Presentation

LAGI JURY EXAMPLE

land art generator initiative powered by art!

Solar Hourglass by Santiago Muros Cortés
In July of 2014, a jury of 16 professionals representing politicians, architects, designers, engineers, historians, city planners, and artists, reviewed the 25 shortlisted entries to the LAGI 2014 design competition for Copenhagen.

They were asked to consider the selection criteria on the next page.

The design brief called for a three-dimensional sculptural form that presented an interesting concept to visitors that came to see it—a reflection on the local and regional context, energy generation, or the environment. At the same time, the artwork was to use renewable energy technologies to generate clean electricity for the City of Copenhagen. The artwork was to be safe to people and in harmony with the natural world. The design brief asked that the artwork be possible to construct (something that could be engineered and built).

With reference to the Design Brief and to the Jury Criteria, the LAGI 2014 Jury selected their winner: Solar Hourglass by Santiago Muros Cortés.
LAGI 2014 Jury Selection Criteria

The LAGI 2014 jury will make their decisions based on the following criteria:

1. How does the artwork fit into its surroundings? Is the design responding to elements around it such as buildings, landscape, or human culture?

2. Is the design sensitive to nature? Are there any ways in which it might be harmful or beneficial to animals or to the environment?

3. How much clean electricity can be produced by the artwork? (refer back to the Energy Fundamentals activity)

4. How does the artwork address the public? How can people interact with it? Would it be a nice addition to the community?

5. What does the artwork make you think about? Does it provide meaning or ask important questions? Is it beautiful? Poetic?

On the following pages you’ll find the three design boards and the text file exactly as the 2014 winner submitted them. Take a look at the design. Understand the technology, and reference the design brief. Do you agree that Solar Hourglass satisfied all of the criteria? Would you have recommended it if you were a juror? What do you think the design could have done better?
DESIGN BOARD 1

COPENHAGEN’S SOLAR HOUR GLASS

An hourglass to remind us, that as long as we take care of our environment... the energy will never run out.
The project aims to use the solar hourglass as a sustainable energy source. The hourglass is made of solar glass instead of solar panels, which makes it more aesthetic and energy-efficient. The hourglass is carefully positioned so that it captures solar energy as efficiently as possible. The glass is transparent to sunlight and reflective to the surrounding environment. The hourglass is designed to be an eye-catching feature that integrates into the urban landscape.

This way, the project not only converts solar energy into electricity but also adds beauty and value to the area. It promotes a sustainable lifestyle by offering a unique and engaging experience to visitors. By placing the hourglass at the same time as an outstanding platform from which to enjoy the city's skyline and the installation itself.

The glass is designed to reflect the city's heritage and history, creating a unique visual experience for those who visit. Along with the artwork, the hourglass will keep reflecting, giving us a glimpse of the past and making it a memory of hope for a brighter and more sustainable future.
THE SOLAR HOURGLASS

As you are walking along one of Refshaleøen flea markets, you suddenly notice something in the distance, an object that you can clearly recognize. You start to approach it, becoming aware of its massive scale.

You approach the object and now you are absolutely sure... It’s an hourglass. However there’s something particularly different about this one. The majestic hourglass does not appear to be trickling sand or powdered eggshell. Instead, it is glaringly bright there. The light seems to trickle from one bulb to the other. Is it measuring time? Or is it something else?

All over the lower bulb of this hourglass, dozens of people enjoy a summer noon sheltered by the cozy shadow of the upper bulb. Some are having lunch, others chatting, a few others reading. Some of them, lying on the subtle slope of the bulb, are enjoying the incredible views of Copenhagen’s harbor and Yderhavnen. You find the east side being used as seating for people watching an improvised performance by a couple of musicians. It appears as if the hourglass was being host of all sorts of activities.

When you wind your way up and reach the light beam you start to feel some heat. Indeed it is a solar beam, an energy beam that is being reflected by hundreds of small heliostats on top of the upper bulb onto a focal cone shaped mirror that shoots it down the hourglass’s neck.

The effect is just breathtaking. It is a solar hourglass. It’s not measuring time, but instead, producing electricity by capturing solar heat and concentrating it on a receiver to power a turbine.

You’re amazed. This astonishing object is a power plant.
You overhear someone saying that at night, the beam goes off and the skin of OLED (organic light-emitting diode) lights transform the hourglass into a mirrored set of curves planes that float off the edge of Refshaleøen. You just have to stay around to see that.

The project aims to send an optimistic message to those who visit it: that we still have time to make things right with nature.

Solar Hourglass works as a concentrated solar power thermal generator, which consists of an arrangement of small flat mirrors that concentrate their reflection of solar heat onto a cone shaped set of smaller mirrors that concentrate these reflections and shoots them down the neck of the installation.

The concentrated beam of solar heat then reaches a receiver, containing molten nitrate salt heated to temperatures over 600 °C. A heat exchanger turns water into steam to power a turbine generator. A very small percentage of the steam produced is released back to the neck of the hourglass, thus making the solar beam visible to the public. The higher heat capacity of the molten salt, allows the system to continue producing energy for hours after the sun is gone.

ENVIRONMENTAL IMPACT STATEMENT.
All the energy production and transformation components are hidden inside the bottom bulb thus becoming inaccessible for the general public, making it a safe installation.

The Hourglass should account for a 32% capacity factor, and with a diameter of 50m, the 1960sqm parabolic set of heliostats would concentrate enough heat to produce 6.2MW, which would be enough electricity to power 860 homes, or the greater part of Refshaleøen.

The structure is built mainly out of recycled steel and aluminum extrusion.