

SOLAR TREES

Our building for ST KILDA TRIANGLE is a sculptural work inspired by nature: trees. Our proposal is inspired by biomimicry. It represents several trees whose leaves are other than large solar panels. These panels are inspired by solar ovens. With their parabolic shapes, these panels absorb solar energy and transform it into electrical energy. In addition to the photovoltaic plates they are made of, these panels also heat a network of water pipes circulating beneath them. The water thus heated is transformed into steam. This steam rotates mini-turbines which in turn start up an electric generator.

The book we propose contains:

- premises open to the public and intended to raise the masses' awareness of the interest of renewable energies
- A pipeline network designed to promote heat exchanges between water and photovoltaic panels

Each SOLAR TREE has large photovoltaic panels. We recommended to use panels made with monocrystalline silicon. It has a yield of 14.5%

Each panel measuring about 120 m^2 , we obtain a generated power of 120×0.0145 , or 1.74 kWp. Based on the meteorological documents of the region, we obtain as annual energy produced, a yield of $1.74 \text{ kWp} \times 1500 \text{ kWh} / \text{kWp}$, or 2205 kWh per year.

