

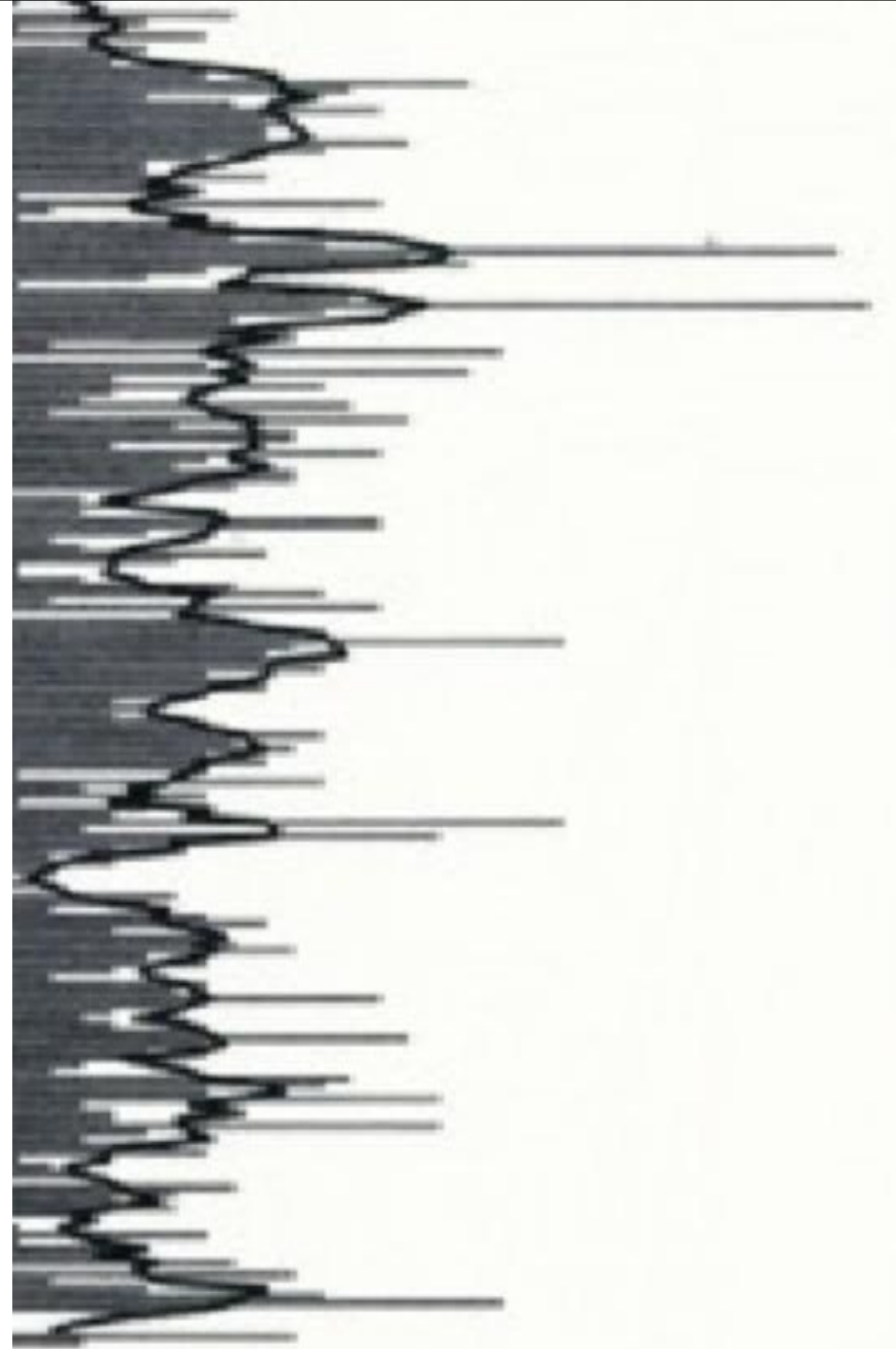
CIMENA FOOTBRIDGE

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OBJECT: footbridge

LOCATION: Canale Cimena, Po river wing (San mauro Torinese)

AIM: connecting the two banks so that is possible to give a path in between the facilities of the area

STRUCTURE: inspired reverse cable-stayed structure

ROOF: included, since Turin is under an high frequency of rainfall and snowfall

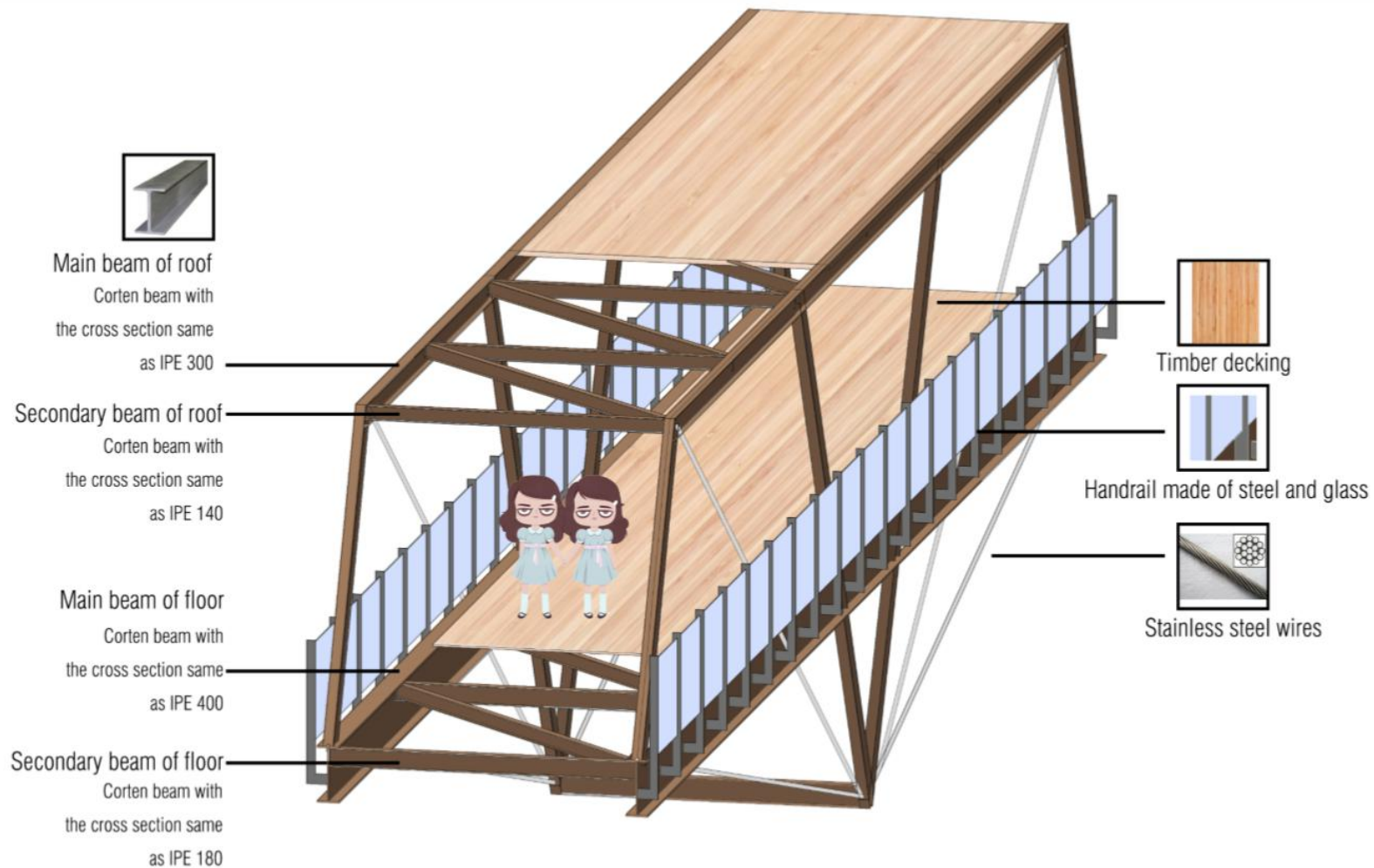
MATERIALS: corten steel, steel, stainless steel, timber and glass



Why corten?

Weathering Steel is an alloy steel formulated for primary forming into wrought products. Cited properties are appropriate for the hot worked condition.

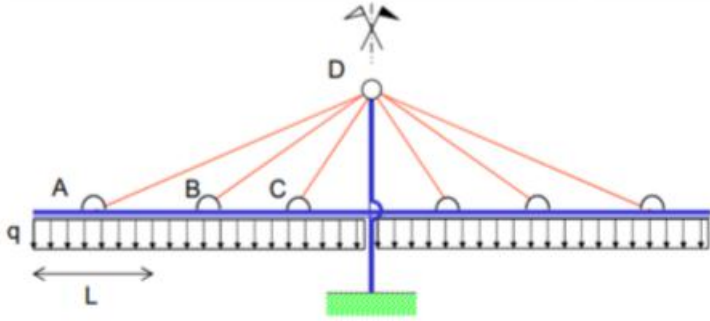
It has a moderately low embodied energy among EN wrought alloy steels. In addition, it has a moderately low thermal conductivity, relatively high tensile strength and a good corrosion resistance.



Beinell Hardness = 170	Elastic Modulus = 190GPa
Elongation at Break = 16%	Fatigue Strength = 260Mpa
Impact Strength: V-Notched Charpy = 30J	Possion's Ratio = 0.29
Shear Modulus = 73GPa	Shear Strength = 350MPa
Tensile Strength Ultimate = 580 MPa	Tensile Strength: Yield = 390MPa

Inspiration

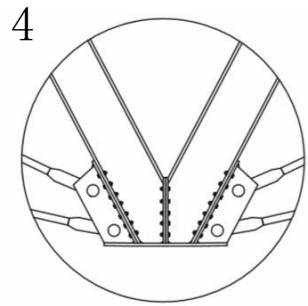
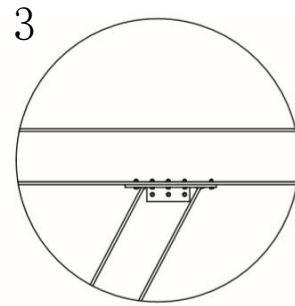
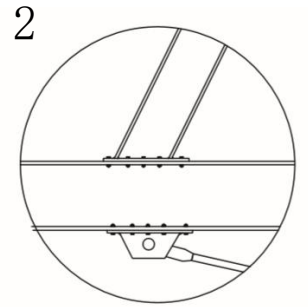
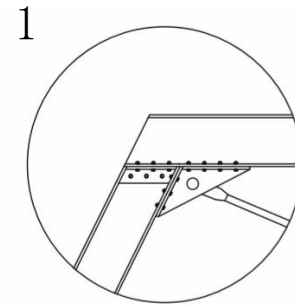
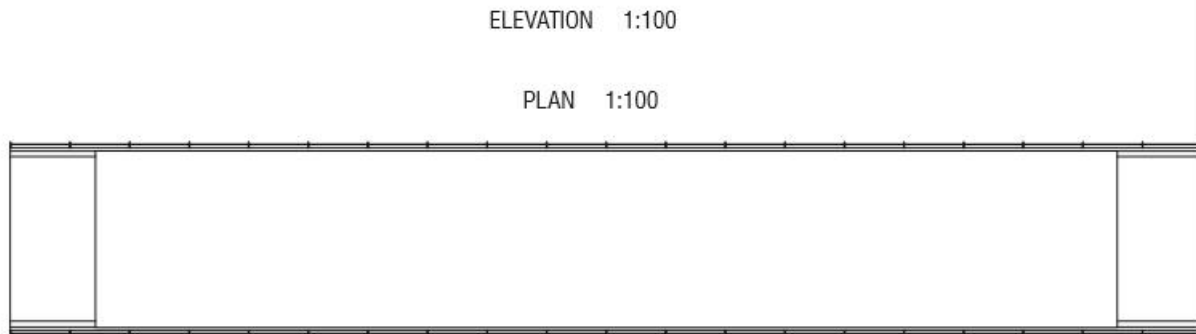
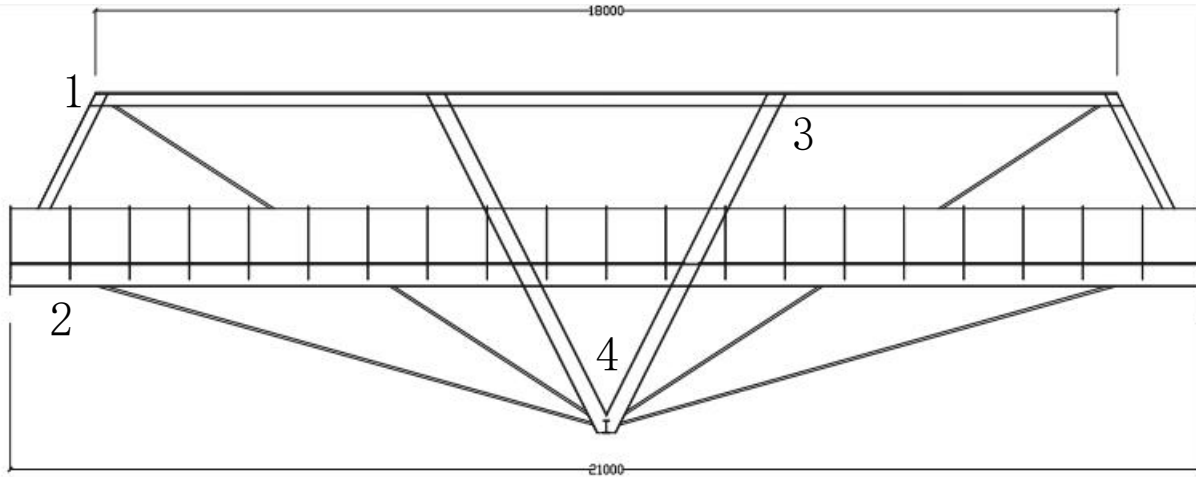
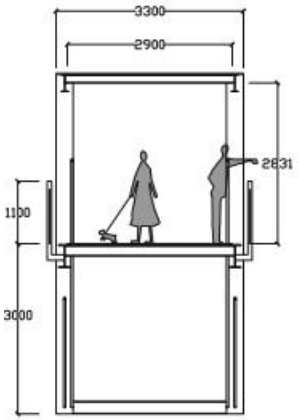
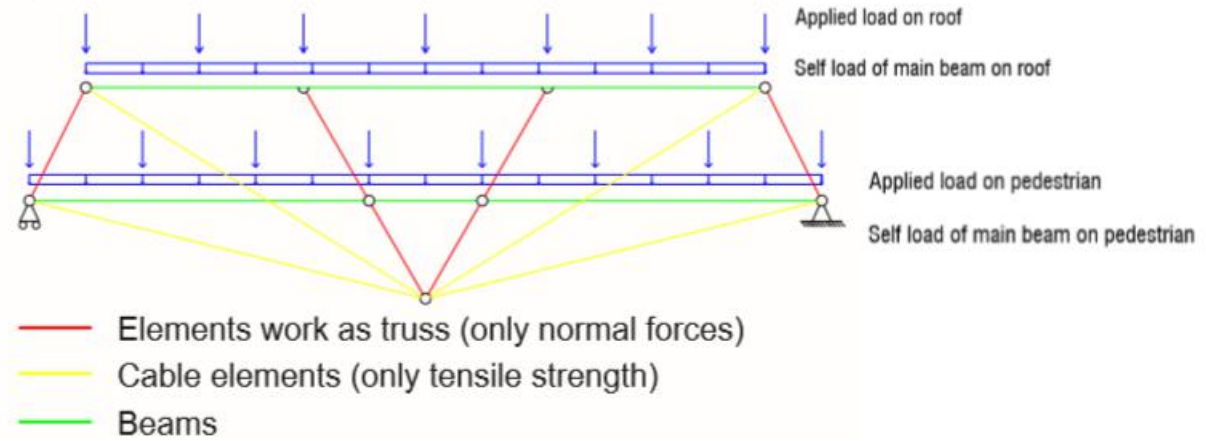
The static behavior of a cable-stayed structure

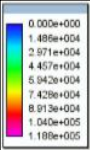


- Elements in tension
- Elements in compression
- Elements in compression-bending

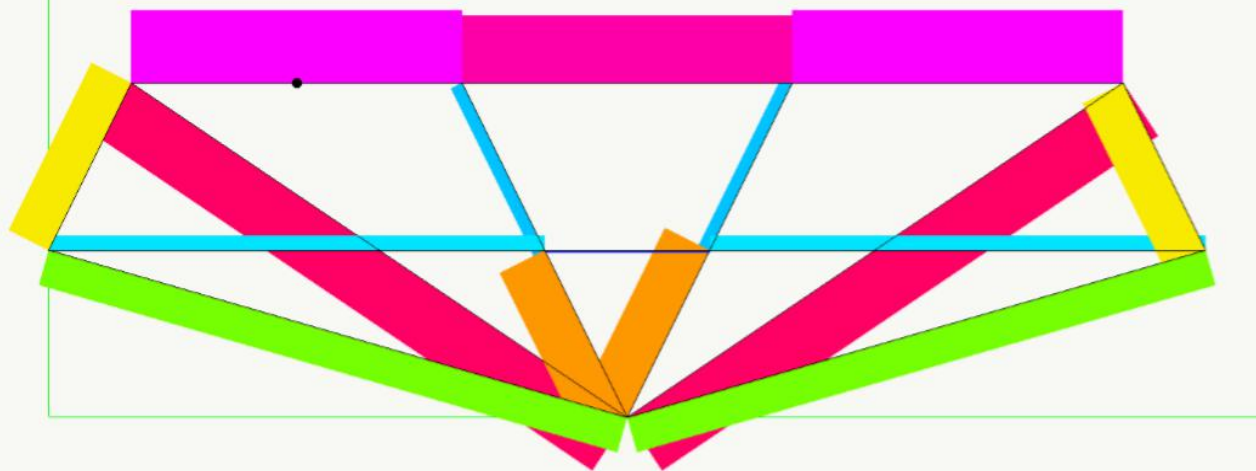
Our solution

Upside down cable

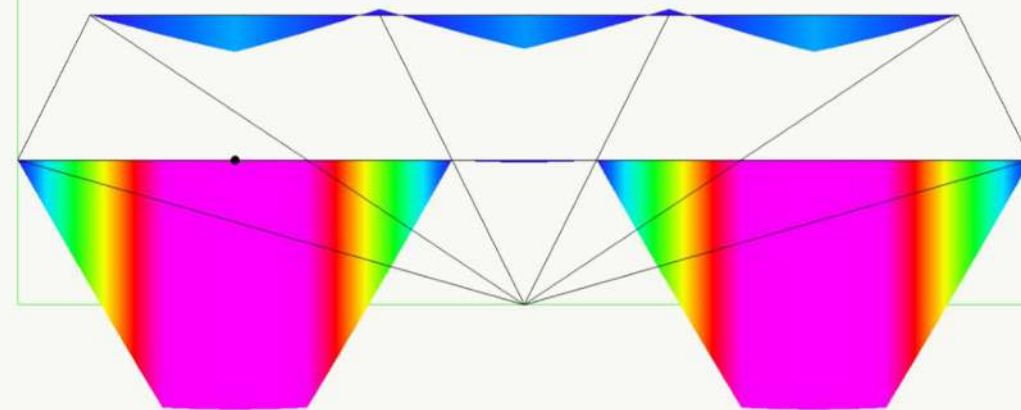




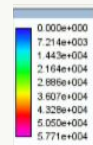
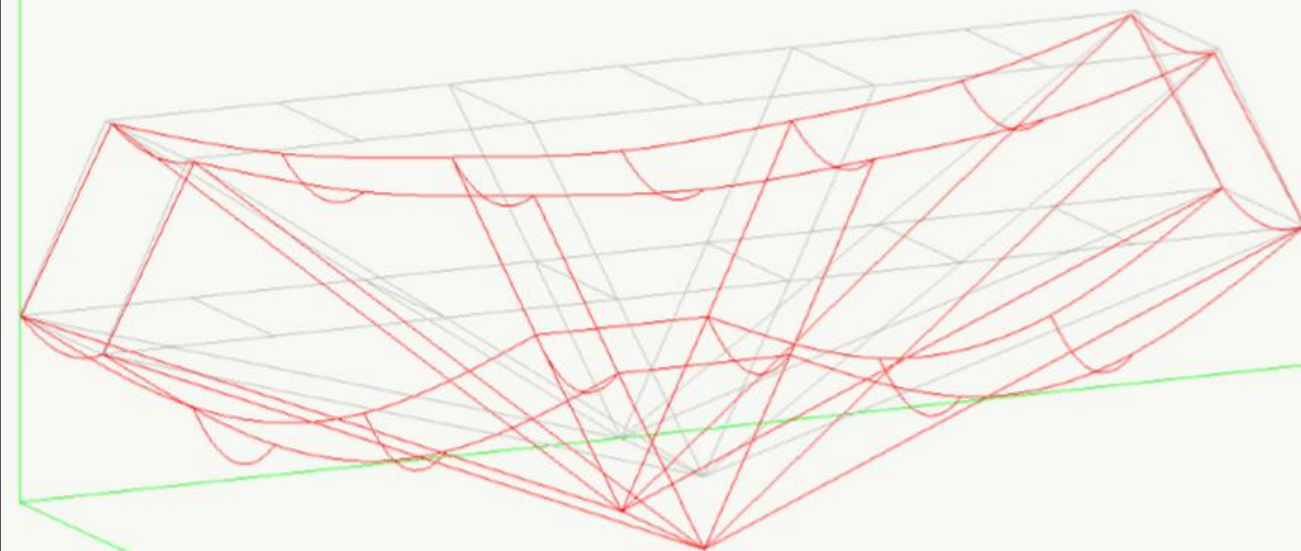
Normal Forces diagram



Moment diagram on yz plane



Deformations in 3D model



Moment diagram on xz plane

