



THE PROJECT INCORPORATES THREE PREDOMINANT SOURCES OF ENERGY PRODUCTION, THIS BEING THE PIEZOELECTRIC FLOORS ON THE SURFACES OF THE PLAYING AREAS, SOLAR FILM SUN SHADE CANOPIES, AND AN UNDERGROUND WATER DRAINAGE HYDROELECTRIC TURBINE. THIS PROVIDES THE SITE WITH SEASONAL ENERGY PRODUCTION SOURCES, IN WARMER MONTHS THE PREDOMINANT SOURCE OF ENERGY PRODUCTION WILL COME FROM THE PIEZOELECTRIC FLOORS AND SOLAR SHADES, WHILE IN COLDER WETTER MONTHS THE HYDROELECTRIC TURBINES WILL CREATE A SUBSTANTIAL AMOUNT OF ENERGY FOR THE SITE. THE HYDROELECTRIC TURBINE PLACED UNDER THE CARPARK HAS AN ENERGY CONVERSION FACTOR OF AROUND 90%, MAKING IT AN EXTREMELY EFFICIENT FORM OF ENERGY PRODUCTION. TAKING THE ANNUAL RAINFALL OF ST KILDA INTO CONSIDERATION THE TURBINES COULD PRODUCE CLOSE TO 81 KILOWATT HOURS, ROUGHLY ENOUGH TO SERVE FOR THE ELECTRICITY NEEDS OF 270 OF ST KILDA'S RESIDENTS. THE SUN SHADES ABOVE VIEWING AREAS OF THE SITE ARE COVERED WITH A PHOTOVOLTAIC FILM WHICH CREATES SHADE AS WELL AS HARNESSING ENERGY FROM THE SUN. THESE PHOTOVOLTAIC CELLS IN THE FILM USED CAN CONVERT AS MUCH AS 80% OF THE SUNLIGHT THEY RECEIVE, MEANING OVER THE COURSE OF THE SUMMER MONTHS IN ST KILDA THESE CELLS ON THE SHADES OF THE SITE COULD PRODUCE OVER 900 KILOWATT HOURS OF ELECTRICITY. THIS MAKES THE CELLS A MAJOR PRODUCER OF ENERGY BUT A LIMITED ONE, AS THE MAJORITY OF THE ENERGY IT PRODUCES WILL PREDOMINANTLY COME IN THE SUMMER MONTHS. IN TERMS OF PIEZOELECTRICITY BEING USED IN THE PLAYING COURTS OF THE SITE, IN CONTEXT, ONE PLAYER PLAYING ON THE FUTSAL PRODUCING ANYWHERE FROM 400-500 STEPS DURING THE DURATION OF AN INTENSE FUTSAL GAME COULD PRODUCE AROUND 21 KILOWATTS OF POWER.

SCALE 1:500

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ACTI-SCAPE