

# SPECIFIC INNOVATION & KNOWLEDGE CENTRE



Swansea University  
Prifysgol Abertawe

College of Engineering  
Coleg Peirianeg



*SPECIFIC's vision is a world in which buildings can generate, store and release their own heat and electricity from solar energy.*

## Summary

Buildings account for around 40% of UK energy consumption and carbon emissions. SPECIFIC aims to address this challenge by developing building-integrated energy technologies that generate, store and release heat and electricity.

The technologies work together in one integrated system in a building design concept called 'Active Buildings', which captures heat and electricity from the sun and stores it in the building until it is needed. The technologies are designed to work in harmony with each other and the wider energy system.

SPECIFIC works at all levels from fundamental science through to full-scale building demonstration. The centre also works closely with industry and businesses to promote early commercialisation of new technologies.

It does this by uniting world-class academic and industrial expertise – in the fields of printed photovoltaics; industrial coatings; electrical storage; thermal storage; and building energy systems – with unique pilot manufacturing facilities and business development expertise.



In 2016, the first full scale Active Building, the 'Active Classroom', was constructed at Swansea University. In its first year of operation the building generated 1.5 times the energy it used and proved the design concept in a classroom. Since then, SPECIFIC has built the UK's first energy-positive Active Office at Swansea University. A development of sixteen Active Homes in partnership with Pobl Group, Wales' largest social housing provider, will be opened in 2020.

## Aims

- To develop a range of energy generation and storage technologies from the lab to full-scale products, through pilot manufacturing and building demonstration
- To demonstrate how energy technologies can be combined in one integrated, optimised system in a building
- To investigate the role of buildings in future low-carbon and adaptive energy systems
- To promote early commercialisation of new technologies and systems, by working closely with industry and supporting businesses to innovate

## Funders



Engineering and  
Physical Sciences  
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## Find out more

Website: [specific.eu.com](http://specific.eu.com)

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#ActiveBuildings / #GenerateStoreRelease

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