

# SOFT FAÇADE

Digital Mock-Up Workshop

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EDEN PROJECT: “Nicholas Grimshaws’ designers decided not to use traditional materials in their biomes -- they went with glazed ETFE foil instead. A piece of ETFE weighs less than 1 percent of a piece of glass with the same volume. It is also a better insulator than glass, and it is much more resistant to the weathering effects of sunlight.

The Eden Project designers formed this ETFE material into extremely sturdy pillows, each made from three sheets of ETFE foil welded together along the sides, one on top of the other, with layers of air pumped in between them. The air layers provide increased insulation without decreasing the amount of sunlight that shines through. The most effective thing about these pillows is that they are adjustable: On a colder day, they can be pumped up with more air to provide better insulation; on a hotter day, they can be partially deflated to allow more cooling.”

**Essentials:** The ETFE cladding system comprises a number of layer of the UV stable copolymer Ethylene Tetra Fluoro Ethylene (ETFE) welded into cushions or foils.

The cushions are restrained around their perimeter by aluminum extrusions, which are in turn fastened to a supporting primary structure. The cushions are inflated with low-pressure air to provide insulation and to resist wind loads.

A ETFE cushion comprises at least two layers. However, more layers can be added into the system to enhance the cladding's insulation properties.

Each foil can be treated with a variety of treatments to control and manipulate the aesthetics quality of the roof, the visual transparency and the level of solar gain.

The ETFE system has both exceptional durability and a high resistance to tearing.

ETFE Cushions can either be completely prefabricated in a Factory or can be clamped into their supporting framework on site. Aluminum extrusions incorporate secondary drainage channels and the highest quality EPDM gaskets to ensure the waterproof integrity of the cladding over the life of the building.

ETFE cushions can be fabricated in any size or shape with limiting factor being the wind and snow loads that the cladding has to resist. It is recommended an early discussion with engineers during the conceptual planning stages of a project to ensure that the structural grid and cladding interface is optimized.

**Ecology:** Texlon ETFE is unaffected by atmospheric pollution and UV light. The material does not harden, yellow or deteriorate over time. This makes its use ideal for long life, low maintenance buildings such as hospitals, railway stations, leisure centers and botanical houses.

The detailing strategies and range of patented extrusions ensure that building movement is accommodated across the whole surface of the cladding. This strategy reduces stress concentration at movement joints and vastly increases gasket life. Texlon’s ability to self cleanse under the action of rain further reduces life cycle costs to very low levels.

ETFE Texlon is both an energy efficient and ecologically friendly technology. The raw material is admitted under the Montreal Treaty and is not a petrochemical derivative. The production process is an enclosed water based process and does not involve the use of any solvents.

The material is 100% recyclable and we construct many components from recycled material.