

DSM Modelling Checklist

Key inputs and our quick process for SBEM / DSM Part L calculations and Commercial EPCs

① When is DSM needed?

SBEM is the default route for most non-domestic buildings. DSM (Dynamic Simulation Modelling) is required, or strongly advised, where SBEM cannot accurately represent the building's physics. The features below are the usual triggers:

- ☐ Full-height atriums and multi-storey glazed circulation cores
- ☐ Mixed-mode or natural ventilation strategies
- ☐ Exposed thermal mass that shifts heating and cooling loads
- ☐ Complex shading, high glazing ratios and solar gain control
- ☐ Unusual operating hours or internal gains that differ from SBEM defaults
- ☐ BREEAM, overheating (TM52) or operational energy analysis alongside the EPC

② Key inputs checklist

Drawings & geometry ☐ Floor plans, sections and elevations (PDF or CAD) ☐ Room / zone layout — atriums, cores, circulation spaces ☐ Roof plan: glazing, PV and plant locations ☐ Building orientation and site context	Fabric & glazing ☐ U-values and construction build-ups (walls, roof, floor) ☐ Glazing spec: g-value, light transmittance, frame factor ☐ External and internal shading devices and controls ☐ Thermal bridging strategy
HVAC & controls ☐ Plant schedules: boilers, chillers, heat pumps, VRF ☐ Ventilation strategy: mixed-mode, natural, mechanical ☐ Controls: BMS schedules, set-points, free cooling ☐ Distribution: duct / pipe runs, fan and pump efficiencies	Occupancy & operation ☐ Operating hours per zone ☐ Occupancy densities and profiles ☐ Lighting specification and controls (incl. daylight linking) ☐ Equipment / small power loads — server rooms, catering, DHW
Renewables & other ☐ PV array details, orientation and shading ☐ Heat pumps, CHP or other low-carbon systems ☐ Existing BRUKL or EPC outputs ☐ BREEAM / overheating / TM52 studies, if any	Site & context ☐ Weather file location and exposure ☐ Neighbouring buildings or obstructions that shade the site ☐ Any planned refurbishment or change of use

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③ Our quick process

- ① **Data review**
Drawings and specifications in; we confirm the model scope and the geometry approach before any modelling starts.
- ② **Model build**
DSM constructed in approved software — zones, glazing, shading, HVAC and controls modelled as designed.
- ③ **Verification**
Results checked against loads, benchmarks and design intent; anomalies investigated and corrected.
- ④ **BRUKL & EPC**
Part L compliance output and the Commercial EPC lodged, with your final rating confirmed in writing.
- ⑤ **Design advice**
Where the model shows headroom, we recommend cost-effective changes that improve the band.

④ What correct DSM can change

For complex buildings — atriums, glazed cores, mixed-mode ventilation and exposed thermal mass — correctly prepared DSM reflects how the building actually performs, while SBEM applies conservative default assumptions. That difference is why we often see ratings improve by one or two full EPC bands when DSM is modelled properly.

DSM is not a way to inflate a rating. It must match the building as designed: if the design genuinely performs better than the defaults — high-performance glazing, effective shading, daylight controls, efficient plant — the rating follows. If it does not, the model will honestly show it. That is exactly why the quality of the modeller matters.

⑤ Before you commission

Ask for a geometry check first	Small atriums and lobby glazing are often fine in SBEM — a quick review before a full model saves money.
Agree the inputs list	Use this checklist to confirm who supplies each item and when, so the model is not held up.
Confirm accreditation and software	Check the consultant is accredited for non-domestic EPCs and uses approved SBEM / DSM tools.
Get the BRUKL and EPC in writing	Plus a written note of any design changes that could improve the band further.

This checklist provides general guidance only and does not constitute site-specific EPC, Part L or compliance advice. Requirements depend on the building's actual design, construction and operation.