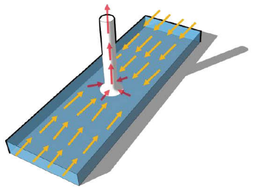
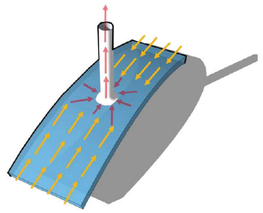
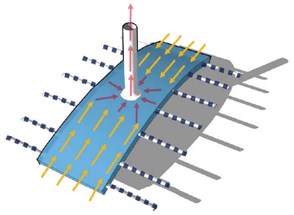


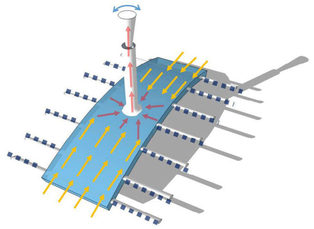
1. SOLAR UPDRAFT EFFECT



2. CURVED BASE TO ENHANCE AIR FLOW



3. WALKABLE SURFACE TO FUNCTION AS A BRIDGE



4. BLADELESS WIND OSCILLATORS ADDS TO ENERGY GENERATION AND VERTICAL DROP AMUNSEMENT RIDE TIES IN WITH THE CONTEXT OF LUNA PARK

SITE PLAN

0 15 45 75

SITE SECTION

0 6 18 30

BLADELESS WIND OSCILLATORS

THE OSCILLATORS AT THE TOP OF TOWER'S WIND TUNNEL GAIN FROM THE **AIRFLOW** COMING FROM IT. ADDITIONALLY, BECAUSE OF THE HEIGHT THEY ARE IDEALLY SITUATED TO MAXIMIZE THE ENERGY PRODUCTION WITH **VORTICITY**, AN **AERODYNAMIC** EFFECT THAT PRODUCES A PATTERN OF SPINNING VORTICES.

VERTICAL DROP AMUSEMENT RIDE

THE INSTALLATION BECOMES DYNAMIC WITH INTEGRATION OF THE VERTICAL DROP **AMUSEMENT RIDE**. THE NATURAL CLIMB OF THE TOWER NECESSARY FOR HARVESTING THE **UPDRAFT ENERGY** IS UTILIZED TO HOST THE RIDE CARS. WITH BALANCED COUNTERWEIGHT DESIGN, THE RIDE WILL USE MINIMAL ENERGY TO OPERATE, BUT WILL ENHANCE THE ST KILDA TRIANGLE'S "**FUN**" IMAGE IN KEEPING WITH THE TRADITION OF **LUNA PARK**.

SOLAR UPDRAFT TOWER

DESIGNED TO EXPLOIT THE AIRFLOW TO HARVEST THE ENERGY, THE SOLAR TOWER IS **CYLINDRICAL**. ITS BASIC FUNCTION IS TO CREATE A WIND TUNNEL WITH **THERMAL HEAT PRINCIPLE**, RESULTING IN **UPDRAFT** AIRFLOW. THE AIRFLOW WILL BE USED FOR THE WIND TURBINE, AND THE BLADELESS OSCILLATOR.

SOLAR UPDRAFT WIND TURBINE

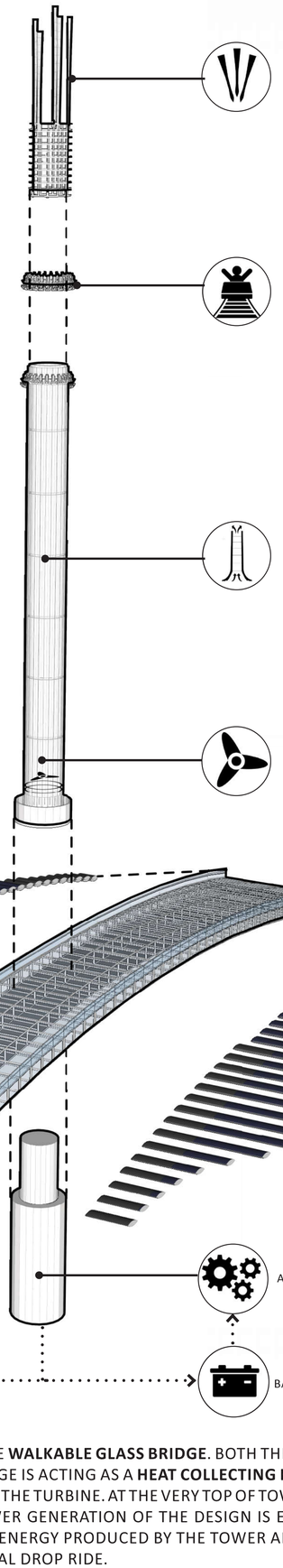
A SUPER-EFFICIENT, **AERODYNAMIC** WIND TURBINE MADE WITH COMPOSITE MATERIALS WILL SPIN TO **CAPTURE THE ENERGY** FROM THE UPDRAFT AIRFLOW IN THE TOWER. THE ENERGY CONVERTED FROM THE **WIND TO ELECTRIC** WITH THE TURBINE WILL BE FED INTO THE UTILITY GRID.

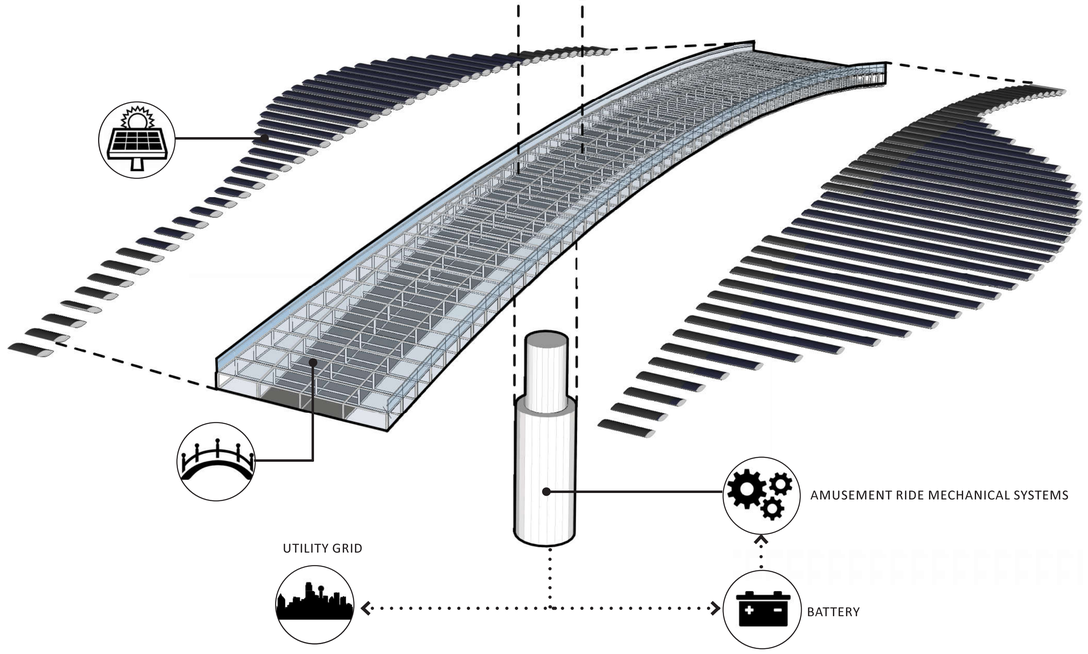
THIN-FILM PHOTOVOLTAIC CELLS

THE THIN-FILM PHOTOVOLTAIC ARRAY IS PERPENDICULAR TO THE DIRECTION OF THE BRIDGE, SEEN AS **HORIZONTAL BLADES**, FACE THE SOUTHERN SKY. THEY INCREASE THE SOLAR COLLECTOR AREA, AND **INCREASE POWER GATHERING CAPACITY**. THE POWER HARVESTED WITH THIS SYSTEM WILL ALSO BE FED BACK INTO THE **UTILITY GRID**.

WALKABLE GLASS BRIDGE / HEAT COLLECTOR

AS PART OF THE INTEGRATED DESIGN, THE SOL TOWER **WALKOVER BRIDGE** IS A **HYPERBOLIC CAVITY** THAT INDUCTS THE THERMAL ENERGY FROM THE LIGHT AND RADIANT HEAT **SPECTRUMS**. THE BOTTOM OF THIS CAVITY HAS **THERMAL STORAGE** DESIGNED TO REJECT HEAT DURING NIGHT TIMES. THEREFORE THE BRIDGE CREATE UPDRAFT CONDITIONS THROUGHOUT THE **24 HOUR CYCLE**.





THE **THIN-FILM PHOTOVOLTAIC CELLS** ARE ARRAYED ON EITHER SIDE OF THE **WALKABLE GLASS BRIDGE**. BOTH THE BRIDGE AND THE CELLS CONVERT THE SAME ENERGY OF SUN INTO **ELECTRICAL POWER**. HOWEVER, THE BRIDGE IS ACTING AS A **HEAT COLLECTING ENCLOSURE**, WHICH HELPS CREATE THE **WIND UPDRAFT** THROUGH THE HOLLOW OF THE SOL TOWER, ROTATING THE TURBINE. AT THE VERY TOP OF TOWER, THE **BLADELESS OSCILLATORS** CAPTURE ENERGY FROM **VIBRATIONS**. THE COLLECTIVE RENEWABLE POWER GENERATION OF THE DESIGN IS ESTIMATED TO BE APPROXIMATELY **260 MWH PER YEAR** AND WILL FEED INTO THE UTILITY GRID. THE ANNUAL ENERGY PRODUCED BY THE TOWER AND BRIDGE STRUCTURE IS ABLE TO PRODUCE THE ANNUAL ENERGY CONSUMPTION REQUIRED BY THE VERTICAL DROP RIDE.