

REPORT

COST ACTION TU1303 NOVEL STRUCTURAL SKINS

RESEARCH

CONCEPTUAL SMART TEXTILE AND BENDING-ACTIVE ARCHITECTURAL MOD

PROJECTS

DEPARTURE UNDER THE STARS "ZORGVLIED" WALK-IN CLOUD "NUVOLA"

ZORGVLIED CREMATORION

DEPARTURE UNDER THE STARS
Amsterdam, The Netherlands



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Introduction

On the site of Zorgvlied cemetery in Amsterdam, architects' office GROUP A designed an extraordinary crematory. A pavilion which offers to accompany the deceased to the last moment. A design which aims to meet the needs of various groups with diverse cultural and religious backgrounds. It focuses on the actual burning of the body and the spiritual experience connected to this event. The upward direction and big skylight above strengthen the feeling of the rising departure.

Concept

The spirituality of the building is materialized in a contrast of materials. The base of the building is made of stone as metaphor of heaviness, gravity and earthly. The cover is a membrane, showing lightness, clearness and heavenly. Evidently the quality and translucency of the membrane was of vital importance for the architect. Material of choice was Serge Ferrari TX-30, a strong material which, above all, is easy to maintain clean. Processing TX-30 is a specialized work, executed by Buitink Technology.

Structure

The shape stands out in the green surroundings of the cemetery. It also stands out from a structural point of view. Before the architect choose to use fabric as the pavilion's envelope, the geometry was already defined. A geometry which deviates from conventional membrane structures as the shape is not a typical minimal surface, it's not a shape which the fabric takes by nature. When working in the digital model of the project, Tentech tweaked and tuned tensions in different areas of the membrane - manipulated

the 'natural' shape of the fabric - into the architects' design.

Materialisation

The digital model of the cover finally matched with the initial design. Next step was to materialize the project, to make an equally shaped physical membrane. To create this, the actual tensions from the digital model had to be introduced in the physical membrane. When engineering membrane structures, it is business as usual to adjust the patterns of a membrane to create pre-tension. In this project, the pre-tensions varies heavily in many areas of the cover. Tentech developed a routine to translate these pre-ten-

sions in local adjustments of the patterns. It narrows or expands the patterns at certain points along the seams, which subsequently creates the required local pre-tensions, which in their turn defined the shape of the beautiful cover.

Material

PRECONTRAIINT TX-30 is a new innovative material, developed by




Serge Ferrari to guarantee both more natural light input and a useful life of over 30 years for demanding projects. The PVDF top treatment is CROSSLINKED using a reticulated process. It creates irreversible chemical links between the PVDF molecules and provides long term benefits. As a consequence of its high resistance, the flexible top treatment has to be abraded before welding.



Pictures of construction process © Buitink Technology

Client:	Municipality of Amstelveen
Architect:	GROUP A
Structural engineer:	Breed ID
Membrane engineer:	Tentech
Main contractor:	Bouwbedrijf Van Schaik
Tensile membrane contractor:	Buitink Technology
Supplier of the membrane material:	Serge Ferrari
Material:	TX-30
Membrane surface area:	425m ²

 Daan Rietbergen
 Daan@tentech.nl
 www.tentech.nl

 Rienk de Vries
 info@buitink-technology.com
 www.buitink-technology.com



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