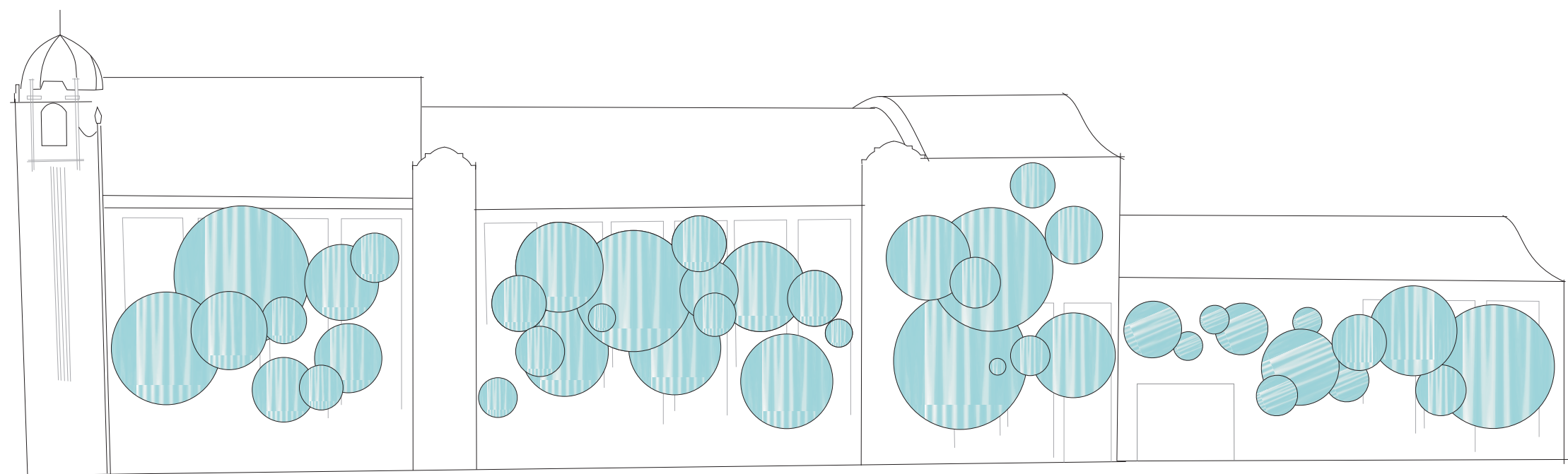


Annual solar energy output

Energy technology: monocrystalline solar panels
Estimated annual capacity: 120-170 Mwh



The wall of Palais Theatre and the envelope building, proposed to be a holder of solar installation, is exposed to the sun during a significantly big part of the day (except morning periods), enabling good harvesting of solar energy.

Solar panels shaped using solar cells into the circles, bracketed together by the fixed frames. The frames are hooked to the wall of the Palais Theatre and the envelope building.

Monocrystalline solar panels have the highest efficiency rates and therefore were selected to described solution.

But still, more detailed consideration and calculation (especially financial ones) should be conducted before making the final decision in this area.

$E = A * e * S * P$

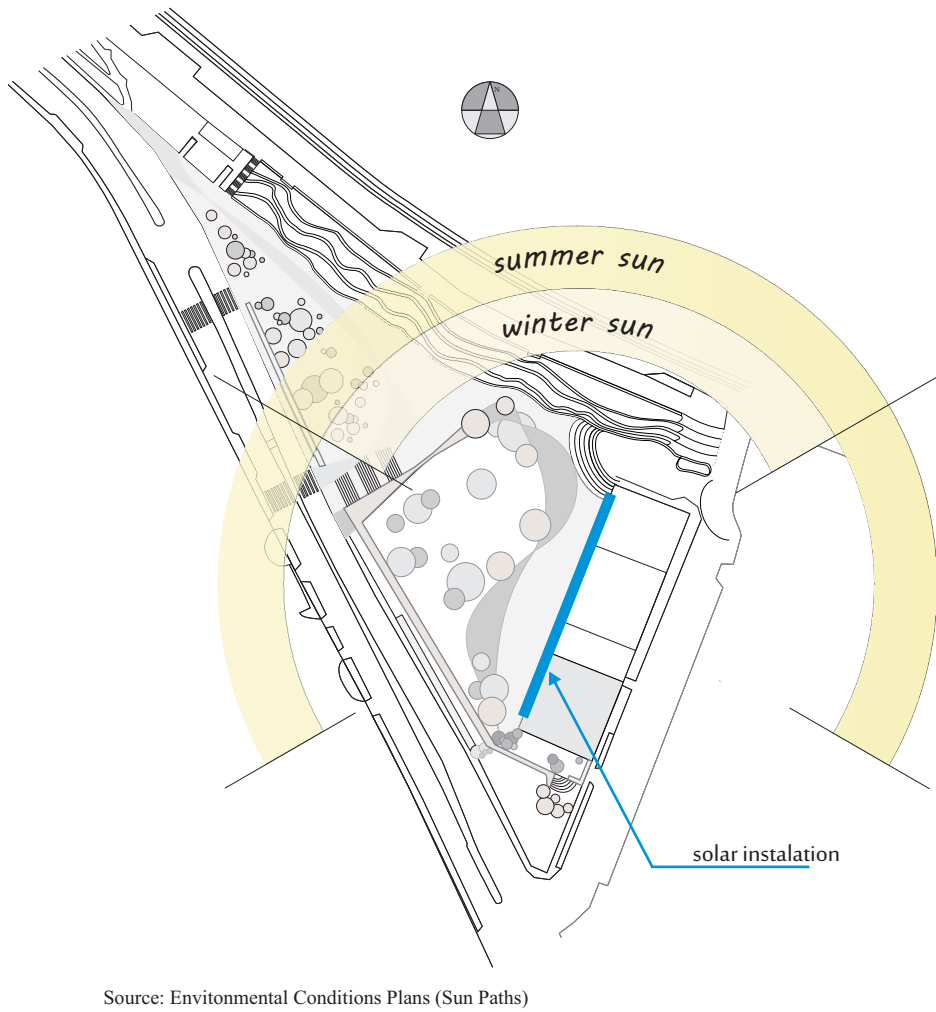
E – energy (kWh)
A – total solar panel area (m²)
e – solar panel efficiency (%)
S – annual average solar radiation (kWh/m²/year)
P – performance ratio

Total area of proposed solar panels is estimated around 600 m².

The value of annual average solar radiation was based on data obtained from NASA Atmospheric Science Data Center.

The efficiency rates of proposed type of solar panels is between 15% and 22% and therefore the value of possible energy output was calculated for this range of values.

The performance ratio, accepted for this solution, is equal to 0,9 due to unfavorable solar exposition.



Source: Environmental Conditions Plans (Sun Paths)

Existing plants growing in area under consideration

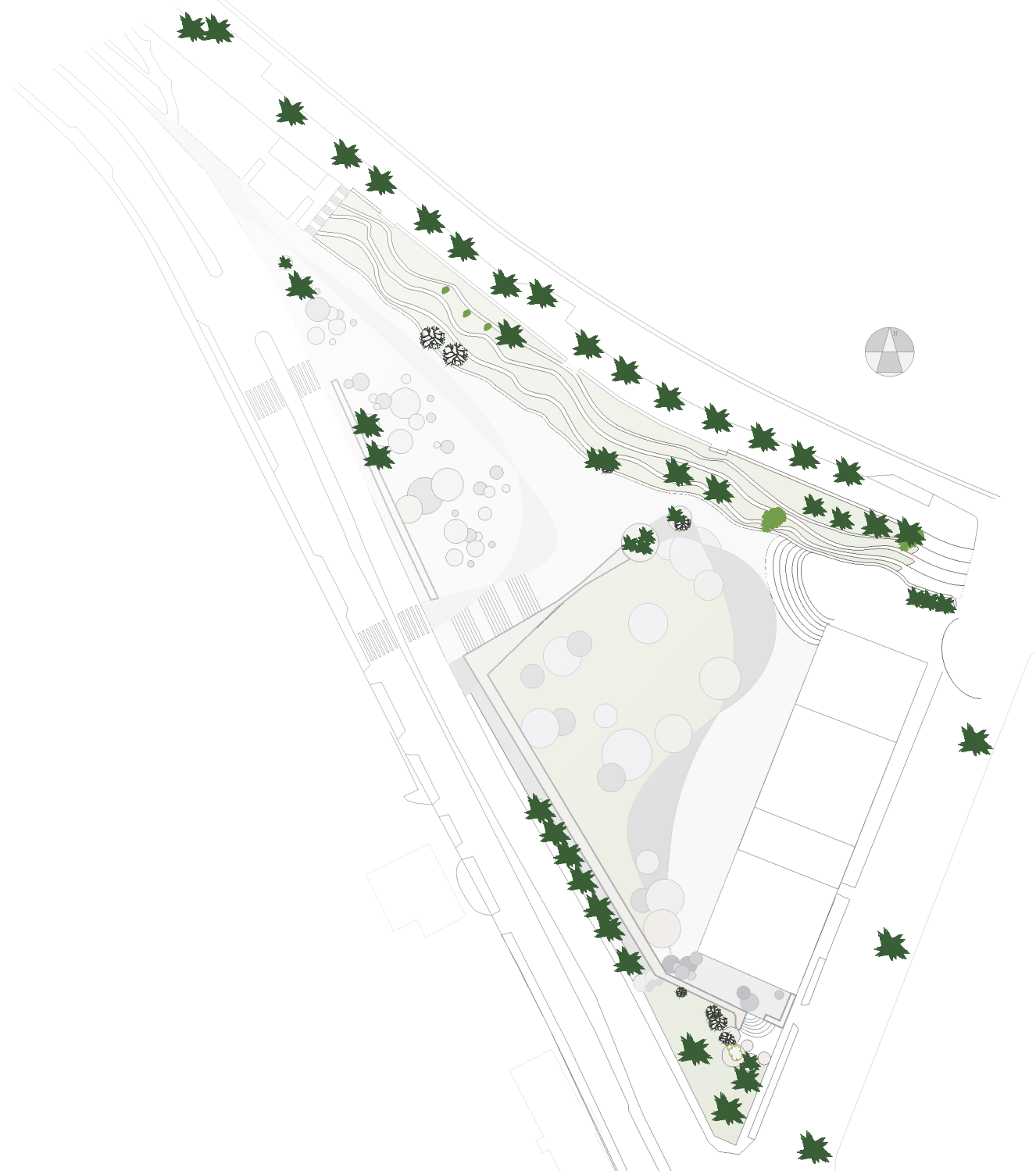
The treasures of St Kilda Triangle are its location, Palais Theatre and palm trees with other existing greenery. Therefore one of assumptions of this project was to maintain these assets in possible unchanged conditions.

Palm trees, which grow on The Esplanade, have at present unfavorable conditions, due to total cover of pavement area by concrete and solid materials. To ensure, that these trees will grow in good conditions still for many years, removing part of pavement close to the base of trunks is proposed.

The same arrangement is proposed for the palms, growing along Jacka Boulevard, which additionally will be in worse cultivation conditions after construction of the underground car park.

Both these lines of trees should obtain high level of care in future to provide joy for all users of this area for a long time.

At the plan on the right, all existing trees are marked. They will stay in the same locations, therefore high care should be provided during construction works to protect them from any damage.



New plants proposed to be added to St Kilda Triangle

All selected species are recommended for urban areas in Australia, some of them are native to Australia, others introduced but still resistant to conditions occurring in this region.

The two following species are proposed for the same location:

Jacaranda mimosifolia (blue jacaranda)
a tree up to a height of 20 m. It is cultivated for its large compound leaves as well as big flowers, grouped in 30 cm panicles, appearing for up to two months.

Lagerstroemia indica (crape myrtle)
A flowering small tree growing to 6 meters and wide spreading.

Washingtonia filifera (desert fan palm)
a very popular ornamental tree, growing to 15–20 m height, having a columnar trunk and fan-shaped leaves.

Lomandra longifolia (basket grass)
perennial, rhizomatous herb, native eastern Australia, with grass-like leaves.

Dianella caerulea (flax lily)
a perennial herb native to Australia and Tasmania, up to a meter high, with blade-like long leaves.

Diets virgata
a perennial herb, up to a meter high, with grass-like long leaves.

Diets grandiflora (large wild iris)
a perennial with blade-like long leaves.

Banksia spinulosa (hairpin banksia)
A small ornamental shrub (up to 2 m), native to Australia, with narrow leaves and very characteristic flower spikes

