

NABERS UK AND ENERGY MODELLING BRIEF

This brief sets out the base requirements and outputs for predictive energy modelling instructed by Derwent London. It is envisaged that any assessment commissioned will be done so at the earliest opportunity, with a target start point of RIBA Stage 2 to capture the design concept and run through to Stage 4 to capture the design development stage. The actual predicted energy consumption of the project must also be assessed during key milestones of Stage 5 up until Practical Completion (PC). Details of final fabric and equipment choices used on site will be provided by the appointed Contractor to inform the assessment process.

It is recognised that each Consultant practice will have their own format/house style for presenting the results for their assessments; this brief is not intended to direct this, rather set out some of the basic parameters Derwent London requires. However, all Energy Modelling reports will need to meet the requirements of the NABERS Rules, and Consultants are encouraged to familiarise themselves with the template modelling reports available via the BRE.

Responsibilities

The Energy Modelling Consultant role may be appointed to the Services Engineer or Sustainability Consultant, depending on specific scheme arrangements. This will be referenced in the Consultant services and Design Responsibility Matrix.

The Energy Modelling Consultant is responsible for all actions and reporting contained in this brief.

From Stage 5 onwards, the Contractor (or Contractors if multiple contracts) is responsible for complying with the design to ensure the DfP rating can be achieved, and for providing the information that the Energy Modelling Consultant needs to carry out the modelling and assess the energy consumption and compliance with the rating.

Requirements

Framework

It is necessary that all assessments undertaken and designs must have their methods aligned to/conform with the NABERS UK - Design for Performance scheme including:

- NABERS UK Guide to Design for Performance
- NABERS UK Energy for Offices
- NABERS UK Metering and Consumption Rules

Derwent London will formally register a project with NABERS UK by end of Stage 2, and the UK NABERS Consultant must support Derwent London in this process.

Derwent London will appoint a NABERS Independent Design Reviewer from the UK IDR Panel at the start of RIBA 3. The IDR Consultant will carry out an initial review at the end of RIBA 3, and a full Independent Design Review (IDR) RIBA 4 with a view to the project obtaining a NABERS Approved Target Rating. The Energy Modelling Consultant shall facilitate the IDR, including:

- Coordinating with the design team to assemble a pack of design information
- Attending workshops with the IDR to brief them on the scheme, and review findings
- Coordinate the close-out of all recommendations with the IDR, including liaison with the design team to agree any design changes
- Update the Energy Model to incorporate the recommendations of the IDR at the next modelling stage (typically RIBA 5, following conclusion of IDR at RIBA 4)

Metering Strategy and NABERS Rating Calculation

Within the Modelling Report the Energy Modelling Consultant shall define the precise methodology for calculation of the NABERS Rating, including any exclusions and apportionment of shared services in multi-use buildings. This shall include reference to individual electricity and heat meters that will be required to calculate the rating.

In addition, the Consultant shall provide a matrix detailing the precise methodology for calculating the assessment metrics scheduled above. i.e. which specific energy meters are summed to calculate each metric. Through this the Consultant shall demonstrate that all metrics are fully verifiable in practice.

Results Presentation & Benchmark Comparison

The assessment as a minimum should present the outcomes from the assessment graphically in the following ways:

- o Complete Derwent London NABERS Template
 - o Energy Intensity kWh/m² NIA and GIA showing the following:
 - Bar 1: Landlord & tenant split (stacked)
 - Bar 2: Individual use types as listed above (stacked)
 - Comparison to NABERS 4, 4.5 and 5 Star ratings
 - o Present the above at each stage of design
 - o Present against relevant industry standards (e.g. UKGBC / RIBA / NABERS database etc.)
 - o Present alternative design / Off-Axis Scenarios as appropriate to the RIBA Stage in accordance with NABERS guidance and as agreed by the team (e.g. occupancy density / fabric / occupancy hours / different HVAC options / air supply temperatures etc.)
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- Commentary should also be provided explaining the results, significant findings, relationships and design recommendations for improvements to increase the Star rating

NABERS Rating Achievement Plan

At the end of Stage 3 a NABERS Rating Achievement Plan (RAP) should be developed, led by the Energy Modelling Consultant working in close collaboration with the Derwent Development and Asset or Property Management representatives, outlining key actions, risks and opportunities and relevant stakeholders responsibilities under the following headings:

- Maintaining the Design Intent Stage 4 (final design)
- Maintaining the Design Intent Stage 5 & 6 (procurement, construction and commissioning)
- Maintaining the Design Intent Office Tenant Leasing & Fit-out
- Achieving Efficient Operation (seasonal commissioning, FM procurement, energy monitoring and targeting, independent energy performance audits)

Conclusions & Reduction Opportunities

- At each stage of design, within the conclusion section the top five reduction opportunities are to be presented together with their reduction potential against the total energy consumption. These opportunities should be practicable and realistic and in-line with the project objectives
- If requested a route to a Six Star rating should be presented

Planned vs Actual Reporting

- Over the course of construction, equipment and / or other changes which will impact the operational energy must be compared against the results at Stage 4. The frequency of this process will be dependent on the scope and scale of the project and will be agreed on an individual basis.
- Results should be presented as previously outlined in the brief
- A final assessment and report will be completed at PC for the project

Employer's Requirements

Energy Modelling Consultant to ensure that all ERs and project specification is in line with NABERS requirements and Agreement and list out any specific NABERS related requirements.

Handover Documentation

The Energy Modelling Consultant is to work with the Contractor to produce a full updated as-built Energy Modelling report, including fully updated methodology for calculation of the NABERS rating with as-built meter references. This report shall be the basis of energy performance tuning in operation.

Reporting on Post-PC Requirements

Post-PC requirements to be outlined in NABERS RAP, clearly listing roles and responsibilities. These are to be discussed with our Property Management team in quarterly meetings in the 12-18 months leading up to handover. The following is anticipated to be required:

- Validation Engineer monitoring of building fine-tuning and tenant fit outs
- Operational performance auditing such as quarterly monitoring and targeting for 24 months post-PC by the NABERS Consultant with the Building Manager, FM Contractor and Sustainability Manager to monitor and report progress against the NABERS ratings
- Formal assessment 24 months post-PC by the NABERS Consultant.
- Assistance to the FM team in setting up process to track NABERS rating by the NABERS Consultant