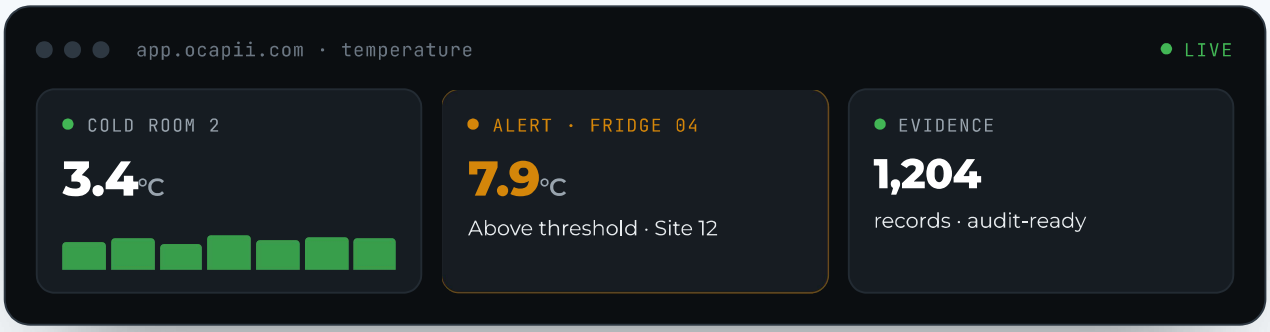
TEMPERATURE MONITORING

The Operational Guide to Temperature Monitoring.

For the people responsible for temperature-controlled environments, across one site or many. The gaps manual checks leave behind, what continuous monitoring enables, and how to build an approach that delivers evidence, not just data.

- Continuous coverage
- Audit-ready evidence
- Multi-site visibility



IN THIS GUIDE

Built for the people accountable for the cold chain.

This guide is for people responsible for managing temperature-controlled environments across one site or many. It covers the gaps that manual checks leave behind, what continuous monitoring enables, and how to build an approach that delivers evidence, not just data.

01

BEFORE YOU CHANGE YOUR APPROACH

Five questions to ask before you change your approach

Upgrading temperature monitoring is not primarily a technology decision. It is an operational one. The technology is only as useful as the workflows it connects to and the culture it operates within.

1 Where are your highest-risk assets, and are they currently your most monitored?

Risk and monitoring effort do not always match. A walk-in cold room holding three days of stock for a busy kitchen is a different risk profile to a worktop chiller. Map your assets by volume of product, frequency of use, and consequence of failure, then check whether your current monitoring reflects that.

2 What would you do today if a fridge failed overnight?

Work backwards from the worst case. If a cold room went out of range at 11pm, when would you know? Who would be notified? If the answer depends on someone happening to check in the morning, that is the gap worth closing.

3 How long does it take to produce temperature evidence for an audit?

If the answer involves pulling paper records, cross-referencing spreadsheets, or chasing team members for missing logs, your evidence process has a latency problem. The question is not only whether the evidence exists. It is whether you can produce it quickly and confidently when needed.

4 Do your managers have visibility across all sites, or only their own?

Monitoring tends to be a local responsibility with central accountability. That only works if central leaders can reliably see what is happening across sites without visiting each one. If that visibility does not exist, exceptions may not surface until they become significant problems.

5 Are your current records reliable enough to use in your defence?

THE MOST IMPORTANT QUESTION

Temperature records exist, in many cases, because they may be needed in an investigation, complaint, or enforcement action. If your current records contain gaps, inconsistencies, or entries that could not have been made in real time, they may not provide the protection you assume they do.

02

A STANDARD WORTH BUILDING TO

What 'good' looks like

Across the range of environments where temperature monitoring matters, there is a set of operational outcomes that a well-built approach should consistently deliver. Most organisations are already delivering two or three. **The gap is usually in escalation, corrective-action linkage, and multi-site consistency**: the parts of the loop that go beyond reading and recording.

✓ **Continuous coverage**
Every controlled asset monitored continuously, not just at check intervals.

✓ **Exception detection in minutes, not hours**
Alerts generated and routed to the right person within minutes of a threshold breach.

✓ **Clear escalation paths**
If the first person does not respond within a defined time, the alert moves to the next level.

✓ **Corrective action linked to the exception**
Every breach has an associated action record: what was done, by whom, when, and with what outcome.

✓ **Evidence that tells a story**
Not just the reading, but the timeline: when the excursion started, how long it lasted, what was done, and when it resolved.

✓ **Trend visibility for continuous improvement**
Patterns of repeated exceptions or underperforming assets visible in dashboards, not just incident records.

✓ **Multi-site consistency**
The same standards applied and evidenced across every location, not dependent on local interpretation.

03

WHAT IS AT STAKE

The numbers behind the decision

The case for investing in temperature monitoring is not just operational. These figures help quantify what is at stake.

£3.2bn

Annual food waste

In UK hospitality alone, a significant portion preventable with better cold-chain control.

Source · WRAP

~70%

Still on paper

Estimated share of the market still using manual or paper-based operational records as their primary system.

OCAPII estimate

30%

Extra energy use

23 fridges running 3°C cooler than necessary used 30% more energy, over £2,400/yr in avoidable cost.

OCAPII beta customer data

Energy monitoring: an overlooked benefit

Continuous data does not only reveal excursions, it reveals inefficiency. Equipment running consistently colder than its threshold uses more energy and accelerates wear. A temperature trend that looks acceptable on paper can still be costing more than it should.

The gap in your monitoring schedule

A fridge checked at 9am and 2pm has an unmonitored window of 5 hours. Over a year, across a single asset, that is more than **1,800 hours of invisible operation**, longer than any audit trail would typically cover.

04

THE LIMITS OF THE SNAPSHOT

What manual checks actually tell you

Manual temperature checks have been the industry standard for good reason. They are simple to implement, require no technology, and produce a visible, signable record. The issue is not that they are wrong. It is that they are **discrete**: they capture a moment, not a story.

WHAT A MANUAL CHECK TELLS YOU

- The temperature at the moment of reading
- That someone visited the asset at a particular time
- Whether it was in range at that point

WHAT IT DOES NOT TELL YOU

- What happened between the last check and this one
- How long the asset was out of range, if at all
- Whether the issue resolved on its own or is still deteriorating
- Whether the person who checked acted on what they found
- Whether the record is accurate, or filled in from memory

That last point matters more than is often acknowledged. Multiple food-safety investigations have found temperature logs completed in advance, in bulk, or after the fact, not necessarily through negligence, but because manual systems create pressure to *record* rather than to *manage*.

This does not mean manual checks should be abandoned. For many processes, such as probe checks on cooked food, goods-in inspections and Bluetooth probe readings, they remain the right tool. But as the primary means of continuous assurance, they leave gaps that continuous monitoring can close.

05

WHERE EXCURSIONS CLUSTER

The six most common failure points

Temperature excursions tend to cluster around a predictable set of causes. Understanding where issues typically originate helps decide where investment in monitoring has the highest return.

FAILURE POINT	WHY IT GETS MISSED
Overnight or off-hours drift	No one is present to observe or record readings. Issues may persist for hours before the next check.
Door open during deliveries	Delivery periods coincide with peak activity. Temperature changes during this window are rarely captured separately.
Equipment degradation	Compressors, seals and fans degrade gradually. Manual checks may not detect subtle decline until it causes a significant excursion.
High-volume or high-traffic periods	During busy service or events, checks may be skipped, delayed, or completed by less experienced staff.
Multi-asset environments	When one team monitors many assets across a site, less critical items receive less frequent attention.
Transport and cold chain	Temperature in transit is rarely monitored in real time. Excursions in vehicles or during loading are hard to detect and evidence.

The common thread across all six is **timing**: the problem happens in a window where no one is watching. Continuous monitoring closes that window.

06

FROM REACTIVE TO RESPONSIVE

What continuous monitoring actually changes

Continuous IoT-based monitoring is not simply a faster version of manual checking. It changes the relationship between your team and your temperature data, from reactive to responsive.

BEFORE	AFTER
Fixed readings at set times	**Readings captured continuously, 24/7**
Issues found at next check	**Exceptions flagged the moment they occur**
Manual record, filled in by hand	**Sensor data logged automatically, timestamped**
Corrective action handled separately, if at all	**Alert triggers an assigned action with owner and deadline**
Evidence gathered retrospectively	**Readings, alerts and actions build a live record**
Patterns identified in annual reviews	**Trends visible in dashboards, week by week**

◆

A note on evidence quality

When something goes wrong (a stock write-off, a product complaint, a regulator's question), the quality of your evidence determines how quickly you can respond and how credibly you can demonstrate what happened. A continuous record is meaningfully different to a log of snapshots.

07

REQUIREMENTS DIFFER BY SECTOR

Industry-specific considerations

Asset types, regulatory frameworks, and the operational consequences of an excursion vary significantly by sector.

Food & Beverage

HACCP-based documentation under food hygiene law.

- Cold rooms and walk-in chillers are high-value, high-risk assets.
- Hot-hold monitoring is frequently under-evidenced.
- Probe checks remain vital for point-of-service assurance.

Healthcare & Care Homes

Tighter tolerances under pharmacy & CQC standards.

- Medicine fridges typically require +2°C to +8°C with minimal drift.
- Strict evidence: who was notified, when, and what action.
- Ward and catering fridges are often monitored separately.

Manufacturing & Industrial

Excursion consequences may not be immediately visible.

- May form part of ISO or sector-specific certification.
- Cold-chain integrity is a frequent audit focus.
- Continuous records from storage to despatch strengthen evidence.

Education

Consistency across multi-academy trust locations.

- Catering requires the same standards as commercial food ops.
- Labs and specialist storage sit outside the catering framework.
- Central visibility with local accountability is the goal.

Facilities & Estates

Assurance without direct operational control.

- Central dashboards give oversight without being on site.
- Escalation reaches facilities and the local operator at once.
- Covers tenant kitchens, concessions and shared storage.

Hotels & Accommodation

Consistency across many departments and teams.

- Kitchens, banqueting, room service, bar storage and minibars.
- Brand standards increasingly require digital evidence.
- High-occupancy periods raise the risk of missed checks.

08

PRACTICAL STARTING POINTS

Making the transition

The move from manual to continuous monitoring does not have to be complex. Most organisations find it most straightforward to start with their highest-risk assets, typically cold rooms, medicine fridges, or any asset where an overnight excursion would have significant consequences.

A typical rollout sequence

1. **Identify priority assets** by risk profile and monitoring gap.
2. **Define thresholds** per asset type, using regulatory guidelines and operating experience.
3. **Map alert routing**: who needs to know, in what order, within what timeframe.
4. **Define corrective-action workflows** for common exception types.
5. **Connect monitoring data** to dashboards and reporting from day one.
6. **Review the first month's data** for trends, gaps and calibration opportunities.

The goal is not to monitor everything immediately. It is to build a monitoring capability that gives you confidence in the assets that matter most, then expand from there.

SEE HOW OCAPII CONNECTS MONITORING TO ASSURANCE

The data is already there.

Most operations teams don't have a monitoring problem. They have a visibility problem. The readings exist. The signals are there. OCAPII makes them impossible to ignore: IoT sensors, configurable thresholds, automated alerts, corrective actions, and audit-ready evidence in one connected platform.

Book a walkthrough at ocapii.com →