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Summer Solstice and Winter Solstice

(2023)

Mild steel, urethane coated steel, solar lights, Augmented Reality filters.

Each work is a large steel shade awning which uses the solar angle at noon on the summer or winter solstice to cast shadows on the ArtWalk site, and which explore concepts and ideas relating to several different environmental science disciplines, including solar energy engineering, planetary heating and cooling, growth cycles of plants, recent discoveries in biology, and ecological damage.

Summer Solstice casts a shadow on the ground suggesting the phenomenon of 'canopy shyness': the tendency of trees of the same height in a forest to leave space for neighbouring trees. It is an example of co-operation and collaboration in natural systems. The cast shadow-image of the tree canopy will be at its most crisp at noon on 21 December (the summer solstice in the southern hemisphere).

Winter Solstice casts shadows against the wall of stylised subterranean tree roots, the shadows most crisp on 21 June (the winter solstice). Recent research has shown that trees communicate in previously unimagined ways and that their root systems are connected by mycorrhizal fungi in vast underground networks, in which the fungi assist the trees to communicate and exchange nutrients.

Part of each work is an Augmented Reality filter showing a 3-dimensional illusion specific to the artwork: a ghostly forest surrounding the viewer (*Summer Solstice*) and a root and fungal network extending to the viewer's feet showing the speed at which these networks share information (*Winter Solstice*).