

In-situ wall u-value
measurement (EWI)

GDR
SURVEYORS

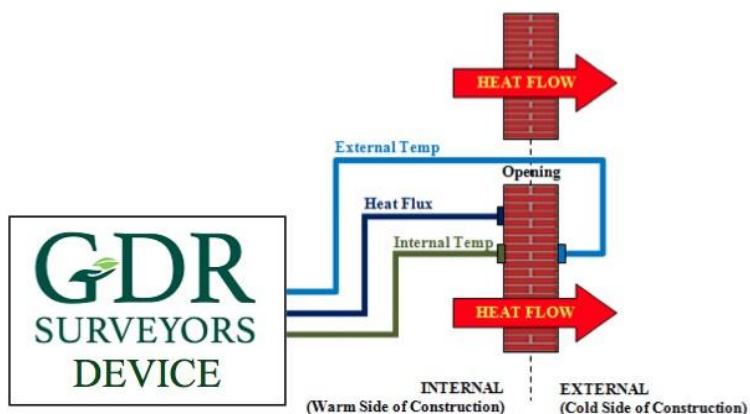
Scheme Appraisal

- Asset data appraisal – external checking for existing EWI and unsuitable/non-qualifying properties for ECO funding & Solid Wall Minima
- SWIGA Technical Survey (measured survey with contentious items taken, which allows the quantity surveyor to accurately cost the scheme)
- Construction Analysis (elemental breakdown of the wall construction) & internal finishing inspection

In-Situ U-Value

- BRE approved equipment & methodology for calculating wall U-Value (Audited to ISO9869:1994 Thermal insulation, Building elements, In-situ measurement of thermal resistance and thermal transmittance)
- Removing the performance gap by providing actual wall U-Value
- Overwriting default U-Value in RdSAP & Issuing U-Value certificate
- Potential increased carbon savings using In-Situ (>40% in some cases) compared to RdSAP and SAP

GDR In-Situ Measurement Device



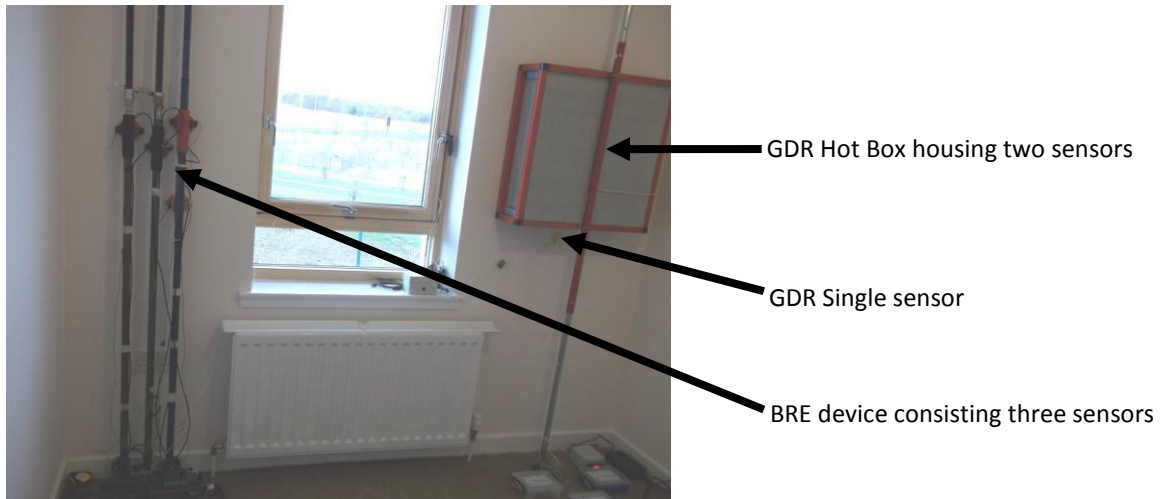
- 20 mins to install, 5 mins to remove
- Sensors fixed with non-marking tape and thermal paste
- 72 hour* continuous measurement
- Hot box for unheated seasons only
- Flexible sensors for rough, shaped and uneven walls

BRE Approved In-Situ sampling methodology

Scheme Example Breakdown

Wall Type	Total No Wall Type	Min 10% Sample Measurement Requirement	Archetype / Build Form Type	Minimum No In-Situ Measurements
Solid	500	50	House	10
			Semi-Detached	10
			End Terrace	10
			Mid Terrace	10
			Flat	10
			Multi	10
Total In-Situ Measurements Required for Scheme				60

GDR In-Situ & In-Situ 'HotBox' installed at BRE Ravenscraig (BRE device LHS, GDR device RHS)



Energy Performance Certificate (EPC)

- Certificate recommending energy saving measures based on an assessment of the property

Carbon Modelling

- RdSAP (using EPC default values to calculate carbon savings)
- SAP (using wall elemental breakdown to calculate carbon savings)
- In-Situ (in-situ device fitted to a sample of the schemes properties for a continuous period of 72hours to produce the dynamic u-value of the wall and associated carbon savings)
- Report showing the comparison of each method, highlighting carbon savings yield

Example – External wall construction (20mm render, 340mm brick, 20mm dry lined); fitted with Wetherby 90mm Epsitherm board and render

Option 1- RdSAP default pre and post								Benefit of In-situ			
Property	Archetype	Default U Value (Pre)	Default U Value (Post)	Annual TC02 Pre	Annual TC02 Post	Annual TC02	Lifetime TC02	Property	In-Situ % Carbon increase compared to RdSAP	In-Situ % Carbon increase compared to OCDEA SAP	
1 Baron Road	ETF	1.55	0.35	3.233	2.483	0.75	16.4839	1 Baron Road	41.33	47.22	
Flat 0/1, 2 Barron Road	ETF	1.55	0.35	2.802	2.407	0.395	8.68131	Flat 0/1, 2 Barron Road	44.05	50.93	
Flat 1/2, 2 Barron Road	MTF	1.55	0.35	5.009	4.558	0.451	9.912078	Flat 1/2, 2 Barron Road	47.23	54.78	
1 Cluney Drive	SDF	1.55	0.35	3.334	2.497	0.837	18.39559	1 Cluney Drive	43.97	46.77	
14 Cluney Drive	ETF	1.55	0.35	3.007	2.115	0.892	19.60438	14 Cluney Drive	40.25	45.80	
Flat 0-2, 49 Cluney Drive	SDF	1.55	0.35	2.724	2.263	0.461	10.13186	Flat 0-2, 49 Cluney Drive	36.23	30.56	
2 Mote Hill Road	SDF	1.55	0.35	3.875	2.912	0.963	21.16483	2 Mote Hill Road	40.71	64.04	
21 Mote Hill Road	ETF	1.55	0.35	3.343	2.54	0.803	17.64833	21 Mote Hill Road	41.84	47.73	
Option 2- In-situ pre and post								Lifetime TC02 Benefit of In-situ			
Property	Archetype	In Situ U Value (Pre)	In situ U Value (Post)	Annual TC02 Pre	Annual TC02 Post	Annual TC02	Lifetime TC02	Property	In-Situ TC02 increase compared to RDSAP	In-Situ TC02 increase compared to OCDEA	Price per TC02?
1 Baron Road	ETF	2.38	0.6	3.707	2.647	1.06	23.29668	1 Baron Road	6.81	7.47	?
Flat 0/1, 2 Barron Road	ETF	2.38	0.6	3.061	2.492	0.569	12.50548	Flat 0/1, 2 Barron Road	3.82	4.22	?
Flat 1/2, 2 Barron Road	MTF	2.38	0.6	5.317	4.653	0.664	14.59339	Flat 1/2, 2 Barron Road	4.68	5.16	?
1 Cluney Drive	SDF	2.38	0.6	3.872	2.667	1.205	26.48349	1 Cluney Drive	8.09	8.44	?
14 Cluney Drive	ETF	2.38	0.6	3.562	2.311	1.251	27.49448	14 Cluney Drive	7.89	8.64	?
Flat 0-2, 49 Cluney Drive	SDF	2.38	0.6	2.99	2.362	0.628	13.80218	Flat 0-2, 49 Cluney Drive	3.67	3.23	?
2 Mote Hill Road	SDF	2.38	0.6	4.477	3.122	1.355	29.78019	2 Mote Hill Road	8.62	11.63	?
21 Mote Hill Road	ETF	2.38	0.6	3.854	2.715	1.139	25.03294	21 Mote Hill Road	7.38	8.09	?
Option 3 - Manual OCDEA pre and post								Average			
Property	Archetype	OCDEA U Value (Pre)	OCDEA U Value (Post)	Annual TC02 Pre	Annual TC02 Post	Annual TC02	Lifetime TC02	Average			
1 Baron Road	ETF	1.41	0.27	3.15	2.43	0.72	15.82416	Average % gain			
Flat 0/1, 2 Barron Road	ETF	1.41	0.27	2.757	2.38	0.377	8.285706	Average % gain			
Flat 1/2, 2 Barron Road	MTF	1.41	0.27	4.957	4.528	0.429	9.428562	Average % gain			
1 Cluney Drive	SDF	1.41	0.27	3.239	2.418	0.821	18.04394	Average % gain			
14 Cluney Drive	ETF	1.41	0.27	2.909	2.051	0.858	18.85712	Average % gain			
Flat 0-2, 49 Cluney Drive	SDF	1.41	0.27	2.672	2.191	0.481	10.57142	Average % gain			
2 Mote Hill Road	SDF	1.41	0.27	3.769	2.943	0.826	18.15383	Average % gain			
21 Mote Hill Road	ETF	1.41	0.27	3.254	2.483	0.771	16.94504	Average % gain			

Chartered Surveyors Report

- Recommended measures signed off by a chartered surveyor

Moisture Testing

- Indication of potential damp that might result in failing EWI
- Calcium Carbide & Hygroscope

Design / Suitability Indemnity Insurance

- Insurance to indemnify the suitability of the substrate prior to EWI being installed
- Specialist professional indemnity policy limit of £5,000,000

Thermography

- Defect indication & analysis report
- Quality assurance report
- Pre/Post install performance analysis