

Solar trees continue to light the way for a sustainable future

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A family of solar trees on the rooftop Piazza at [Eastgate Shopping Mall](#) has consistently provided a self-powered living space where people gather, night and day, to regroup and relax. It is illuminated proof of how steel and solar engineering can create a better future.



[Macsteel](#) believes in the pursuit of reinvention to create a better world for all.

Every day, new innovations and solutions are being engineered that demonstrate how humankind can adapt nature to our needs, without negatively impacting the world around us. We admire and applaud it.

One such example is the construction of the family of solar trees at Eastgate Shopping Mall. Comprising three elegant yet functional solar trees, constructed from steel, this mini-forest provides efficient and renewable energy while increasing the public's awareness of alternative and responsible energy sources.

When [Liberty Two Degrees](#) (L2D), co-owners of Eastgate Shopping Centre, commissioned architects [Batley Partners](#), to upgrade the rooftop piazza, they didn't know exactly what they wanted, but they knew that they needed to create a space where customers could congregate and relax – a space that was aligned to the company's Sustainable Development goals, as well their 2030 net-zero carbon target. The solar trees at Eastgate are an exciting initiative as Liberty two Degrees aims to implement renewable energy projects throughout our portfolio, while creating sustained value for our stakeholders. This initiative also aims to inspire customers to adopt sustainability practices in their everyday lives", said L2D asset manager, Mike Rodel.





Inspired by the Baines' baobabs in the Botswana Nxai Pan National Park, Batley Partners conceptualised a space designed to uplift the experience of customers through function and aesthetic.

In Africa, baobabs can often be the only trees for miles. Baobabs have drawn people to them for centuries and are known as Africa's tree of life. They are part of Africa's social and storytelling culture and in the same way, these solar trees aim to bring people together to share their stories and enable community-driven experiences.

Whatever the architects dreamt up, the main contractor, [Anchor Engineuity](#) brought to life. The result was a self-reliant, live installation that harnesses the sun during the day through its shade-producing, solar panel 'leaves'.

The tree illuminates the area at night by operating completely off the grid and the night-time lights run off batteries that last for approximately 6 hours.

Creating these immense structures went beyond ensuring they could withstand the conditions they would be exposed to.

Being so large, they had to be constructed off-site in three parts, transported separately, and then assembled at the site. Over 200 people contributed to the successful completion of this project.



The teams involved included, amongst others, [Batley Partners](#) as the architects and [Anchor Enginuity](#) as the main contractor.

“The Eastgate solar tree project is unquestionably one of the most iconic steel structures in South Africa – integrating the steel component with electrical, solar and stainless-steel cladding to create a special and unique world-class structure,” said Andrew Kirkland from Anchor Enginuity.

The aesthetics of the solar trees were inspired by nature but dictated by the scale of the space. They had to be built into a slight unconventional shape not too large and not too small. The decision was also taken to replicate the smallest family unit in nature – three. The father tree stands at 13.5 metres high, the mother tree at 10.5 metres and the child tree at 9 metres high.

To make the trees look as natural as possible, each tree consists of three primary parts, the steel tubular ‘trunk’ and ‘branches’ which allow cables to be run through them without being seen, the stainless steel netting called Jakob Webnet procured in Switzerland, and the solar panel ‘leaves’ that have a life-span of 10 years and can easily be replaced.

“As a sustainable, versatile and strong material, steel is invaluable in a project such as this. Few materials will allow you to recreate nature on this scale, effortlessly and seamlessly providing the strength required for the trunk while allowing for the precision needed for the more delicate replication of the branches and veins of the canopy. ” said Mike Benfield, CEO of Macsteel.

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