

EMOTIONAL FOG

"EMOTIONAL FOG" IS A LIGHT INSTALLATION FOR PUBLIC SPACE THAT REACTS TO RELATIVE HUMIDITY CONDITIONS FORMING NEW RELATIONAL SPACES BASED ON THE PSYCHOLOGY OF COLOR.

The **"EMOTIONAL FOG"** makes the legend becomes a reality. A magical public space that generates emotions both of the beholder as to who gets into it. A subtle landscape during the day, almost transparent... overnight completely transforms the image of the city into a space of wishes and feelings crossing.

CONTEXT:

Remember the **legend** in the context of Copenhagen: Legend has it that the songs of the Sirens bewitch men of the sea and the city of Copenhagen. A fisherman while working was fascinated by the voice of a young mermaid. The Little Mermaid gave up her immortality in exchange for the appearance of a woman to get to keep the love of her prince.

If you look at the physical context and specifically in the **climate**, we can see that the relative humidity in Copenhagen throughout the year is very high. This circumstance causes the appearance of different types of fog. Specifically mists that occur are:

- **Radiation fog** usually occurs in the winter, aided by clear skies and calm conditions. The cooling of land overnight by thermal radiation cools the air close to the surface. This reduces the ability of the air to hold moisture, allowing condensation and fog to occur. Radiation fogs usually dissipate soon after sunrise as the ground warms.
- **Advection fog** occurs when moist air passes over a cool surface and is cooled. A common example of this is when a warm front passes over an area with snow cover.
- **Evaporation fog** is caused by cold air passing over warmer water or moist land. It often causes freezing fog, or sometimes Types of frost. When some of the relatively warm water evaporates into low air layers, it warms the air causing it to rise and mix with the cooler air that has passed over the surface. The warm, moist air cools as it mixes with the colder air, allowing condensation and fog to occur.

This **fogs** are used as a mechanism **to create the emotional relationship spaces**. Fog occurs on certain days a year and not continuously. This makes this wonderful show is unique and speci

REAL PERFORMANCE: So the first step we take is to create a small facility to simulate the effect of a fog using a cannon smoke. We use blue and red, those more distant from the visible spectrum. We get two conclusions:

- The long wavelength reflects more light than the wave short in the same type of colloidal system.
- Very different sensations depending on the color in which we are immersed.

STRCUTURE:

The structure of "EMOTIONAL FOG" must be consistent with the idea of fog. It should be a lightweight structure.

The light structure constructed from a double module tensegrity model based on Kenneth Snelson. The anodized aluminum rods 3 m length are subject to compression and tension lines are under tension. These bars are provided with RGB LED strips.

Binding of tensegrity modules form hexagonal geometries larger scale (50 m diameter) that bind again in a grid similar to a honeycomb. The height reached is 9 m.

This union of hexagonal geometry mimics the binding of water molecules in solid state.

Support points of installation are located on the perimeter of the mesh, in the place where the arms of tensegrity. At these points exist a cover formed by small propellers to rotate due to wind action producing electricity. The toppings are supported on the ground by the union of three anodized aluminum bars 10 m in length.

WIND ENERGY:

The Coverage located at the meeting points of the tensegrity arms is formed by small propellers that rotate with the wind and produce electricity that is transmitted by the cables in tension up to the light bars installation.

The electricity produced is transmitted through the legs of the structure to a general connection.

Each propellers coverage is capable of producing 2.5 MWH. There are 28 propellers coverage distributed throughout the facility with a total production of 140.000MWH per year.

This means about **25%** of the **energy** consumed by the inhabitants of the city of Copenhagen in a year.

EMOTIONAL COLOR LIGHT:

This occurs from a phenomenon that occurs in the atmosphere called **Raleigh**: if the colloidal particle of the atmosphere equal to or less than the incident wavelength, the wave part yields energy by emitting a light signal corresponding to lengths short wave (when the sky is blue). When the particle is greater than the incident wavelength, it behaves like a mirror reflecting the longer wavelengths and dispersing short (at sunset rays have to traverse more particles). This phenomenon is called **Mie scattering**.

Fog is a colloid in which the dispersed substance is a liquid; water

Thereafter, we propose a cloud analysis where the highest and lowest points of density correspond to these two phenomena, producing fog color. The colors are associated with emotions and these emotions to people occupying the space.

Moreover spaces full visibility in fog are also formed. The movement of the propellers of the coverage and the dissipation of heat from the power generation causes other meeting spaces, spaces without fog.

We propose new areas of psychological **relationship**. These gatherings of people depend on your **mood**.

ENVIRONMENTAL IMPACT:

"EMOTIONAL FOG" easily adapts to the environment due to its lightweight structure. Assembly is simple because it is constructed of modules that come ready assembled. Furthermore, this facility uses wind power, one of the cleanest of all renewable energies. These are the properties that best describe this landscape installation.

TRANSPARENCY: Steel wires are imperceptible structure from close range. Steel bars reflect the structure of the space around it making a beautiful landscape reflections during the day.

LIGHTNESS: The tensegrity structure allows large distances and needs very little support. This means that the construction of the facility does not need complex and expensive systems foundation. Although we know that there were buildings inside this area and the old foundations are probably still in the ground, there is no need to dig again for reuse.

ENERGY: As we know, wind energy is one of the cleanest in terms of waste is concerned. Not produce odors and toxic waste.

The propellers that form the skin of the hedges are located 9m high, this situation makes little imperceptible sound may occur.

SECURITY: the height at which they are located small propellers that produce energy makes it impossible for people to access them. We avoid any physical contact with the tensegrity structure and energy hedges.

INMATERIALIDAD: la transformación de la instalación durante la noche se base en la luz, es decir, en lo inmaterial. Esto significa que somos capaces de generar diferentes espacios sin necesidad de añadir paredes o particiones.

"EMOTIONAL FOG" BECOMES THE PUBLIC SPACE WHERE THE COEXISTENCE OF EMOTIONS SHAPE THE NEW LANDSCAPE OF THE CITY OF COPENHAGEN.