

COMPUTATIONAL DESIGN

i praksis

Timo Harboe Nielsen

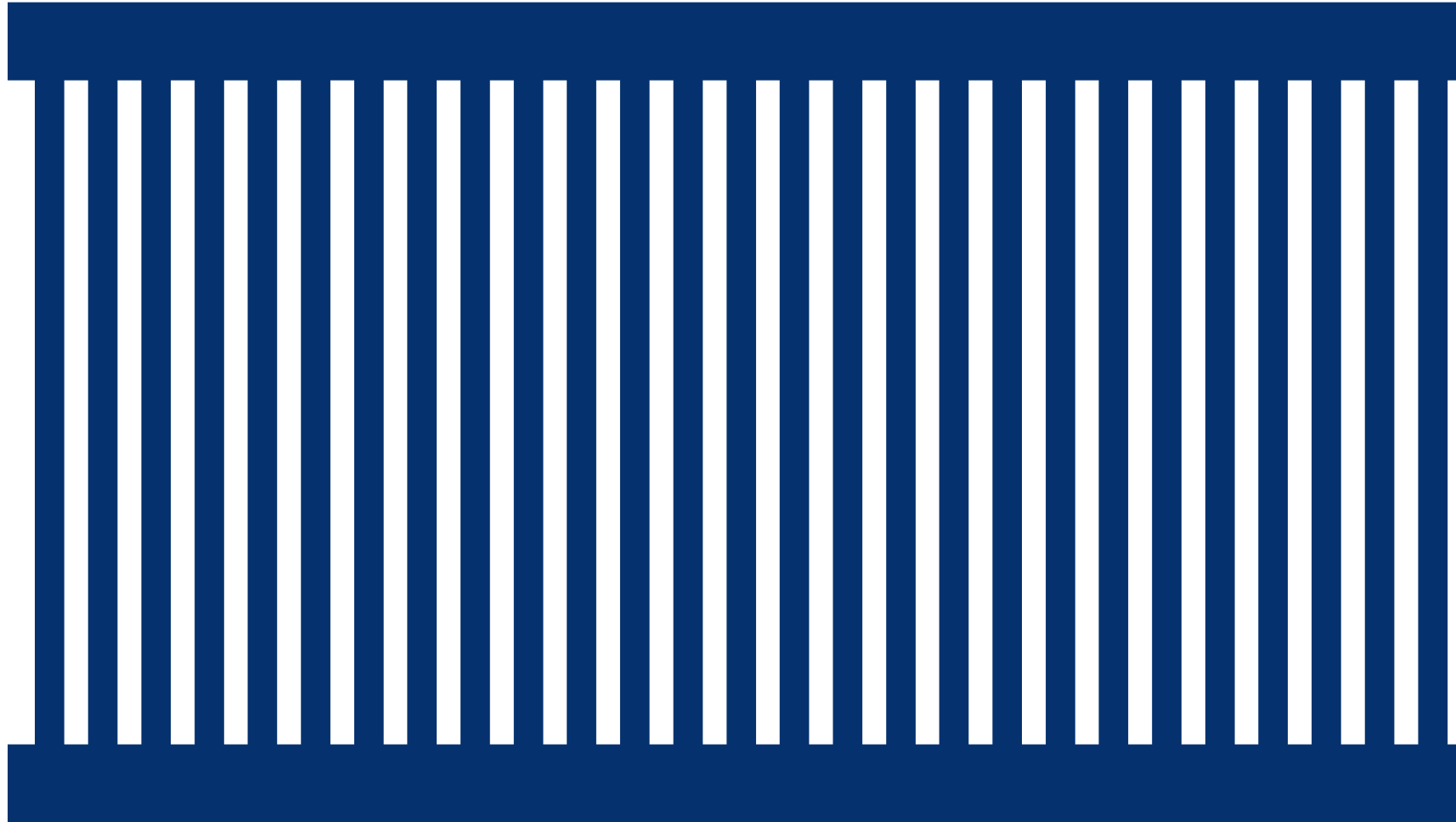
KompetenceUdvikling i Byggeriets Uddannelser – 26. Okt 2022

RAMBOLL

Bright ideas.
Sustainable change.

Hvad er Computational Design?



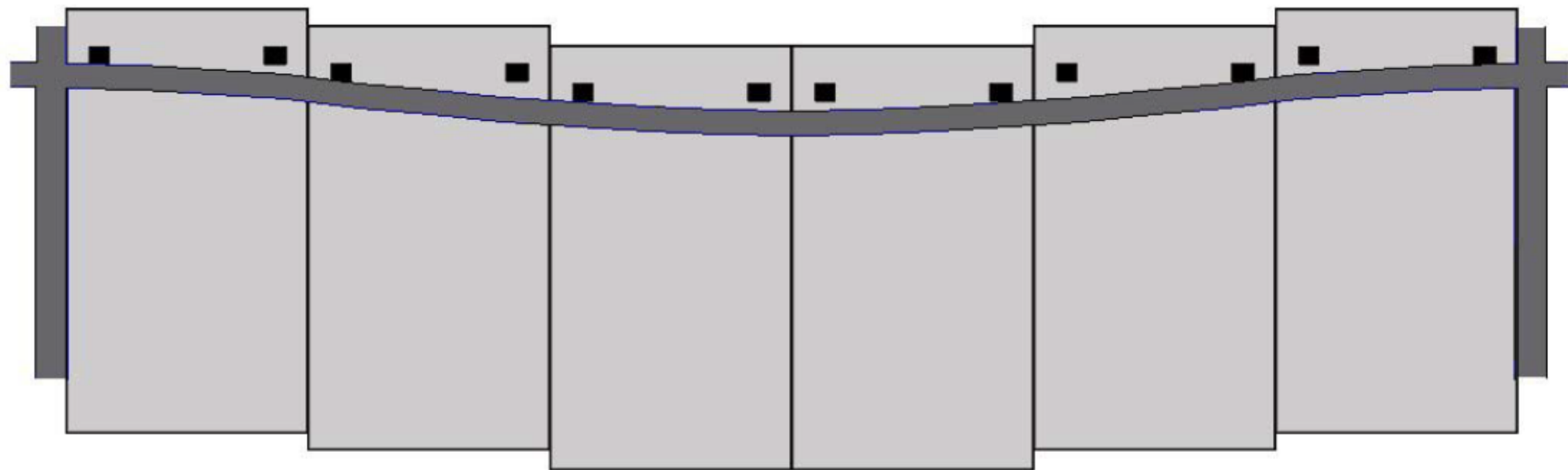


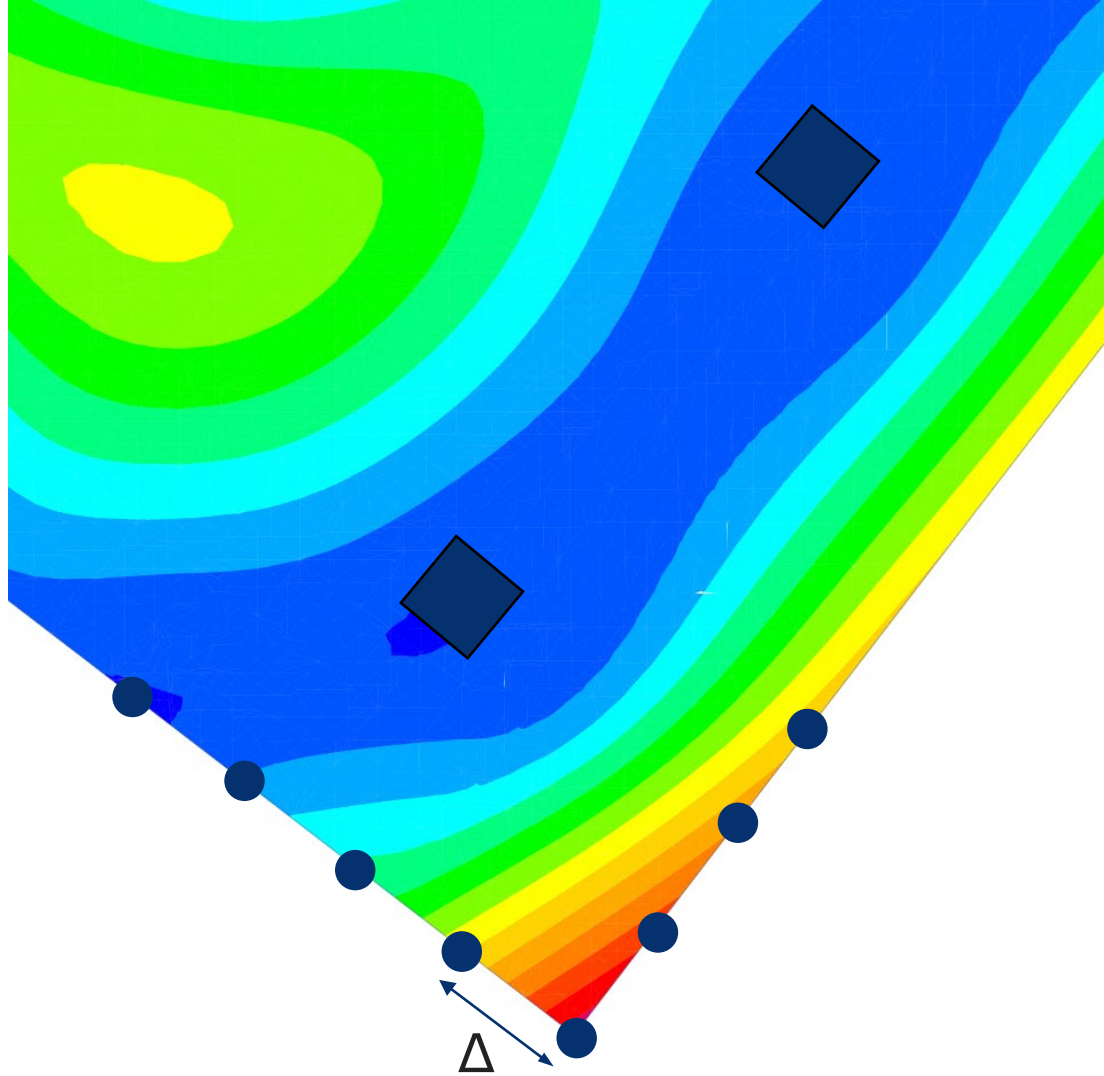
Elevation

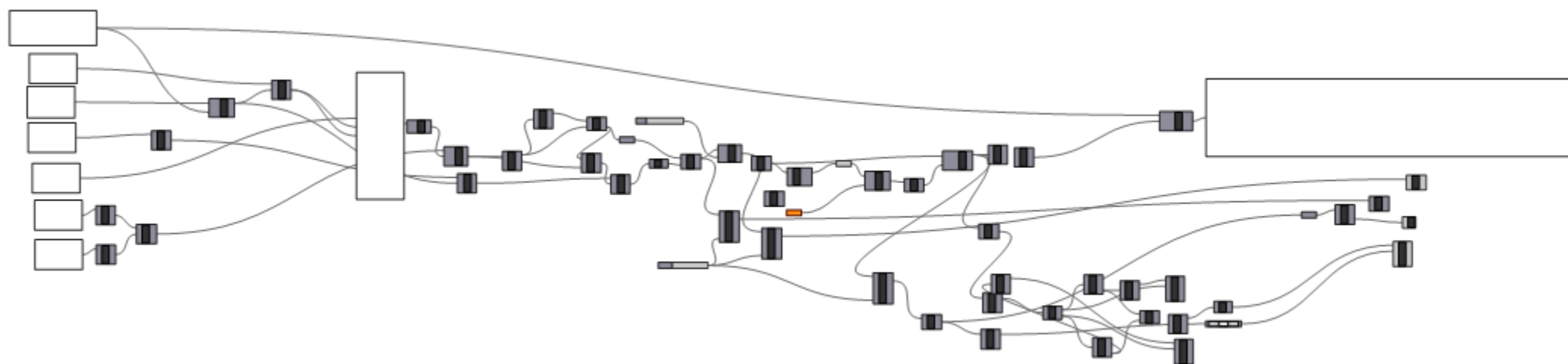


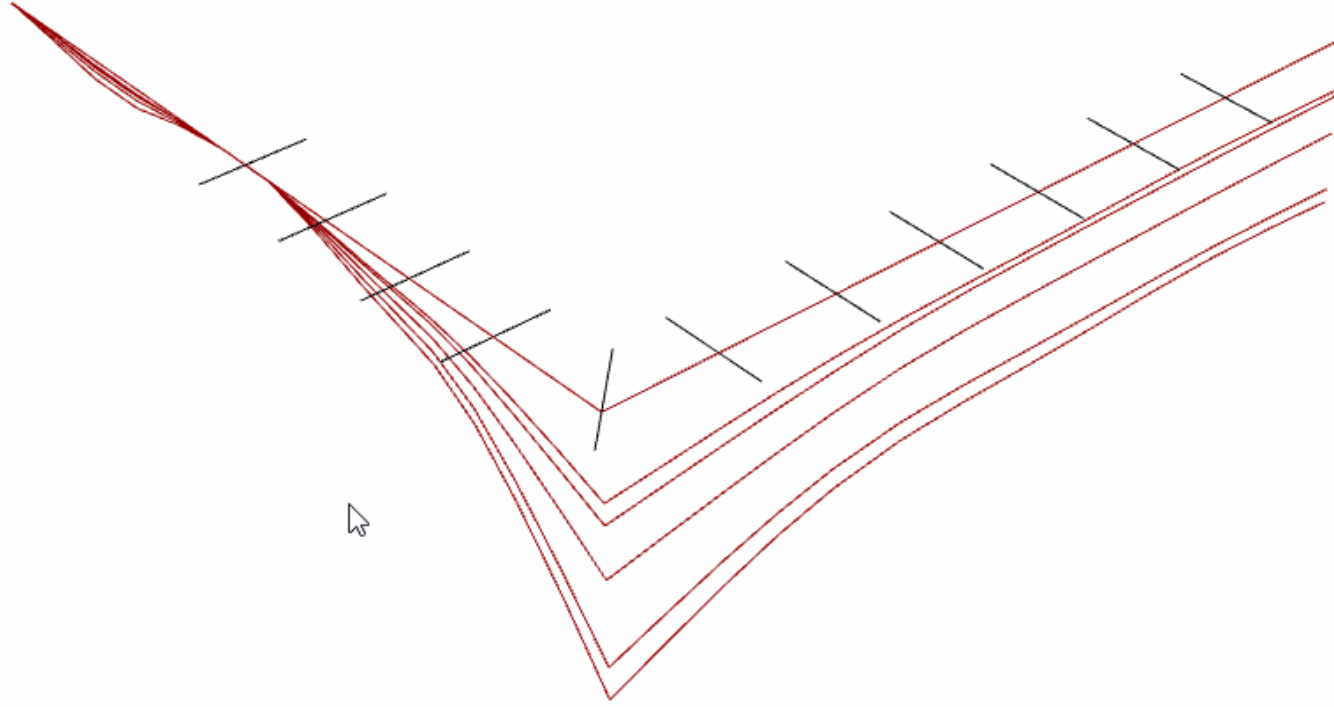
Section

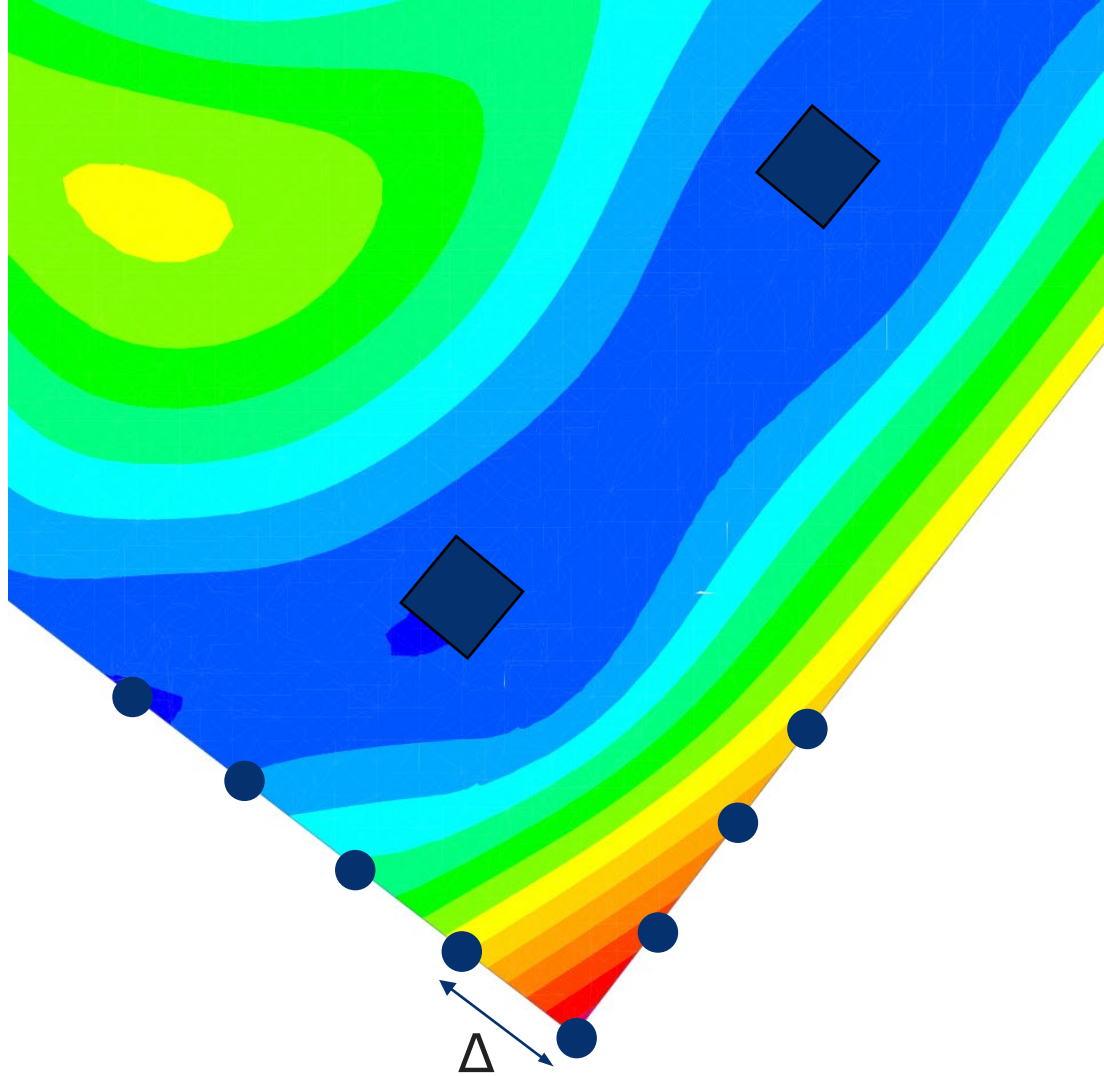


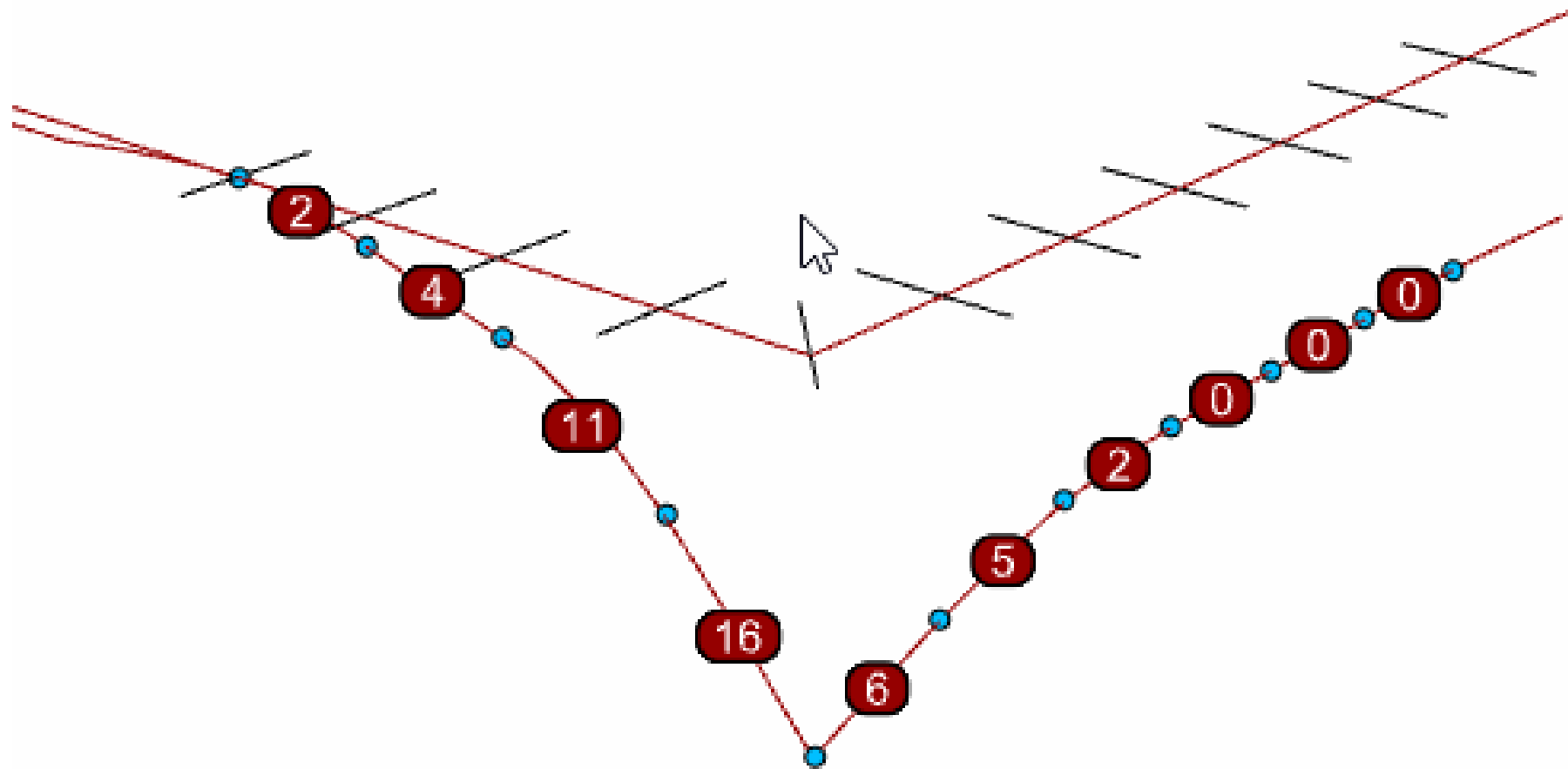


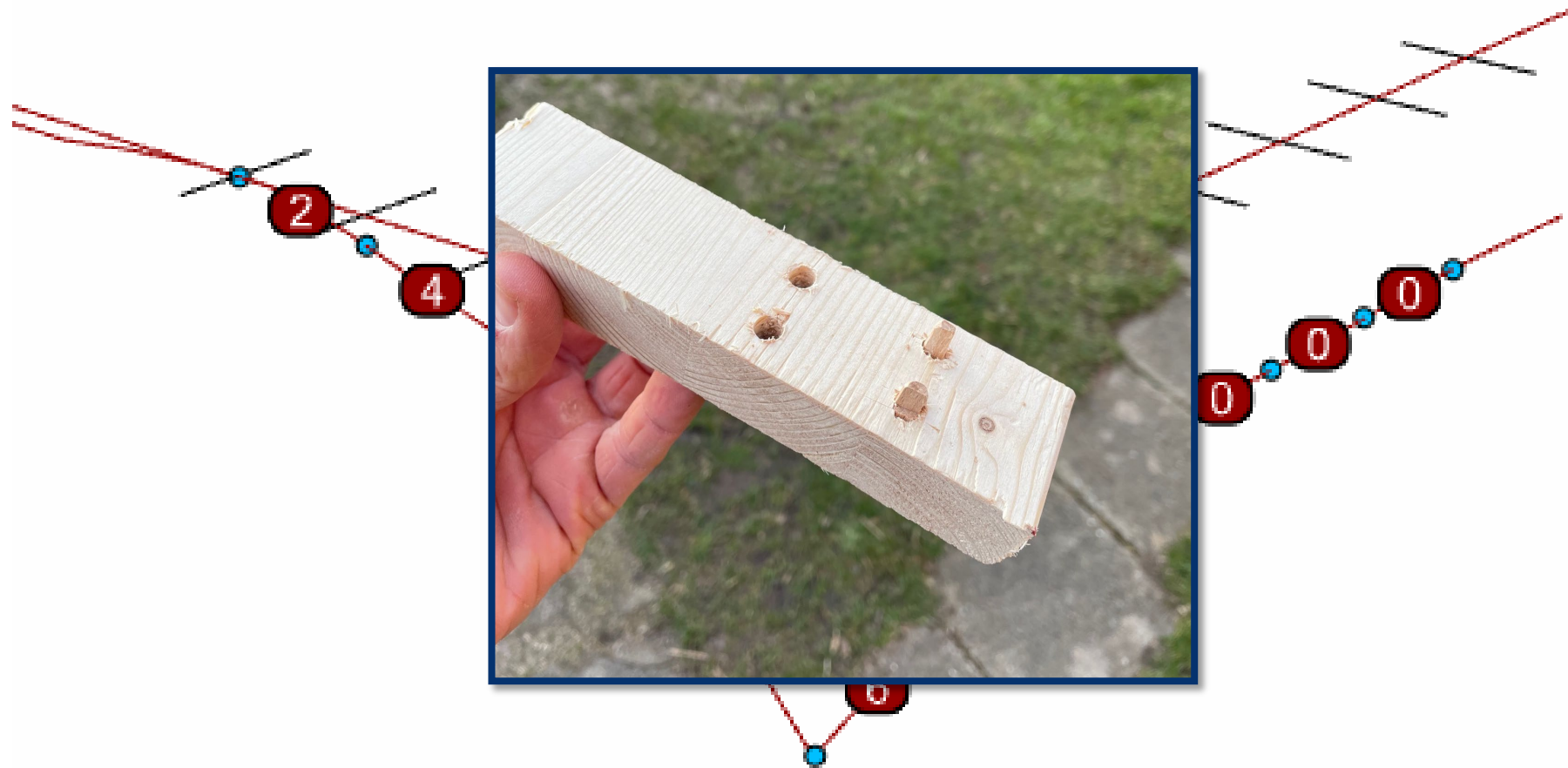


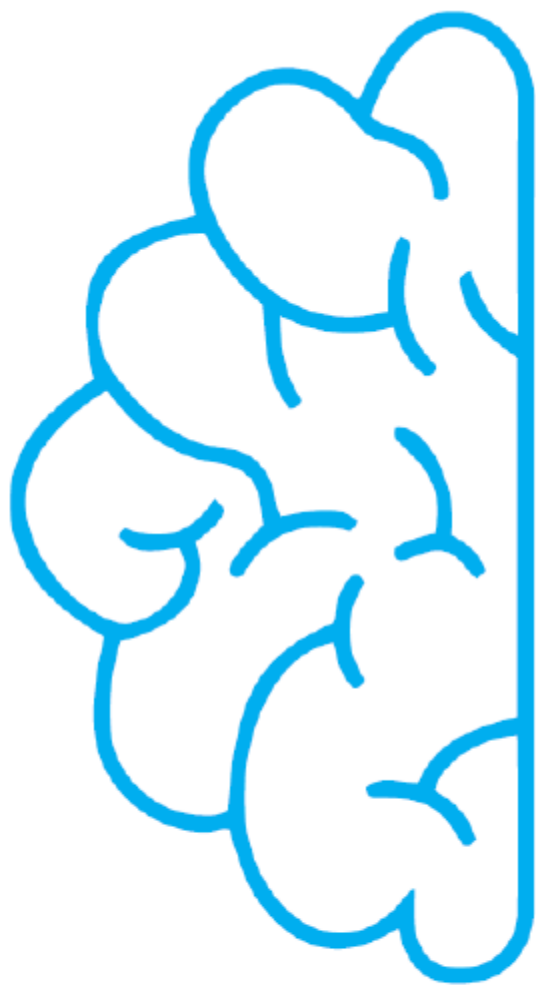






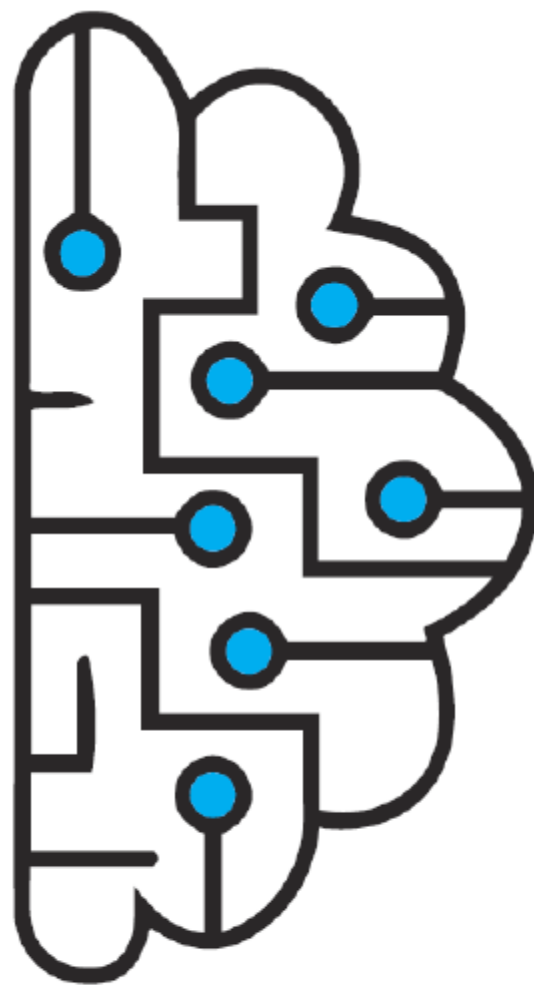






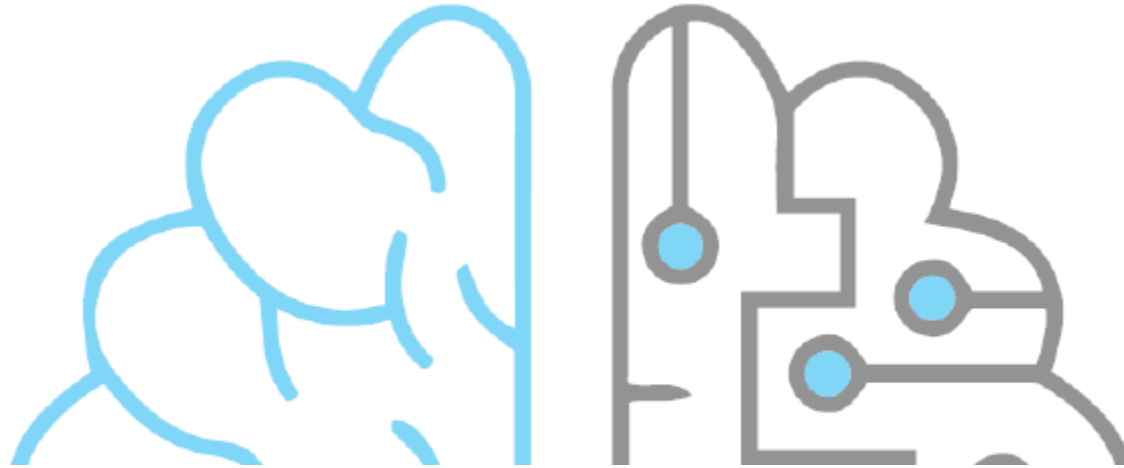
Human Strengths

Creativity
Finding parallels
Consequential thinking



Computer Strengths

Memory and processing power
Works 24/7
Unprejudiced



designer

“~~The engineer~~ of the future is a centaur”

Peter Debney, Author of ‘Computational Engineering’.

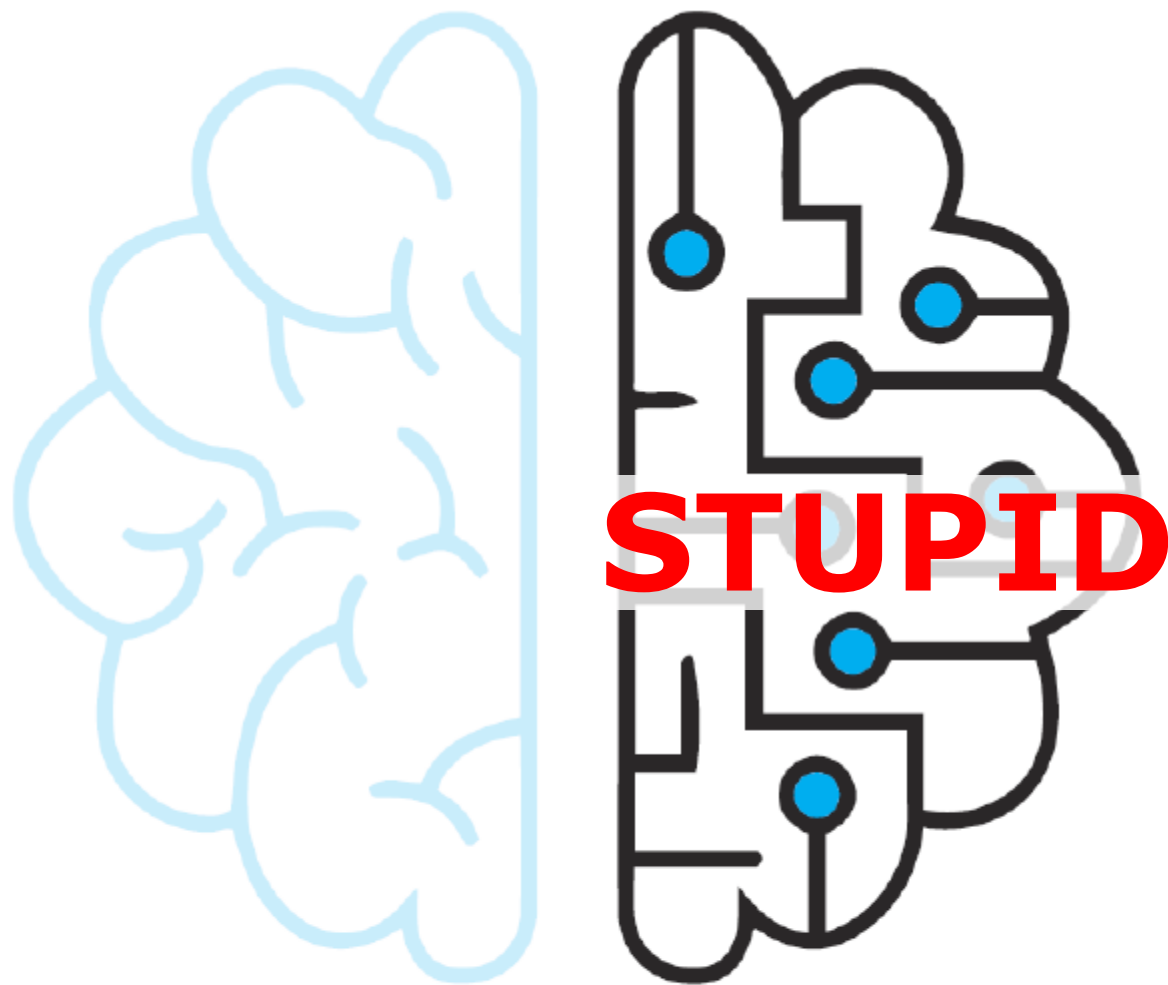


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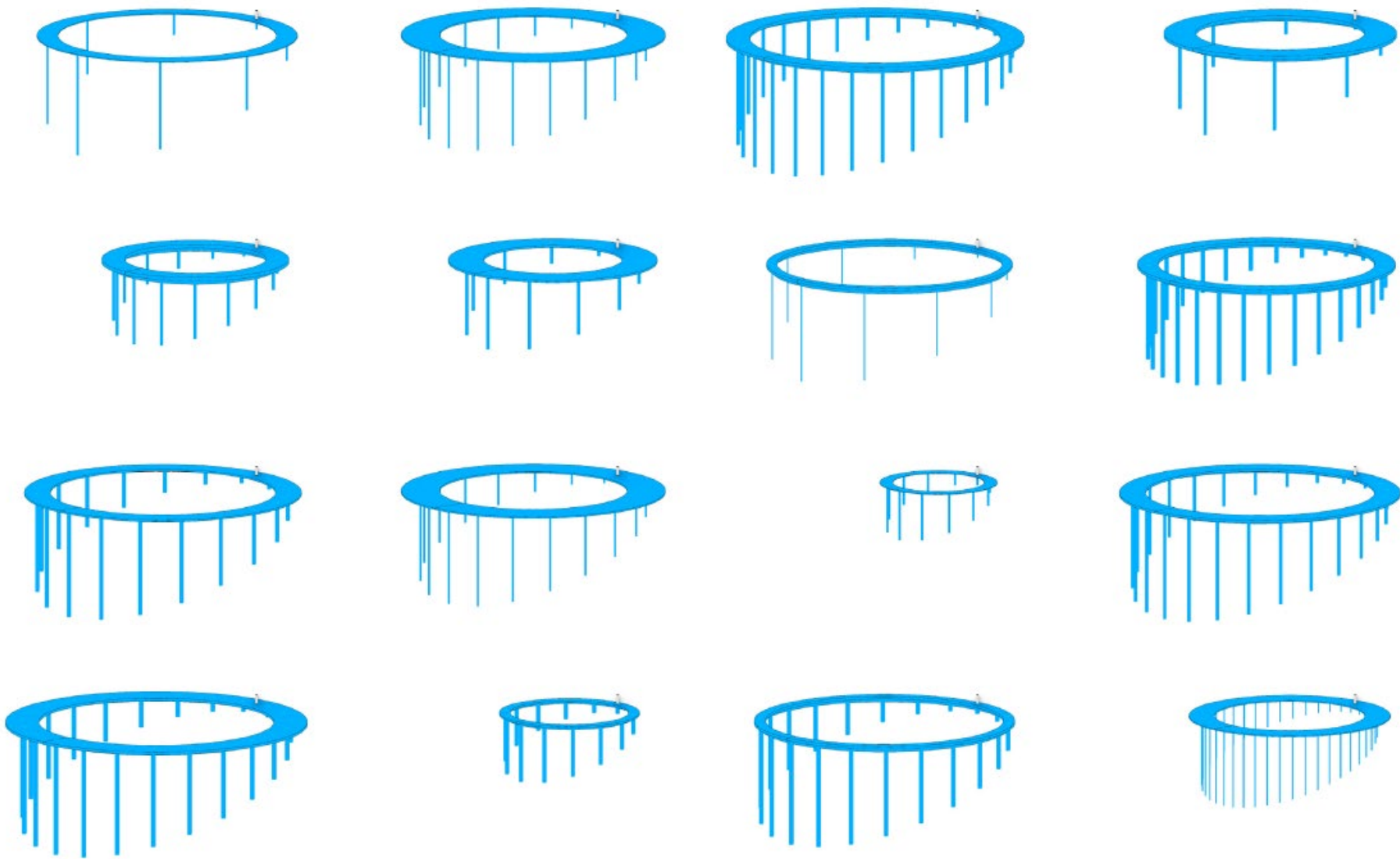


Hvad er parametrisk modellering

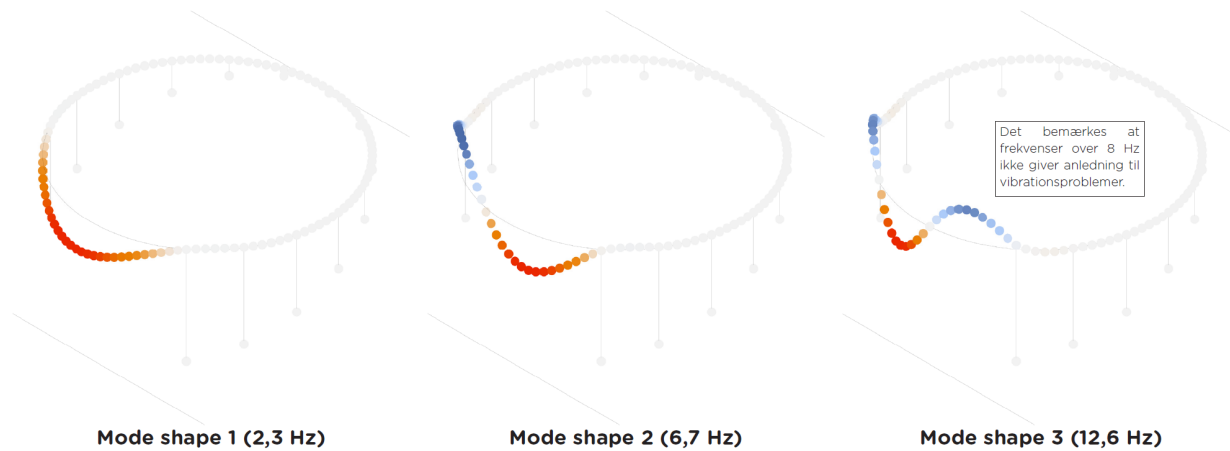
Vejle Viewpoints

Example

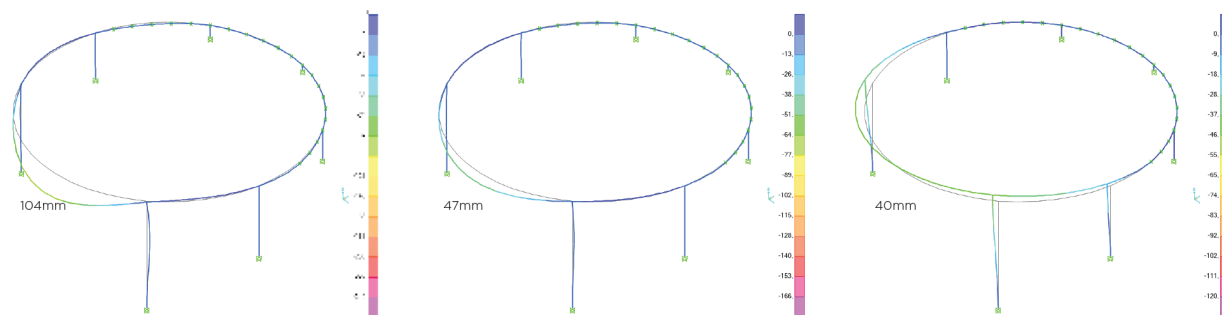




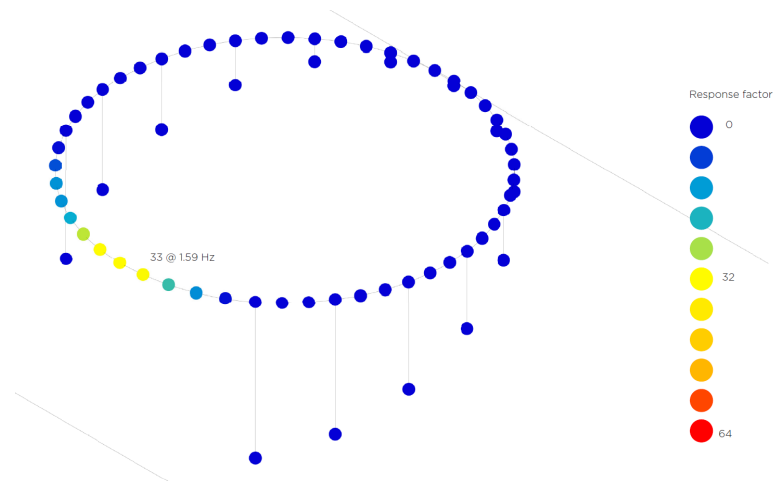
Mode Shapes



Displacements



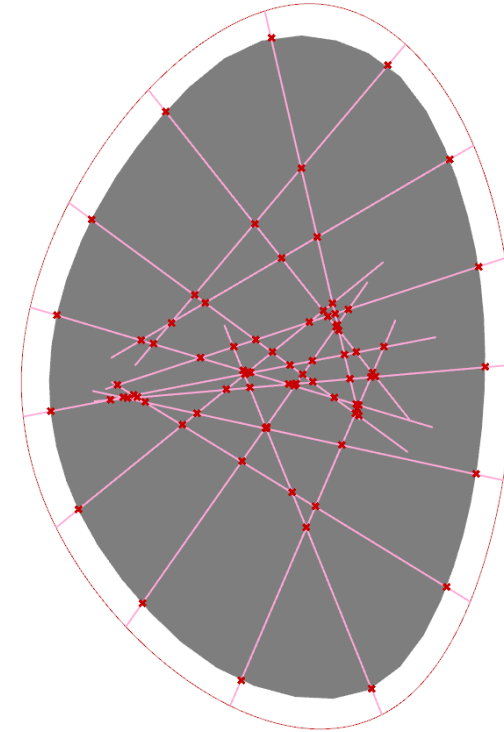
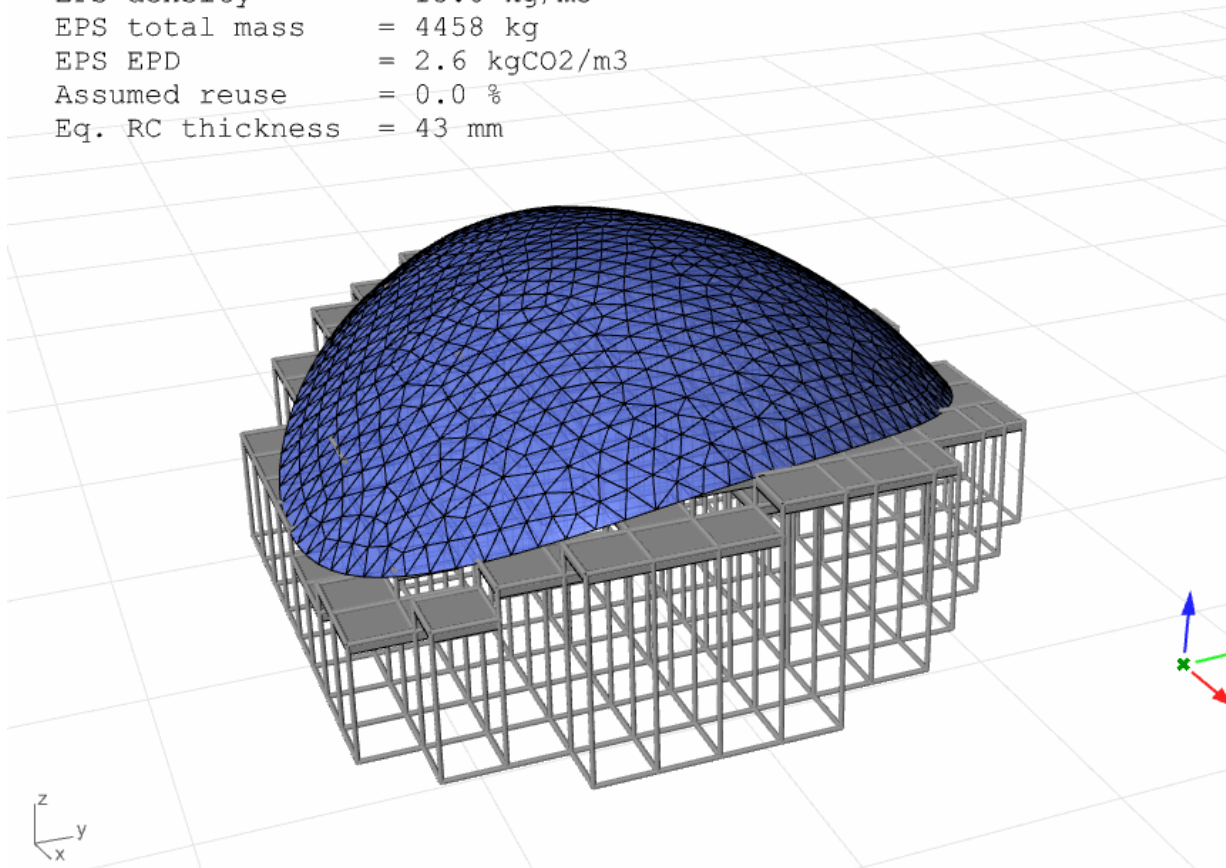
Vibrations

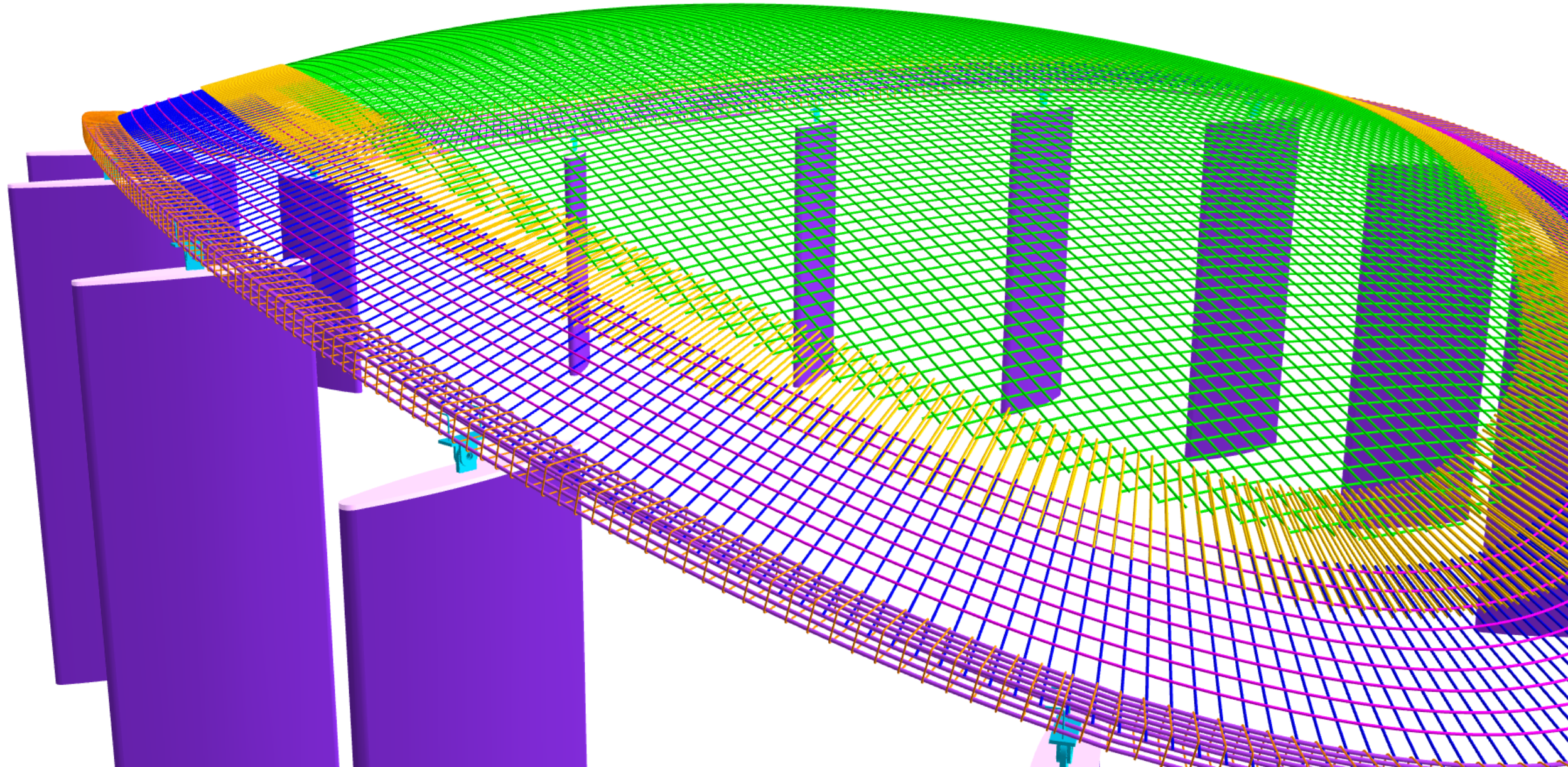


Kanalbyens Fælleshus

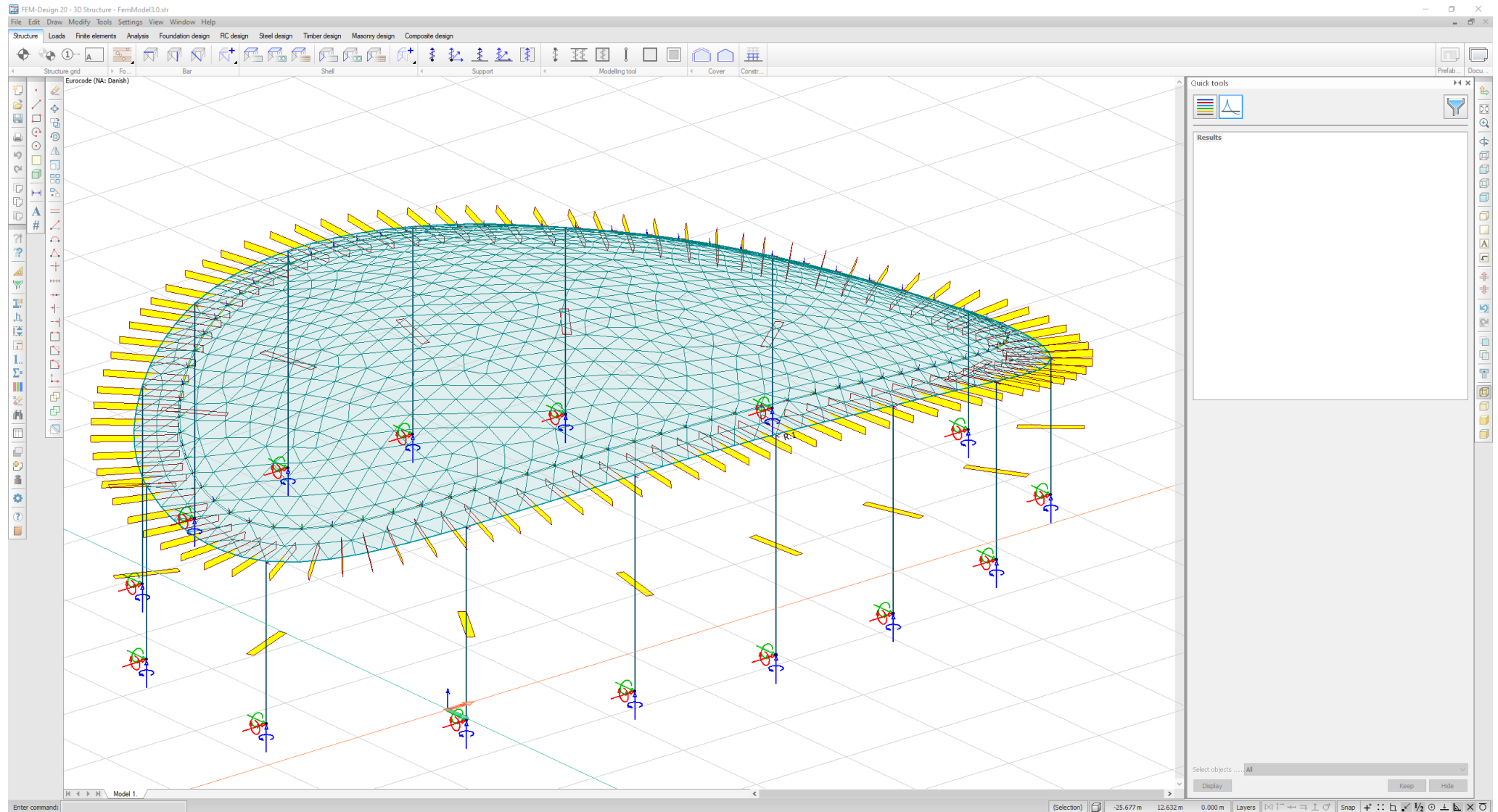
'Cool' projects

Total CO2eq = 11591 kg
EPS density = 15.0 kg/m3
EPS total mass = 4458 kg
EPS EPD = 2.6 kgCO2/m3
Assumed reuse = 0.0 %
Eq. RC thickness = 43 mm

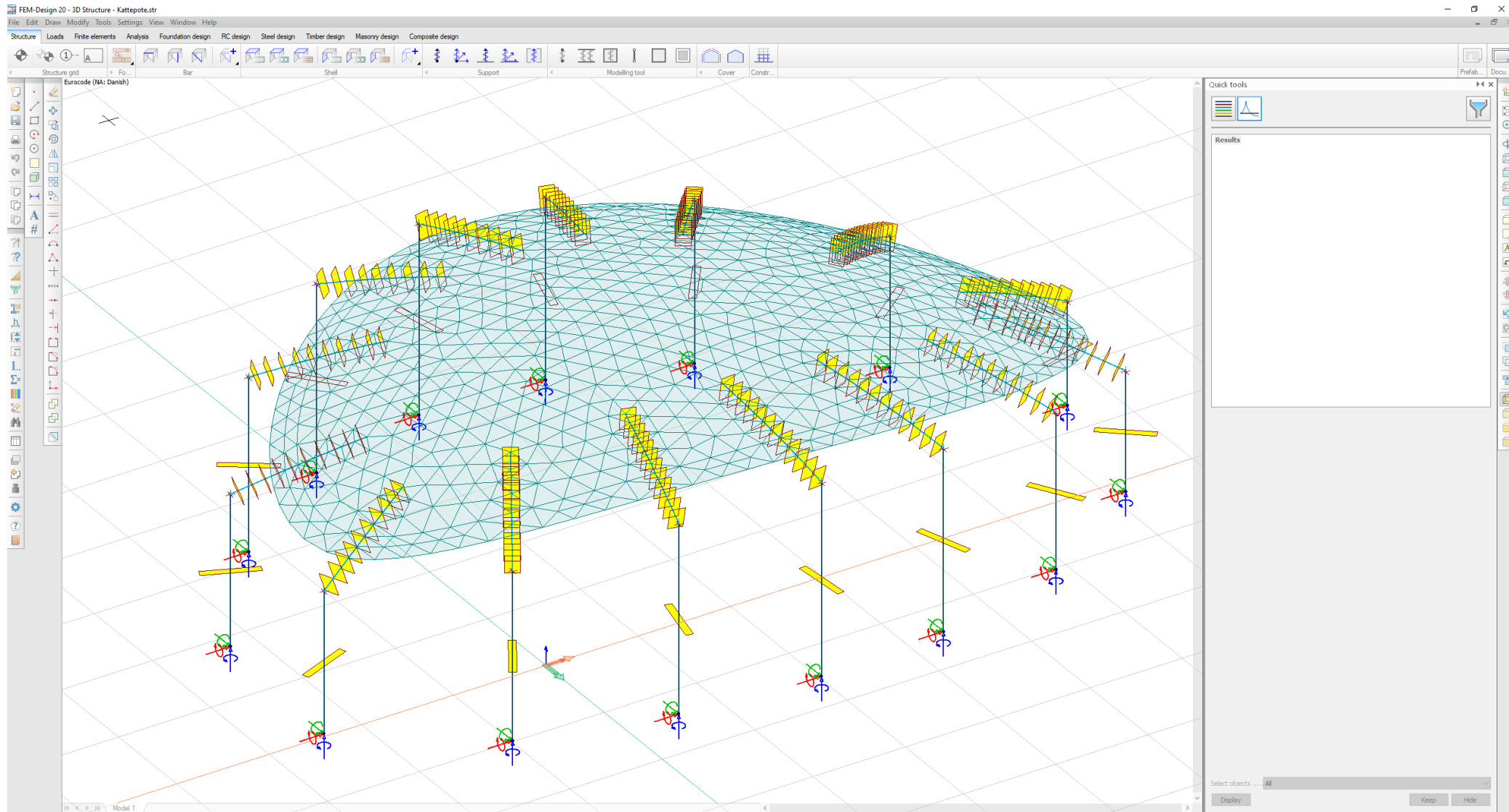




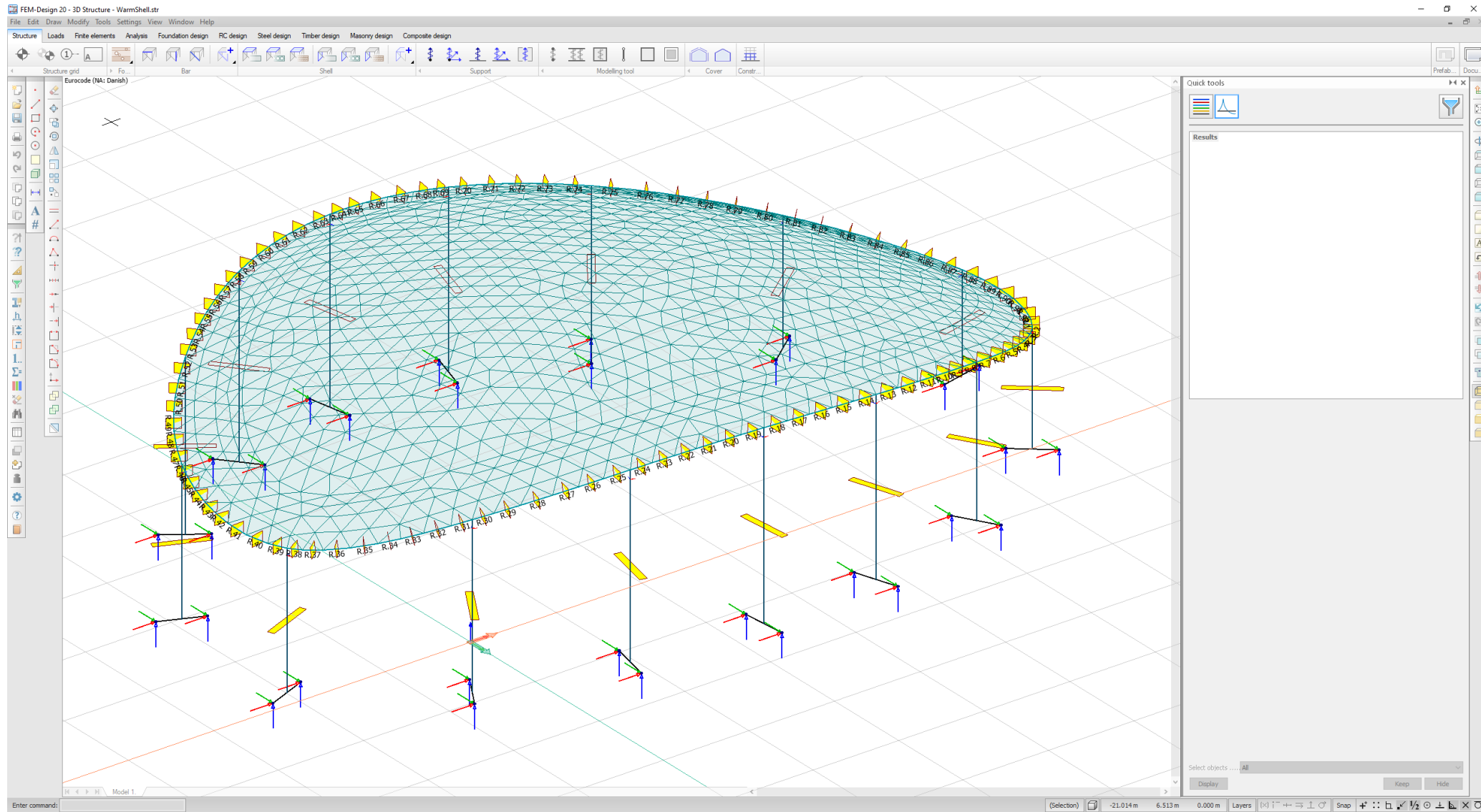
Automatic FE model generation



Automatic FE model generation



Automatic FE model generation



FE Model checker

Søjledesigner

Thank you