

Dipl.-Ing Bernd Stimpfle
Dipl.-Ing U. Chile Sergio Leiva

Radolfzell am Bodensee - Güttinger Str. 37 | 78315 Radolfzell | Germany
Berlin - Schlesische Str. 12 | 10997 Berlin | Germany
fon: +49 7732 9464-0 | fax: +49 7732 9464-94 | info@form-tl.de

SUPPORTING AND LIGHTWEIGHT STRUCTURES

What do we offer?
From concept design to
production design!

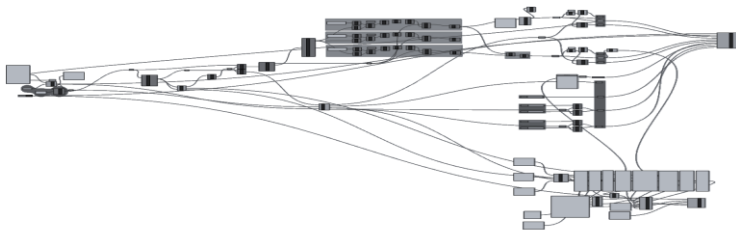
CONSULTING
ENGINEERING DESIGN
DETAIL DESIGN
WORKSHOP / PATTERNING

How do we work?

PARAMETRICS
BIM
COMMERCIAL as IN
HOUSE SOFTWARE



STRUCTURES FOR EVENTS AND EXHIBITIONS



ARCHITECTURAL [ART] WORK

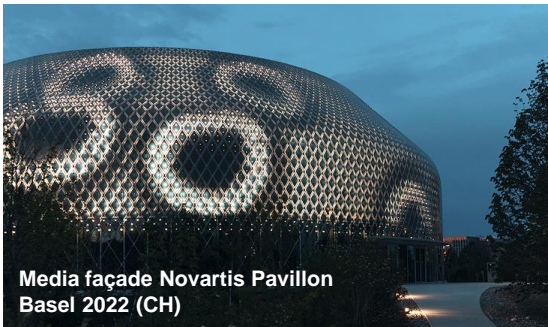
OUR AIM
formTL stands for engineering quality, innovation, aesthetics, and teamwork
to satisfy our clients' needs and expectations!



Tubaloon Jazz Festival
Kongsberg (N) 2006



La Nuvola at the EUR Convention Centre
Rome (I) 2016



Media façade Novartis Pavillon
Basel 2022 (CH)



Innercourtyard SMS Campus
Mönchengladbach (D) 2023

Textile Roofs 2024

28.04. – 30.04.2024, Berlin

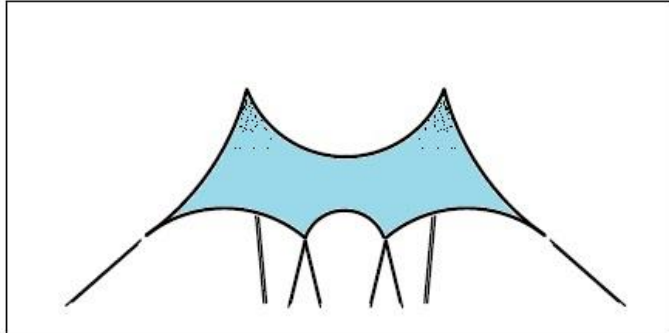
Development in tensile Architecture.
What's next?

Sergio Leiva, Bernd Stimpfle, form TL ingenieure für tragwerk und leichtbau gmbh

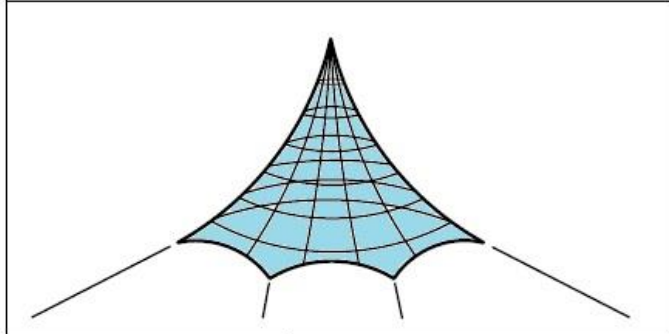
types of membrane and cable-net structures

anticlastic

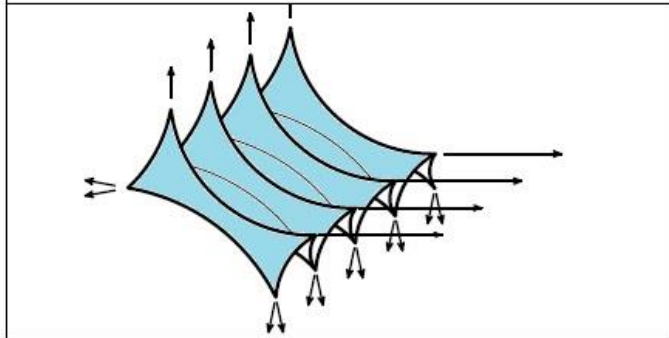
spatially curved and tensioned membrane



spatially curved and tensioned cable-net with cladding

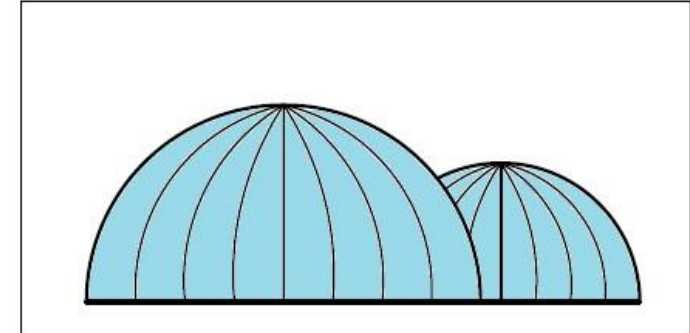


cable supported membrane structure

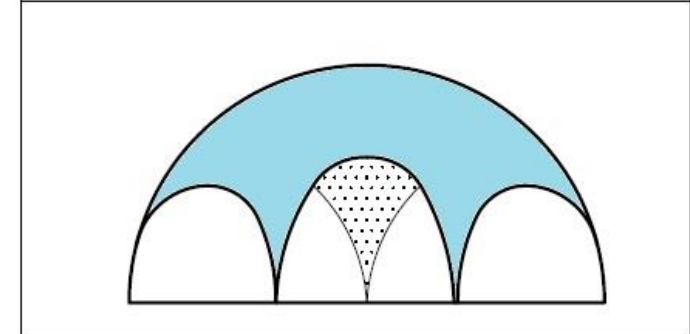


synclastic

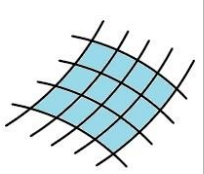
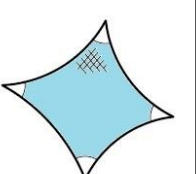
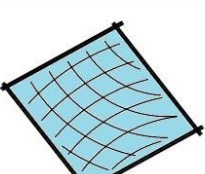
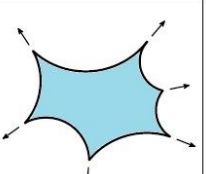
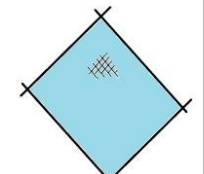
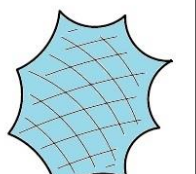
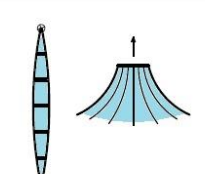
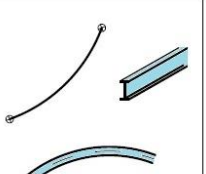
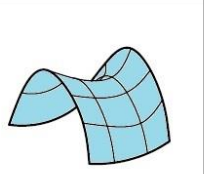
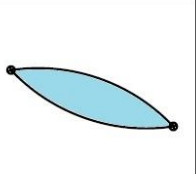
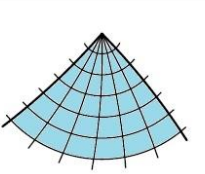
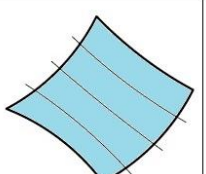
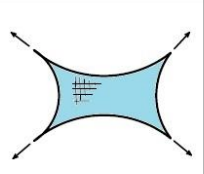
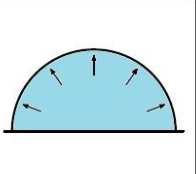
pneumatic structure



shell



design parameters

surface, open or closed	net		membrane		border	fixed boundary		free boundary, e.g. cables	
loads, wind and snow	flat surface		spatially curved surface		additional supports	point: highpoint or lowpoint		line: intermediate cables, linear profiles, arches	
surface, form	saddle: anticlastic curvature		pneu, cushion: synclastic curvature		cutting pattern	radial pattern		parallel pattern	
method of prestress	pull the borders pull in weft/fill to prestress in warp		inner pressure						

We have different design parameters which lead to the following construction principles:

- Hypar surface
- Arch membrane
- Cone structure
- Ridge and valley cable membranes (folded plates)
- Cushion
- Bubble
- Air hall
- Cable girder

So now days we have 4 mayor building types in our industry

Mechanically tension membranes

Pneumatically tension membranes

ETFE Cushions

Single layer ETFE

mechanically tensioned structures



Forum Kirchberg, Luxemburg - 1996



Kurklinik Masserberg - 1994



Velodrome Abuja - 2006



Zénith de Strasbourg - 2007



Centro Congressi di Roma – Nuvola - 2016



Textil Akademie Mönchengladbach - 2018



Photo: thomasmayerarchive.de

Batumi Stadium - 2020

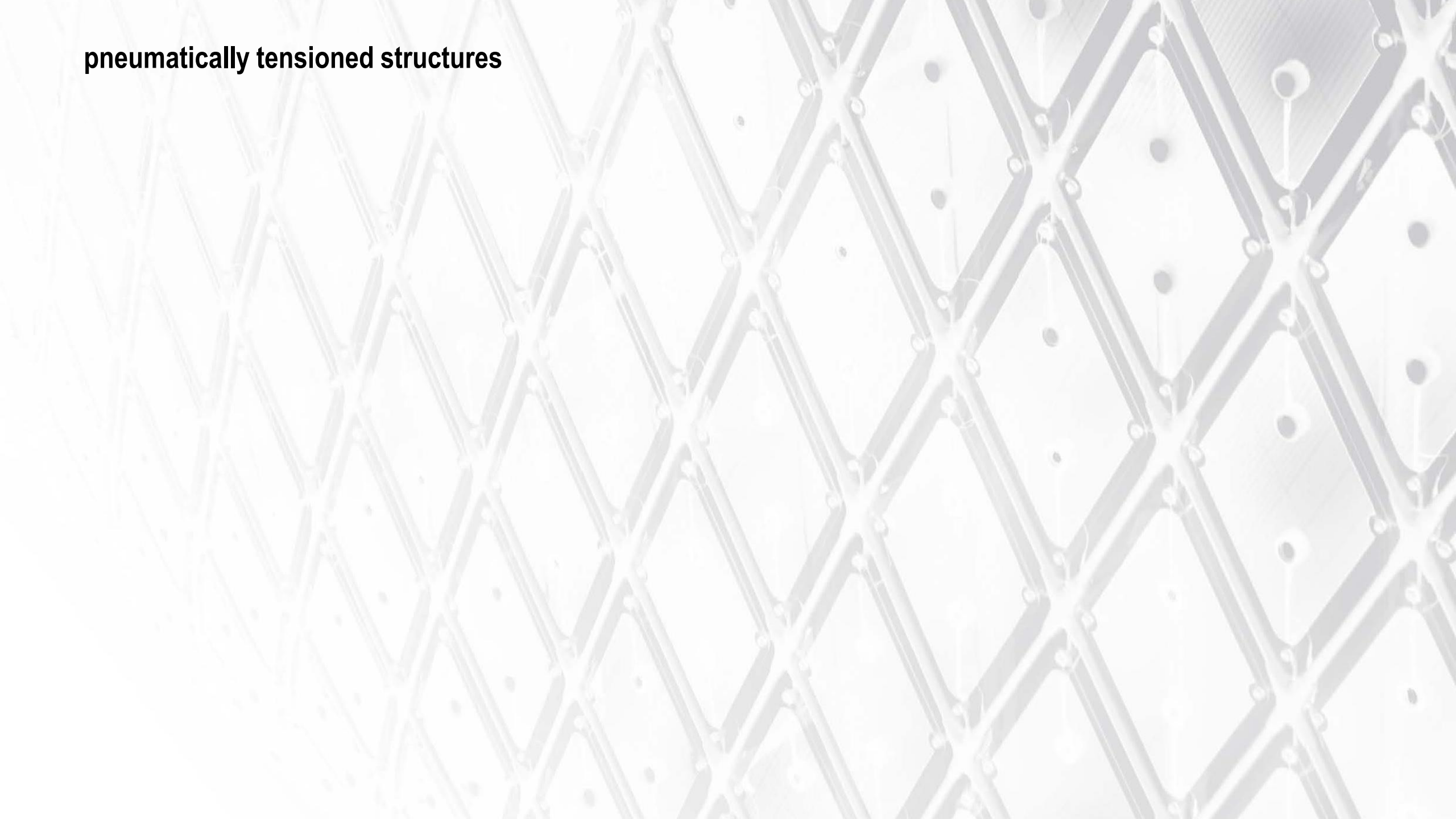


Photo: Anagi

Saarbrücken Stadium - 2021



pneumatically tensioned structures



Nouvelle DestiNation - 2001

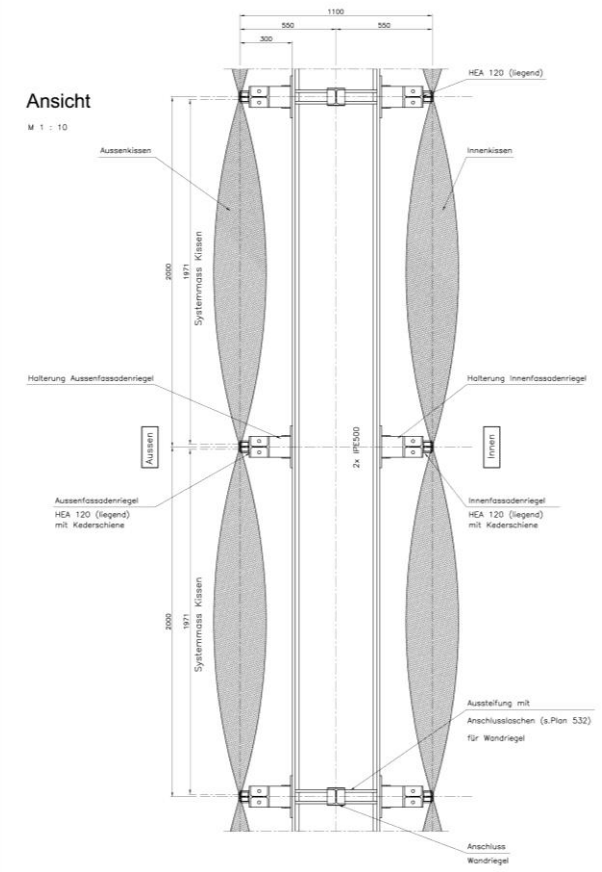


Raumwelten Pavillon - 2015

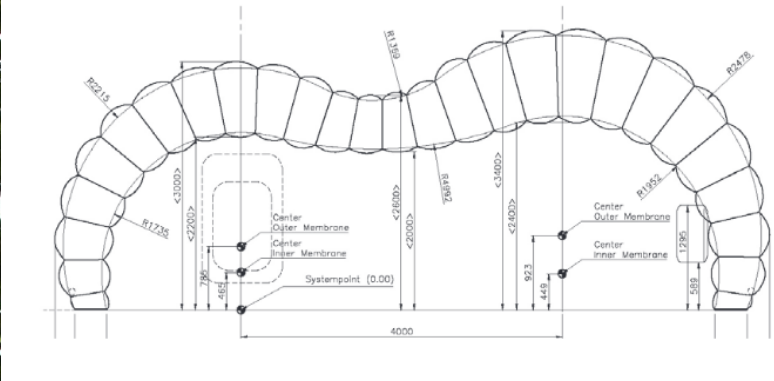


Photo: Rainer Pfisterer Film und Medienfestival GmbH

BMW fair hall IAA Frankfurt



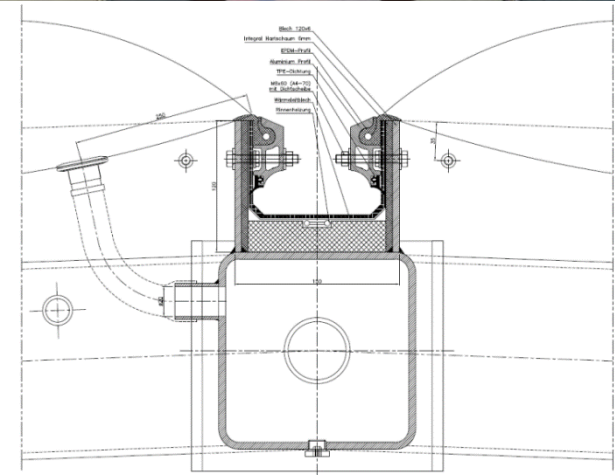
Modern Teahouse - 2007



foil cushions



Dresden castle - 2008



Meilenwerk Düsseldorf - 2006



Botanic Garden Århus - 2013



Photo: Quintin Lake

Tropical Islands - 2004



Photo: CenoTec

Rheinhallen Köln - 2005



Bushof Aarau - 2013



Lilienthalhaus
Braunschweig (D) 2017

single layer foil structures



Unilever - 2009



Bundestagsarena Berlin - 2006

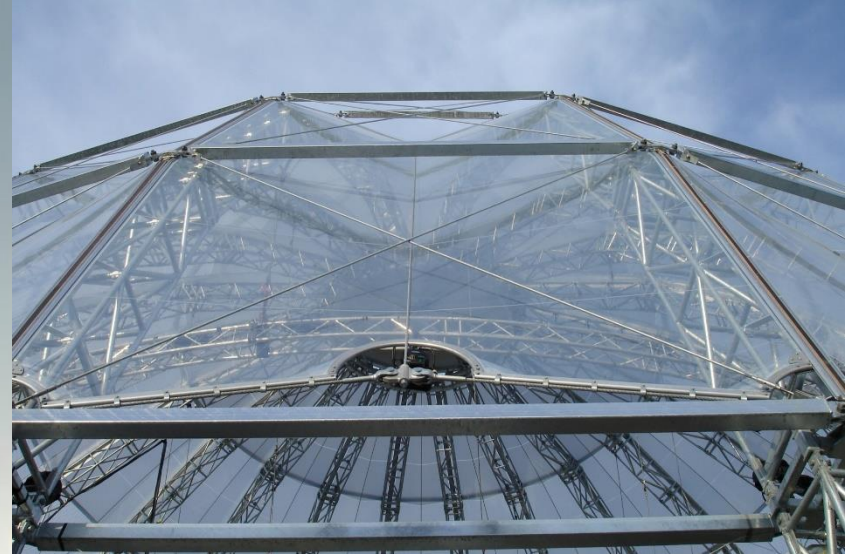


Photo: CenoTec

Copagri Pavilion



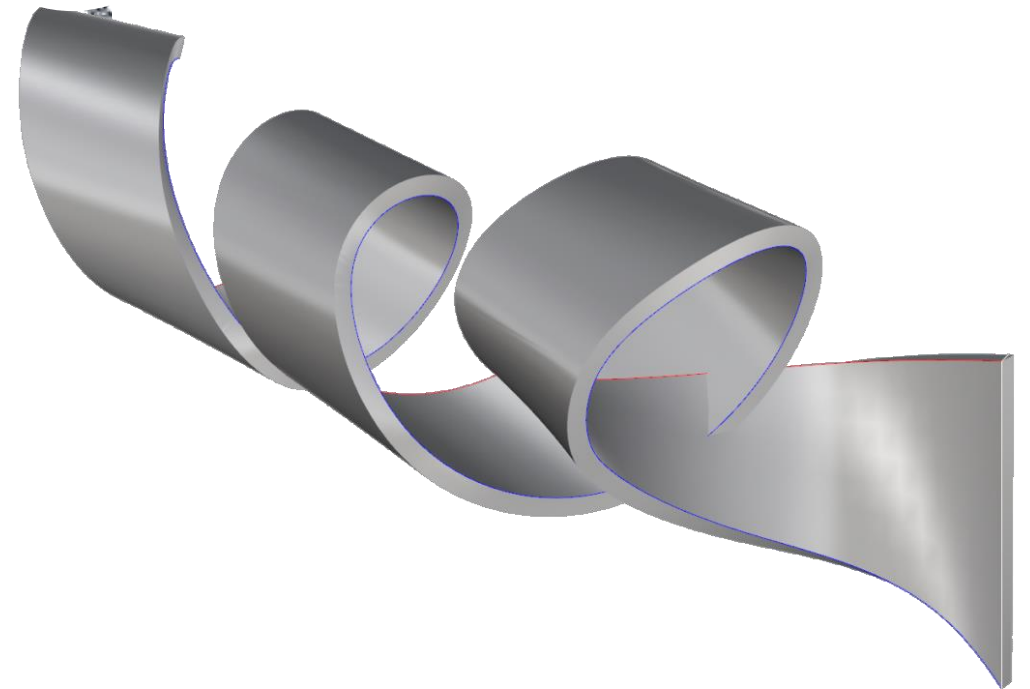
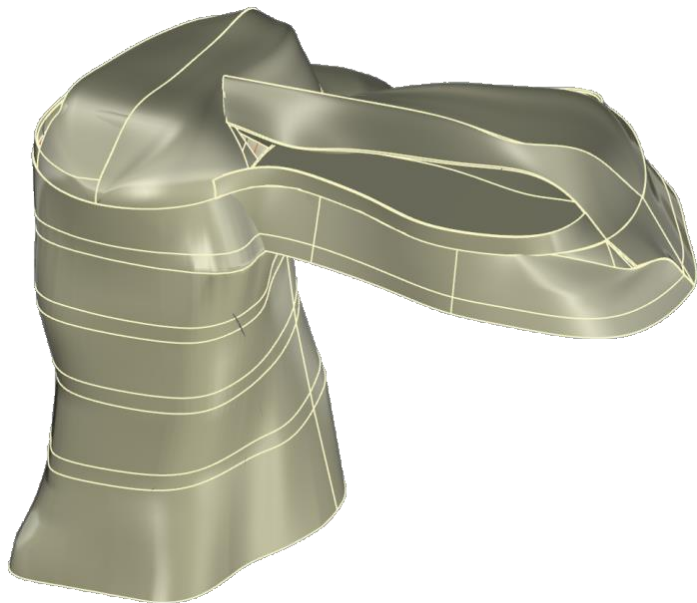
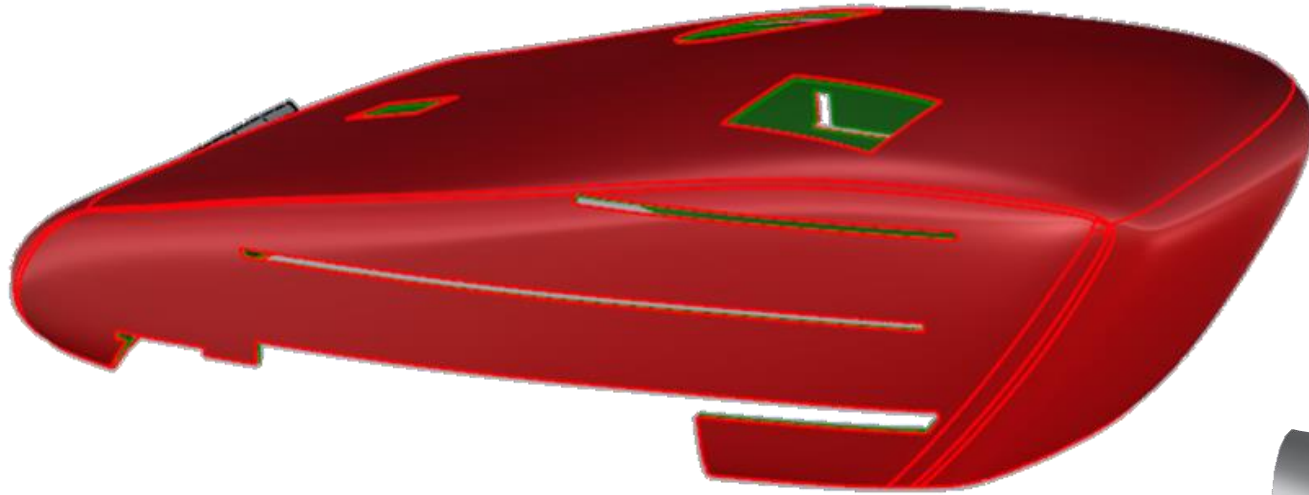
TemporActive



Whats next?



Whats next?

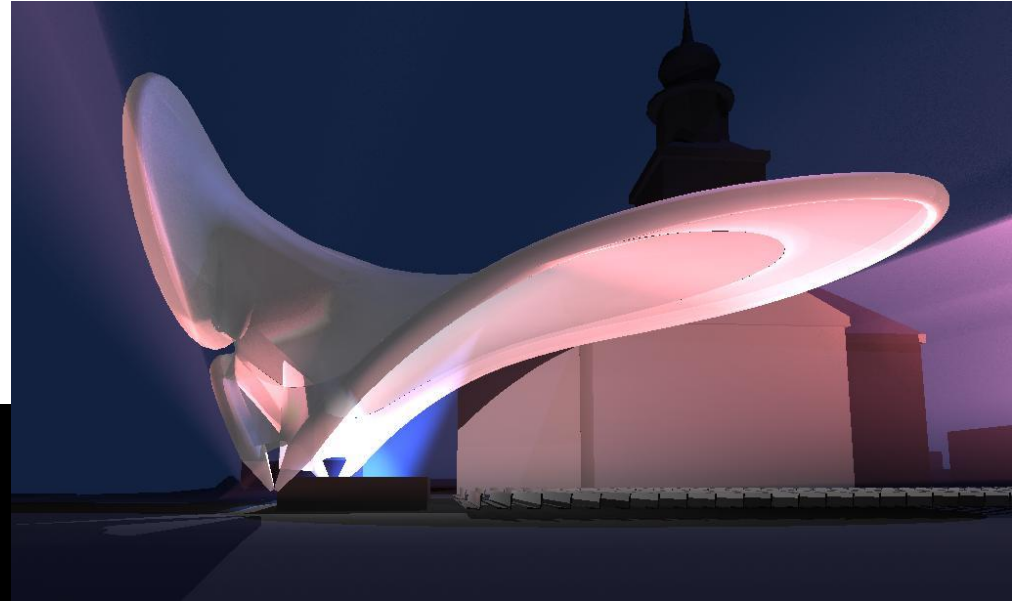


Software tools available on the market offer new possibilities to designers in the development of free form shapes.

This leads to a wide range of interesting structures and enriches the today architecture.

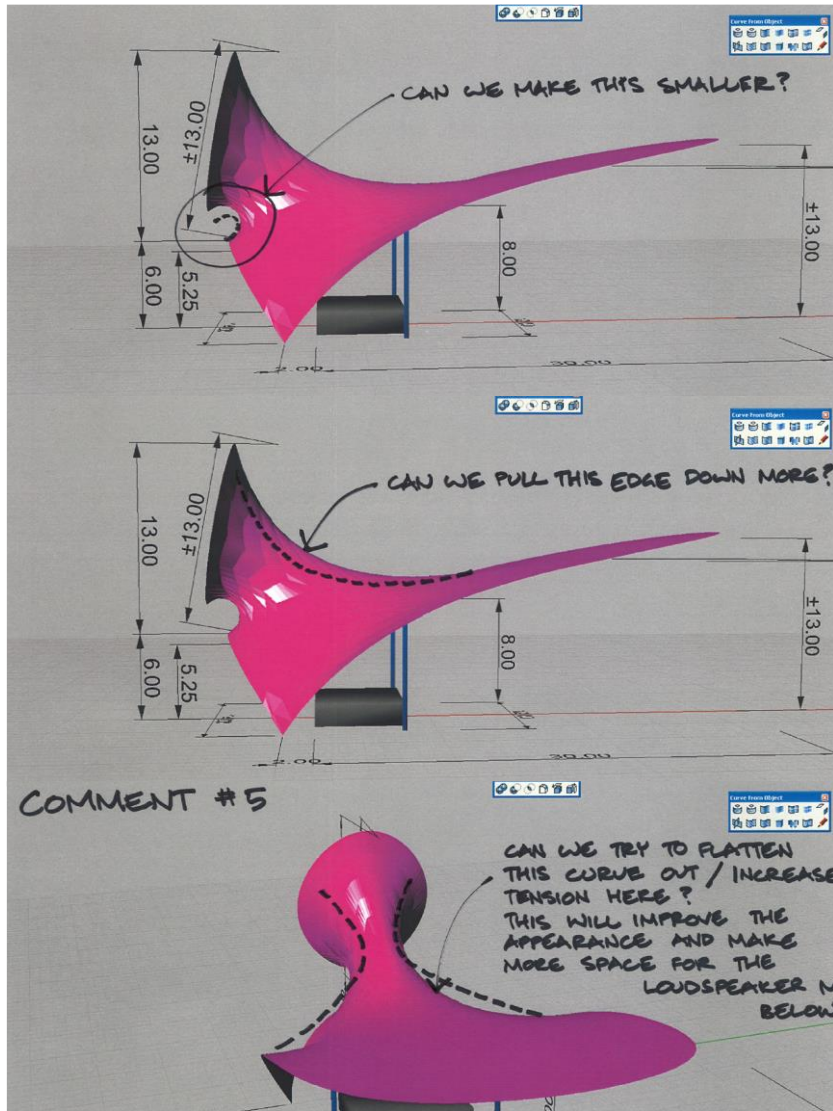
What's next?

The design intend may sometimes look hard to be realised
but
together in the team it can be achieved.
Snoeta Architects - Tuballonn



Images: Snohetta

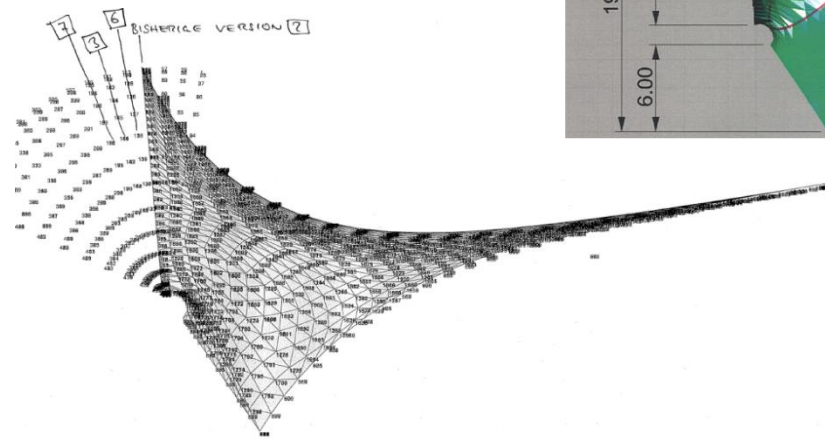
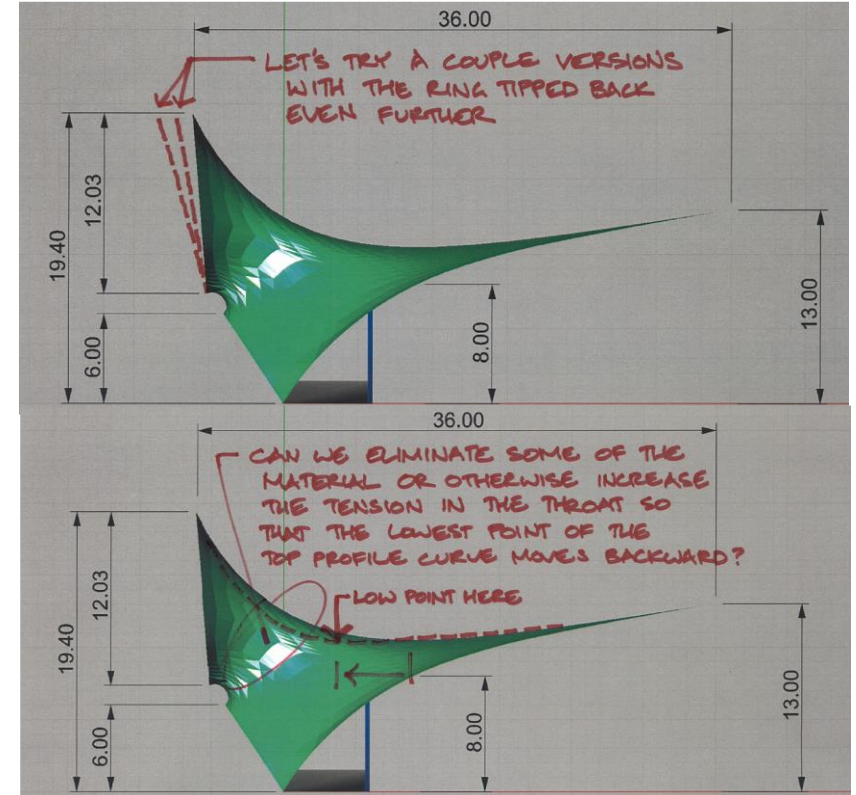
What's next?



A back and forth process.

studying different parameters and judge on the feasibility

helps to achieve this goal.



What's next?



formTL ingenieure für tragwerk und leichtbau gmbh

Güttinger Str. 37
D-78315 Radolfzell

M. Eng. Sergio Leiva (office Berlin) – THANKS!

Dipl.-Ing. Bernd Stimpfle

www.form-TL.de

