Baba Yaga in chains

Planet Earth according to Tesla, is a gigantic electrical Generator from which limitless energy can be harnessed using the right medium or shape. One of the tangible forms of this source of energy is the Infinite wind force.

The purpose of design is to use this powerful energy source without old fashioned turbine blades, which has caused death or serious injuries to many birds. The idea is to remove the rotation and replace it with a reciprocating motion inspired by waving leaves in the wind, flying birds, or swimming aquatic creatures. Among the existing structures, the one that most closely resembles living organisms is the Tensegrity, and combining tensegrity and deployable structures is a solution to move in a flow in a way that living organisms do.

The simple act of folding is a technique to increase rigidity and take advantage of the flexibility to create specific motions that can be stable in two positions.

Unlike the turbines in this combination, there is no need for cost. Simple materials such as wood, paper, and rope can be used to build this structure. Also, these materials are all fully recyclable and very environmental-friendly. (Leave No Trace)

This flexible structure is resistant to storms and stays functional at any wind speed. Also, it can shrink like a Seashell and becomes aerodynamically resistant to storms and this shape can be used as a shelter for visitors. It feels like being a little bird and sheltered under the mother's wings

In addition to beauty, constructing, or even designing similar structures with this system by visitors of the site can be the reason for gatherings and interacting. In this way, participants can use what has been previously built, and what they build provides facilities for future users. (This is an unconditional gift-giving)

When the middle sticks are vertical the structure spreads and wind push the sheets down. This rotation shrinks the spring which is attached to the joint. the compliant mechanism using a specific geometry can change the stick angle which is connected to parallel middle stick above it. Their rotation shrinks the structure and the springs can turn it against the wind direction. As the wind can pass through the structure the force exerted by it can lift the kite-like shape sheets.

The amplitude of the structure changes at low and high wind speeds with the stretching and moving center of the support cable.

Two options can be used to work in changing wind direction. One is placing it on a rotating Platform and in another type of design, the structure is fixed and moves in any direction the wind blows. When it blows from both sides, the structure waves with the periodic vortex force like a flag and it’s possible that with this flexible pattern it can work in a turbulent flow.

Translating this idea into a practical solution requires a lot of math, geometry, modeling, and experimentation.

The sheets can be more colorful but to show details, they are white.