Project ID	DIP092		
Long Title	Smart Home BRE		
Short Title	BRE_SmartH		
Keywords	Site; Domestic; Electricity; Heat; Solar PV; Solar Thermal; Heat Pumps; Thermal Storage; Smart Devices;		
Location (Town, Region, Country)	Watford	Hertfordshire	England
Latitude and Longitude	51.70N	0.37W	
OSGB code	TL 125 013		
Status	Complete		
Start Date	2012		
End Date	2013		
Description	In 1998, BRE and partners created the highly innovative Integer House. It had one of the first green roofs, an early photovoltaic array, greywater recycling system, and a ground source heat pump and prototype intelligent electronics. The house has undergone an extensive retrofit. Now called The Smart Home. Through a joint BRE and British Gas project, it has been re-equipped with a host of ultra-energy-efficient features and functions, making it super fit for the future. Using cutting-edge technology, design and building techniques, the innovative retrofit has made the house 50% more energy efficient and halved its carbon emissions, upgrading it from an E to an A/B EPC rating. An intelligent, whole house living system with occupation sensors for a range of purposes controls the heating, lighting, ventilation, water and security. The latest air source heat pump technology has been integrated to provide heating via app-enabled advanced controls, and improvements have been made to the solar thermal water heating and air tightness. The house has a new-to-market solar thermal system, and an integrated PV array has been installed into the conservatory glazing to generate most of the home's energy requirements and shade clear glass against excess heat. Innovative 3 mm thick insulating plaster has been applied finished in heat-reflective paint to improve thermal performance, whilst paint with light-reflective particles on the internal walls dramatically increases brightness and reduces lighting needs. To counteract upper floor overheating, Phase Change Material (PCM) has been incorporated into the upper floor walls. Ducted skirting, reclaimed timber floors and an FSC certified kitchen have been fitted, and doors and windows have been replaced with the latest uPVC double glazing incorporating recycled uPVC. The very latest Velux windows have been installed, and the front door showcases new generation electronic locking, including a car style remote key.		
Sectors	Domestic		

Funding Sources	Undefined
Budget £	Undefined
Partners	BRE Trust, British Gas
Energy vectors	Electricity, Heat
Scale (lab/site/ small/community/region/national)	Site
Technologies demonstrated	Smart controls, thermal storage, heat pumps, solar PV, smart appliances, low energy buildings, solar thermal
Economic models demonstrated	
Other concepts demonstrated	Low carbon retrofit, energy efficiency retrofit
Industry engagement	Industry led
Consumer engagement	
Project Reports (incl. links)	
Datasets (incl. links)	
Website/social media	https://bregroup.com/ipark/parks/england/buildings/smart-home/
Information sources	As above