

Solar Carports

Powering the UK towards a clean energy future.

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Solar Carports

A solar carport is a dual purpose, stand-alone structure that provides shelter for vehicles, whilst generating clean, renewable energy from the sun. This free electricity can then either be used on-site and (or) used to charge a fleet of electric vehicles.

Solar carports can be installed independently or in conjunction with a roof mounted solar PV system on your main premises. The solar carport is particularly useful for companies exploring solar options without adequate roof space or with roof spaces filled with vents or skylights.

From a dual parking space to an entire commercial car park; a solar carport makes a real statement on sustainability and not only offers the opportunity to charge electric vehicles on-site but to generate an income from low grade parking spaces.

Solar carports can increase land value and create revenue opportunities for site operators from EV charge-points, branding and advertising.



BENEFITS AT A GLANCE

How can solar carports benefit a business?

Increase on-site energy generation

Create additional space for solar and generate an ROI from otherwise unproductive space.

Charge electric vehicles on-site

Option to add electric vehicle charge points now or in the future.

Create a new revenue stream

Bill staff and (or) visitors to charge their electric vehicles on-site.

Make a statement on sustainability

Visibly promote your green initiatives and improve corporate reputation.

Create a superior parking experience

Protect staff, visitors and their vehicles from the elements whilst generating energy on-site.

Aesthetically improve your car park

Transform low grade parking spaces into a vision for the future.

Solar Carport Design

General

EV charging point(s) may be supplied as an option.

LED soffit mounted lighting can be supplied as an option.

Minimum roof eaves height is generally 2.7 metres. Minimum structural clearance height is 2.265 metres. Overall depth of single or double bay carports are generally 100mm to 500mm longer than the standard UK parking bay length of 4.8 metres, but site specific designs based on our standard types will be produced for each individual project.

Column bases are provided with a wraparound rubber buffer strip designed to protect the structure and vehicles from minor impact damage and scrapes.

Solarsense recommend that car park line markings are repainted on completion of the carport installation and consideration is also given to installing height restriction booms and/or safety warning notices to avoid collision damage from tall vehicles.

Steelwork can be finished in standard RAL colours or finished to match corporate colours at additional cost.

Steel Frame

Columns are normally spaced at 7.2 metre centres which equates to three standard UK parking bay widths. Wider or narrower column spacings can be proposed to suit wider parking bays or to avoid underground services such as drains and power cables.

Structural steelwork to be designed to comply with BS5950 and Eurocode 3.

All steelwork to be manufactured to comply with CE marking standards laid out in BS EN 1090 to Exec Class 2; welded, gusseted, plated and bolted in accordance with good practice.

S275 plates to be used for all connections.

Appropriately sized steel rod tie bar cross bracing to be used in single bay or in minimum 1 bay of multi-bay structures.

All structural steelwork to be supplied hot dip galvanised to BS EN ISO 1461 (2009) to 85 micron mean thickness.

Localised damage to galvanised coating that may occur during transportation or erection to be made good using appropriate spray applied zinc rich coating in accordance with DIN EN ISO 2063.

Spun galvanised fixings to be provided for all steelwork connections.

Column Base Foundations

Standard design is for column bases to be bolted to 4No. 75mm diameter Spirafix ground anchors - length to be confirmed after on-site load testing. In poor ground situations in-situ concrete bases can be provided subject to engineers design.

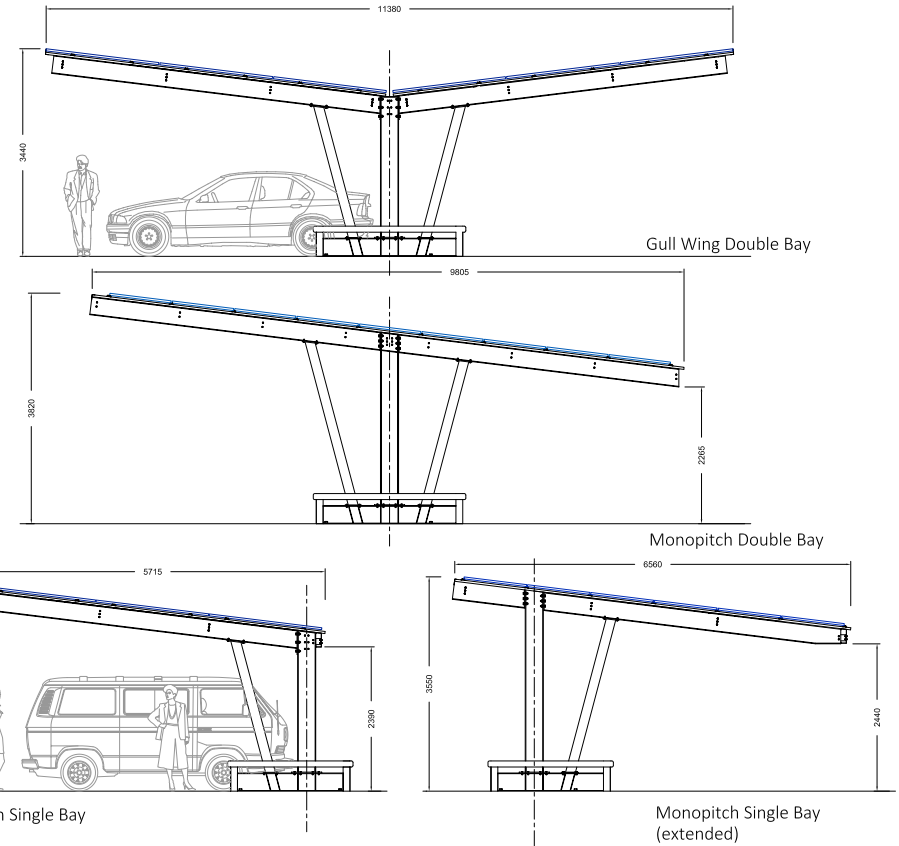
Eaves Beam & Purlins

Cold rolled galvanised steel sections at typical 1800mm centres by Metsec or similar manufacturer to be bolted to structural steel cantilevered roof frames using angle cleats to allow flush top flange alignment.

Roof Cladding

Single skin 1000 / 34 • 0.7mm thick trapezoidal profile plastisol coated galvanised steel sheeting fixed to purlins / eaves beam with self drilling / tapping Austenitic stainless steel fasteners.

Plastisol coated 0.7mm thick galvanised pressed steel flashings to roof verges and top side.



PV System

Canopy roof allows flexibility of panel choice and orientation. Roof slope can be adjusted in length to suit panel availability and specific site characteristics. Overall system size will depend on number of bays and number of carport ranks. Panels are secured to the roof sheeting with the K2 Mini Rail fixing system (or similar).

Array DC string cables will be run under solar panels to a location above one of the support columns where they will be run in a vertical galvanised steel trunking to a column mounted or free standing inverter (depending on overall system size and site specifics).

Rainwater System

Standard design utilises eaves drip rainwater discharge system as approved by Building Regulations.

Gutters and downpipes can be provided as an optional extra but downpipes will need to connect to existing or new surface water drains therefore may not be practical or economic to provide.

Cherwell District Council

Bicester Leisure Centre, Oxfordshire

Technology: Solar carport

System size: 150kWp

Number of PV modules: 400

Annual output: 148,315kWh

Annual CO2 savings: 34,561kg

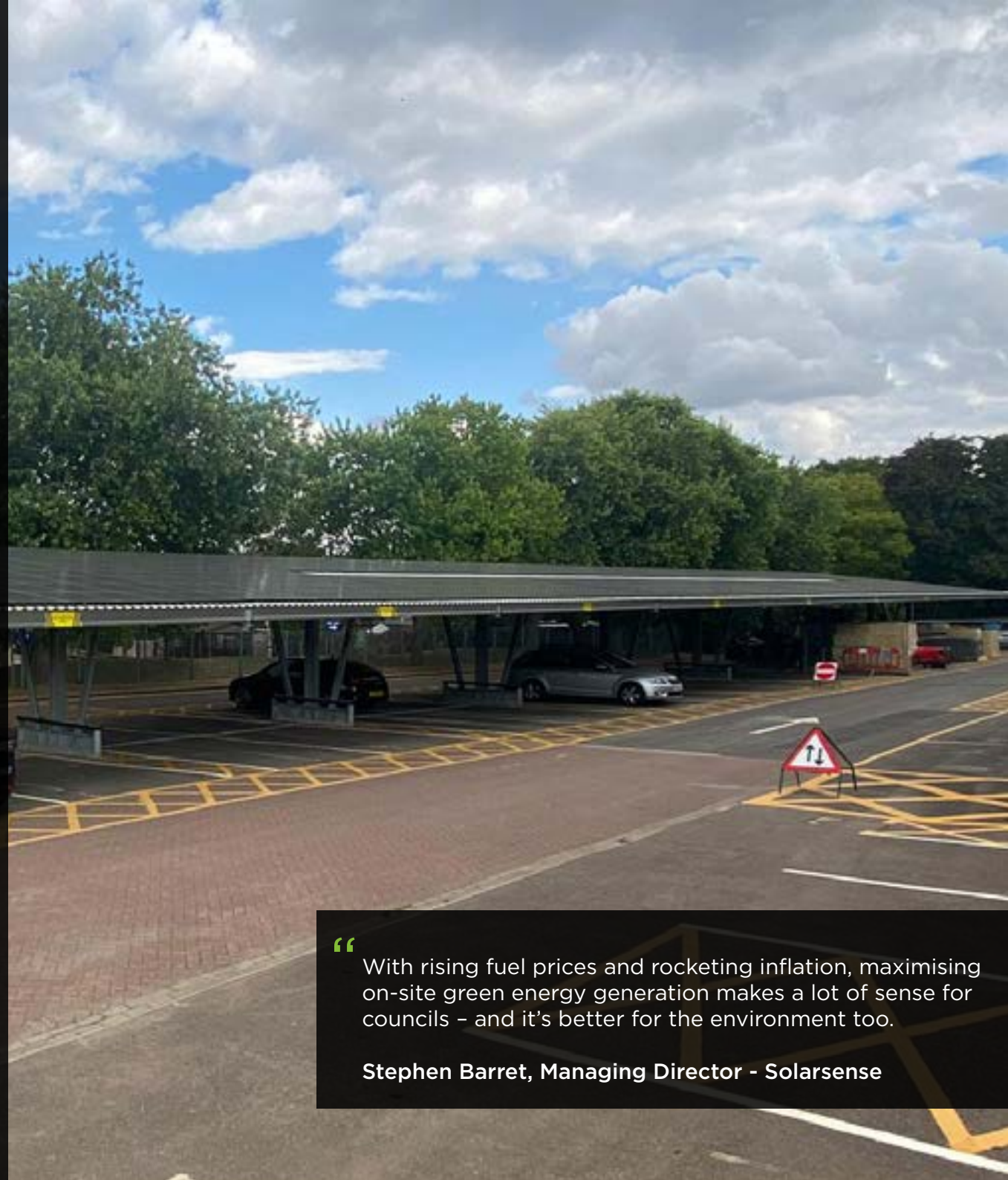
Cherwell District Council invested in a solar carport as part of continued efforts to reduce its carbon footprint.

Solar carports are starting to gain popularity in the UK as organisations which have already used all their existing roof space for solar panels look to increase on-site green energy generation.

The clean energy installation is one of the UK's largest local authority-owned solar carports. Covering around 60 parking spaces, the steel carport structure has been mounted with a series of solar panels, which are expected to generate around 150,000 kWh of green electricity per year, providing around 18% of the total energy demand of the site.

Using solar power will avoid around 34,500kg of CO2 emissions annually – the equivalent to driving more than 85,000 miles. The system is predicted to pay for itself within approximately 10 years.

In the context of rising energy costs and economic uncertainty, the measures will help to ensure the long-term viability of the leisure centre for the benefit of the local community.



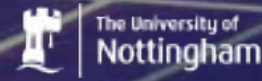
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With rising fuel prices and rocketing inflation, maximising on-site green energy generation makes a lot of sense for councils – and it's better for the environment too.

Stephen Barret, Managing Director - Solarsense

ABOUT SOLARSENSE

Solarsense is a leading player in innovating, supplying, installing and maintaining solar technologies for the commercial, industrial and public sectors.



Wiltshire Council



GET IN TOUCH

To arrange an initial desktop survey please fill out the form on our website or get in touch

We use industry leading software to accurately predict how much solar energy can be generated and used at your specific premises and provide detailed economic efficiency calculations to ensure you understand exactly how and when you can expect to break even, the structure of repayments and the overall profitability for your business in the long term.

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