

This store called
debenhams (figure 1)
caught my



**ASSIGN
BUSTER**

This summer while I traveled to London, UK, a type of technology-based art outside a store called Debenhams (Figure 1) caught my eyes and inspired me to create my work of art in this course. 1 This sculpture was created by Ned Kahn, who often creates works that integrate the four natural elements with technology. 3 As seen in Figure 1, the walls of Debenhams use screens to create waves or a ripple effect throughout the screen. For my final project, I have attempted to create a fusion between engineering, science, and art through the medium of a dynamic sculpture titled “ Fluctus per Auras” (Waves by Wind). The basis for my kinetic sculpture is that wind can only be felt and cannot be seen. I wish to use the power of wind to create unique patterns so that viewers can see the wind in a physical shape and form.

Design Process A gold paperboard facade was covered with a “ hook net” structure composed of 420 hinged silver sequins (2 cm diameter), attached to a 45 cm x 56 cm cardboard.

The sequins reveal the patterns of the breeze while they sway in it. These hanging sequin panels are very lightweight and highly responsive to subtle changes in the wind. As seen in Figure 5 which demonstrates the design process, I have used a thin and flexible copper wire to hold each piece of sequin to the cardboard so that it is free to move but still securely hinged to the board using tape.

25 m of 20 gauge artistic wire cables that are spaced every 2. 5cm in distance are attached vertically in rows on the structure. The wire was cut into 5-7 cm pieces and then bent into a hook shape using pliers. The sequins were then attached to the cable, one sequin per wire piece. The overall shape of the hook net is rectangular, 51cm long and 43cm wide. Since the

<https://assignbuster.com/this-store-called-debenhams-figure-1-caught-my/>

dynamic nature of the sculpture cannot be seen at night, I have attached a 5.5 m series of flexible micro LED string lights behind the sequins so that when the sequins move with the wind, the lights underneath can be seen when the lights in the room are turned off. During the day, the sculpture looks like waves of mirror.

At night, the back and forth swinging of the panels reveal the flickering of micro LED lights. Since the sculpture is composed of hundreds of mirrors like sequins, it is intended to suggest that the gold construction paper in the background has been enveloped by a digitized cloud. The optical qualities of the sequin change dramatically with the light and the time of day. The sequins reveal the complex patterns of air turbulence depending on the speed of the air currents. Although this prototype is small, it can be replicated and created on a larger scale to demonstrate the same concept. My artwork aims to dissolve the boundary between the elements of sky, wind, aesthetics, and architecture.

Connection to Engineering and Science The first connection to engineering and science is that the force, speed, direction, and energy of the wind is used to create the patterns of wind on the sculpture. I used mechanical, electrical, and architectural concepts to design and build my project to reveal the surrounding environment. Additionally, if the artwork is placed in front of an object, anything behind the artwork will be cooler in terms of temperature as the metal sequins reflect light and thereby does not let much heat transfer through the sculpture.

From Figure 2, we can see that having a gold background reflects infrared radiation marginally better than silver above $0.8 \mu\text{m}$ while silver, which has the highest light reflectance of any material, reflects the most amount of infrared radiation above $0.4 \mu\text{m}$.

Hence a combination of gold background and silver sequins was used. The lower power consumption by the micro LED lights enables the kinetic sculpture to maintain its presence even at night. In order to show the effect of wind in my artwork, I have used two mini fans that were connected to the USB port of my phone which will generate air currents (Figure 3). Holding the fan at different distances from the artwork can create various wave patterns. There is a very strong connection between waves and wind, which clearly demonstrates how the movement of the sequins mimics waves in the ocean. It is a long studied and well-known fact that an increase in wind speed is proportional to an increase in wave height as seen in figure 4. Similarly, an increase the wind speed from a table fan creates greater turbulence in the sequins and artificially increases the sequin "depth" and movement on the hook.

This was shown in the short video in the presentation. It is challenging to demonstrate this concept well in my small scale artwork as it would take wind speed changes of at least 5 m/s to see a height change on 1m as shown in Figure 4. If the same sculpture was to be created on a much larger scale, it could help lower the temperature within a building by several degrees thereby saving electricity costs related to air conditioning which leads to lower carbon emissions. Connection to Art and Aesthetic Theory This artwork is mimetic in a sense as it aims to recreate waves in the sea on a panel of

<https://assignbuster.com/this-store-called-debenhams-figure-1-caught-my/>

metal sequins instead as described in the paragraph above. This is also a representation of bio art and biomimicry because the design is inspired by nature.

It is integrated with the biological ecosystem around it to produce the kinetic sculpture. However, since nature (wind), itself is part of the design, it can also be categorized as biodesign. 11 This design relates to the theory of “imitation of imitating” as stated by Aristotle in Poetics and Plato in Republic as it supports their aesthetic theory that art is mimetic, it aims to imitate the waves in the ocean while at the same time, it tries to replicate the visual appearance of mirrors through sequins. 8 Similar to Avant-Garde art theory by Clement Greenberg, my work is not meant to be perfect since the hook distances and sizes are different. 10 The sculpture can be Avant-Garde in nature because it can be viewed as “art for art’s sake”; it does not need any justification and is self-contained.

7 Looking at this work of art from another perspective, one could also argue that this sculpture is Kitsch as it can be mass produced using commonly available and inexpensive materials to create multiple such “sequin” tiles”, which can be put together to create an entire building facade. 10 Contrary to Susan Sontag’s theory, this work of art is meant to be interpreted as the design serves a functional purpose as well. We are able to decipher and make sense of the design in context to the environmental problems and societal concerns that it addresses. 9 This project is not a traditional example of artwork but a more modern approach because even though I have designed the facade and artificially aimed to create wave patterns, it is actually nature that is bringing the kinetic sculpture to life and dictating how

<https://assignbuster.com/this-store-called-debenhams-figure-1-caught-my/>

the design is put to use. ConclusionThe confluence of art and science has been of interest to me.

Through this artwork, I wanted to develop a project that was inspired by the movement of fluids, physics, meteorology, and design for the environment. I am more fascinated about creating artworks that capture the “ known mysteries” of the environment around us rather creating altered realities. The “ known mysteries” can help us observe, enhance, and frame our understanding of the natural world. The primary objective of creating this design was observing patterns and recurring themes in nature. I wanted to create a different feeling for the viewer where the typically invisible force of wind is experienced as an immediate effect that could induce a full body experience. It is only later that the viewer realizes that these effects have been artificially created.