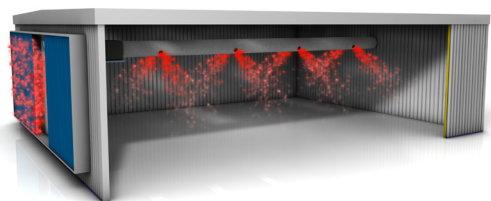


The perforated Transpired Solar Collector (pTSC): SolarWall®



Area Used	595m ²
Energy Saved	99,973 kWh/year
Cost	£46,775
Total Energy Requirement Met	11.38%

The installation of 595m² of SolarWall® will provide 11.38% of the development's total energy demand.

An Independent study to examine the potential for onsite renewable energy generation on a development in Cambridgeshire was undertaken on behalf of South Cambridgeshire District Council. The aim was to reach a renewable energy target of 10% of the total energy demand of a mixed-use development of approximately 13,583m² footprint.

Specific recommendations were made in this study based on the most appropriate and viable technologies to achieve the required level.

Following the Nottingham Declaration on climate change, South Cambridgeshire District Council's goal is for projects to achieve 10% of their total energy consumption from renewable sources. For each project the method of achieving the desired goal of 10% can be a mixture of the various methods available, or choosing a single highly efficient system.

Because of installation costs, equipment costs, and economy of scale, it is almost always more cost-effective to select a single system as opposed to combining several systems. The study concluded that only one system was economically viable and satisfies the 10% onsite renewable energy target for this development: **SolarWall®**.

For further information, please visit our website www.cagroup.ltd.uk

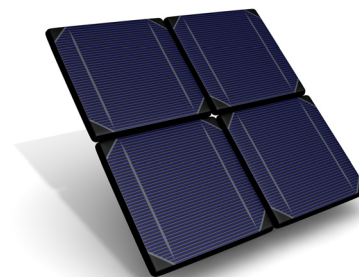
The 10% onsite renewable energy target, based upon energy efficiency measures as required by Part L 2006, is: 87,841 kWh/year. The South Cambridgeshire Development Control Policies DPD (2007) Policy NE/2 states: 'All development proposals greater than 1,000m² or 10 dwellings will include technology for renewable energy to provide at least 10% of their predicted energy requirements, in accordance with Policy NE/2.'

*Full report available on request.

Photovoltaics

Area Used	1172m ²
Energy Saved	87,900 kWh/year
Cost	£1,172,000
Total Energy Requirement Met	10.01%

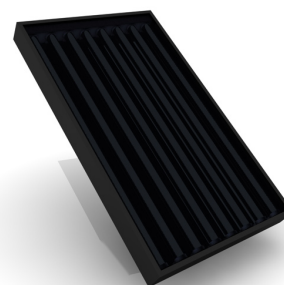
That's over **£1.1 million** pounds to reach a **10%** renewable source.



Solar Thermal (Water) Systems

Area Used	20m ²
Energy Saved	12,353 kWh/year
Cost	Not Stipulated*
Total Energy Requirement Met	1.41%

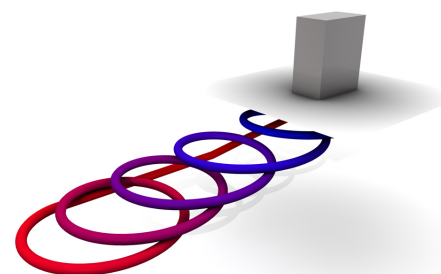
It's a large investment and difficult to calculate the savings.



Ground Source Heat Pump

Area Used	Not Stipulated*
Energy Saved	96,959 kWh/year
Cost	£205,000
Total Energy Requirement Met	11.04%

The underground layout means extra time working round existing pipes and cables



Wind Turbine

Area Used	Not Stipulated*
Energy Saved	89,102 kWh/year
Cost	£138,000
Total Energy Requirement Met	10.14%

Wind turbines can take up large vertical as well as horizontal areas and greatly impact surrounding areas



THE SOLARWALL™

4.3 Potential Contribution of SolarWall™ to typical UK sheds

The following assumptions have been made for this comparison:

SolarWall™ area	1579 m ²
Energy contribution of SolarWall™	153 KWh/m ²
Total contribution of SolarWall™	242,400 KWh

Over year for a 18,500m² shed this equates to 13.1 KWh/m² (Day only)

This would (for a shed size 18,500m² and assuming frost protected at night) make the following contribution to various shed types,

	Total energy consumption (kWh/m ²)	Heating		SolarWall contribution (kWh/m ²)	Approx Heat (%) contribution	% contribution to total energy contribution
		%	kWh/m ²			
Part L	58	32	18	13.1	70	24
Low energy heated	31	25	8	13.1	100	25
Low energy frost	275	2	1	13.1	100	0.5

Table 6:

4.4 Conclusions

The results of this comparison indicate the following:

1. For a Part L compliant shed, that requires (>15°C), the SolarWall™ will make a significant contribution to both the heating and overall energy consumption.

Heating contribution	50-70%
Overall Energy contribution	20%
Merton rule achieved	Yes

2. For a low energy heated shed the SolarWall™ also makes a substantial contribution.

Heating contribution	70-90%
Overall energy contribution	20%
Merton rule achieved	Yes

3. For a frost protected shed, that is well run (doors kept shut in winter), the SolarWall™ will not contribute much to either energy or heating requirement, because the heating loads are so low. The SolarWall™ will NOT take the place of frost protection.

Heating contribution	Unknown
Overall energy contribution	<1%

For a Part L compliant shed, that requires (>15°C), the SolarWall[®] will make a significant contribution to both the heating and overall energy consumption:

- **Heating contribution** 50-70%
- **Overall Energy contribution** 20%
- **Merton rule achieved** Yes

For a copy of the full report, please visit www.cagroup.ltd.uk