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SHAPING A SUSTAINABLE FUTURE

CIBSE TM59 2026

Your guide to the revised overheating methodology

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Introduction

Managing overheating risk is becoming an increasingly important consideration in residential design.

With changing weather patterns, increasing summer temperatures and growing emphasis on creating buildings that remain comfortable and resilient over their lifetime, overheating assessments are playing a greater role in informing design decisions.

The 2026 revision of CIBSE TM59 introduces significant changes to the methodology used to assess overheating risk in homes.

The revised approach places greater emphasis on passive design, future climate resilience and early consideration of overheating, while introducing a new three-stage assessment methodology, revised overheating criteria, updated weather files and more robust reporting requirements.

For developers and design teams, this means overheating is likely to require greater consideration much earlier in the design process.
This guide provides an overview of the key changes and what they could mean for future residential projects.

What has changed, what it means for residential development and why overheating needs to be considered earlier in the design process.

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What's changing?

The 2026 revision introduces several important changes to the TM59 methodology, including:

- **a new three-stage assessment methodology**
- **revised overheating criteria**
- **a more robust checklist covering model inputs**
- **new weather files**
- **greater consideration of ceiling fans; and**

Perhaps the most significant change, however, is the move away from a single assessment methodology towards a staged approach that prioritises passive measures before more energy-intensive solutions are considered.

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A new three-stage approach

The previous 2017 version of TM59 followed a single methodology.

Under TM59 2026, this is replaced by a three-stage methodology, encouraging overheating risk to be addressed progressively through the building design.

Stage 1: Passive building assessment

The first stage focuses on achieving comfortable conditions through the building design itself assuming unconstrained natural ventilation.

At this stage, site-specific noise, air-quality or additional security constraints on ventilation devices are not included.

Continuous background mechanical ventilation systems, such as MEV or MVHR with an effective summer bypass, may be included, along with ceiling fans where necessary.

Importantly, all spaces in all dwellings should pass Stage 1.
This places significant emphasis on getting the fundamentals of passive design right before progressing to more complex solutions.

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Stage 2: Introducing real-world constraints

The second stage incorporates ventilation constraints to further assess the developments. At this stage, site-specific noise, air-quality or additional security constraints on ventilation devices are included. All the passive heat-mitigation measures required to achieve a pass at Stage 1 are retained.

Mechanical ventilation systems that deliver higher (than background) rates of air supply may be introduced but not any form of mechanical cooling. Ceiing fans may be included if necessary.

If there are no ventialtion constraints and the devlopment passes Stage 1, then no further stages need to be simulated.

Stage 3: Full mechanical ventilation and Active cooling

Stage 3 is only undertaken where an assessment pass cannot be achieved at Stage 2.

Passive heat-mitigation measures developed through Stages 1 and 2 are retained, but mechanical ventilation incorporating active cooling or air tempering may now be introduced where necessary.

What does this mean in practice?

The hierarchy is important:
Passive design → constrained passive/ventilation solutions → full mechanical ventilation and active cooling

Rather than using cooling as an early solution to overheating, the methodology encourages design teams to demonstrate that appropriate passive measures have first been explored.

Achieving an overall TM59 pass

Under the revised methodology, an overall TM59 overheating assessment pass is achieved when every habitable space within every sampled dwelling passes the applicable criteria at Stage 1 and, where required, either Stage 2 or Stage 3.

Communal areas within multi-dwelling buildings must also pass the new, Criterion d at the applicable stages.

Appropriate sampling and transparent reporting will become increasingly important parts of the assessment process.

Understanding the revised assessment criteria

TM59 uses different assessment criteria depending on how a space is ventilated and how it is used.

Criterion a – Predominantly naturally ventilated spaces

Criterion a applies to predominantly naturally ventilated spaces where people are awake during occupied hours between May and September.

For living rooms, kitchens, home offices and bedrooms, the number of occupied hours where the relevant temperature difference is greater than or equal to 1 K must not exceed 3% of occupied hours between 1 May and 30 September.

This equates to:

- **59 hours** for living rooms, kitchens and home offices; and
- **110 hours** for bedrooms.

Where ceiling fans are used, a maximum operative temperature threshold uplift of 1.2°C is permitted when the operative temperature exceeds 25°C.

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Criterion b – Bedrooms (naturally and mechanically ventilated)

Criterion b specifically considers bedrooms and overnight comfort.

Between 1 May and 30 September, the number of nights where the mean operative temperature during sleeping hours exceeds the relevant threshold must not exceed four nights.

For the purposes of TM59, sleeping hours are assumed to be **11pm to 8am.**
Criterion b applies to both naturally ventilated bedrooms and bedrooms incorporating mechanical ventilation or active cooling.

Unlike Criterion a, installing ceiling fans does not provide an uplift to the Criterion b temperature threshold.

Bedrooms therefore need to pass Criterion b alongside either Criterion a for predominantly naturally ventilated rooms or Criterion c for predominantly mechanically ventilated rooms.

Criterion c – Predominantly mechanically ventilated or cooled spaces

Criterion c applies to spaces that are predominantly mechanically ventilated or mechanically cooled during occupied hours between May and September.

For living rooms, kitchens, home offices and bedrooms, the operative temperature must not exceed 26°C for more than 3% of occupied hours between 1 May and 30 September.

Again, this equates to:

- **59 hours** for living rooms, kitchens and home offices; and
- **110 hours** for bedrooms.

TM59 permits a higher temperature threshold in predominantly mechanically ventilated or mechanically cooled spaces where ceiling fans form part of the base build or retrofit.

Criterion d – communal areas

Criterion d considers communal circulation spaces such as:

- stairwells;
- corridors;
- lift lobbies; and
- entrance lobbies.

The operative temperature must not exceed **28°C for more than 3% of occupied hours** between 1 May and 30 September, equivalent to **100 hours.**

The methodology presumes against manually controlled ceiling fans within communal areas, so no temperature threshold uplift is permitted under Criterion d.

Which criteria apply?

The criteria applied will depend on the ventilation strategy.

For **predominantly naturally ventilated** homes, the relevant assessment comprises Criteria **a, b and d**.

For **predominantly mechanically ventilated** homes, Criteria **b, c and d** apply.

TM59 defines predominantly naturally ventilated as situations where natural ventilation devices are operable for at least 50% of the time.

Designing for the climate of the future

Another important change is the weather data used within assessments.

The 2017 methodology required current 2020s weather files. Under the revised 2026 methodology, future 2050s weather files are required.

CIBSE revised its weather files in 2025 to reflect more recent heat events and overall weather conditions. This represents an important shift in thinking.

Residential developments being designed today will still be occupied decades from now. Assessing them against future weather conditions can provide a better indication of how well they are likely to cope with a warmer climate. It may, however, also make achieving compliance more challenging.

Why passive design will become even more important

One of the clearest implications of the revised methodology is the increasing importance of passive heat-mitigation measures.

Because the staged methodology requires passive measures to be considered and retained before progressing towards active cooling, design decisions made early in a project could have a significant impact on the eventual assessment.

This could make factors such as glazing, solar gains, shading, ventilation strategy and the wider building design increasingly important considerations.

It also means sustainability and overheating specialists may need to become involved earlier.

Identifying potential overheating risks while the design is still flexible provides considerably more opportunity to investigate appropriate solutions than discovering a problem once layouts, elevations and specifications have already been fixed.

Could ceiling fans play a greater role?

The revised methodology gives ceiling fans greater prominence as a potential overheating mitigation measure.

They may be considered during Stages 1 and 2, and under some assessment criteria their use allows an uplift to the applicable temperature threshold.

This could make ceiling fans a useful option on some projects before more energy-intensive active cooling solutions are considered.

However, their treatment varies between assessment criteria, so their suitability needs to be considered as part of the overall overheating strategy rather than as a standalone solution.

What could the changes mean for project teams?

The revised TM59 methodology is likely to have practical implications for developers, architects and design teams.

Assessments may become more detailed and potentially more time-consuming, with additional modelling stages, greater reporting requirements and more stringent future weather data potentially resulting in more designs initially failing to meet the required criteria.

The biggest practical lesson is therefore simple:

Consider overheating early

Waiting until the design is substantially developed before undertaking detailed overheating analysis can significantly reduce the options available to resolve problems.

Earlier modelling allows the design team to understand potential risks while changes to glazing, shading, ventilation and other passive measures can still be incorporated efficiently.

Overheating analysis should therefore increasingly be viewed as a design tool, rather than simply an assessment undertaken towards the end of the design process.

Four things to take away from TM59 2026

1. Passive design comes first

The new staged methodology puts greater emphasis on addressing overheating through passive measures before active cooling is considered.

2. Future climate resilience matters

Assessments will use 2050s weather files rather than current 2020s data.

3. Ceiling fans could become increasingly relevant

They can form part of the overheating strategy and may affect temperature thresholds under certain criteria.

4. Earlier assessment could save considerable redesign later

Bringing overheating specialists into the project while the design remains flexible gives teams more options for resolving potential problems.

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How Futura Bright can help

At Futura Bright, our Environmental Modelling team works with developers, architects and wider design teams to assess overheating risk and understand how building design decisions affect occupant comfort and performance.

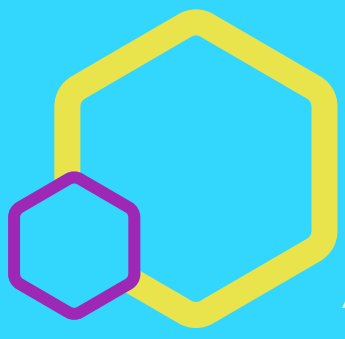
By undertaking modelling early, we can help identify potential risks, investigate appropriate mitigation measures and provide practical advice that can be incorporated into the developing design.

As requirements evolve, our focus remains the same: helping project teams turn complex guidance into practical, deliverable solutions.

Planning a residential development or want to understand how the revised TM59 methodology could affect an existing project?

Speak to the Futura Bright team.

Get in touch



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