



AERIS

Research

A wind turbine is a type of machine that captures and converts the kinetic energy of moving air (wind) into mechanical energy. This mechanical energy can then be used directly for tasks such as pumping water, or it can be converted into electrical energy. The development of wind turbines for practical use dates back to ancient Egypt and has continued through to the present day. Designing an efficient wind turbine requires knowledge of aerodynamics and various fields of engineering in order to achieve maximum power output, energy efficiency, and overall performance. Common English terms for modern wind turbines include *wind turbine*, *wind generator*, *wind power unit (WPU)*, and *wind energy converter*. These differ from older wind-powered machines, which are typically referred to as *windmills*.



กังหันลมเขายายเที่ยง is located on Khao Yai Thiang in Si Khio District, Nakhon Ratchasima Province. It is part of a renewable energy power generation system operated by the Electricity Generating Authority of Thailand. The site belongs to the Lam Ta Khong Jolabha Vadhana Power Plant, which integrates wind energy with a pumped-storage hydropower system. This hybrid system stores water by pumping it to a higher reservoir and releases it to generate electricity during peak demand periods.

Wind power is considered a clean energy source, helping reduce reliance on fossil fuels and lowering greenhouse gas emissions. The first phase of the wind turbine installation began in 2009, with 2 turbines producing a combined capacity of approximately 2.5 megawatts. Later, Phase 2 was expanded between 2016 and 2017, adding 12 more turbines, each with a capacity of about 2 megawatts, increasing the total capacity to around 24 megawatts.

This project is one of Thailand's pilot renewable energy initiatives and serves as a learning center for clean energy technology for students and the general public. It has also become a popular tourist landmark, offering scenic viewpoints overlooking the Lam Ta Khong reservoir from the

Objectives

To design a contemporary, functional bag inspired by Khao Yai Thiang Wind Turbines and the feeling of traveling home, using soft curves and minimal forms.

Designed for urban women aged 22–28, the bag is versatile, practical, and easy to style for everyday use. It reflects confidence, softness, and inner strength in an accessible design.

Concept

The inspiration for this design comes from the journey of traveling back home—passing through tree-lined roads, blue skies, and soft afternoon sunlight in winter. The moment of seeing the Khao Yai Thiang Wind Turbines standing within the natural landscape creates a sense of calmness, cleanliness, and quiet energy.

The slow rotation of the blades in the sunlight reflects how wind is transformed into energy—just like our daily journeys, which may seem simple but help recharge us.

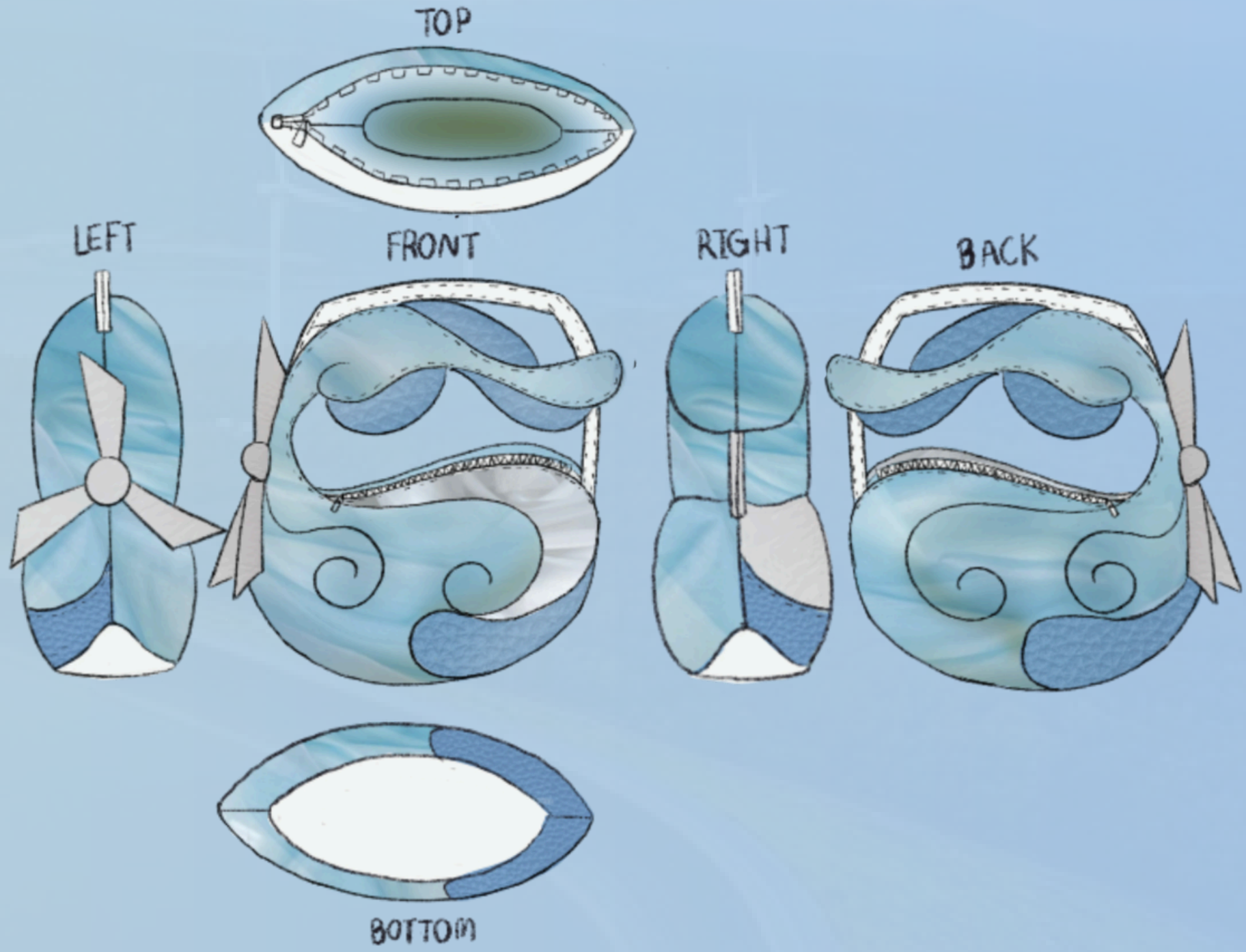
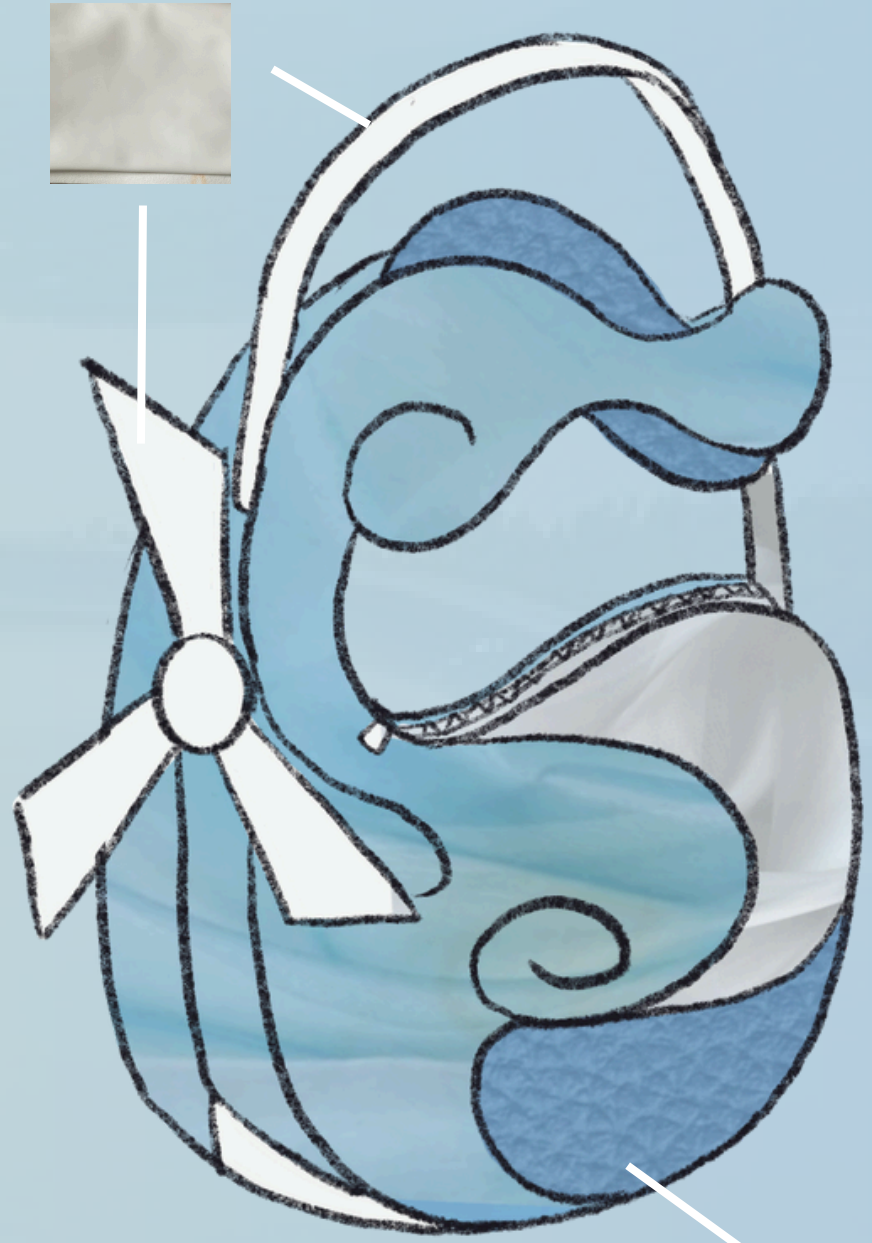
This concept is translated into the design through soft curves and fluid forms, representing movement, lightness, and continuous flow.

Mood&Tone

- **Clean** – represents clean energy, simplicity, and purity in design
- **Movement** – inspired by the rotation of wind turbines and spiral, rhythmic lines
- **Approachable** – paper windmill forms make the design feel friendly, accessible, and



Final sketch



Mock-up



Material



Leather



Texon



Black foam

Technique



Tie & Dye



ruffle

Process



Dyeing leather for lining



Cut foam padding according to the desired pattern.



Layer the glossy leather again according to the bag's shape.



Assemble the windmill by cutting it into three pieces and attaching them to the center axis.



Make the ruffles, attach them to the bag, and sew the zipper onto the lining.



Make the bag strap with a wind-inspired pattern and attach it to the bag, along with the bottom part of the bag and the lining.

Final product



Reference

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