

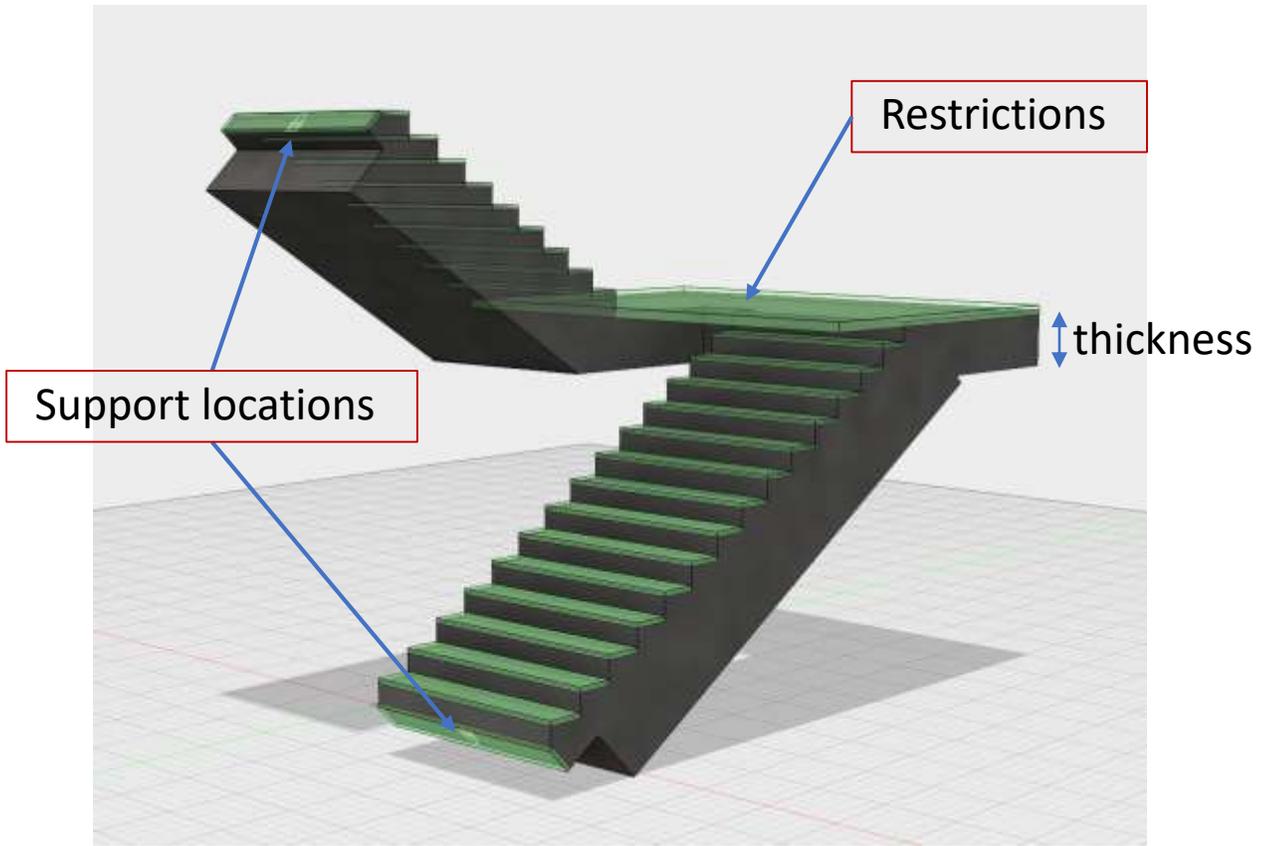
# O Impacto da Modelagem Paramétrica no Projeto de Estruturas – Parte II

Ruy Marcelo de Oliveira Pauletti Prof. Associado Poli-USP

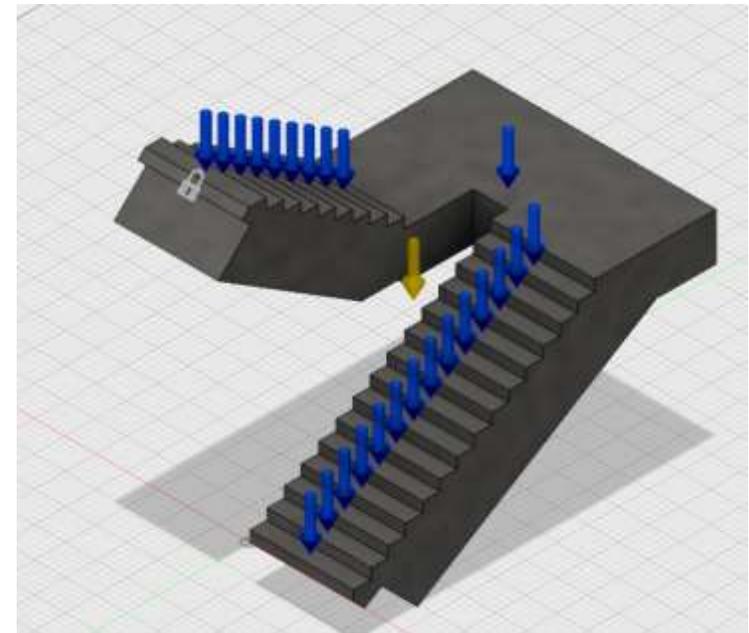
Isabel Moreira de Oliveira Mestranda Poli-USP

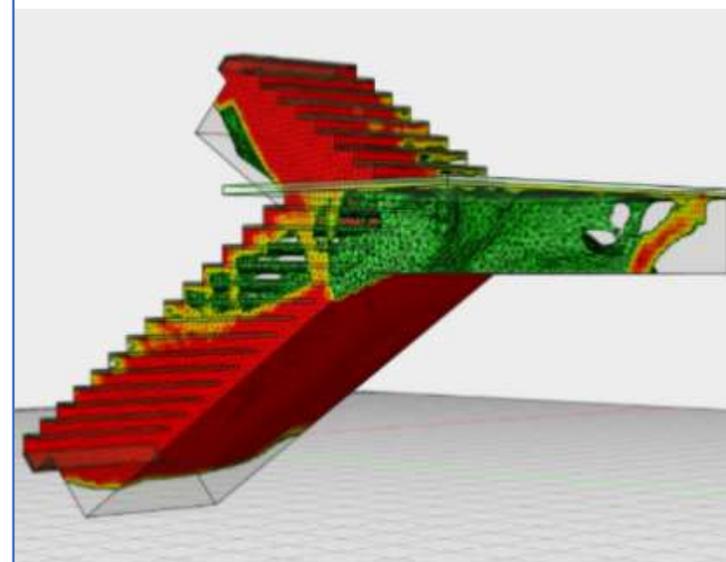
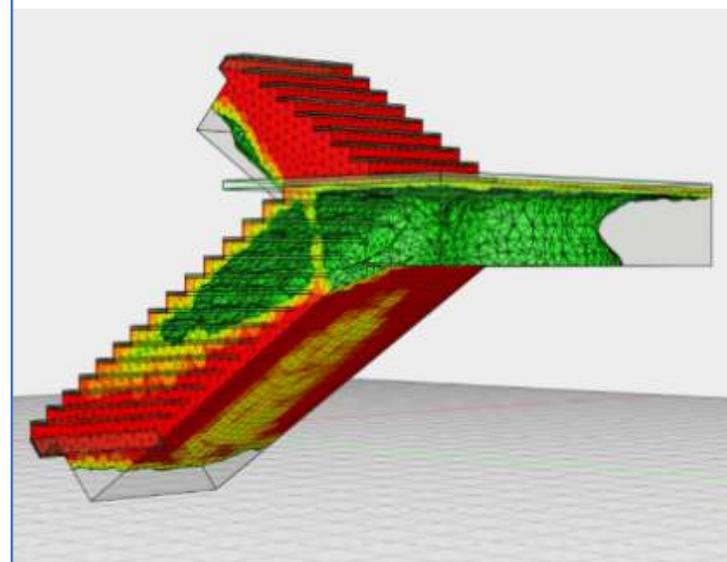
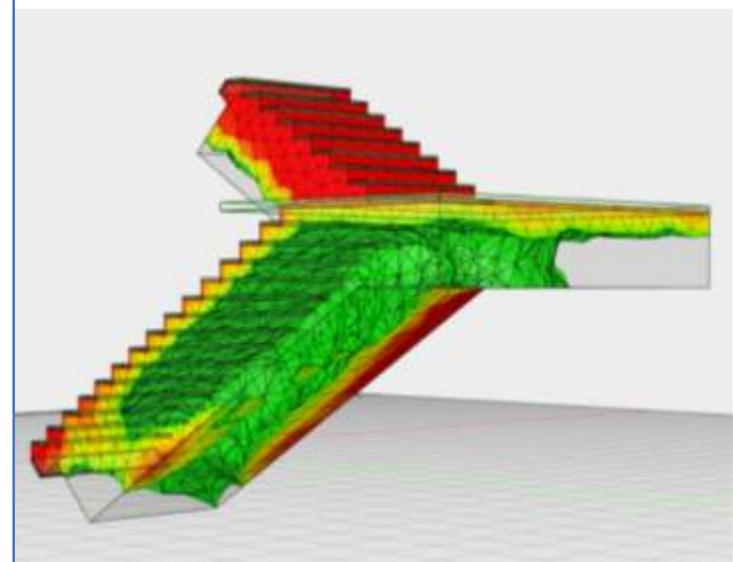
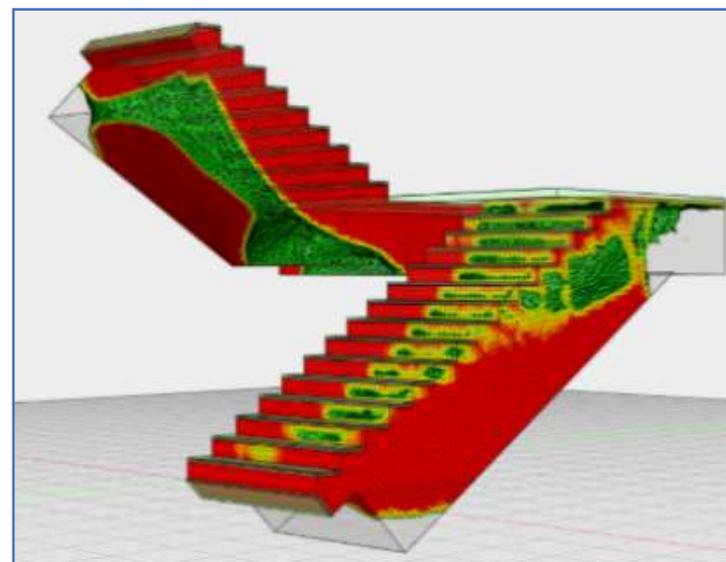
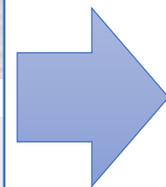
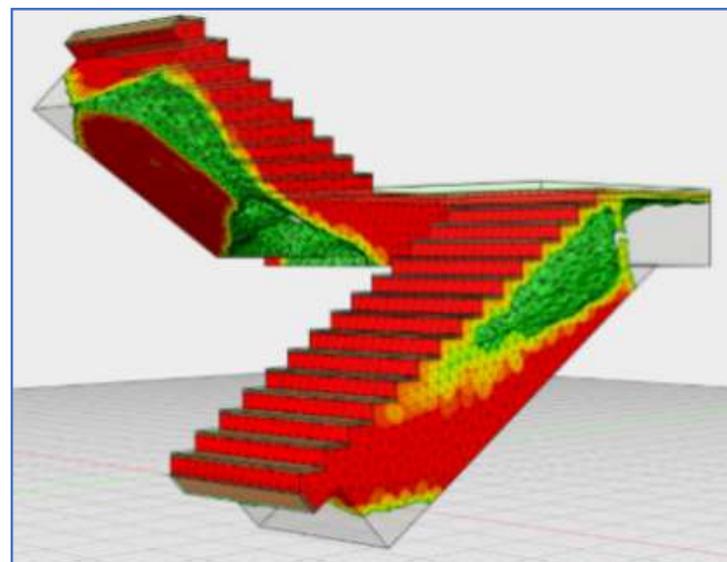
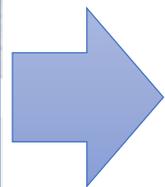
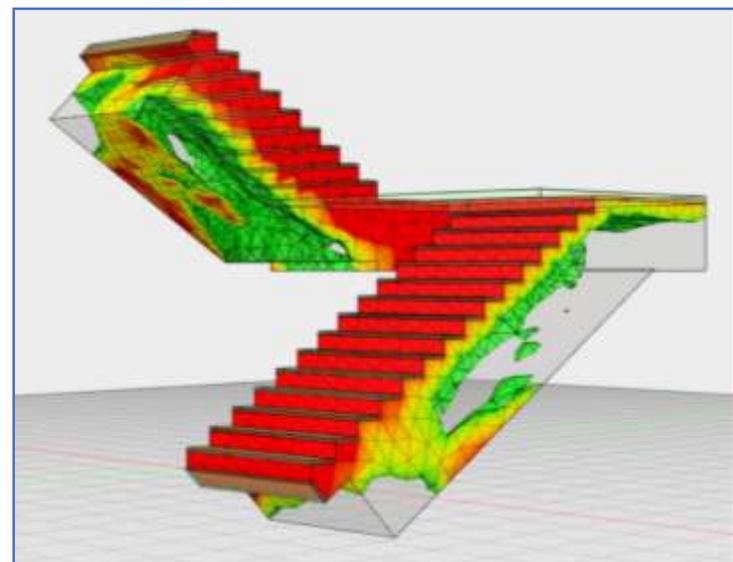
Márcio Sartorelli Venâncio de Souza Aluno Poli-USP

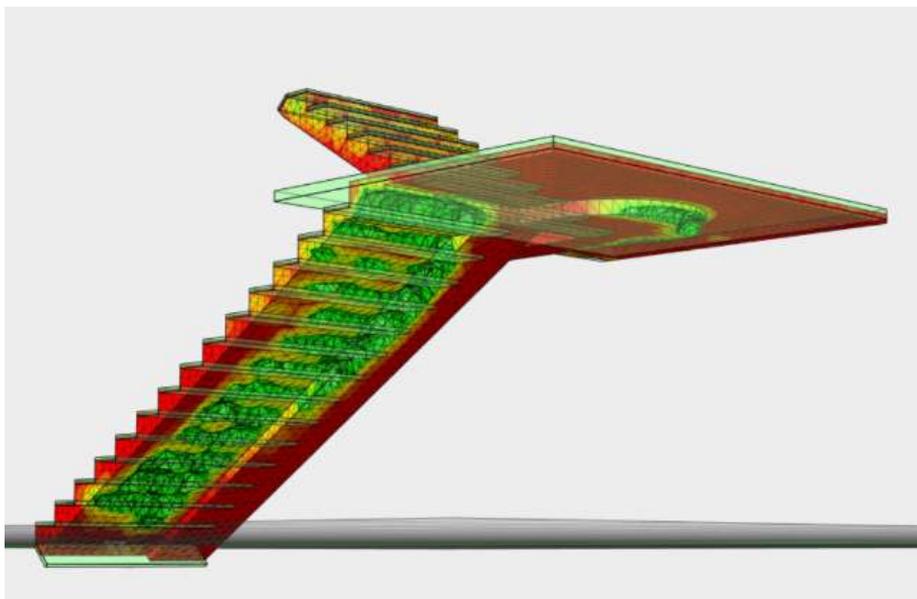




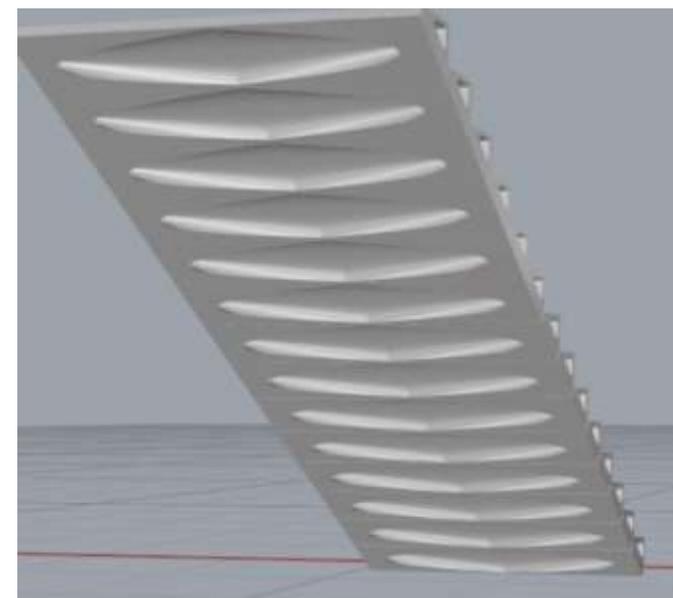
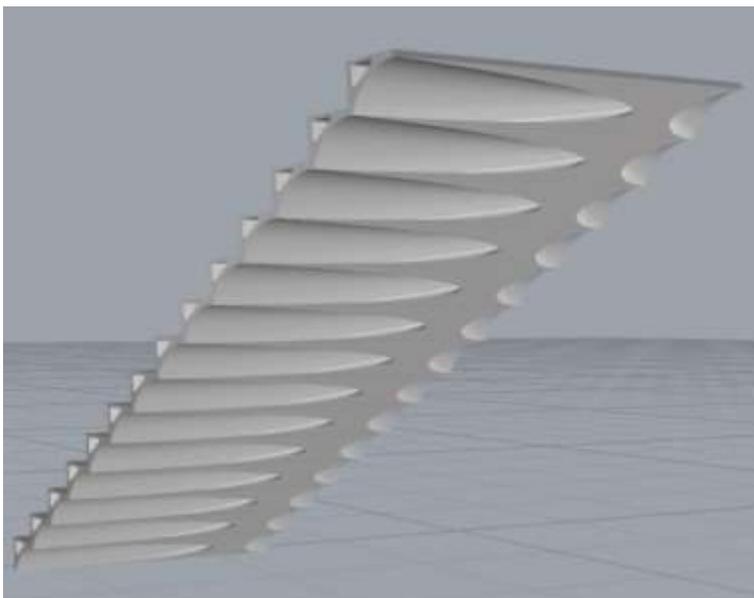
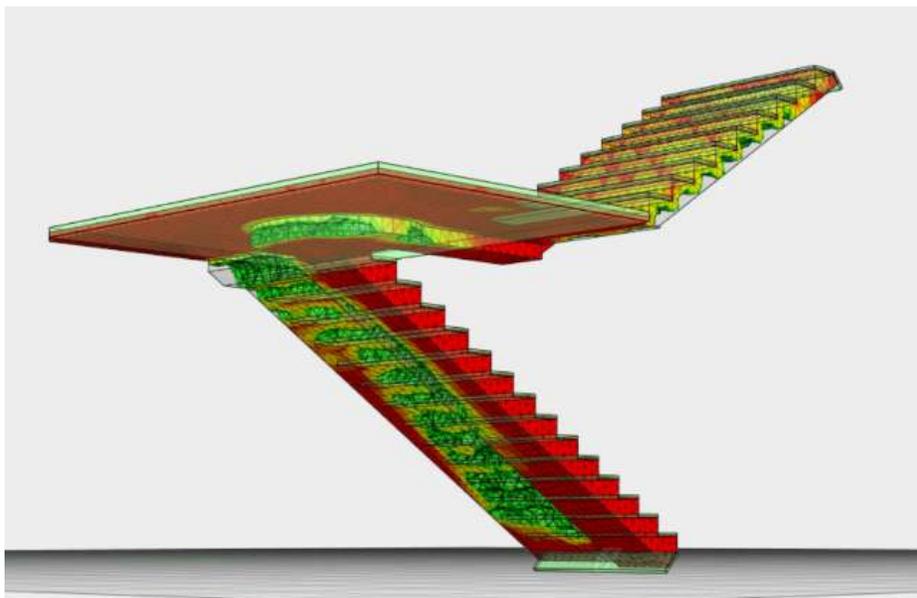
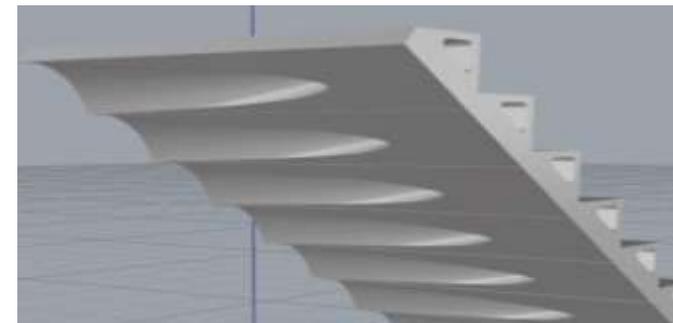
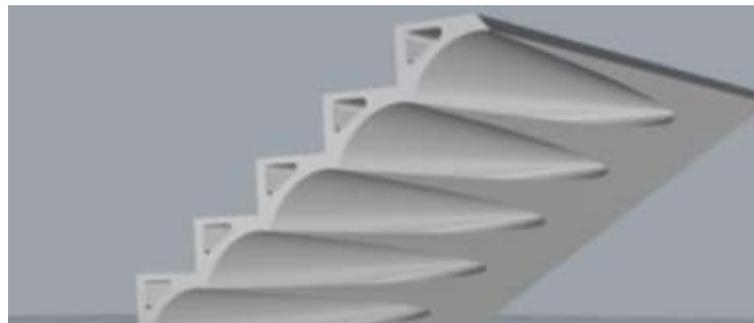
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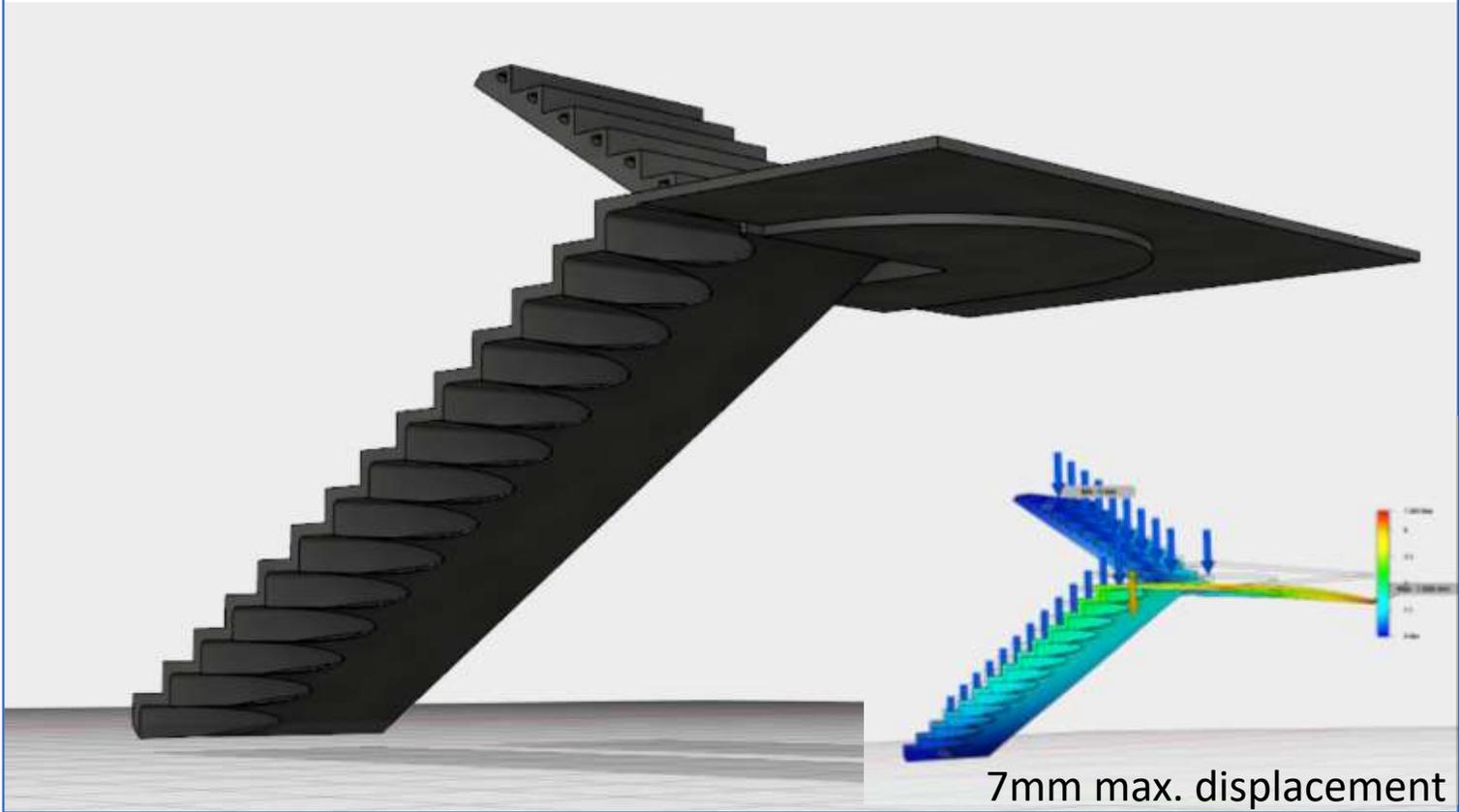
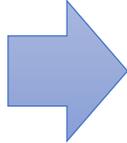
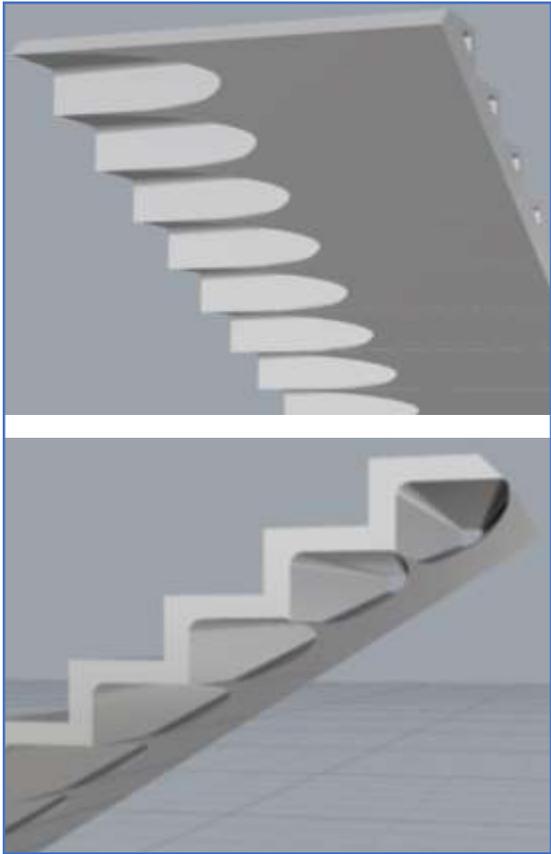






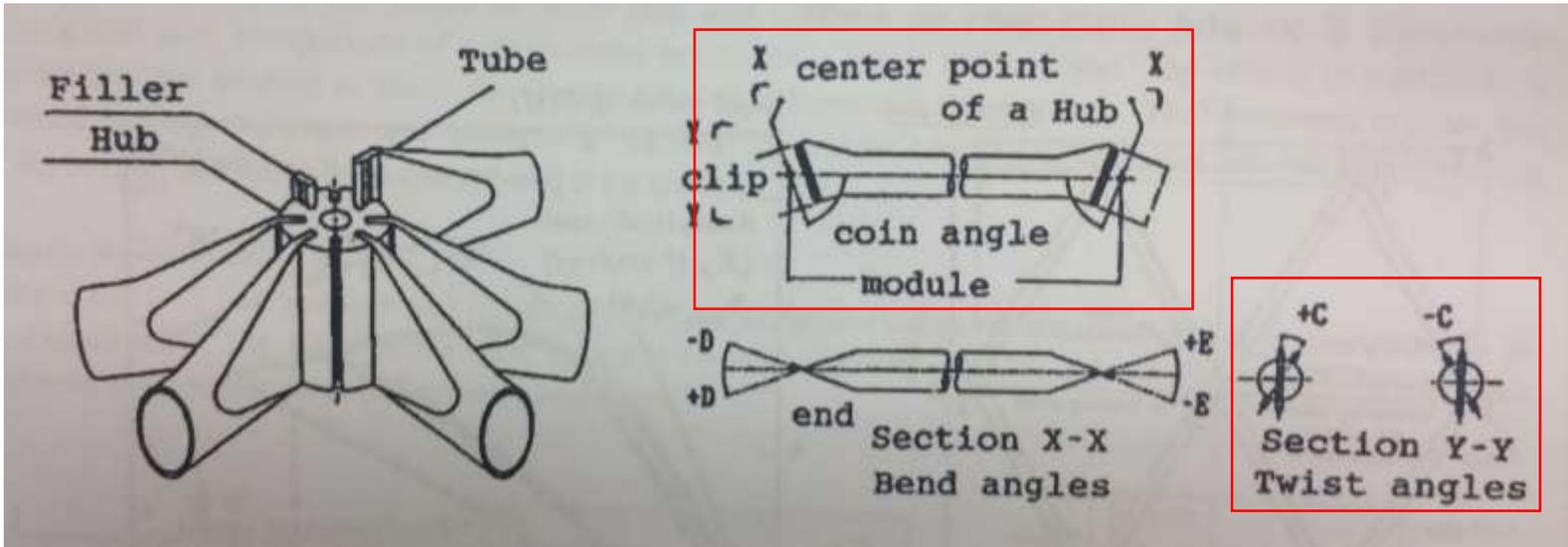
O resultado do estudo de otimização topológica foi usado para explorar formas no ambiente paramétrico





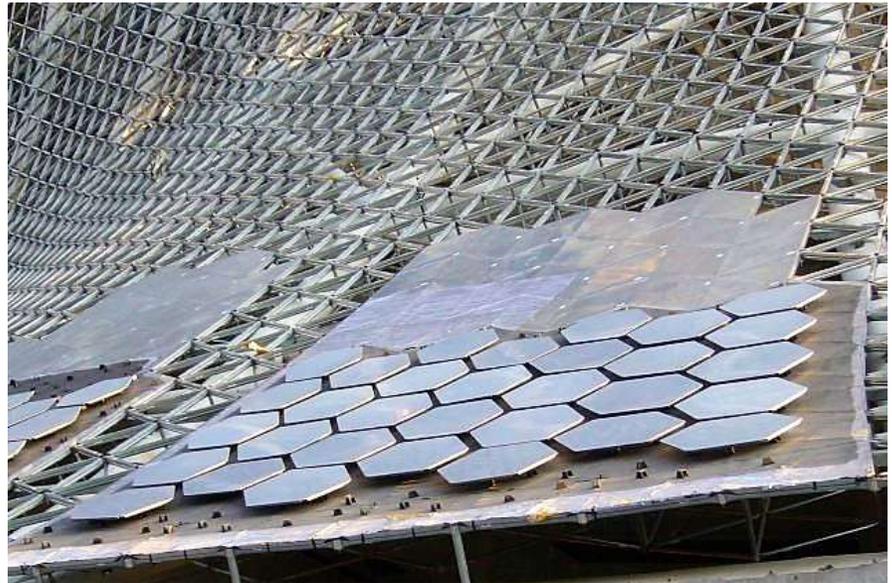


Sistema das empresas *Triodetic* e *Geometrica*

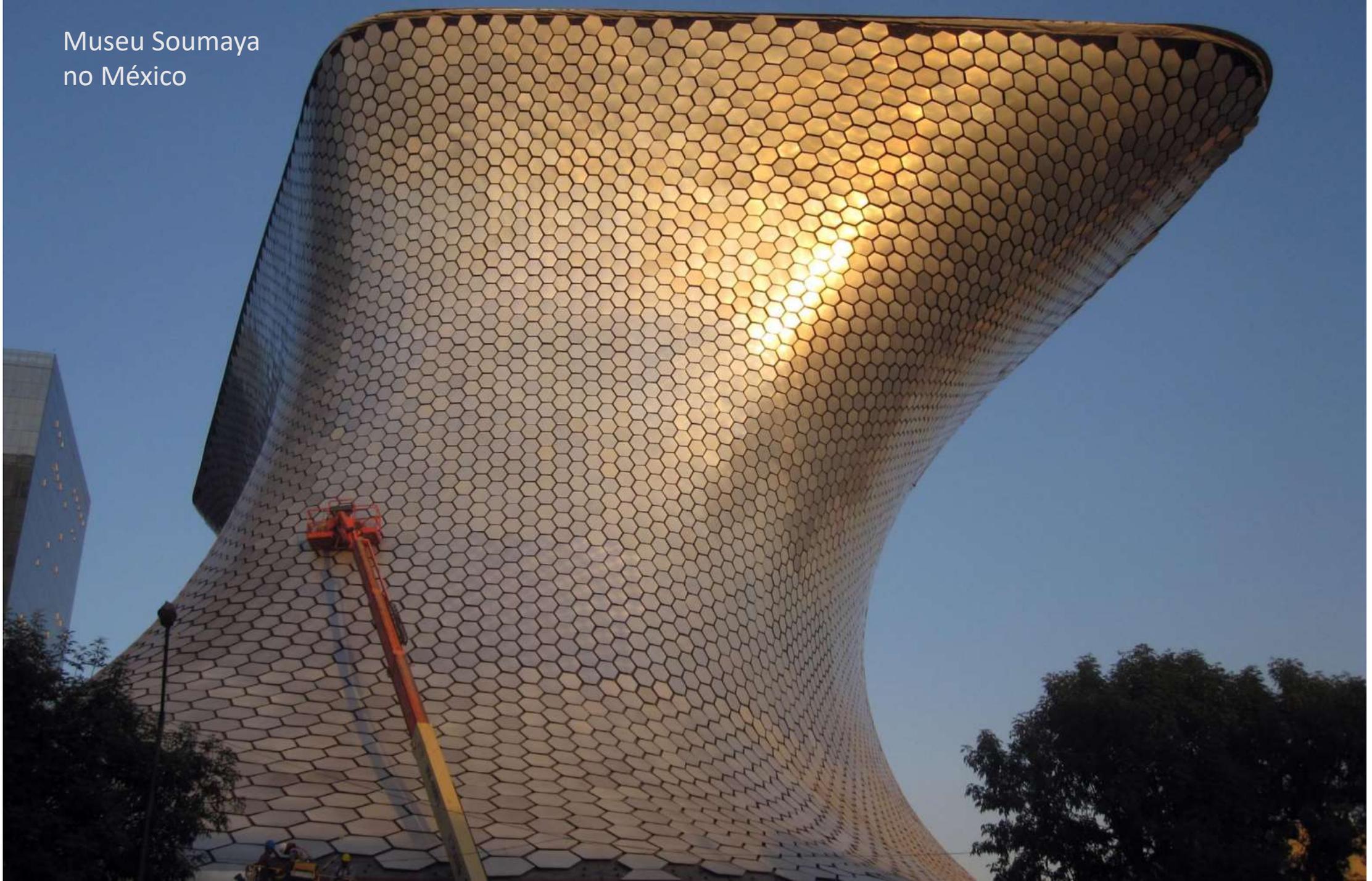


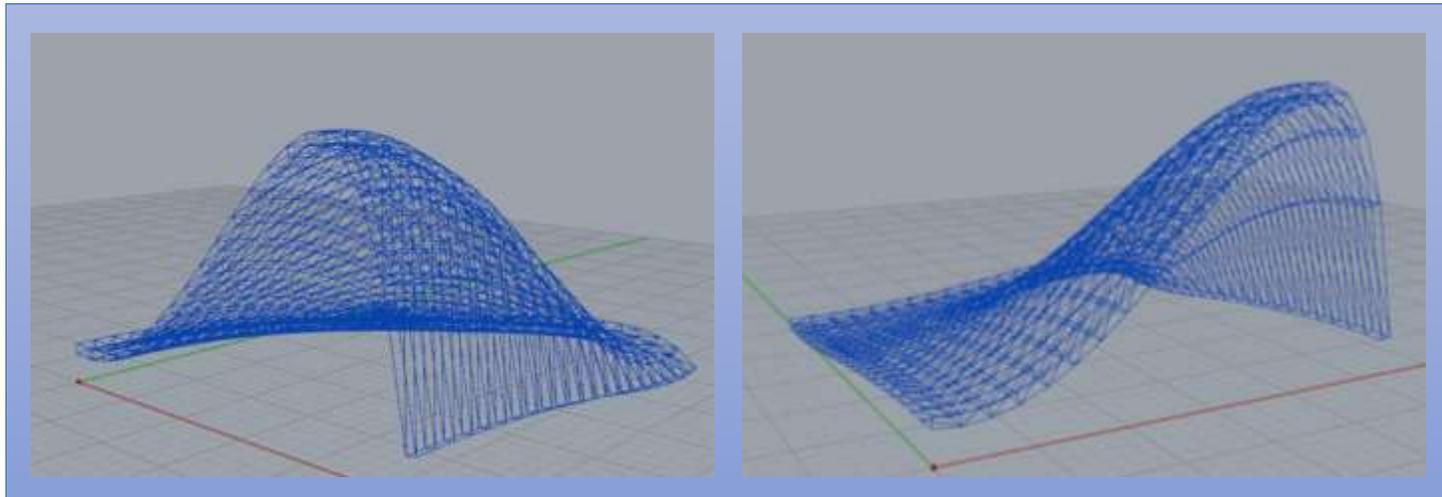
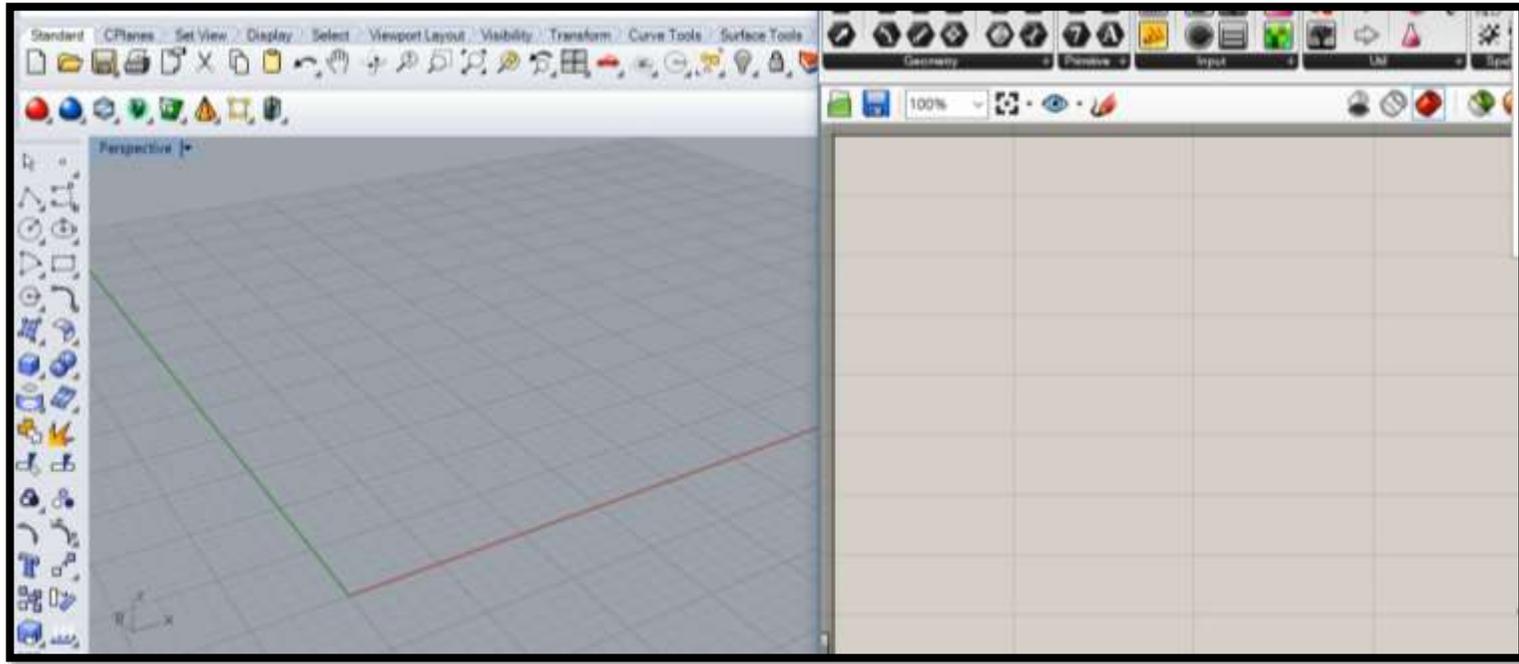
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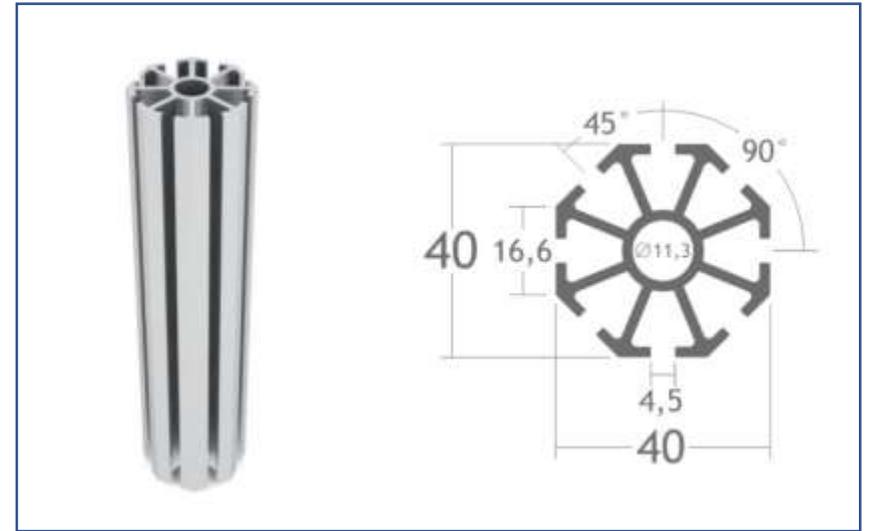
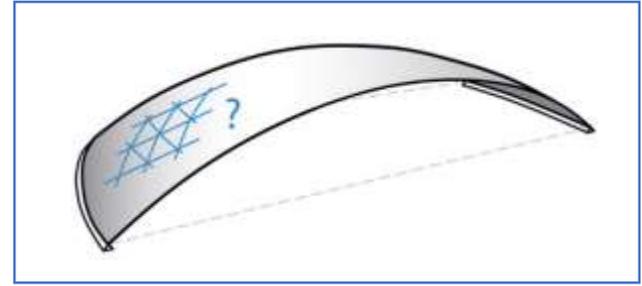
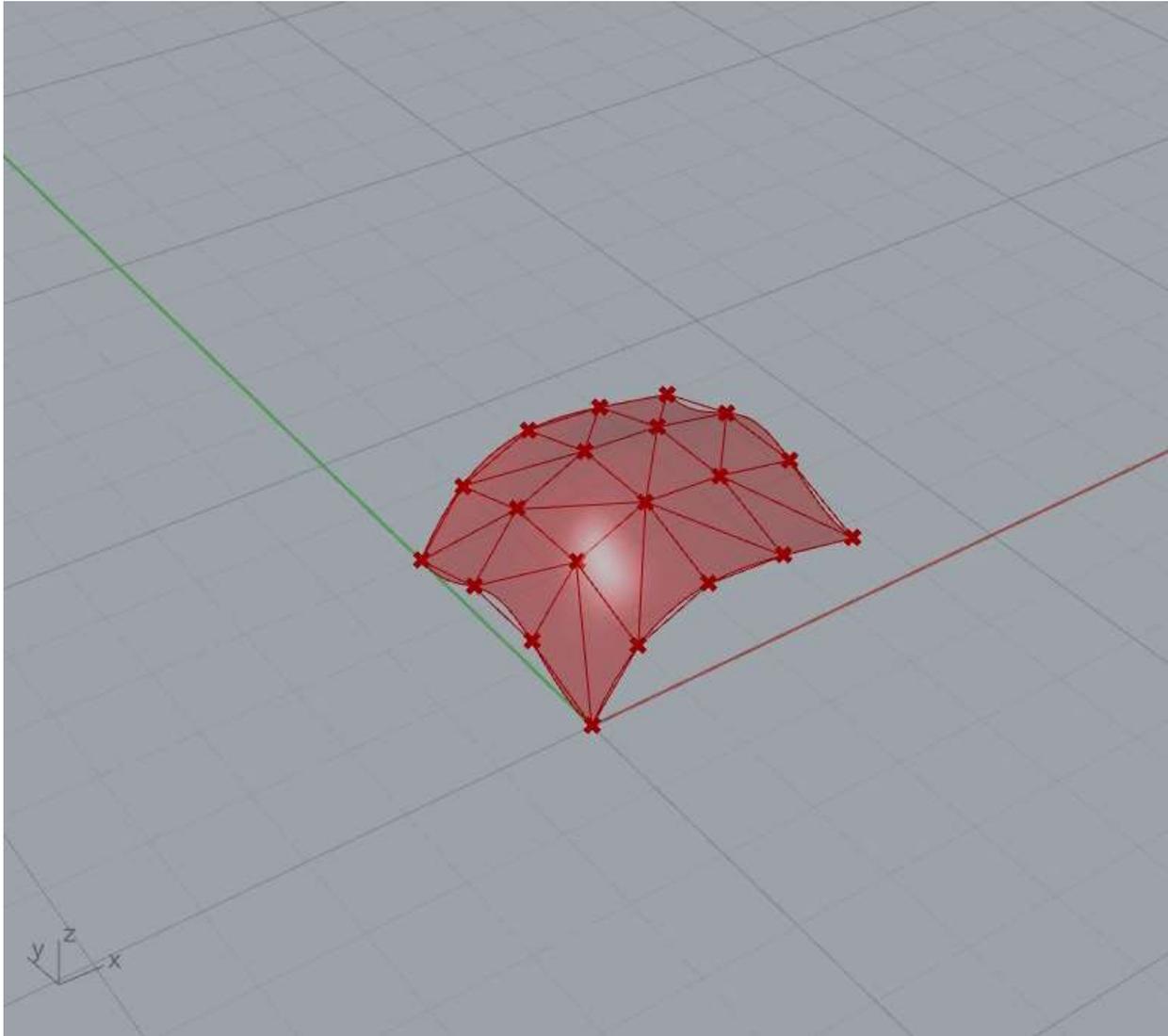


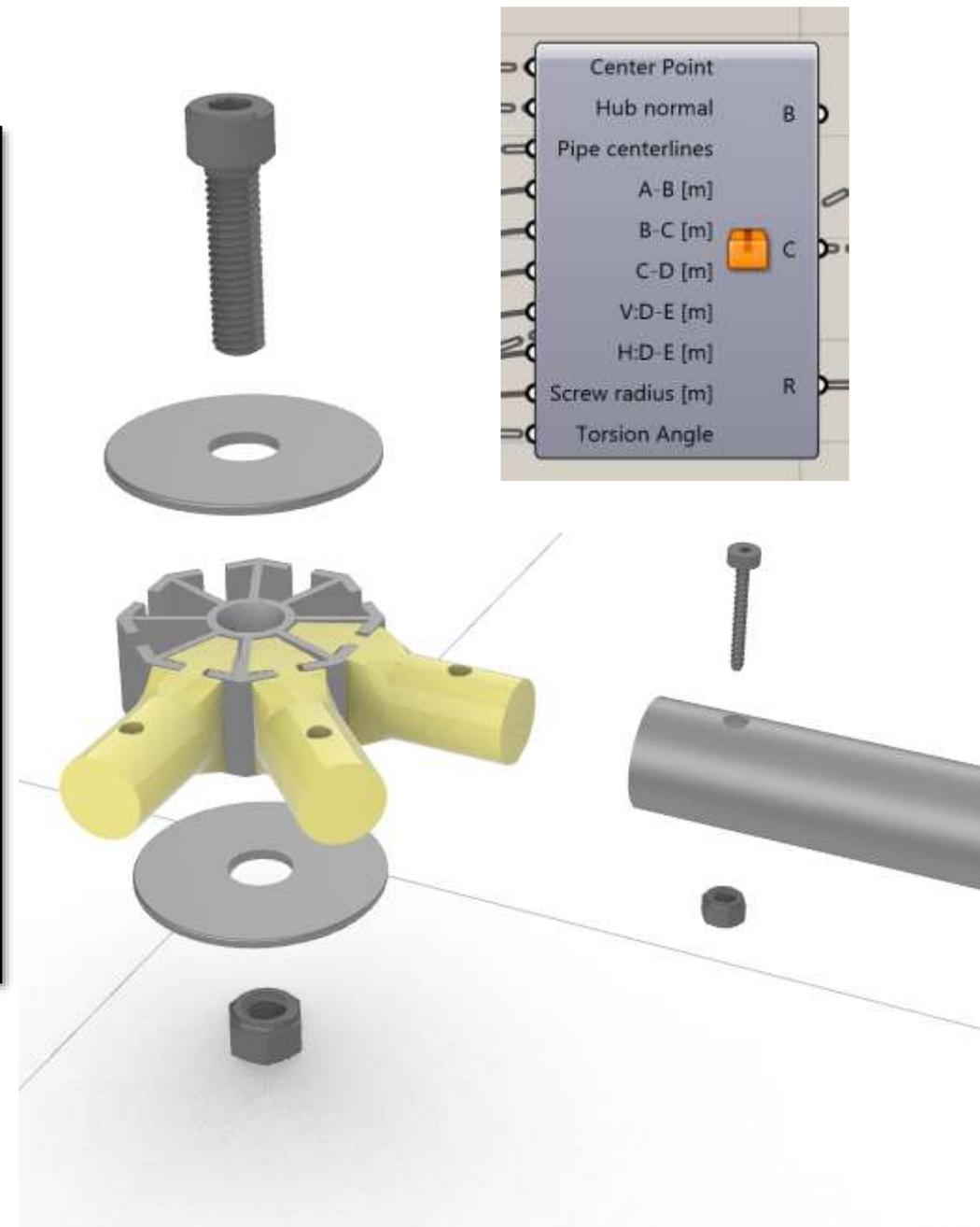
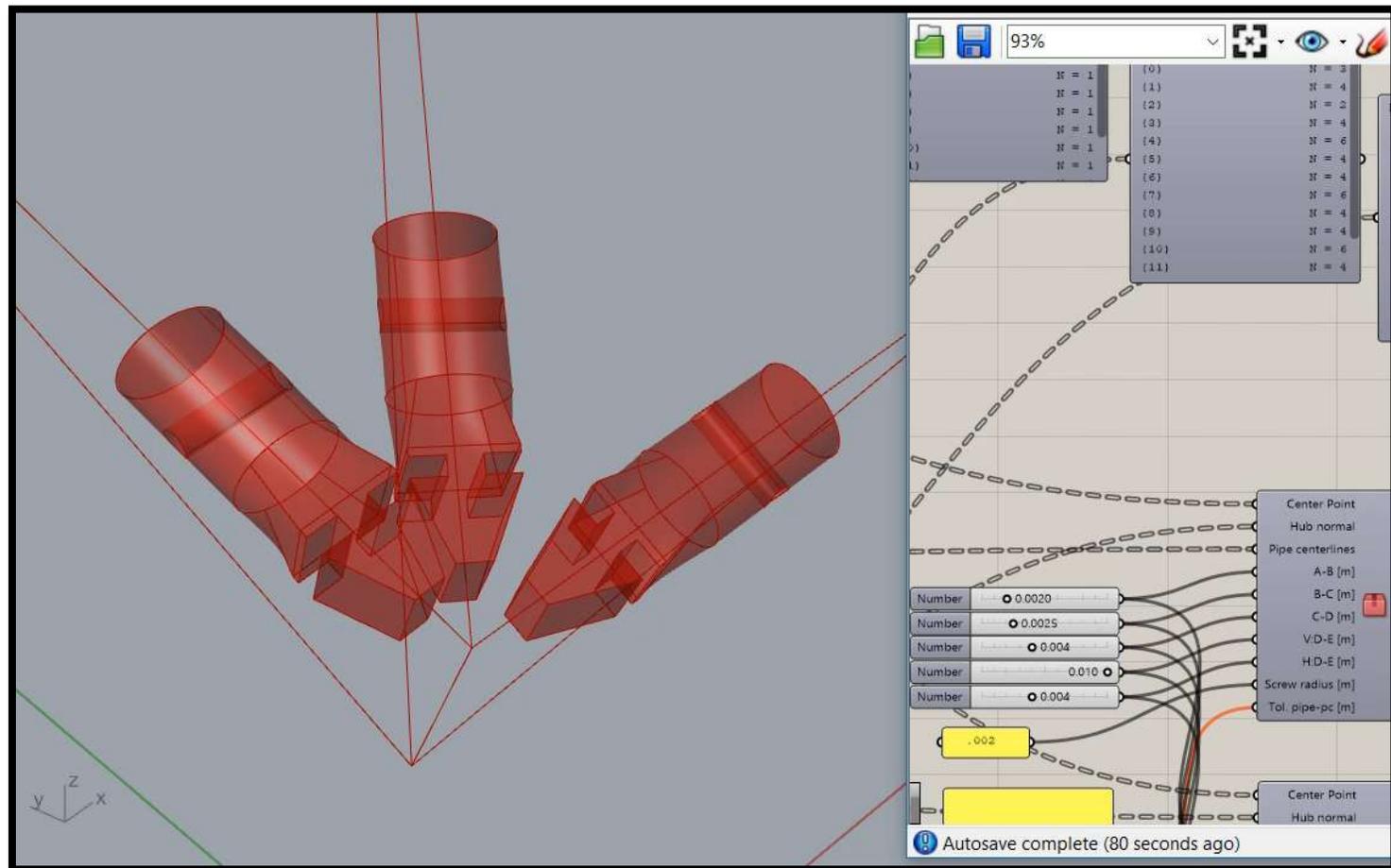


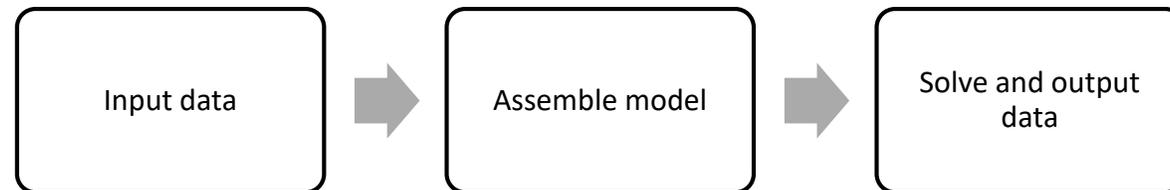
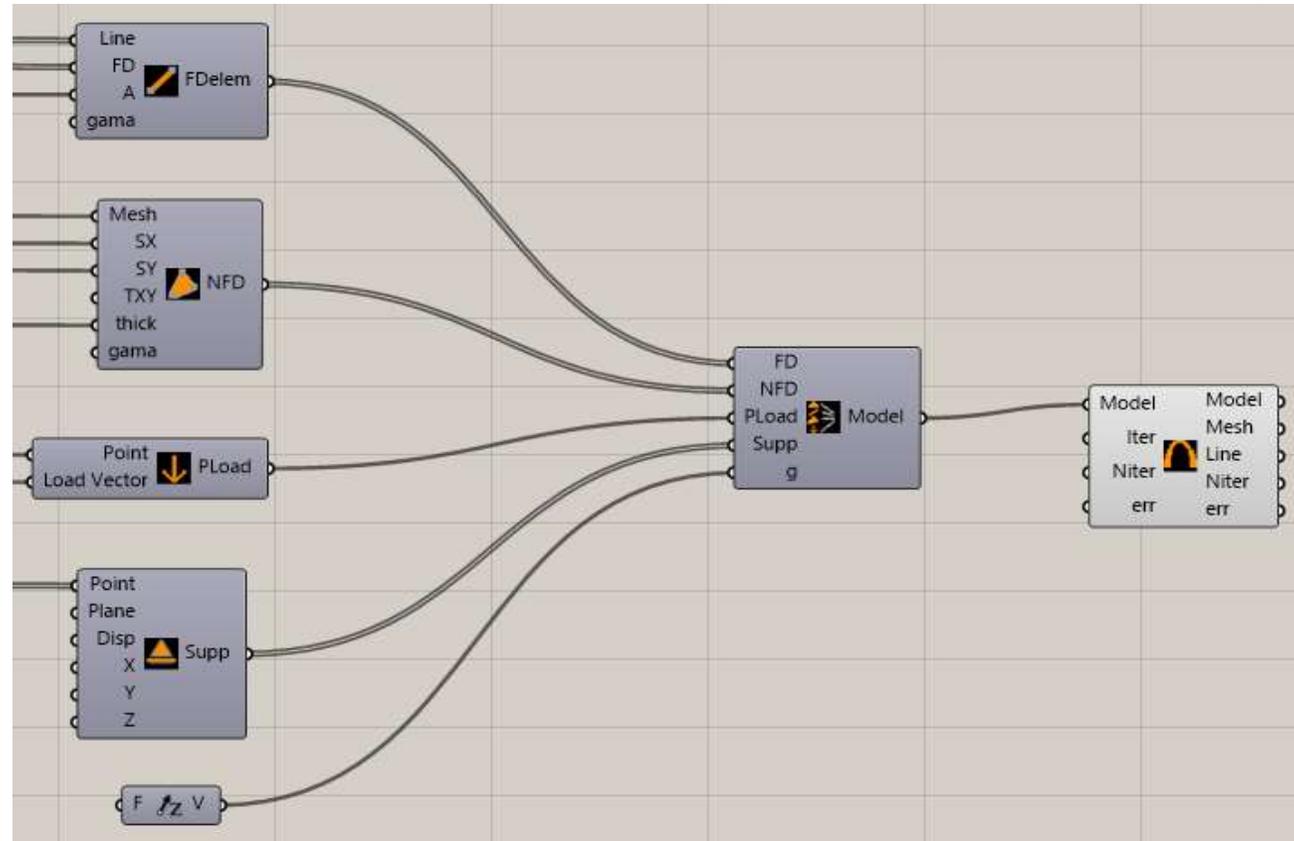
Museu Soumaya  
no México

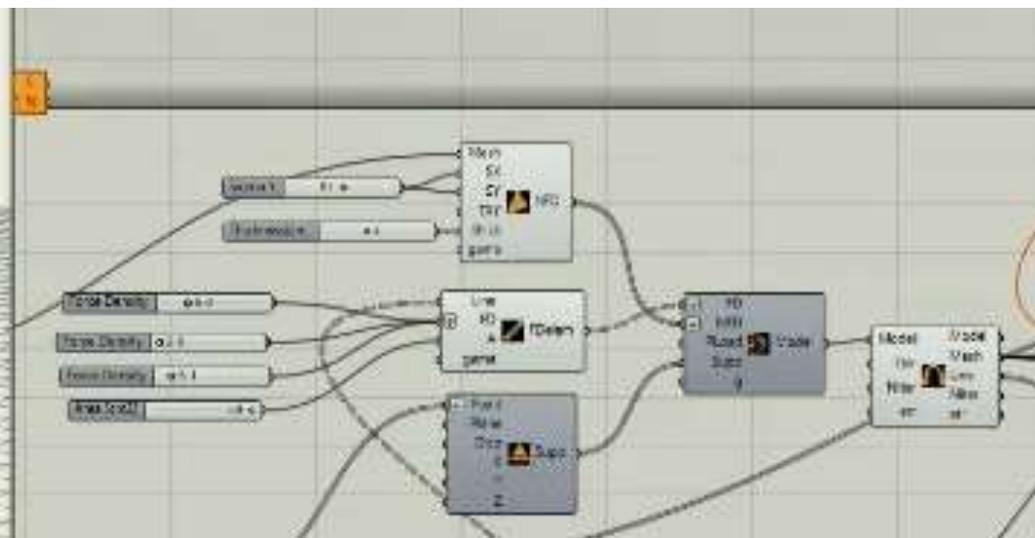
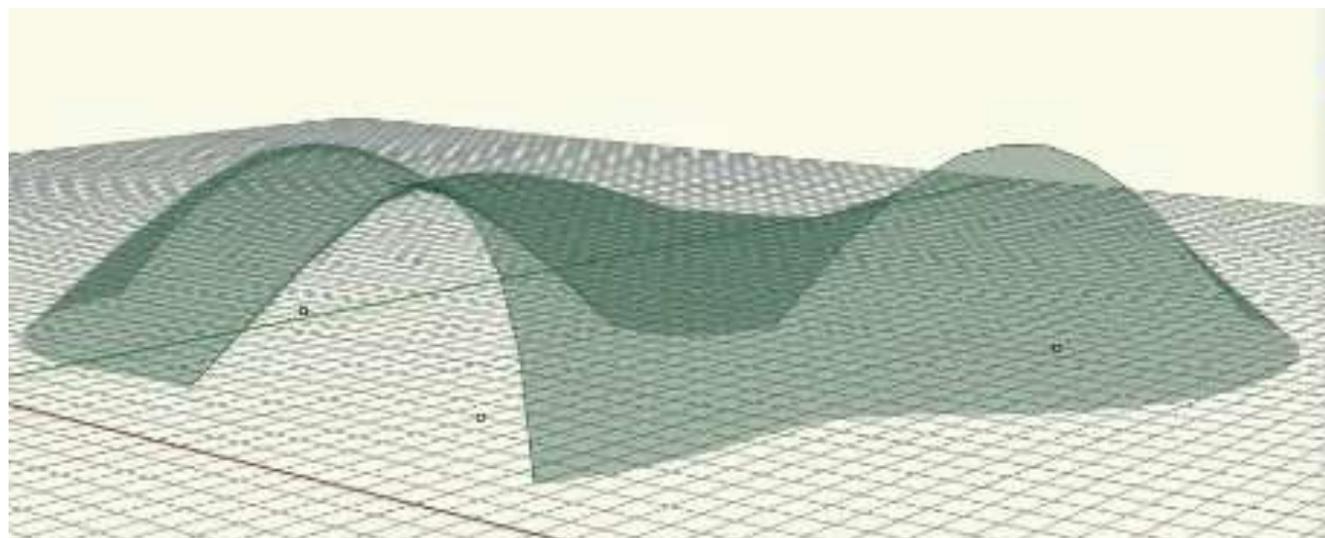
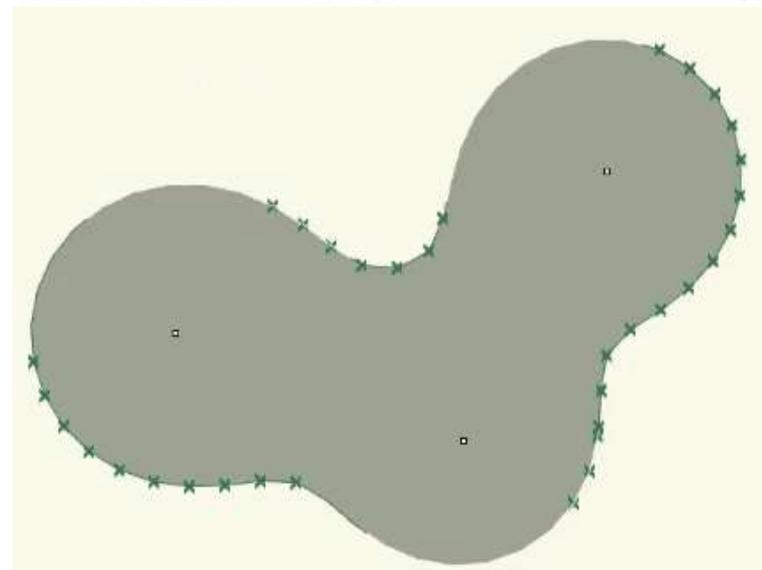
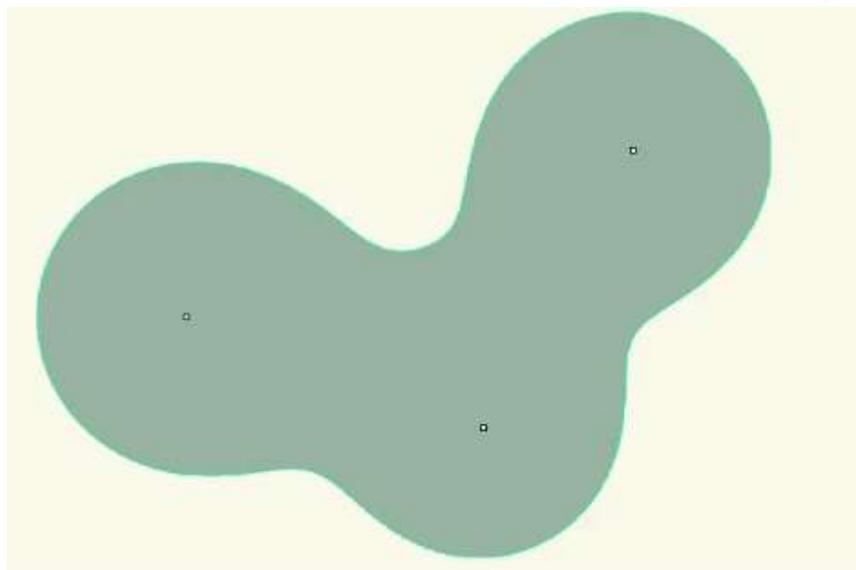






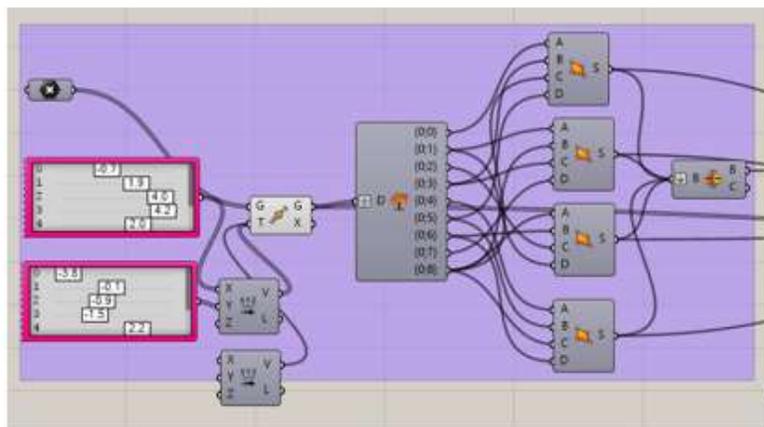




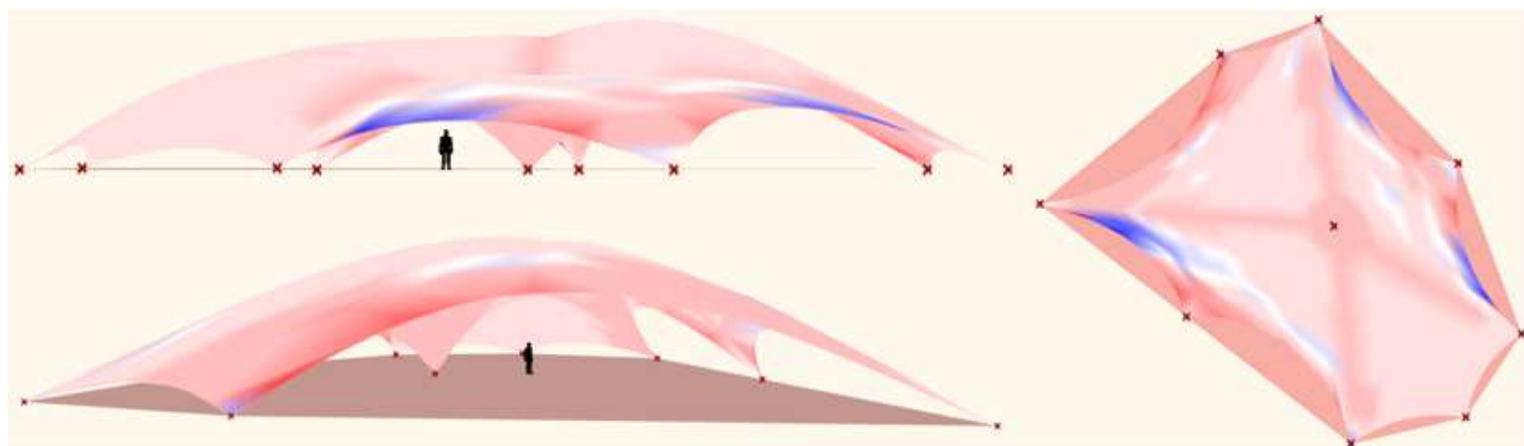




# NFDM design and optimization



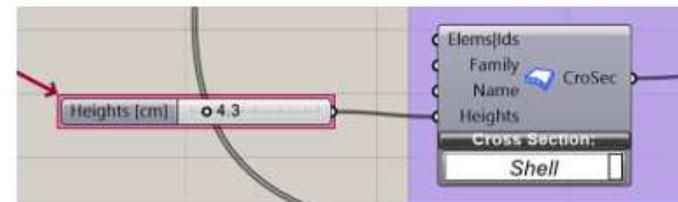
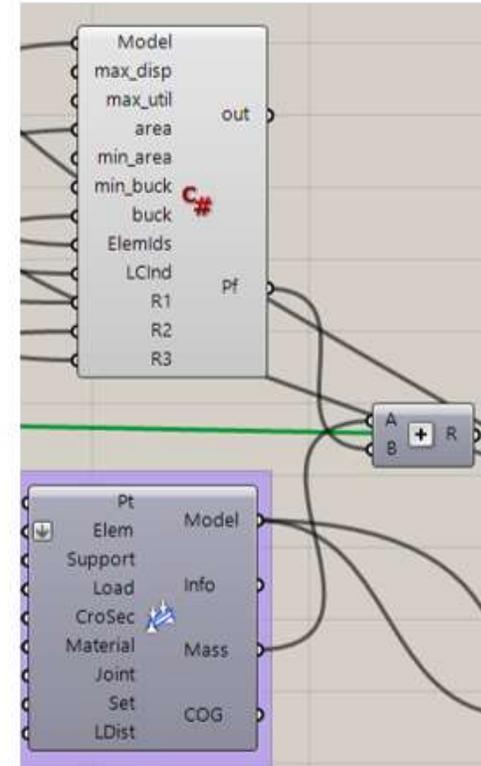
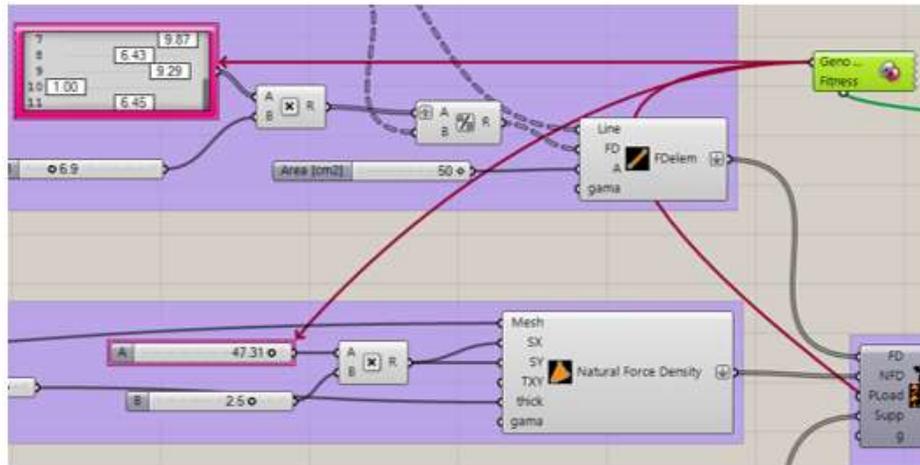
$$\begin{array}{l} \min \quad W(\mathbf{x}) \\ \text{s.t.} \quad \mathbf{K}\mathbf{x} = \mathbf{F} \end{array}$$

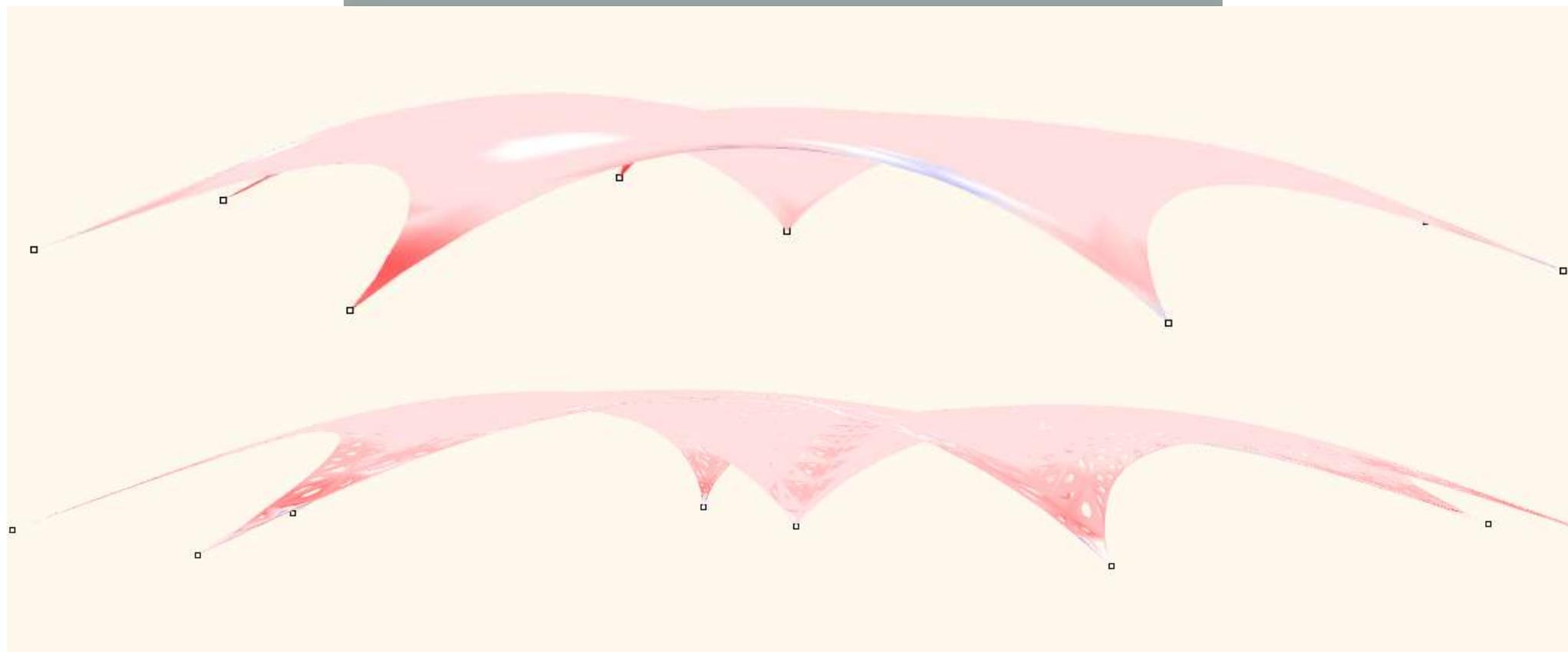
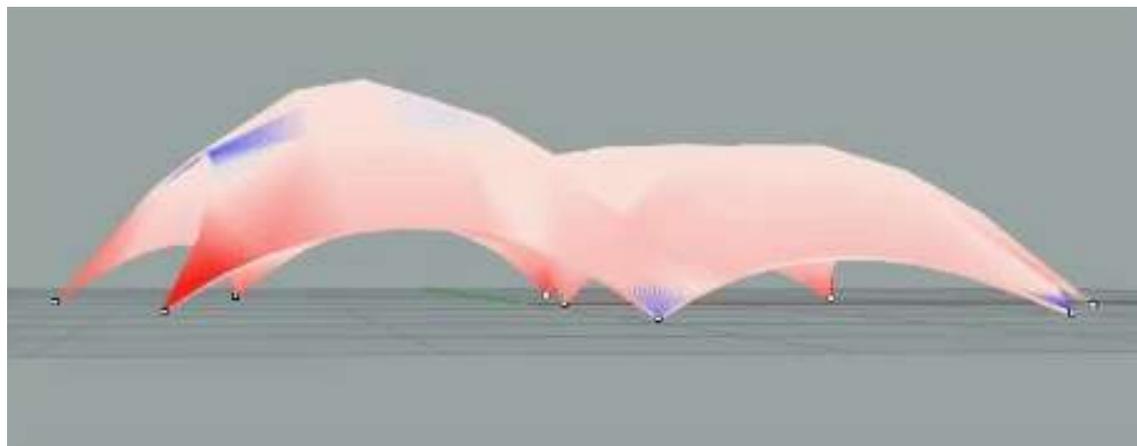


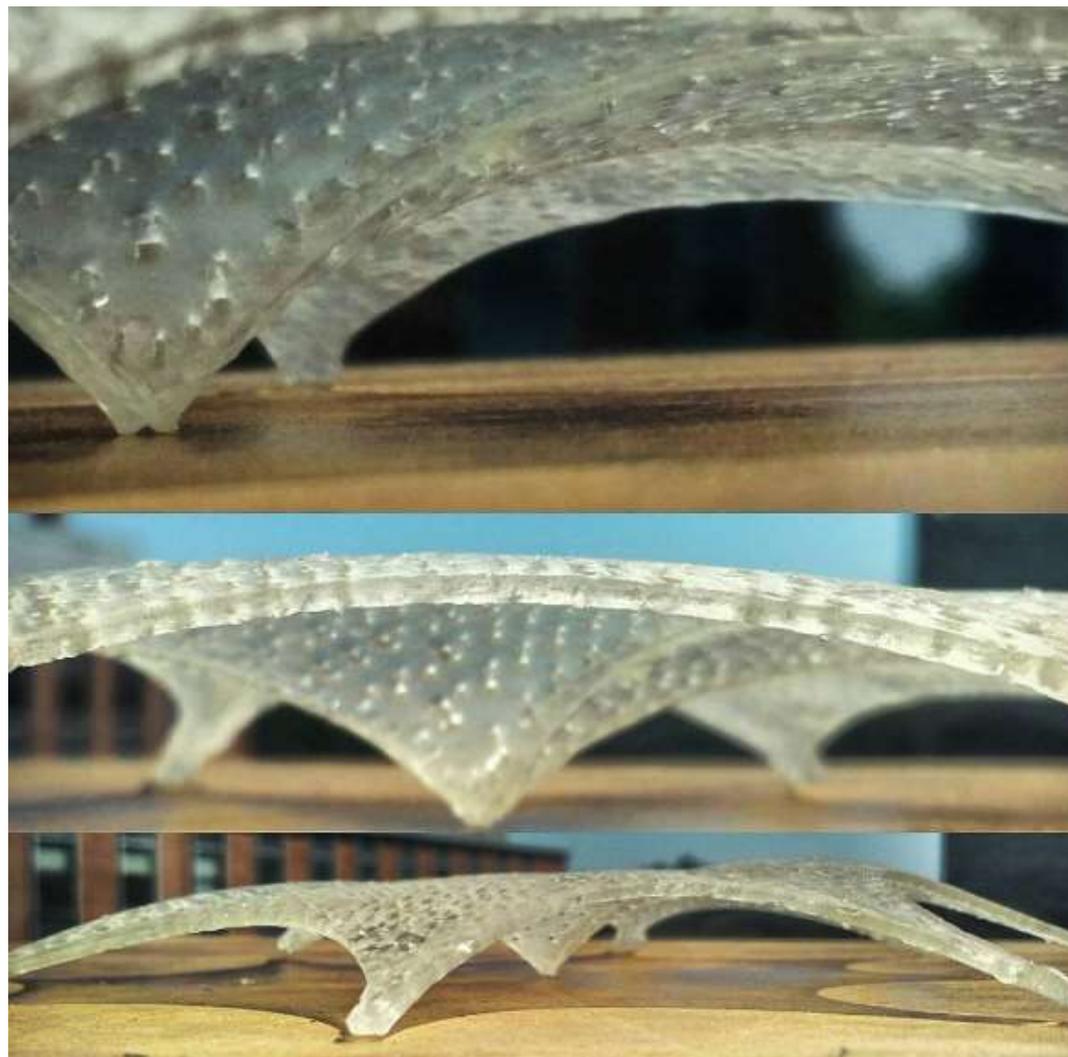


# Constrained Optimization with Penalty Functions

$$\begin{aligned} \min \quad & V(\mathbf{x}, t) \\ \text{s.t.} \quad & \mathbf{K}\mathbf{x} = \mathbf{F} \\ & \mathbf{u}(\mathbf{x}, t) < \mathbf{u}_{\max} \\ & \boldsymbol{\sigma}(\mathbf{x}, t) < \boldsymbol{\sigma}_{\max} \\ & \frac{P_{cr}(\mathbf{x}, t)}{P_L(\mathbf{x}, t)} < \gamma \\ & A^c(\mathbf{x}) > A_{\min}^c \end{aligned}$$

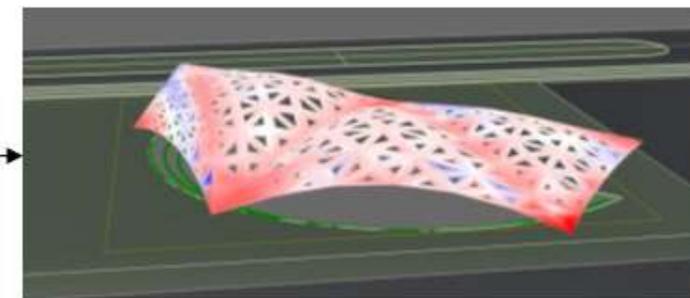
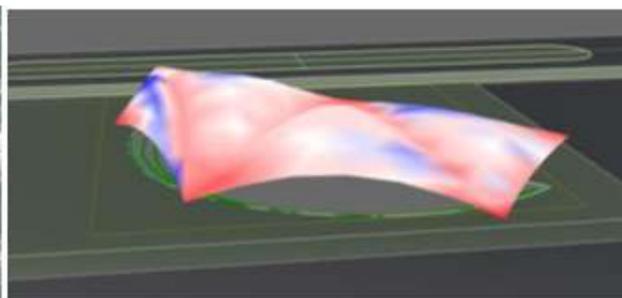








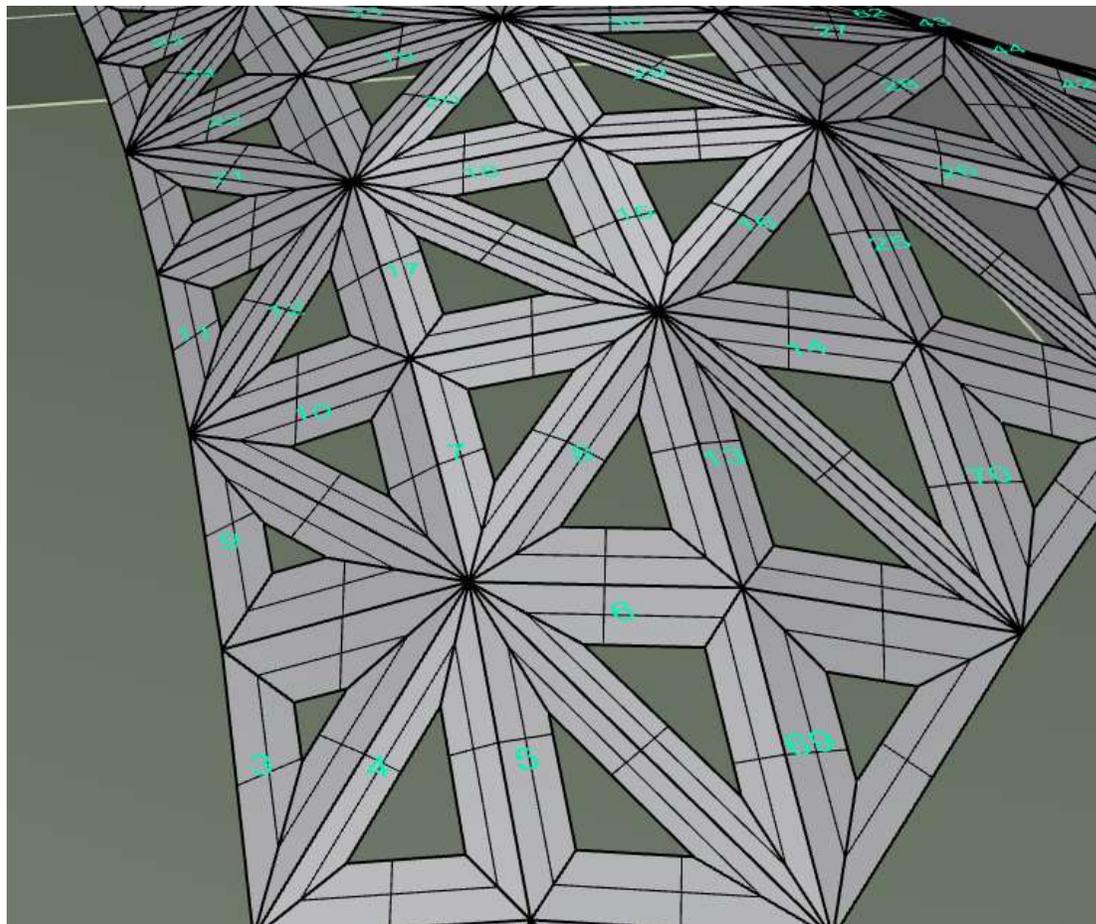
## PROPOSTA DE COBERTURA PARA ANFITEATRO DO LAME (FAUUSP) (2016-2017)

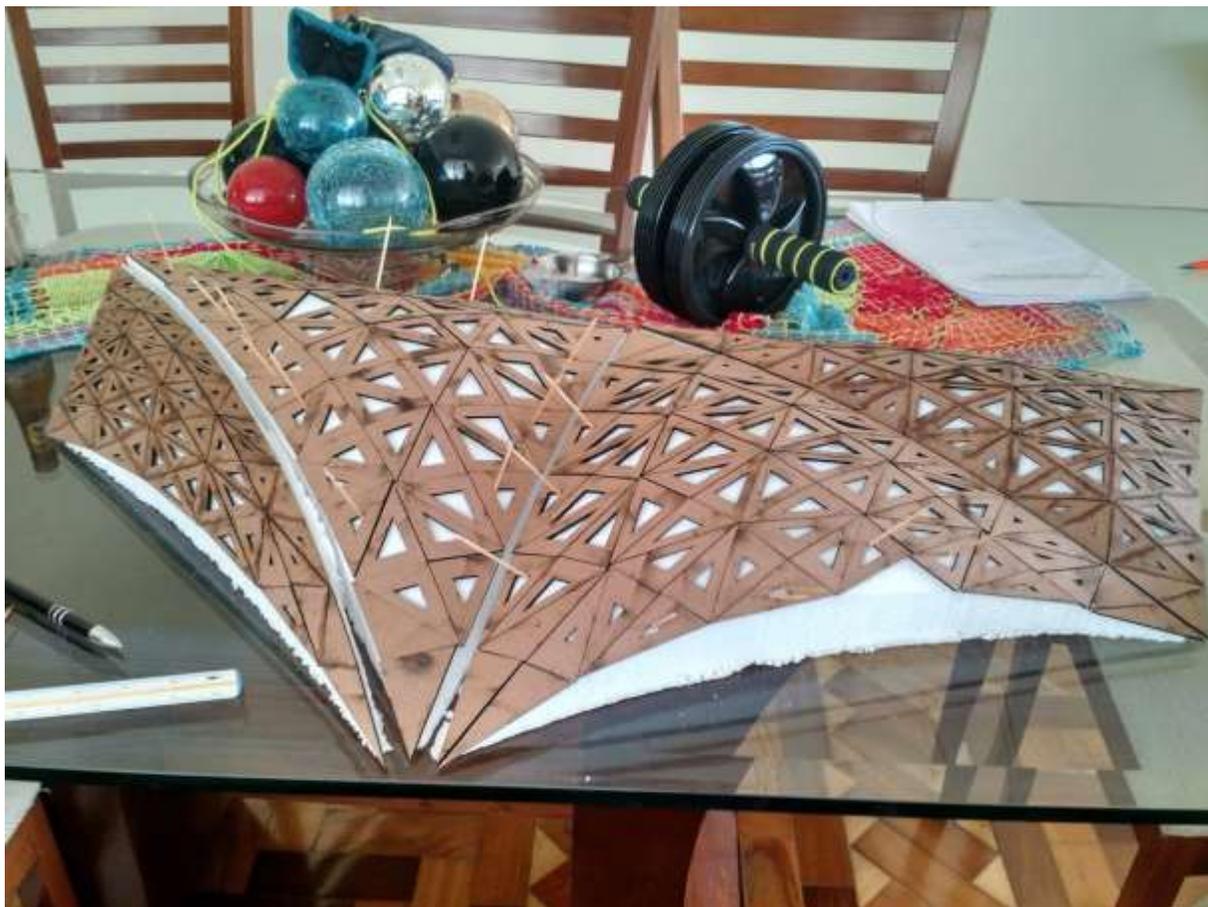


$$\begin{aligned} \min \quad & \mathbf{F}(\mathbf{x}) \\ \text{s.t.} \quad & \mathbf{K}\mathbf{x} = \mathbf{F} \\ & \mathbf{u}(\mathbf{x}) < \mathbf{u}_{\max} \\ & \boldsymbol{\sigma}(\mathbf{x}) < \boldsymbol{\sigma}_{\max} \\ & \min(z_p(\mathbf{x})) > z_{\min} \\ & \gamma(\mathbf{x}) = \frac{P_{xx}(\mathbf{x}, t)}{P_z(\mathbf{x}, t)} > \gamma_{\min} \end{aligned}$$

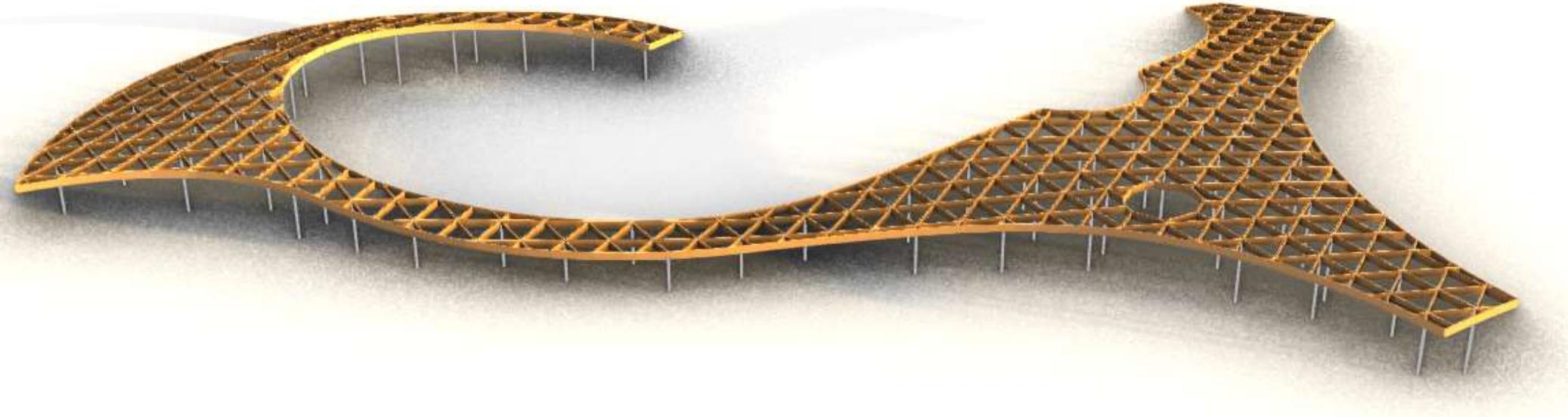
$$\mathbf{x} = \begin{bmatrix} \mathbf{n} \\ \mathbf{N} \\ \mathbf{0} \\ t \end{bmatrix} \quad ; \quad \mathbf{F}(\mathbf{x}) = \begin{bmatrix} V(\mathbf{x}) \\ A_c(\mathbf{x}) \end{bmatrix}$$

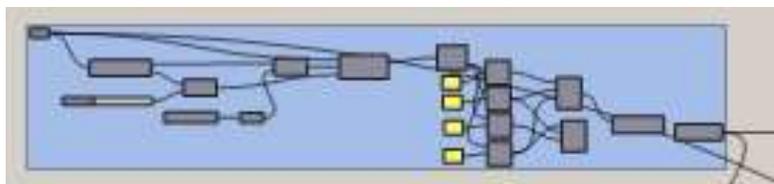
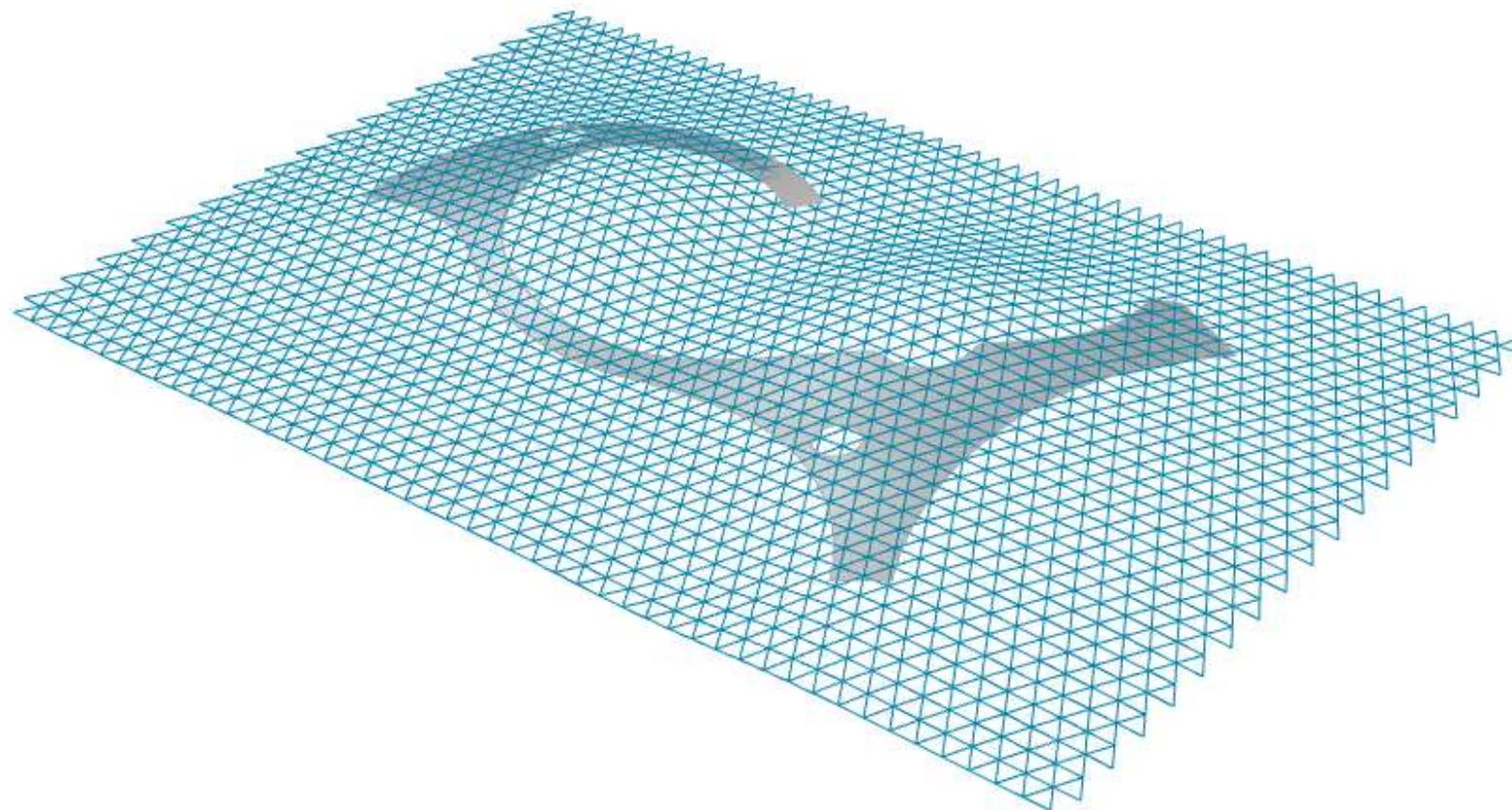


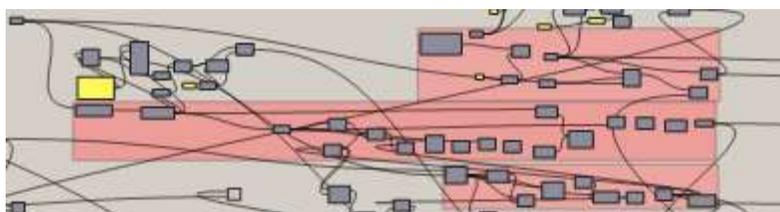
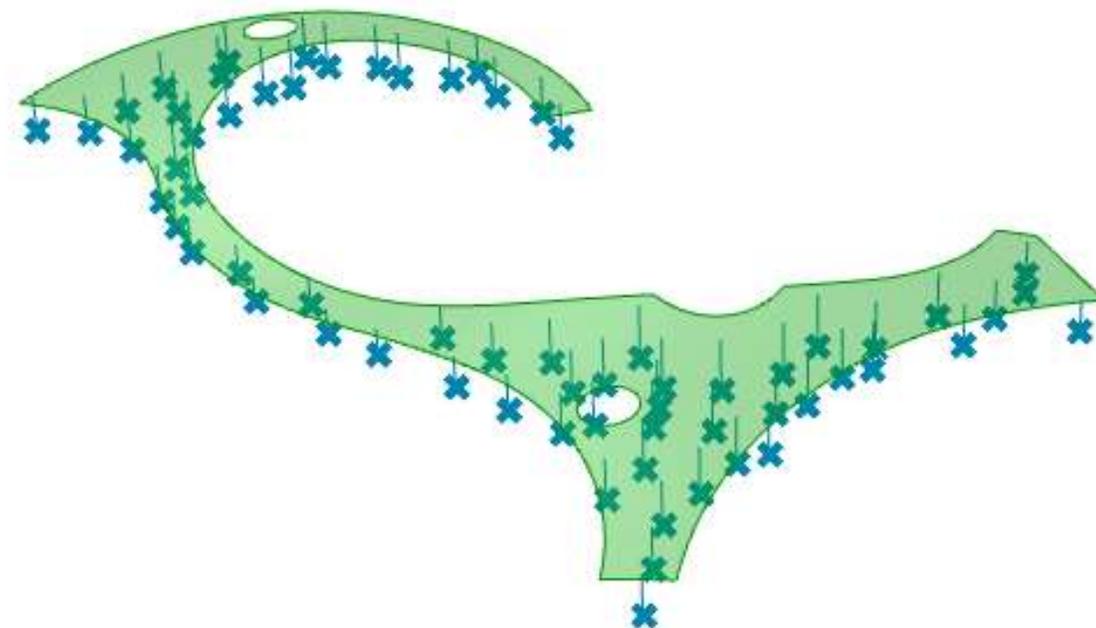
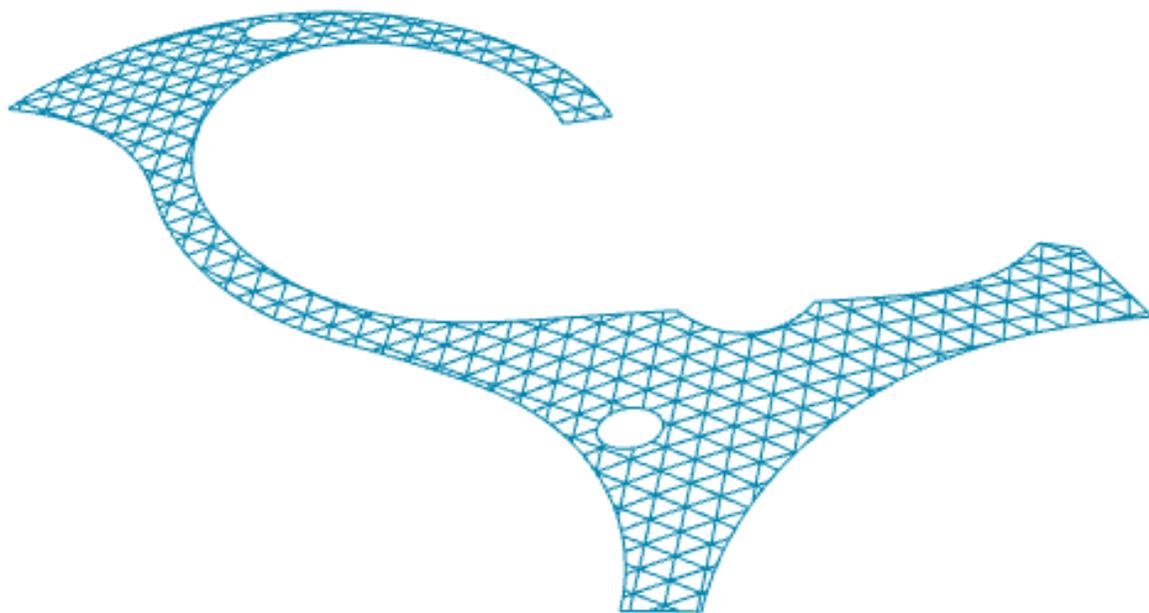


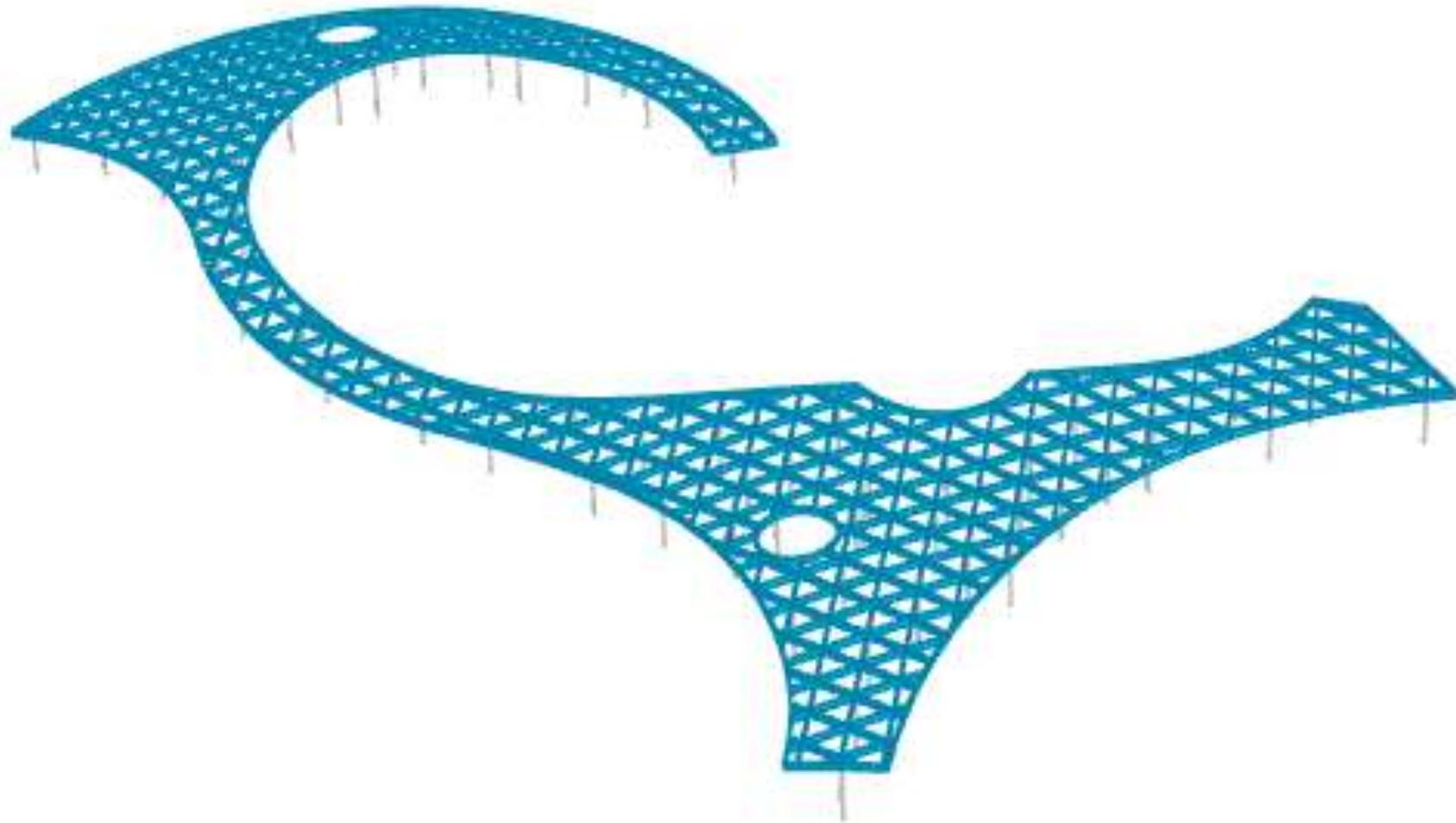


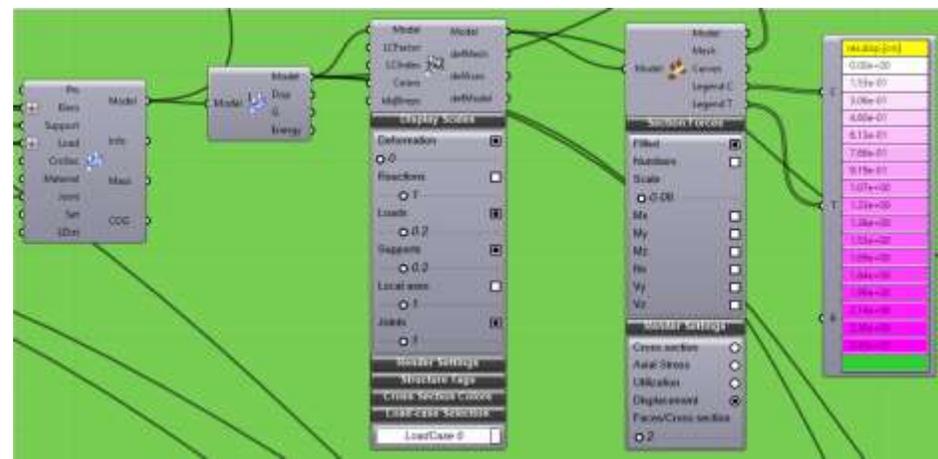
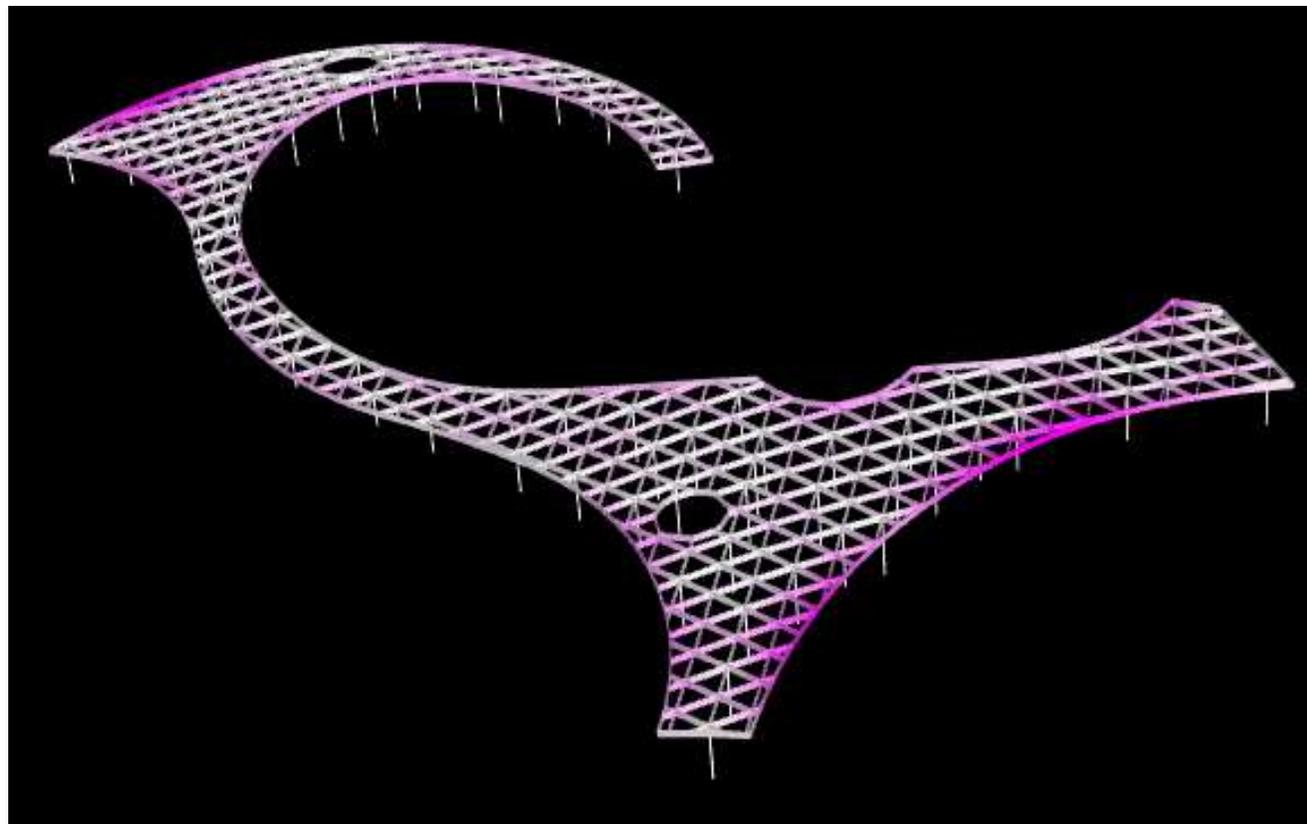
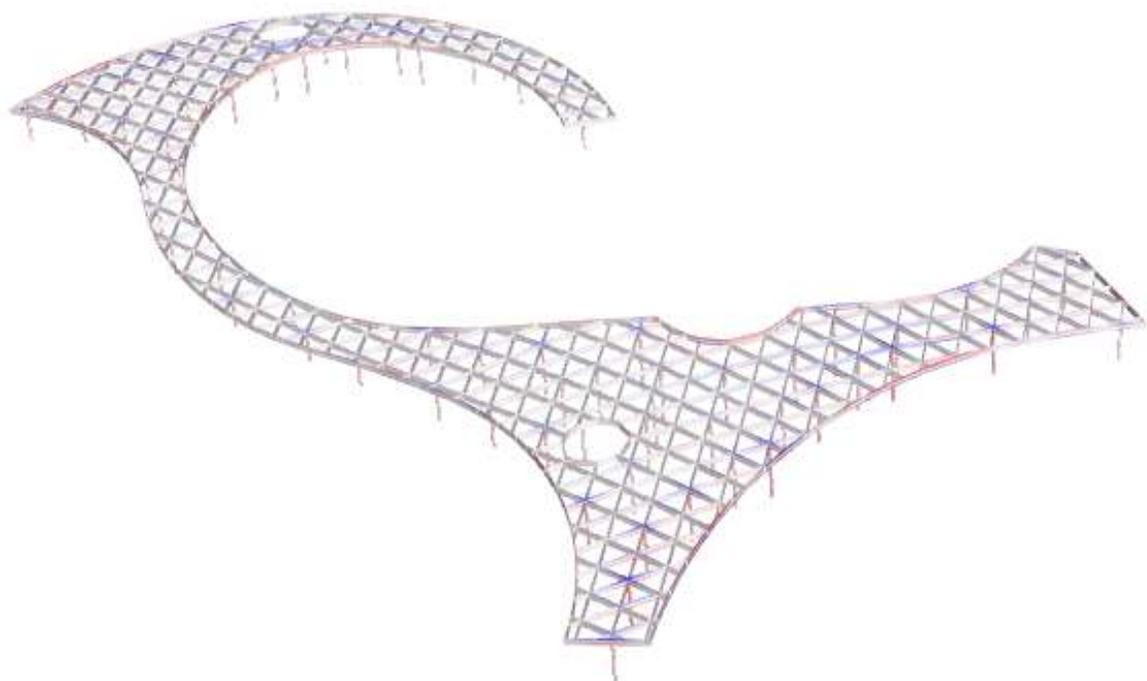






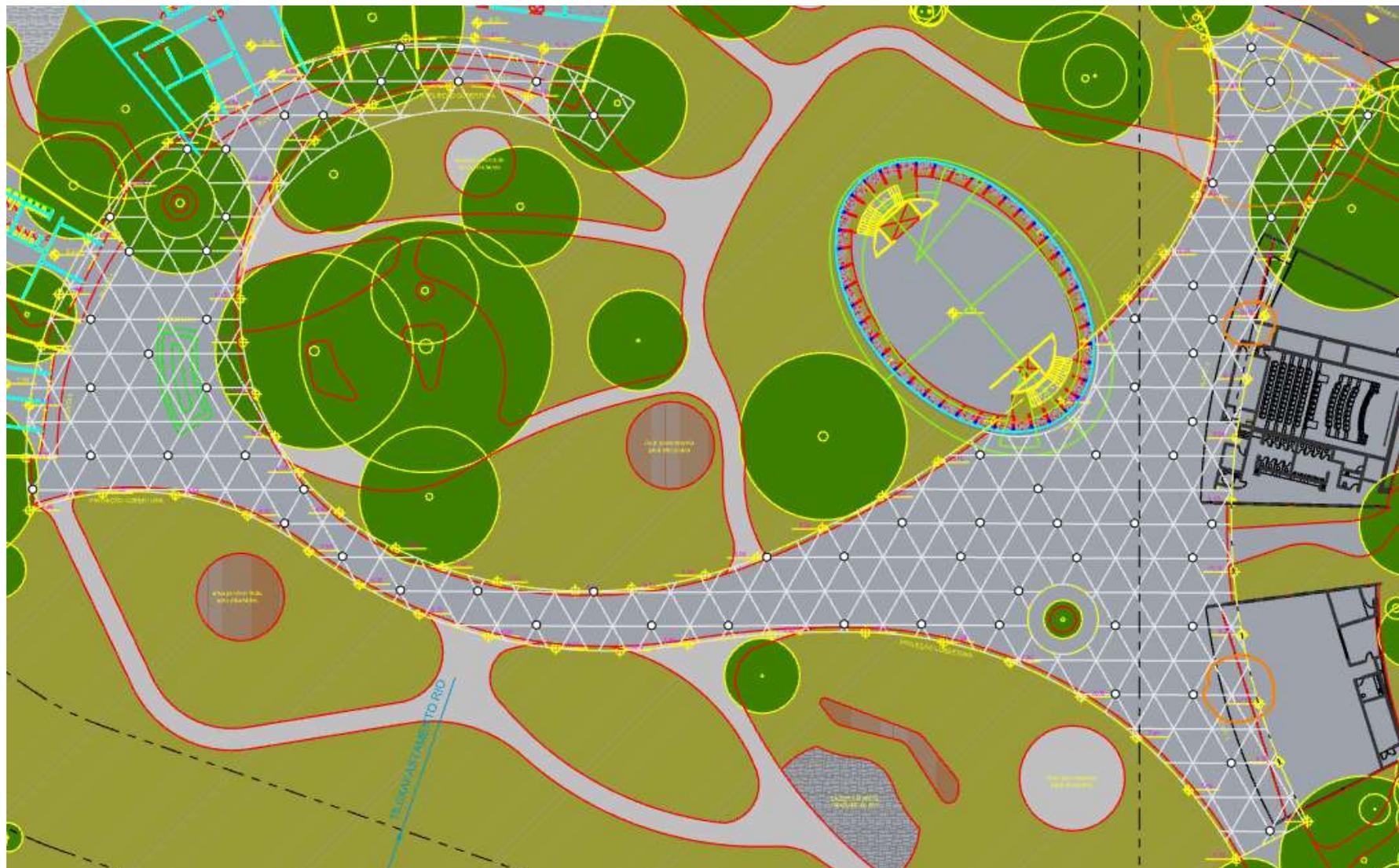




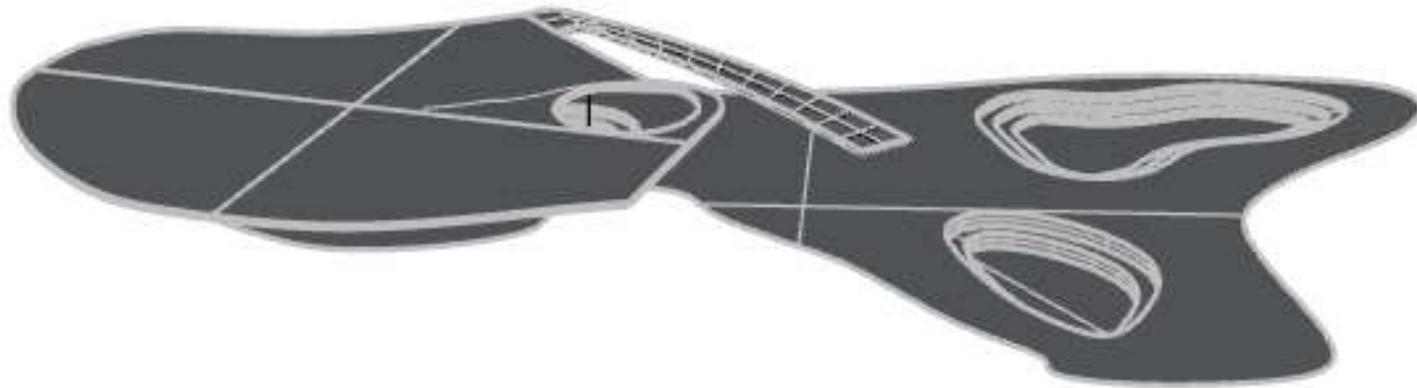
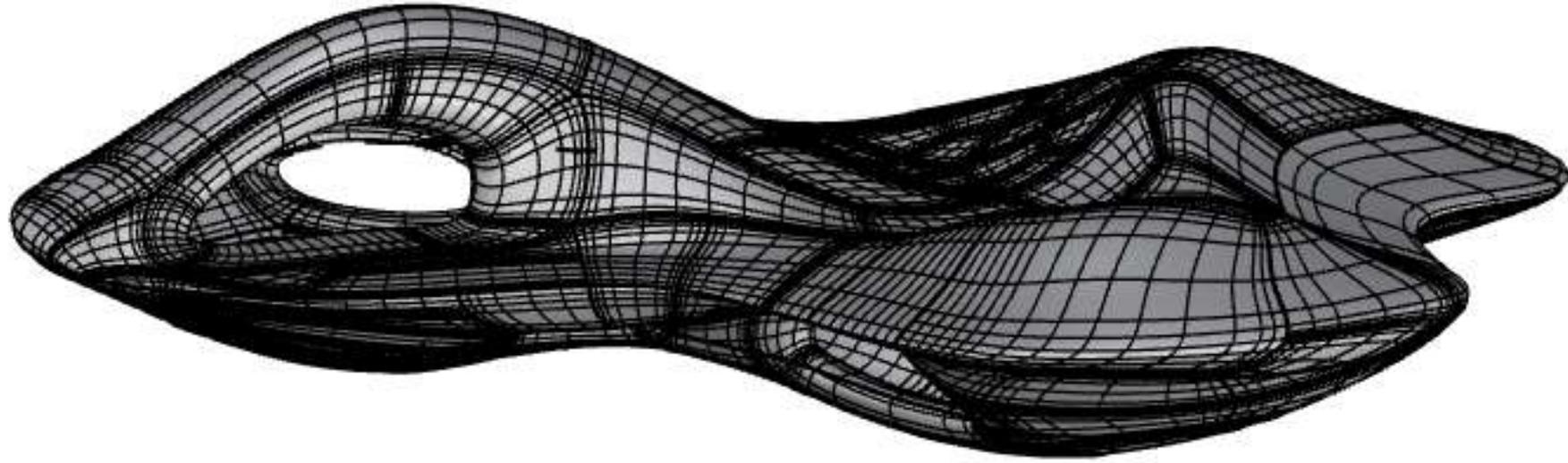


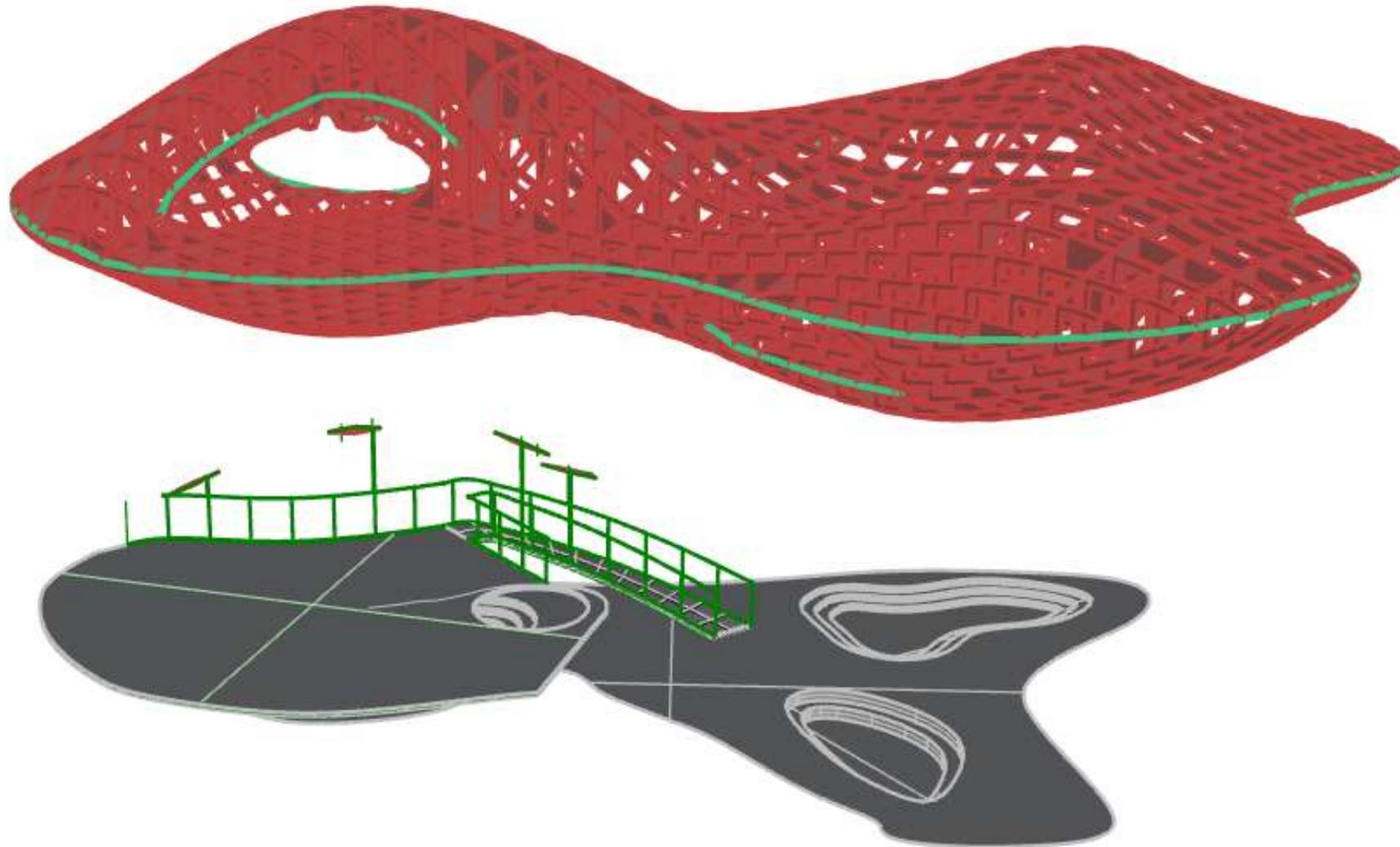


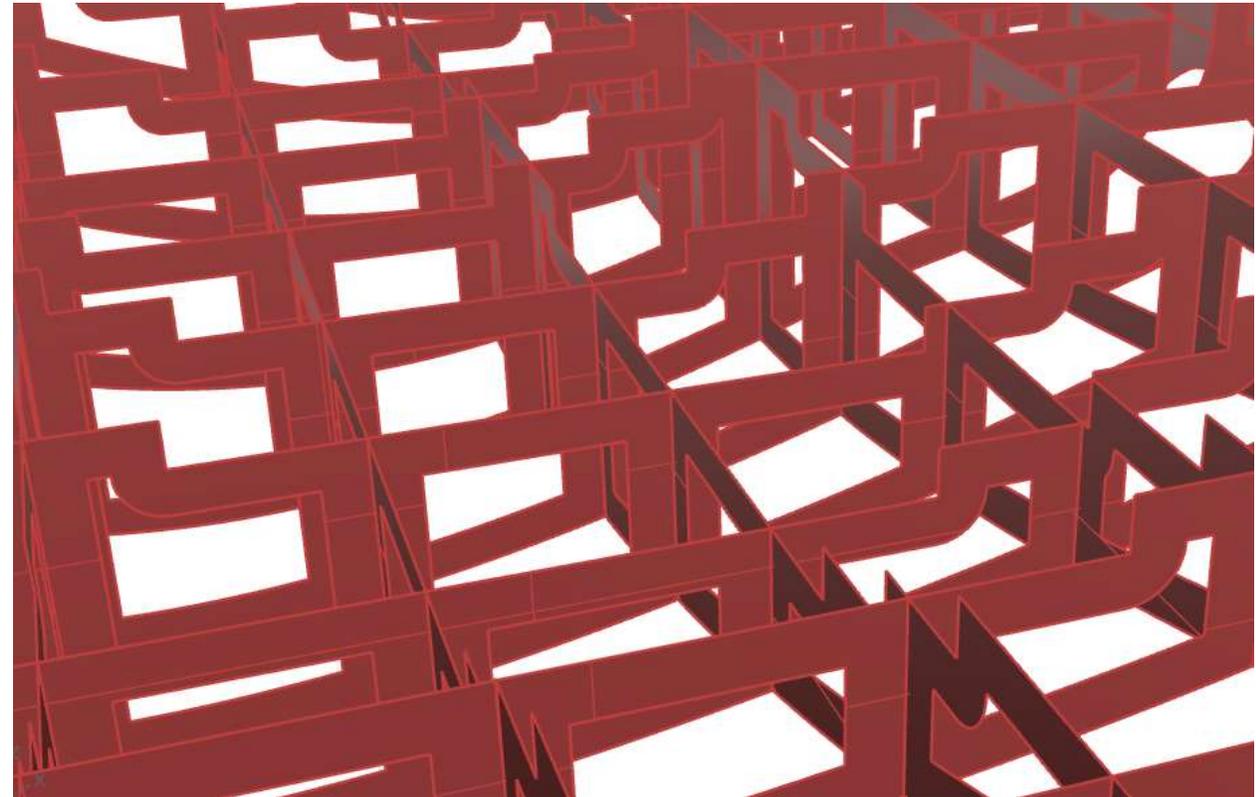
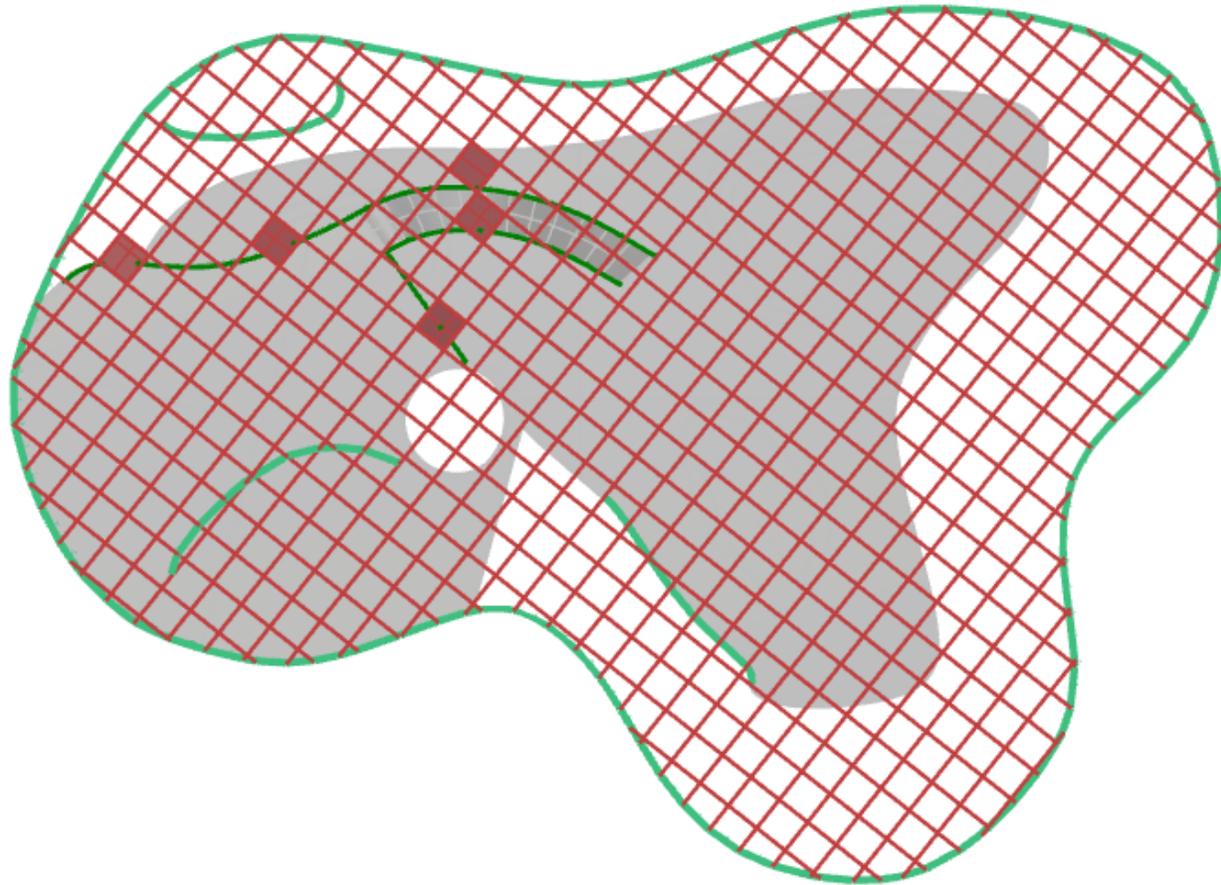
# Marquise SESC Paraty – Parametrização como método de auxílio na comunicação da engenharia e arquitetura

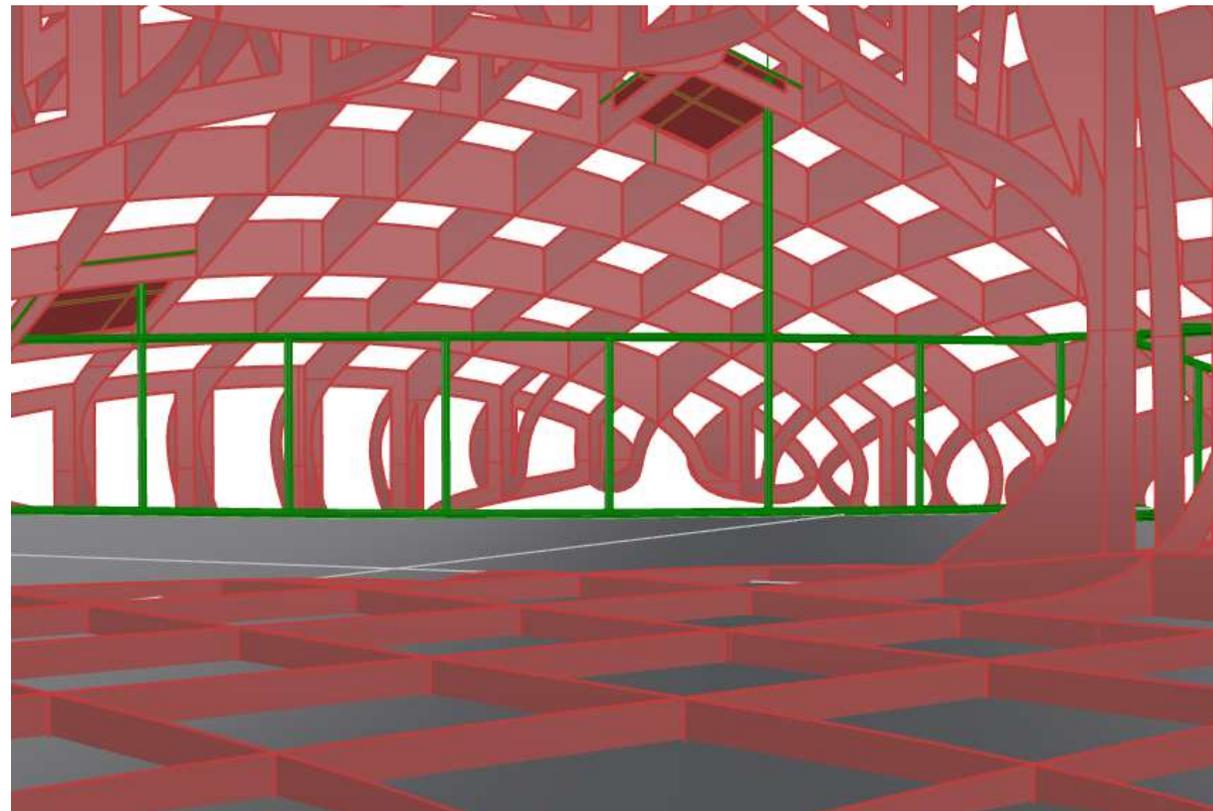
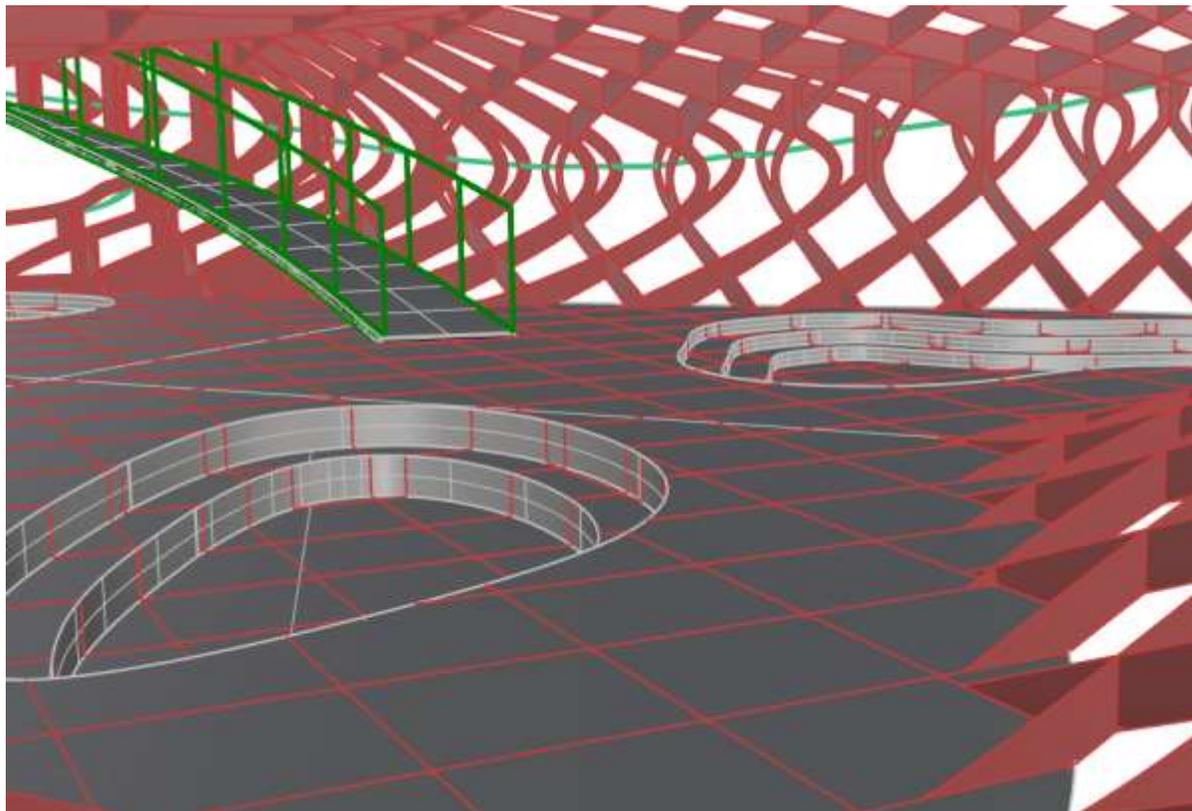


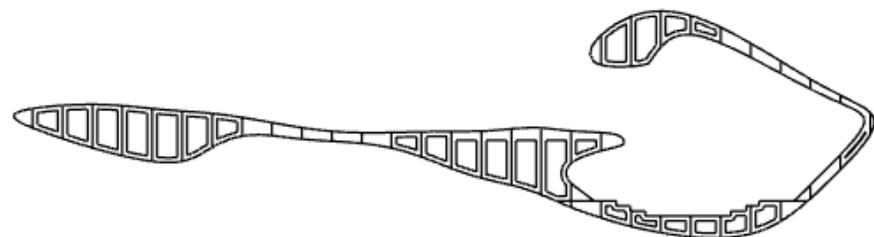




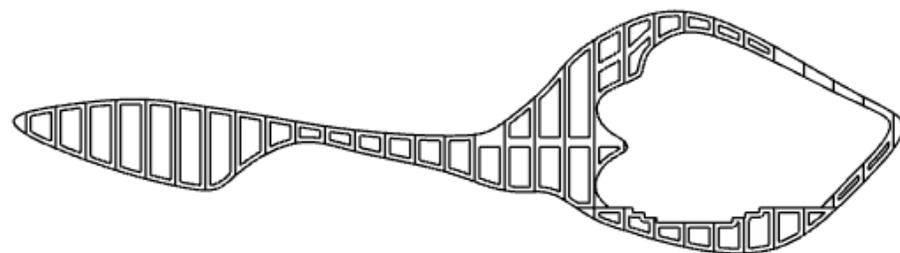




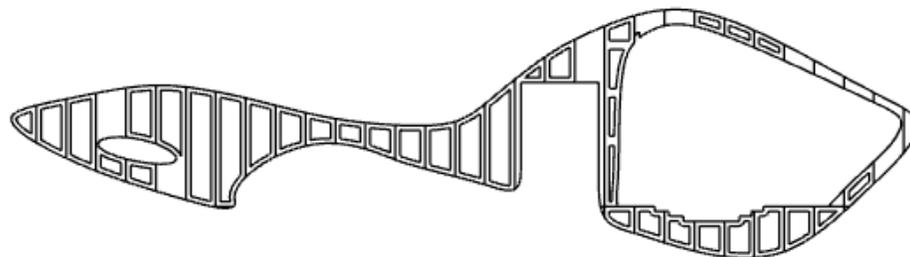




Y23



Y22



Y21



