Planetic

BB101 Compliance & Comfort Audit

ACTION REQUIRED

BB101 (DfE) · CIBSE TM52 · HSE ACoP L24 · CIBSE Guide A

A typical UK secondary school · 30-day monitoring · 2026 audit

TEACHING MINUTES UNDER-HEATED	TEACHING MINUTES OVER-HEATED	ACUTE CO_2 BREACH (>2000, >20 MIN)	CLASSROOMS WITH ≥1 BREACH
9.6%	8.4%	3.0%	67%

01 Audit scope · sensors · period · standards

CUSTOMER	STANDARD
Anonymised — UK secondary school estate	BB101 (DfE) primary; TM52 overheating; HSE ACoP L24 floor
AUDIT PERIOD	PROBE COVERAGE
30 days continuous · all teaching hours	All classrooms · temp + RH + CO_2
LOGGING INTERVAL	COMFORT TARGETS
5 minutes per zone	Min 17.2 °C · max 23 °C · CO_2 <1,500 ppm avg
GENERATED	REFERENCE
29 May 2026 · automated	BB101-2026

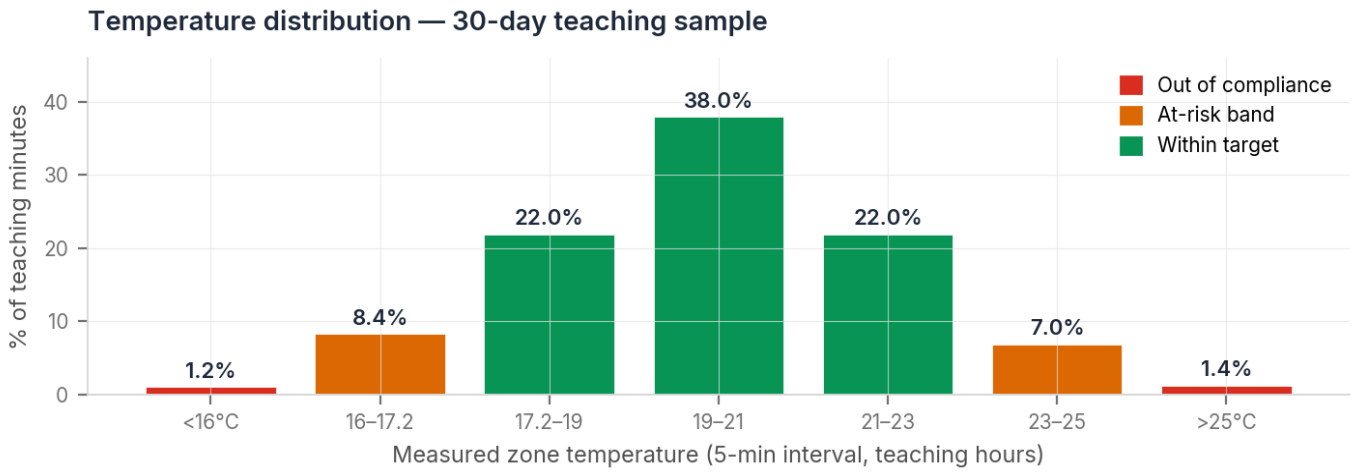
02 Executive summary

BB101 is breached in **two directions at once**. 9.6% of teaching minutes sit below the DfE 17.2 °C minimum — children in cold classrooms. 8.4% sit above 23 °C with 1.4% above 25 °C (CIBSE TM52 overheating). On the air side, 3% of teaching time saw CO_2 above 2,000 ppm for more than 20 minutes — the acute BB101 threshold. 12% breached the daily average ceiling of 1,500 ppm. Peaks reproduce every weekday around 14:30 — same time, same classrooms. The breaches are not random; they have shape, time and location.

The good news: the same sensors that detected this can drive the fix. Optimised start fixes the morning under-heat. Optimised stop and a 2 °C setpoint trim fix the afternoon over-heat. CO_2-driven ventilation fixes the air. Six interventions, all from one kit, all with continuous compliance evidence as a by-product.

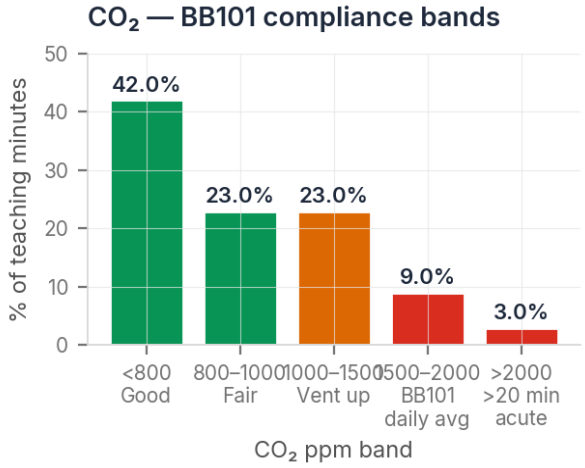
03 Temperature evidence · both directions at once — cold and hot

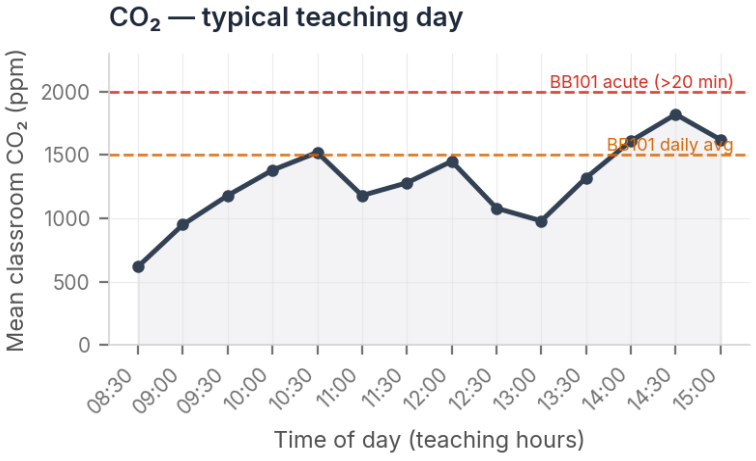
Continuous classroom temperature across 30 teaching days. Bands aligned to BB101 / DfE 17.2 °C minimum and CIBSE TM52 overheating thresholds.



How to read. Two red bars at the extremes: HSE-floor breach below 16 °C and TM52 overheating above 25 °C. Two amber bars either side of the comfort window — under-heated 16–17.2 °C and over-heated 23–25 °C. Three green bars in the middle: within target. Total within target: 82%. Total in breach or at-risk: 18% — split roughly evenly cold and hot.

04 Air quality evidence · BB101 CO_2 ceilings — daily average and acute





Left: distribution of teaching minutes by CO_2 band. BB101 daily-average ceiling is 1,500 ppm; acute ceiling is 2,000 ppm for more than 20 minutes. Both are breached. **Right:** the typical-day CO_2 curve, averaged across classrooms. CO_2 climbs with occupancy, peaks after lunch (afternoon ventilation drops off), and crosses the BB101 daily-average line during most afternoon sessions. The 14:30 peak is reproducible — same pattern every weekday.

05 BB101 signatures detected · six findings · six interventions · all from one sensor kit

#	FINDING	STANDARD	INTERVENTION	TARGET
1	**Under-heat** — 9.6% of teaching minutes below 17.2 °C, concentrated in mornings	BB101 / DfE 17.2 °C teaching minimum	Optimised start: fire boiler earlier based on outdoor temp + zone thermal mass	**<1%** under-heat
2	**Over-heat** — 8.4% above 23 °C; 1.4% above 25 °C (TM52 breach)	CIBSE TM52 overheating · BB101 thermal comfort	Optimised stop + 2 °C setpoint trim; coast on thermal mass	**~2%** over-heat
3	**CO_2 acute** — 3% of teaching time >2,000 ppm for >20 min	BB101 acute limit (DfE)	CO_2-driven ventilation: boost MVHR / open vents when ppm climbs	**near zero**
4	**CO_2 daily avg** — 9% of teaching time 1,500–2,000 ppm; afternoon-loaded	BB101 daily-average ceiling 1,500 ppm	Scheduled afternoon vent boost from 13:00; window-open prompt at 1,200 ppm	**<2%** daily breach
5	**Morning ramp** — boiler takes 90+ min to reach target on cold days	DfE 17.2 °C reached by first occupancy	Outdoor-temp-compensated start (weather-predictive)	**every day** ready
6	**Reproducible 14:30 CO_2 peak** — same time, same classrooms	BB101 acute · cognitive performance research	Investigate worst-3 classrooms; targeted MVHR upgrade where capacity is the limit	**targeted** retrofit

06 Review & sign-off

PREPARED BY

Planetic

Generated automatically from continuous sensor data.
29 May 2026 · ref BB101-2026

REVIEWED & SIGNED OFF

NAME · BB101 responsible person

SIGNATURE

DATE

Purpose & limitations. This is a monitoring evidence record — the classroom temperatures, humidity and CO_2 measured by Planetic sensors at this site through the monitoring period, judged against BB101, TM52 and HSE thresholds. It is not a BB101 compliance certificate, not a Building Regulations Part F assessment, and does not replace inspection by a competent person. Sensor coverage and placement affect what can be detected. Records retained for a minimum of 5 years.