SMARTHTC

THERMAL PERFORMANCE
MEASUREMENT

BUILD
TEST
SOLUTIONS

www.buildtestsolutions.com

SmartHTC is a low-cost test that provides a definitive measure of the thermal performance of any building.

SmartHTC is informed by measurements of internal temperature and energy consumption. Readings can come from existing smart home systems or a small number of temporary, discreet sensors. During the three-week measurement occupants can continue to use the property as normal.

The measured performance gives an indication of the true performance of the building that can be directly compared with the predicted performance. Our system is built on 10 years of academic research and data, and has been tested and validated by 3rd parties and in hundreds of buildings.

You can't manage what you don't measure. An accessible and affordable measure of energy performance empowers building owners and users - improving health, driving down bills and fuel poverty, reducing carbon emissions, and targeting investment to where it is most effective.
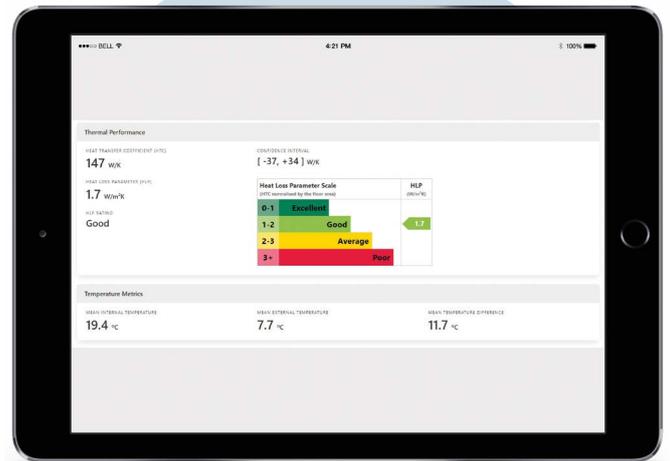
Key Features

Replaces inaccurate predictions

Use in occupied homes

Accounts for weather and occupancy

Developed over 10 years

3rd-party tested and validated

Cost comparable to EPCs

**Easy to use browser interface**

Integratable through APIs

Why is SmartHTC needed?

Over 20% of total UK emissions come from heating our buildings, but the energy performance of individual buildings is rarely measured and little understood. Existing assessments, such as Energy Performance Certificates, rely on visual inspections, yet many important factors such as insulation and airtightness cannot easily be seen. The problem is that homes have been shown to routinely perform worse than predicted, and often by a significant amount (an average of 60% underperformance in the largest study undertaken).

Relying on visual inspections makes it impossible to accurately assess which buildings are most in need of improvement or provide quality assurance of built products. This can lead to fuel poverty, high bills and costly reactive maintenance.
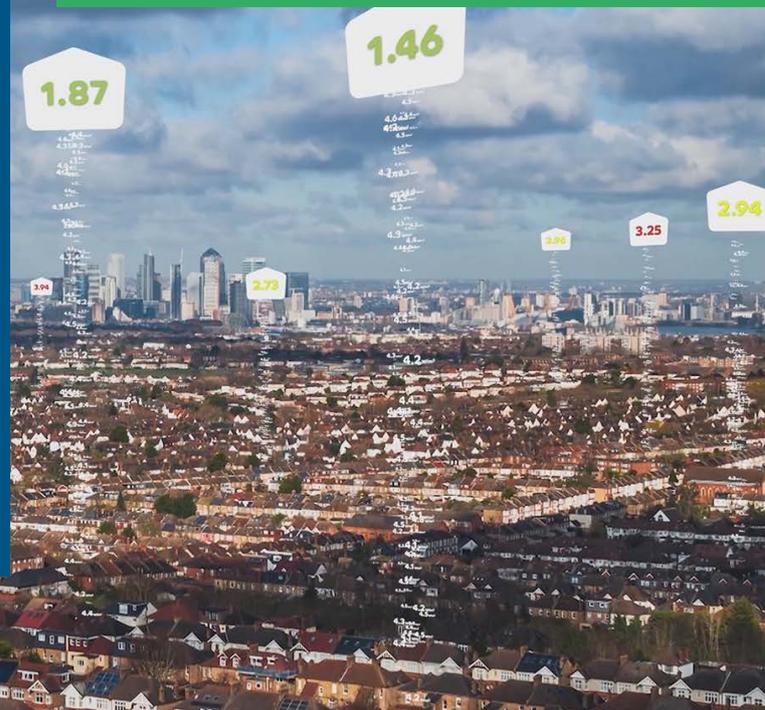
Applications

Housing providers

Better target fuel poverty alleviation and energy efficiency improvements, quality assurance on building works, access to new funding streams requiring performance measurement.

Smart technology companies

Integrate SmartHTC via APIs to provide added value to your customers with validated building performance insights.

Scheme operators and professional bodies

Develop new services based upon measured performance of buildings to help existing customers better understand their buildings.

Contractors, developers and product manufacturers

Provide quality assurance for your products and work.

Energy suppliers

Provide added value to your customers using smart meter data and gain additional ECO credit by measuring the impact of work you fund.

Finance and insurance providers

Get further assurance of the performance of buildings and works you serve.

How does it work?

Step 1:

Gas and electricity consumption is measured at 30-minute intervals by smart meters, or via standard meter readings at the start and end of a period of internal temperature monitoring.

Step 2:

Internal temperature is monitored for a period of at least 3 weeks during winter (Oct-Mar inclusive in the UK). For a building of less than 100m^2 a single temperature measurement can be used, though more sensors give higher accuracy.

Step 3:

The data and some basic information about the building (floor area and location) is fed into a cloud-hosted algorithm, through a browser interface or APIs. The thermal performance is instantly returned.

Price Plans

Choose between a rolling monthly or annual subscription to SmartHTC, with flexibility built in for those busier months.

30 calculations /month

Annual subscription (12 month contract): **£240/month**
or
Monthly rolling subscription: **£400/month**

£8/additional calculations

100 calculations /month

Annual subscription (12 month contract): **£500/month**
or
Monthly rolling subscription: **£800/month**

£5/additional calculations

1000 calculations /month

Annual subscription (12 month contract): **£3000/month**
or
Monthly rolling subscription: **£4800/month**

£3/additional calculations

5000+ calculations /month

Bespoke custom plans available for larger customers, with calculations from as little as: **£0.60/calculation**

Hardware

5x wireless temperature and %RH sensors: **£150**

1/2 day introductory course recommended for all new customers

All plans include:

- Accurate non-invasive measurement of whole fabric heat loss to within approx ± 15%
- Access to additional revolutionary building performance metrics as they are developed

Technical Specification

SmartHTC		
Data inputs	**Required:** - Energy consumption at service meter - Single internal temperature measurement	**Optional additional information:** - Internal temperature in up to 10 locations - Internal relative humidity in up to 10 locations - Half hourly smart meter data - Disaggregated heat input for space heating - Disaggregated heat input for water heating - Local external temperature - Local global solar irradiance - Metabolic gains - 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:** - Floor area - Location (postcode or latitude and longitude)	**Optional additional information:** - Built form - Attachment - Party wall area - Boiler winter seasonal efficiency - Window dimensions and orientation - Glazing type, overshading and frame type - Number of occupants
Communications with calculator	Browser interface hosted at SmartHTC.com, allowing data entry through forms and template CSV file and smart meter data access for Octopus customers. API is a RESTful web service which uses 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	

Contact

For more information about SmartHTC please contact Build Test Solutions using the details provided:

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www.buildtestsolutions.com

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