated timber frame, double-glazed painted timber windows and doors, clay roof tiles, tile hanging and matching brickwork. The completed envelope follows the fabric-first approach in the Sustainability Statement.

Element	Thermal performance
External walls	0.15 W/m ² K
Ground floors	0.13 W/m ² K
Roofs	0.11 W/m ² K
Flush casement timber windows	1.3 W/m ² K
Fully glazed timber French doors	1.4 W/m ² K

Airtightness testing has been completed for every house. The measured air-permeability results at 50 Pa are:

Dwelling	Air permeability
1 Malthouse Cottages	2.97 m ³ /(h·m ²)
2 Malthouse Cottages	2.72 m ³ /(h·m ²)
3 Malthouse Cottages	2.23 m ³ /(h·m ²)
4 Malthouse Cottages	2.69 m ³ /(h·m ²)

The fabric evidence includes the timber-frame installation certificate, window and door thermal certificates, air-test certificates and calculated thermal-bridge junction values.

4 Heating ventilation and overheating

Each dwelling has a Vaillant aroTHERM VWL 35/8.1 A 230V air-source heat pump, rated at 3.5 kW, with sensoCOMFORT VRC 720F controls and a uniSTOR VIH RW 210/5 hot-water cylinder. Space heating is distributed through radiators. The heat pumps and hot-water systems have been commissioned, and MCS certificates are included for all four dwellings.

Whole-house mechanical ventilation with heat recovery is installed throughout. House 1 has a Blauberg Komfort EC SB 550 unit; Houses 2–4 have EC SB 350 units. The systems use S25 controls. Commissioned high-rate supply is 40 litres/second to each living room and 16 litres/second to each bedroom, providing the increased ventilation used in the overheating strategy.

The Part O assessment records a pass against the TM59 overheating criteria. The strategy combines the building fabric, glazing, operable windows and increased ventilation rates. Signed ventilation commissioning records for each dwelling are included with the assessment.

5 As built energy performance

The as-built energy assessments dated 2 October 2026 record a pass for each dwelling against the carbon-emission, primary-energy and fabric-energy targets. The energy ratings and calculated results are set out below.

House	Energy rating	Carbon dwelling / target	Primary energy dwelling / target	Fabric energy dwelling / target
1	B86	3.36 / 11.22	35.63 / 58.56	32.4 / 35.7
2	B86	3.32 / 11.18	35.19 / 58.34	32.0 / 35.4
3	B86	3.04 / 9.67	32.15 / 50.30	31.3 / 34.9
4	B87	2.93 / 9.67	30.99 / 50.30	31.6 / 34.9

Carbon is expressed in kg CO₂/m²/year, primary energy in kWhPE/m²/year and fabric energy in kWh/m²/year. The results are calculated under the standard assessment method. The energy performance certificates, reports and full SAP calculations are included in Appendix A, including the House 4 calculation supporting its B87 rating.

6 As built water consumption

The as-built calculation applies to all four cottages. Shower outlets are restricted to a maximum of 7.5 litres/minute. The fitting and appliance inputs are set out below.

Fitting or appliance	Input	Calculation	Litres per person per day
WC full flush	6.0 litres	6.0×1.46	8.760
WC reduced flush	4.5 litres	4.5×2.96	13.320
Basin taps	4.0 litres/minute	$(4.0 \times 1.58) + 1.58$	7.900
Bath	156 litres	156×0.11	17.160
Shower outlets	7.5 litres/minute	7.5×4.37	32.775
Kitchen tap	8.0 litres/minute	$(8.0 \times 0.44) + 10.36$	13.880
Washing machine	8.5 litres/kg	8.5×2.1	17.850
Dishwasher	0.85 litres/place setting	0.85×3.6	3.060
Unadjusted total			114.705

Applying the normalisation factor and standard external-water allowance gives:

$(114.705 \times 0.91) + 5.0 = 109.38155$ litres/person/day.

The final result is 109.4 litres per person per day for each cottage. This meets the maximum consumption of 110 litres per person per day in the original Sustainability Statement.

The installed fittings include dual-flush concealed WC cisterns, Bristan Orta basin mixers, Eurowa 1700 × 700 mm baths, Bristan Buzz 2 / Artisan shower fittings and Bristan Dune kitchen taps. The flow restrictors are retained as part of the water-efficiency provision.

7 Materials and construction resources

The completed specification includes timber framing, painted timber windows and external doors, clay roof tiles, tile hanging, brickwork and metal rainwater goods. Painted timber flush casements form part of Materials Schedule Revision A, approved under DM/26/0666 on 26 August 2026.

Off-site timber-frame manufacture reduced the amount of fabrication required on site. Construction waste was segregated for reuse and recycling. The durable external materials and maintainable building services support the long-term use of the houses.

8 Surface water drainage and management

The external hard surfaces are permeable. The surface-water strategy manages runoff by infiltration through the permeable parking and hard-surface construction, with roof runoff collected through gutters and below-ground pipework and directed through a silt catchpit to the permeable sub-base.

The drainage design provides a 452 m² permeable parking area with a 475 mm sub-base and a minimum 30% void ratio. It is assessed for the 1-in-100-year rainfall event with a 45% climate-change allowance. The design separates surface water from foul drainage and provides for removal of the identified 101 m² hardstanding misconnection from the foul system.

The drainage maintenance schedule sets out inspection, cleaning and sediment-removal requirements. It forms part of the College's maintenance information and is included with the drainage strategy and drawings in Appendix F.

9 Travel provision and ongoing operation

Four electric-vehicle charging points have been installed, providing one for each dwelling. The as-installed electrical layout and connection records are included in Appendix G. The houses provide College staff accommodation within the estate, close to the place of work.

The mechanical maintenance schedule covers the heat pumps, hot-water systems and ventilation. Continued servicing, filter cleaning and retention of the water-flow controls support the performance set out in this report. Replacement fittings and appliances should maintain or improve the water-efficiency inputs in Section 6.

10 Conclusion

The completed houses incorporate the fabric-first construction, energy-efficient services, water-efficiency measures, durable materials, permeable external hard surfaces and electric-vehicle charging described in this report. The as-built energy assessments record compliance with their carbon, primary-energy and fabric-energy targets. Water consumption is 109.4 litres per person per day, meeting the original 110-litre target.

I request approval of the submitted sustainability information in support of the discharge of Condition 12 of planning permission DM/25/2616. Biodiversity is addressed separately.

11 Attached evidence

The report and supporting evidence are bound together in a single PDF. The appendix index gives the page locations, and bookmarks provide direct access to each document.

Ref.	Evidence
A	Energy performance certificates and energy reports, BREL compliance reports and full as-built SAP calculations for the four cottages, issued 2 October 2026.
B	Air-permeability test certificates for Houses 1–4; window and French-door thermal certificates; thermal-bridge junction calculations.
C	Mechanical equipment schedules, MCS certificates and heat-pump / hot-water commissioning records for Houses 1–4.
D	Signed ventilation commissioning records for Houses 1–4 and the Part O overheating assessment.
E	Materials Schedule Revision A and timber-frame installation certificate.
F	Flood Risk Assessment and Drainage Strategy, reference 12337/17/FRA V2.2 dated 21 August 2026, including maintenance schedule; drainage layout and detail drawings.
G	EV charging layout, electrical installation certificates and EV connection records.
H	Mechanical maintenance schedule.

The as-built water calculation is included in full in Section 6. Its shower-flow setting, the installed permeable external hard surfaces and construction-waste segregation are confirmed as part of this report.

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5 October 2026



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Report: PDF pages 1-5. The water calculation is in Section 6.

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