

Transpiration Tower

LAGI 2018 - St Kilda Triangle - Victoria - Australia

A techno-botanic installation designed to capture plant evapo-transpiration to desalinate and lift water.

The central 100m high (9m dia) Transpiration Tower forms the focal point of the installation and generates a stack effect that drives the system. At the base of the tower are clustered eleven tapering drum structures (15m dia) of varying heights up to 20m,

The components of the proposal are as follows:

The primary structures for both the tower and drums are based on standard steel elevated water tanks with steel pedestals.

Hooped steel CHS's with an ETFE skin form the enclosure structures.

Parabolic Photovoltaic arrays form the roofs of the water tanks.

Humidity condensing plates and associated refrigeration within the tanks are powered by the PV array.

Vertical vegetated panels radiate out from the drums. These panels are intended to be canvases for local artists to create works using living walls as their palette.

At the base of each structure evaporation basins generate a humid atmosphere and supply irrigation water to the vertical vegetated walls.

Ultraviolet LED grow lights wrap around the inside of the hooped structures.

Elevated walkways allow access through the different drums and connect across Jacka Boulevard within an enclosed footbridge.

