BUILD TEST SOLUTIONS

Thermal Performance Measurement

SmartHTC™

buildtestsolutions.com

SmartHTC is a fast, accurate, and affordable way to measure the real thermal performance of any building - without disruption.

Using discreet temporary sensors or historical data from your existing smart home system, SmartHTC directly measures the heat loss from the building in just three weeks. During this time, residents carry on as normal - no need to vacate or change daily routines.

The result? A bespoke picture of how your building actually performs, not just how it's predicted to. Low impact and low cost, SmartHTC is the ideal health check for every house.

This powerful insight helps building owners, managers, and residents take targeted action - cutting energy bills, reducing carbon emissions, improving indoor comfort, and making every investment count. SmartHTC empowers better decisions for healthier homes and a greener future.

Why should I be using SmartHTC?

Without measuring the performance of our homes and buildings, we can't truly understand how they are performing, or what measures we need to take to improve performance, health, and heating bills.

Traditional assessments like EPCs or BS EN12831 heat pump sizing calculations are based visual inspections. Yet many important factors such as insulation and airtightness cannot easily be seen, leading to generalised and inaccurate assumptions based on build type and age.

In a study of 500 homes, EPCs accurately estimated heat loss for fewer than half. Across 80 homes, BS EN12831 calculations were correct for just a third.

Without heat loss measurement, we risk targeting the wrong buildings, installing the wrong systems, and wasting retrofit budgets without delivering real results.

SmartHTC changes that - giving you the data you need to make smarter, more effective decisions.

Harnessing Existing Data for Smarter Homes

With smart meters now common across the UK, households already have access to the data and technology needed to truly understand their home's performance. Whether through temporarily installed sensors placed in the home, or by using the SmartHTC API via smart tech like In Home Displays (IHDs) and thermostats, this data can pinpoint where retrofitting and heating improvements will make the biggest impact — slashing bills and cutting emissions.

Key Benefits

Accurate, Real-World Data
Bespoke Measures actual heat loss, not estimates or assumptions, for reliable decision-making.

Non-Disruptive For Occupants
Monitoring takes just three weeks with no changes to daily routines.

Scalable And Easy To Access
Use our browser interface for low volume, or integrate into existing smart tech with our API.

Target Retrofit Where It Matters
Identifies underperforming homes to prioritise investment and maximise impact, and those with lower than expected heat loss which need less urgent intervention.

Real Quality Assurance
Compares performance before and after improvements to prove results and ROI.

Portfolio-Wide Insights
Scalable across multiple properties to guide strategic planning at stock level.

Supports Funding And Compliance
Provides evidence for grant schemes and policy reporting, strengthening bids and accountability.

Low Cost BPE
Evaluations cost as little as £10 per property.

Did you know SmartHTC also integrates a Mould Risk Indicator?

Scan to find out more!

Applications

Housing Providers
Target fuel poverty and home health, energy efficiency, quality assurance on building works, access to new funding streams requiring performance measurement, support legislative requirements.

Energy Assessors and Surveyors
Provide a unique and valuable new service to your customers and an additional chargeable service to your site visits.

Heating System Sizing
Accurately specify heating systems saving homeowners thousands in installation and running costs with the best possible efficiency for their homes.

Smart Technology Companies
Integrate SmartHTC via APIs to provide real-time, validated building performance insights.

Scheme Operators and Professional Bodies
Develop new evidence-based services for your customers by leveraging real performance data. Help them better understand their buildings, make data-informed decision, and manage risk of underperformance and failures.

Contractors, Developers and Product Manufacturers
Stand out by offering quality assurance for your products and work.

Energy Suppliers
Add value to your customer offerings by using smart meter data to target suitable buildings and gain additional ECO credit by measuring the impact of work you fund.

Finance and Insurance Providers
Gain greater confidence in the performance of buildings and retrofit works, offering your clients better assurances and helping you assess risks more accurately.

How Does It Work?

1.

Install sensors and take meter readings

Place temperature sensors in the home and record initial gas and electricity meter readings (or use smart meters if available).
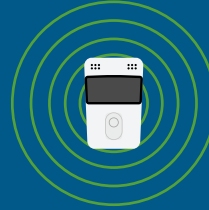
2.

Monitor indoor temperature for 3 weeks

Collect at least 21 days of temperature data during the heating season (Oct–Mar). One sensor may be enough for small homes.

3.

Take final meter readings and collect sensors

After the 3-week monitoring period, return to the property to take final gas and electricity readings. Then retrieve the temperature sensors to access the recorded data.

4.

Upload data and get results

Enter temperature, energy data, and basic building info (floor area, location) via browser or API to receive instant SmartHTC results.

Case study: Local Authority Housing

Bristol City Council set up a Heat Pump Ready Project to support their residents in living healthy, efficient lives in their homes. *"Using the SmartHTC API and measuring properties has delivered a higher degree of accuracy in specifying heat pump systems which prolongs the life of the system and makes the whole project more viable for the consumer and council."* SmartHTC empowers householders to make the right decisions around retrofitting their homes with insulation or other measures. Using a measured approach gives precise insights into what each home requires. Understanding exactly how big a heat pump needs to be often reduces the cost and complexity of installation, and results in the best operating conditions and the lowest energy bills with the highest efficiency.

	SmartHTC	
Data inputs	**Required:** o Energy consumption at service meter o Single internal temperature measurement	**Optional additional information:** o Internal temperature in up to 10 locations o Internal relative humidity in up to 10 locations o Half hourly smart meter data o Disaggregated heat input for space heating o Disaggregated heat input for water heating o Local external temperature o Local global solar irradiance o Metabolic gains o Presence of occupants
Temperature measurements	Must be accurate to ±0.5°C	
Relative humidity measurements	Must be accurate to ±3%RH (25°C, 20-90%RH)	
Building information	**Required:** o Floor area o Location (postcode or latitude and longitude)	**Optional additional information:** o Built form o Attachment o Party wall area o Boiler winter seasonal efficiency o Window dimensions and orientation o Glazing type, overshading and frame type o Number of occupants
Ways to use SmartHTC	Through a web browser at SmartHTC.com. RESTful web service API with Basic Authentication over SSL.	
Outputs	Heat Transfer Coefficient (HTC) Heat Loss Parameter (HLP, HTC normalised by total floor area) Mean internal temperature Mean external temperature Peak heat demand for heating system sizing	

Compatible with sensors and smart technologies from:

Elitech®

AIRTHINGS

octopus energy

PURRMETRIX

Tinytag

Contact

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TOP RANKED
SMETER

>10K
MEASUREMENTS