AIREX

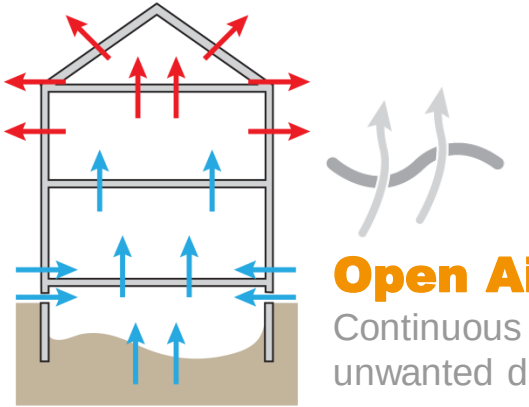
Identified challenges

Climate change

Poorly insulated homes contribute to **26%** of UK's greenhouse gas emissions.

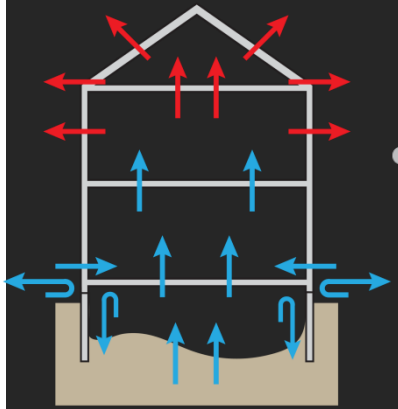
Identified challenges

Thermal Efficiency & Ventilation



Open Air vents

Continuous airflow creates unwanted draughts



Blocked Air vents

Blocked air vents cause mould & damp problems

10-15%

heat loss from vents

34,000 GWh/yr

Energy waste

£3000 cost[1]

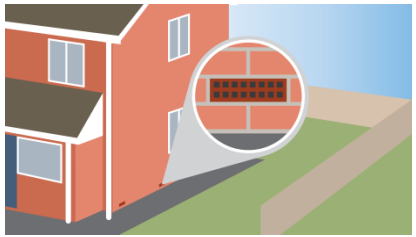
To repair damp damage (1) BRE, 2014

15.9%

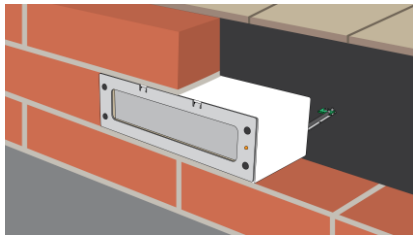
of UK homes have damp problems

Intelligent Air Brick

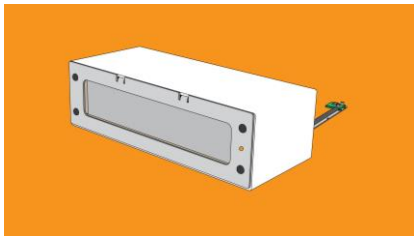
Balancing thermal efficiency with air exchange



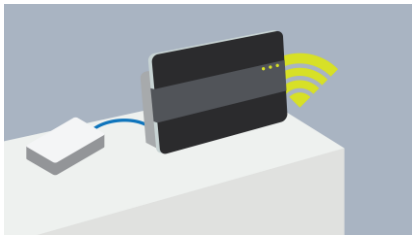
Retro-fit replacement of existing air bricks (sub-floor or room level air vents).



Each AirEx has **in-built sensors to monitor the environmental conditions** of the property.



With in-built **algorithms** responding to these conditions, to **regulate air flow**.



Property data is recorded via the AirEx hub and then sent to the Landlord.

When CLOSED

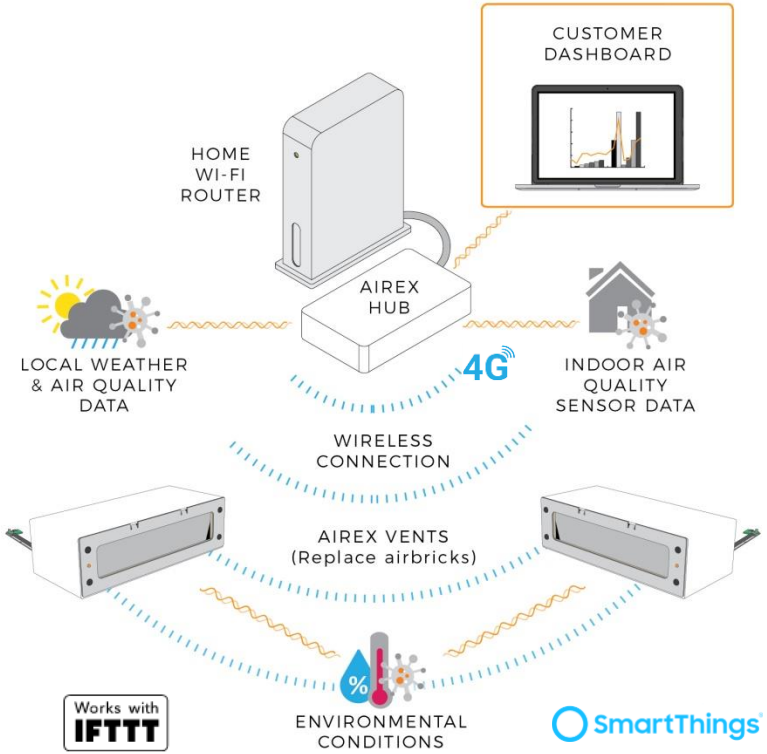
- Maintains thermal comfort
- Saves utility costs

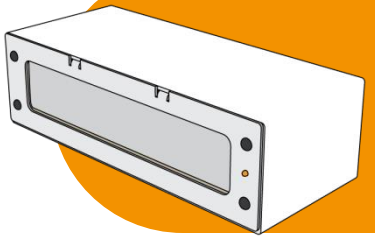
When OPEN

- Ensures good air quality
- Assists in prevention of damp & mould

How it works

The underlying technology





AirEx's smart algorithms automatically regulate the air flow based on:

Temperature **Humidity** **Air quality**

Property suitability

AirEx / Airoom

AirEx

Sub-floor level Smart Airbrick

Age	Pre 1920s	Pre 1950s
External wall type	Solid	Cavity
Floor type	Suspended ground floor	

Airoom

Room level Smart Airbrick

Age	Pre 1930s	1950 – 80s
External wall type	Solid	Cavity
Height	Low rise	Low & High rise

Independent academic validation

4 independent validations

The University Of Sheffield. — 2017

University of Salford MANCHESTER — 2018

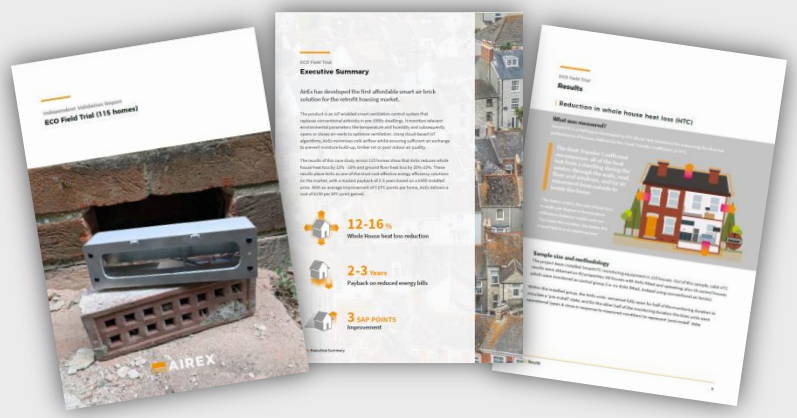
ENGIE by people for people — 2019

bre ofgem — 2020

115 properties

GAS	South	Midlands	Scotland
Annual savings in £	£70.10	£76.10	£88.00
Lifetime Bill Savings (LBS) score	£1,699.20	£1,845.60	£2,134.90

ELECTRIC	South	Midlands	Scotland
Annual savings in £	£177.30	£192.60	£222.80
Lifetime Bill Savings (LBS) score	£4,299.70	£4,670.10	£5,402.20



12%
Whole house Heat loss reduction

20–23%
Ground floor U-value reduction

9%
Air tightness Improvement

Low Capex, Attractive Payback

Comparison with alternative energy efficiency solutions

		Capital Costs	Annual fuel bill savings	Payback	Market penetration
Low Capex, Attractive Payback	Loft insulation	£300	£150/year	2 years	90%
	Cavity wall insulation	£600	£200/year	3 years	70%
	AirEx	£350	£120/year	2-3 years	0%
High Capex, Unattractive Payback	External wall insulation	£15,000	£270/year	55 years	20%
	Internal wall insulation	£9,000	£270/year	33 years	10%
	Double glazing	£8,000	£120/year	66 years	70%
	Traditional floor insulation	£4,000	£200/year	40 years	50%

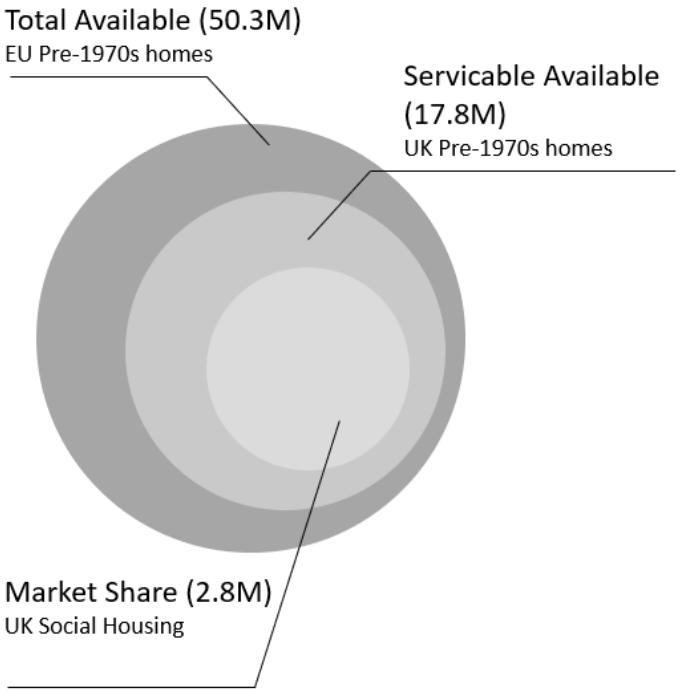
2-3 EPC points/home

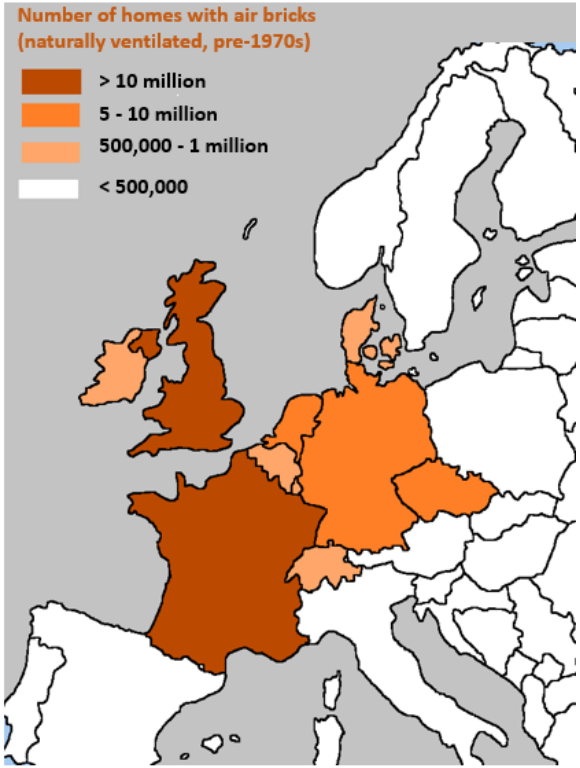
AirEx delivers a cost of £150-£225 per EPC point gained.

Low cost measures > saturated market
Disruptive measures > stagnant market

Market potential

£22.6bn market opportunity (Europe)





Simple, quick, hassle-free installation

External installation, not requiring electrical works

Remove (air)bricks

Mortar in channel

Start & install AirEx

Clip on fascia

Simple, quick, hassle-free installation

Simple pairing process, LED light feedback

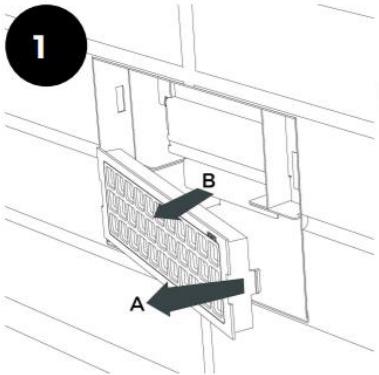
LED Colour	LED behaviour	Diagnostic Information
🟢	Solid light	Hub successfully start-up and connected to the internet
🟣	Solid light	Comms error - check enclosure position and active hub
🟠	Solid light	Vent error - check door & hard reset vent unit
🔴	Solid light	Critical Vent error - requires vent replacement

Easy maintenance

Simple, quick battery-change procedure to be done in every 3-5 years

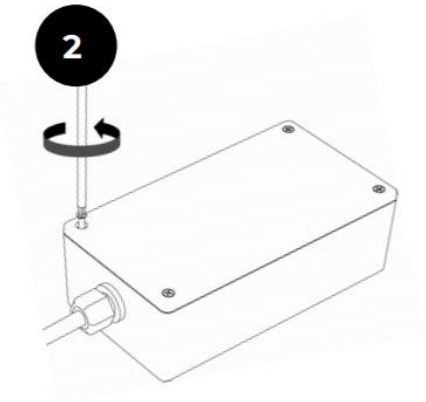
Battery replacement procedure

AIREX



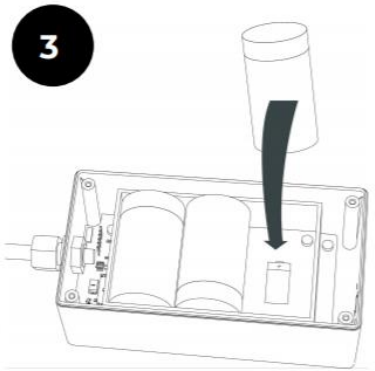
Remove grille & airbrick

Unclip the grille by depressing the edge snap clips (A). The airbrick and battery enclosure can then be slid out from the wall adaptor (B) in the external wall.



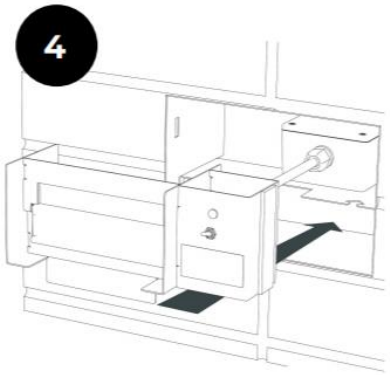
Remove enclosure lid

The lid is removed by secured with 4 screws. These should be removed to access the battery compartment.



Replace batteries

Remove 3x alkaline D cells, and replace carefully, following the battery polarities indicated on the battery clip.



Replace lid & airbrick

Replace the 4 screws from step (2) to secure the enclosure lid. Replace the airbrick unit into the wall adaptor and click grille into position.

Resident benefits

WARMER HOMES

Improves thermal efficiency, so rooms warm up faster

IMPROVED COMFORT

Excludes unwanted draughts, improving airtightness and occupant's thermal comfort

HEALTHY HOMES

Ensures good air quality, mitigating condensation, timber rot & mould risk

LOWER ENERGY BILLS

Helps householders save on heating bills by using 10-15% less energy

Landlord benefits

STRATEGIC ALIGNMENT

Carbon Reduction & Fuel Poverty targets (EPC, ECO)

MAINTENANCE COST REDUCTION

real time data allows preventative maintenance

FUTURE PROOFING

Cases Pro Active / Reactive

MINIMAL DISRUPTION

Quick, non-disruptive install, taking only a couple of hours to replace existing bricks

Our Partners

Our Clients

Our research partners

“

AirEx is a cheap, simple product that can be easily installed in people’s homes, so it’s brilliant to see such positive results from the trial.

Traditional airbricks are commonplace in homes across Britain and while the upfront cost to install is cheap, they could be costing households more in the long-run thanks to internal heat escaping.

This simple innovation could really make a long-term difference by improving energy efficiency and subsequently reducing vulnerable customers’ bills.

We’re proud that we’re able to support the development of innovations such as AirEx, that can deliver more sustainable ways for customers heat their homes, as we move closer towards Britain’s Net Zero targets.

Paul Howell,
Senior Manager of ECO, EDF

“

AirEx provided to be a cost effective solution that can be installed with next to no disruption to residents and we were incredibly pleased about the trial results.

We continue to support and encourage the development of innovative technologies to help the uptake of energy efficiency measures within the UK housing sector, especially those more susceptible to fuel poverty through having low income.

Andrew Waggott,
Energy Services Team Manager,
Portsmouth City Council

“

The judges were left impressed by the company’s smart ventilation system and its ability to bring energy-saving and health benefits while also helping to tackle fuel poverty.

Judging Panel
Business Green Technology Awards

“

Replace traditional air-bricks with AirEx smart bricks which close the floor cavity on icy days to stop the cold coming in from below.

The Sunday Times