

KTU CARE

The Power of Knowing, Not Guessing

From drone data to measurable value.

From Data to Real Understanding

In an industry overwhelmed by data, true value lies in interpretation.

Today's market is flooded with systems that collect and classify information.

AI platforms count anomalies without context, while traditional inspections rely on subjective observation and limited coverage. Both create fragments of truth, but neither provides understanding.

KTV Care bridges that gap.

We combine drone data with engineering expertise to transform raw imagery into verified, contextualised, and measurable insight. AI supports our work where it adds value, but it's our engineers who define what the data actually means.

We're not driven by the number of findings; we're driven by accuracy.

If a building performs perfectly, that's equally worth reporting - because truth, not quantity, defines quality. Every report we deliver represents integrity, not assumption.

Seeing beyond the surface.

Traditional visual inspections show what's visible.

They identify surface-level imperfections; cracks, corrosion, and discoloration, but leave the true condition of the structure unknown. Visual methods alone can't uncover what's happening beneath the surface.

Thermal analysis reveals what's hidden beneath.

By translating temperature differentials into actionable data, it exposes concealed issues such as energy leakage, trapped moisture, thermal bridging, and early-stage material degradation. These insights enable data-driven maintenance, energy optimization, and reduced operational costs.

With drone-based thermal imaging, entire buildings can be assessed quickly and safely, turning invisible risks into measurable results.

The outcome: lower energy consumption, reduced CO₂ emissions, and better-informed decisions across your entire infrastructure portfolio.

One technology - all sectors, all materials

Our solution applies to all major building categories worldwide:

- Commercial offices, retail and public buildings
- Residential complexes and social housing
- Industrial halls and steel structures
- Logistics centers and warehouses
- Schools, hospitals and public institutions
- Hotels and leisure properties
- Solar farms and rooftop PV-systems
- Wind turbines and renewable assets
- Bridges, terminals and large infrastructure



KTV Care technology works consistently across concrete, brick, steel, timber and composite materials - capturing both visible and invisible deviations.

Commercial & Office Buildings

Example on Condition Aspects:

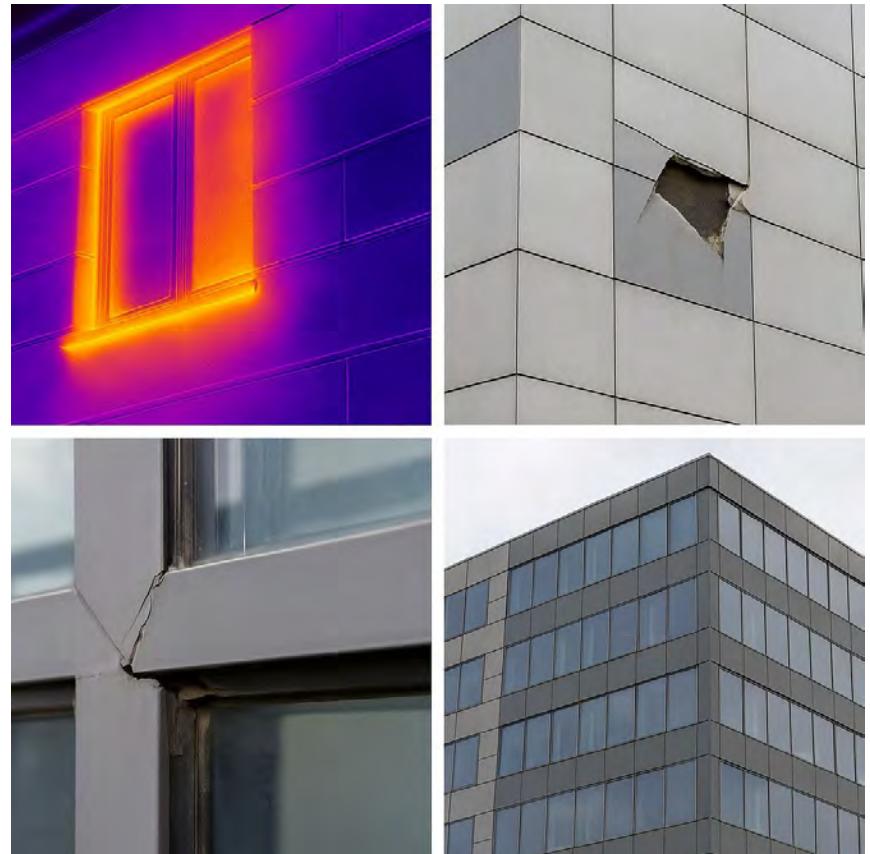
- Thermal bridges and condensation in facade corners
- Cracks in concrete or render (risk of water penetration)
- Loose facade panels or decorative cladding (fall risk)
- Deteriorated window joints and gaskets

Example on Safety Aspects:

- Early detection of loose façade material reduces risk of facade fall incidents
- Verifies window anchoring and sealing integrity

Example on Financial Value:

- Prevents facade repairs € 20 000 - € 40 000
- 60 - 90 % lower inspection cost vs. manual operations



Residential Blocks

Example on Condition Aspects:

- Moisture accumulation behind facade or balcony plates
- Poor insulation continuity between apartments
- Air leakage around windows and ventilation shafts
- Cracked plaster, rusting balcony rails (fall hazard)

Example on Safety Aspects:

- Detection of loose render or facade tiles prevents accidents
- Identifies weak balcony joints and deteriorated anchorings

Example on Financial Value:

- Avoided structural repair € 15 000 - € 30 000
- 70 % cheaper than scaffold inspection



Industrial & Steel Buildings

Example on Condition Aspects:

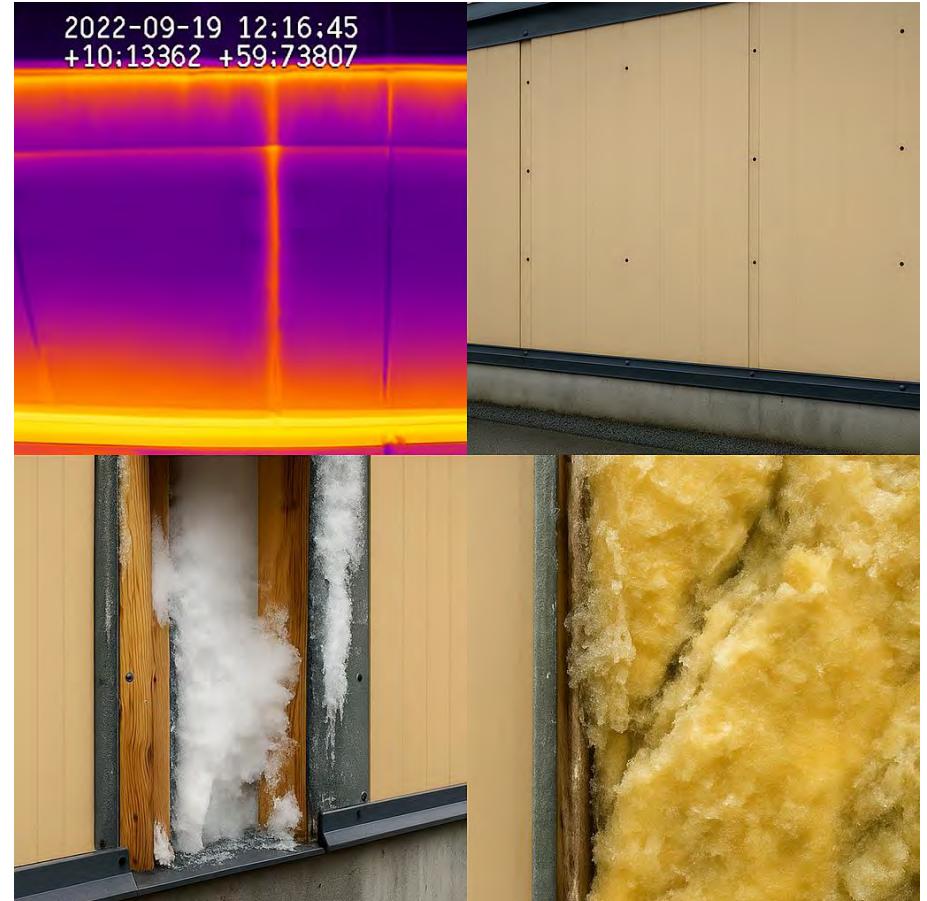
- Corrosion in sandwich panels and steel joints
- Failed sealing around skylights and vents
- Roof deformation under snow load
- Insulation degradation over time, both in regular buildings and cooling storage

Example on Safety Aspects:

- Detects corrosion at load-bearing fixings before failure
- Reveals water ingress that may compromise roof integrity

Example on Financial Value:

- Avoided panel or roof replacement € 25 000 - € 50 000
- 55 - 80 % lower inspection cost vs. rope/lift access



Hospitals, Schools & Public Buildings

Example on Condition Aspects:

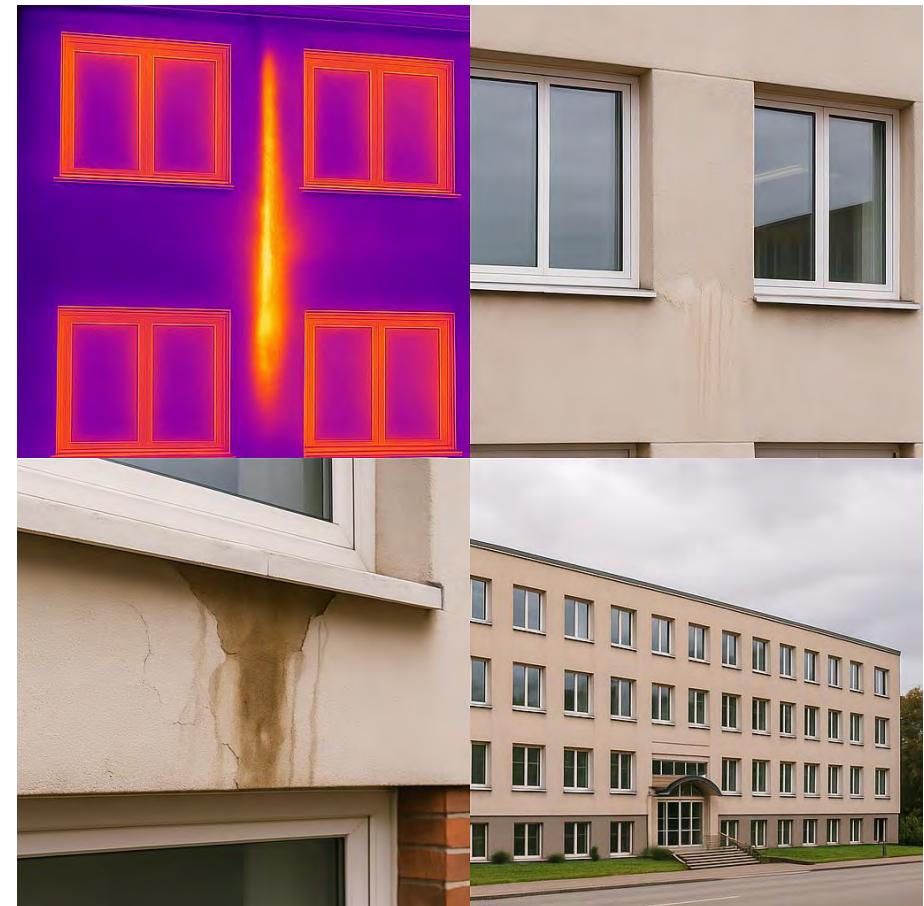
- Air leakage and poor sealing at windows
- Moisture penetration in facade joints
- Aging insulation around HVAC units
- Other hidden damages on facades and roof

Example on Safety Aspects:

- Detects degraded facades in pedestrian areas
- Monitors window integrity in multi-storey façades

Example on Financial Value:

- Avoided envelope degradation € 35 000+
- 60 % cheaper than manual inspection



Roofs

Example on Condition Aspects:

- Moisture under membrane and insulation
- Poor drainage and ponding areas
- Damaged sealing around penetrations
- Thermal bridges

Example on Safety Aspects:

- Early detection of water ingress prevents major costs and potential roof collapse risk
- Identifies slipping hazards from hidden leaks

Example on Financial Value:

- Prevents rebuilds € 50 000 - € 100 000.
- 70 % cheaper than destructive testing



Windows & Glazing Systems

Example on Condition Aspects:

- Air leakage and broken seals
- Condensation between panes (loss of insulation)
- Poor installation causing cold bridges

Example on Safety Aspects:

- Detects loose fittings or frame deformation (risk of glass fall)
- Confirms glazing integrity after storms or impact

Example on Financial Value:

- Energy saving: up to 1500 kWh pr. window
- Prevents replacement € 5 000 - € 15 000
- 65 % cheaper than manual thermal camera survey



Solar Assets

Example on Condition Aspects:

- Hotspots, shading, cracked glass modules.
- Loose connectors and inverter overheating.
- Uneven temperature distribution (indicating production loss)
- Vegetation, Environmental exposure, Paint or coating failure

Example on Safety Aspects:

- Detects overheating junctions preventing fire risk.

Example on Financial Value:

- Production gain: Up to 12%.
- Prevents equipment failure € 5 000 - € 100 000.
- 50 - 90 % cheaper than ground-based inspections.



Wind Turbines

Example on Condition Aspects:

- Hidden cracks and delamination in rotor blades
- Moisture ingress within composite layers (thermal variance)
- Erosion and surface wear along leading edges
- Corrosion on hubs, bolts, and tower flanges
- Oil leakage from gearbox or hydraulic system

Example on Safety Aspects:

- Detects structural fatigue and overheating
- Prevents catastrophic blade failure

Example on Financial Value:

- Avoided downtime € 100 000+
- +50 % cheaper than rope or lift inspection



Concrete, Steel & Special Structures

Example on Condition Aspects:

- Cracks in slabs, beams and columns (thermal or load-induced)
- Delamination and spalling of concrete surfaces
- Moisture ingress through microcracks or poor sealing
- Corrosion of reinforcement bars (rebar heating visible in IR)
- Honeycombing or voids in concrete core (uneven heat absorption)
- Poor adhesion between repair layers and existing concrete
- Differential settlement leading to structural stress zones
- Incomplete curing or thermal gradients causing tension cracks
- Leaks and water migration in joints and penetrations

Example on Safety Aspects:

- Detects progressive weakening before structural failure
- Identifies hidden corrosion before visible damage occurs
- Prevents falling debris or spalled concrete from facades
- Ensures safety compliance for bridges, parking decks and tunnels

Example on Financial Value:

- Avoided structural repair costs: € 20 000 - € 80 000.
- Extended service life: +10 - 15 years
- Up to 80 % cheaper than traditional lift/scaffold inspections
- Typical ROI: < 6 months from reduced energy and maintenance costs

Energy Quantification - Measuring the Invisible

Every surface that uses, transfers, or produces energy can be quantified.

KTV Care transforms thermal imagery into measurable energy data.

Where others only see colour gradients, we quantify real energy flow expressed in kWh, CO₂ and financial value.

Every degree of temperature difference represents a tangible amount of energy - energy that can be saved, optimised, or recovered.

This gives property owners a verified understanding of how much energy their buildings lose, store, or generate - creating a clear link between technical condition and actual performance.

Developed together with specialists in building physics and energy modelling, this capability has become one of KTV Care foremost market advantages: The ability to quantify energy leakage and efficiency directly from thermal data with documented accuracy.

Energy loss is no longer abstract - it's measurable, reportable, and financially accountable.

Carbon Accounting - The Net Climate Effect

Traditional inspection methods come with a heavy carbon footprint. Vehicles, lifts, scaffolding and multiple site visits generate 40 - 60 kg CO₂ per project, long before any analysis even begins.

KTV Care eliminates this.

Our battery-powered drone inspections remove the need for transport and heavy equipment, producing less than 1 kg CO₂ per inspection, a reduction of more than 95 % compared to traditional methods.

But the real impact lies in what follows:

Each thermal analysis uncovers inefficiencies such as energy leakage, thermal bridging, and trapped moisture, issues that, once corrected, typically reduce a building's energy use by 20 000–35 000 kWh per year, equivalent to several tons of CO₂ saved annually.

In other words, one inspection produces less than 1 kg CO₂ but enables thousands of kilograms in annual savings.

Across larger portfolios, this results in hundreds of tons of avoided emissions, all achieved without the logistical burden of traditional inspection methods.

Low emission in execution.

Massive emission reduction in outcome.

The Measurable Impact of KTV Care

Cost Savings

- Targeted maintenance prevents unnecessary repairs
- Fast inspections reduce on-site costs
- Typically up to 70 % lower total cost than traditional methods

Energy & CO₂

- Detects hidden losses = 1 000 - 100 000 kWh saved annually per building
- Equivalent to several tons CO₂ reduction per year
- < 1 kg CO₂ generated per inspection - a truly climate-positive service

Efficiency

- Entire buildings mapped in hours instead of days
- No lifts, scaffolding or physical access required
- Immediate results and faster decision-making

Accuracy

- Every finding is verified and contextualised by engineers
- AI supports precision - humans ensure understanding
- Consistent, reportable data across all assets

Quality

- We're not driven by quantity, but by relevance and truth
- A report confirming "no faults" is just as valuable as one showing deviations
- Integrity and context define our difference

Why Choose KTV Care

The value isn't in the flight - it's in the report.

Drones, sensors, and data are only tools.

The true value for the client lies not in the amount of data collected, but in how it is interpreted, structured, and presented. That's what transforms raw information into real insight, and it's what makes KTV Care different.

Each report represents the sum of advanced technology, engineering competence, and analytical precision.

It connects every finding to its technical cause, energy consequence, and financial impact, giving the customer a complete understanding of how the building performs and what actions matter most.

While others focus on how many images they can capture or how many deviations they can flag, we focus on relevance and reliability. Our mission is not to prove that something is wrong, it's to show the truth, whether that truth reveals a problem or confirms that everything functions as intended. A report that documents infrastructure in excellent condition is just as valuable as one that identifies faults, because both provide confidence and clarity.

Where automated systems end, our engineers take over - interpreting, verifying, and translating complex thermal and visual patterns into conclusions that can be trusted. This is what gives our customers a measurable advantage: fewer uncertainties, lower costs, reduced emissions, and better decisions.

The drone collects data → The analysis gives meaning.

The report delivers value → That's why clients choose KTV Care.