

Brown Thomas, Patrick Street Store, Cork

Energy Optimisation of HVAC and Building Controls Systems



Brown Thomas, situated in the heart of Cork City, is a high-end department store catering to a large clientele. The building has four floors, three of which are open to customers, with a total sales floor area of roughly 5,300 m².

Project Funding: The Energy Efficiency works in BT Cork were funded jointly by Sirius Group and SEAI. Brown Thomas incurred zero upfront costs, nor any risk. The initial 20% of the total project capital cost was provided by SEAI under the Better Energy Workplace (BEW) Programme 2012. The remaining 80% of funds were provided by Sirius under an ESCO type contract.

Project Works: The building is presently served with conditioned air from five roof mounted air handling units (AHU). Originally, the AHU were operating at fixed volume airflow during store opening hours. The total AHU motor electrical load is 129kW. In addition, there are two chillers providing CHW to AHU cooling coils which have a combined electrical load of over 250kW, which includes the associated pumping loads.

The average daily HVAC electrical load, prior to project implementation, was approximately 1,500 kWh. Since implementation of the efficiency programme in late November 2012, the average daily HVAC load has been reduced to 484 kWh, resulting in an average daily saving in the region of 1,000 kWh per day.

“Sirus energy Team achieves energy savings of 190,000 kWh and avoids almost 100 tonnes of CO₂, in 6 months since project completion...”

The BMS optimisation of the HVAC system prioritises free cooling and utilises a temperature dead band to achieve significant energy savings from reduced fan power and chilling power.

Total Energy Savings

Total electrical energy savings of 910MWh were achieved over the three duration of the Energy Optimisation project in Brown Thomas Cork. These energy savings have removed 445 tonnes of carbon emissions from the environment.

	Benchmark	2013	2014	2015
Jan	153,424	122,306	126,698	122,611
Feb	142,938	112,714	107,922	114,939
Mar	155,005	135,767	123,312	139,478
Apr	147,004	118,588	129,513	162,336
May	163,204	130,198	143,533	168,666
Jun	178,102	150,438	160,308	160,099
Jul	185,050	202,196	173,240	176,869
Aug	192,381	172,415	172,017	155,513
Sep	170,333	146,535	155,117	136,253
Oct	176,562	153,374	133,855	135,122
Nov	156,280	121,177	121,514	130,029
Dec	142,952	129,722	131,491	128,496
Totals	1,963,235	1,695,429	1,678,521	1,730,410

Building Energy Solutions

Cork | Dublin | London

www.sirusinternational.com

FINAL CLIENT

Brown Thomas

LOCATION

Patrick Street Store, Cork, Ireland

SERVICES PROVIDED

Initial Energy review;
Energy consumption analysis;
BMS optimization;
Modifications of HVAC;
Installation of sub-metering;
Re-commissioning.

ADDITIONAL FUNDING

SEAI – BEW Grant Programme

DURATION

2012 to 2015

REFERENCE CONTACT

Mr. Bernard Fagan
Facilities and Estate Manager
Tel: On request

PARTNERS

SEAI

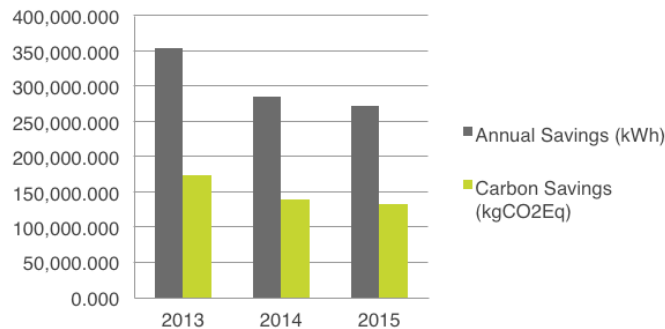
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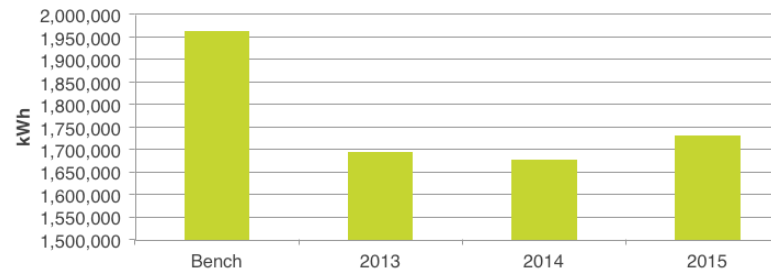
	Energy Savings (kWh)	Carbon Savings (kgCO2Eq)
2013	353,856.370	172,894.222
2014	284,713.990	139,111.256
2015	272,381.156	133,085.433

Annual Savings

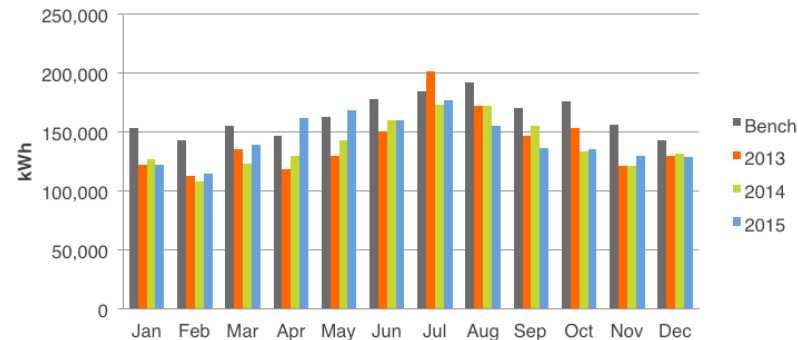


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Annual Energy Consumption



Monthly Energy Consumption



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