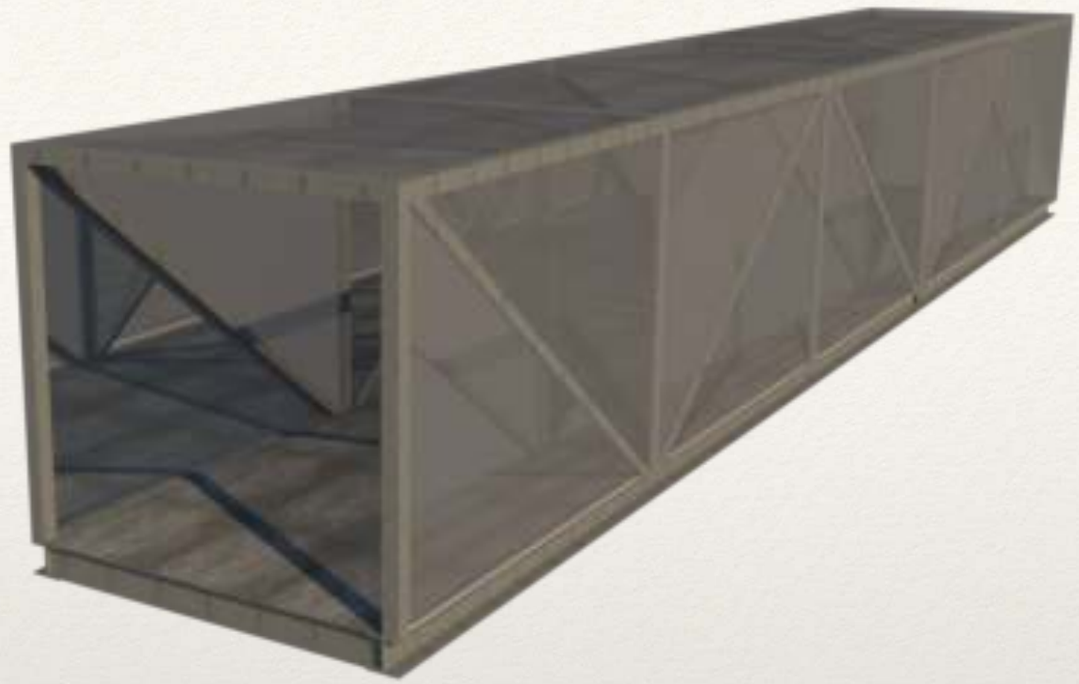


GROUP 3

CONNECT

Elif Kirmiziyesil S252776
Merve Urel S252427
Guz Sonat Yazıcı S241218
Mercan Lambaoglu S253023

DESIGN PROCESS

LOCATION

Wilhelmsburg, Hamburg

In our design phase we checked several bridges like Watermark Westquay Footbridge in England , Hose Bridge in Norway , Hausbergen Footbridge in France.

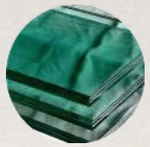
After the discussion we decided to take reference Hose Bridge.

Watermark Westquay Footbridge

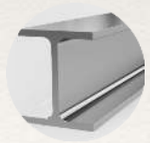
Hausbergen Footbride

Hose Bridge

MATERIAL



Laminated and Tempered Glass



Stainless Steel

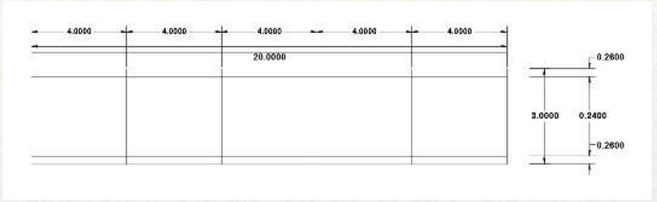
Swiss Pine Wood

In the case of footbridge, our bridge is 20 meter long and 3 meter wide. First we started with design and the concept of the structure.

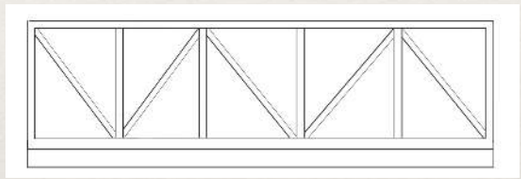
Connect Bridge has X shape bracing on each side also X bracings carrying our decking which is Swiss pine wood decking. Each sides and roof covered by glass material.

STRUCTURAL ELEMENTS

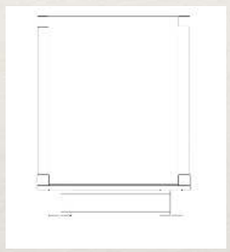
After we chose the materials we have started to find which loads are applied on this structure, and in order to calculate the system we have started from deck and going upper-part with vertical system. We used NOLIAN Software for the calculations.



Bridge Plan

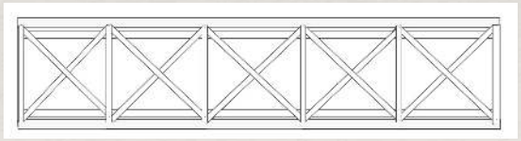


Long Side Elevation



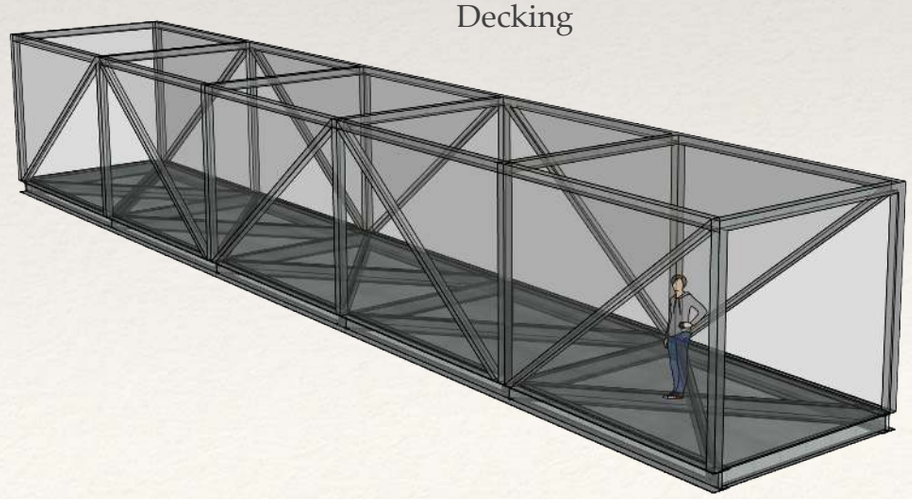
Short Side Elevation

USED IN	MATERIAL	NUMBER	SIZE	WEIGHT 1unit (kg)	Total Weight (N)
Bracing	Stainless Steel (I100)	20	5m	40.5 kg	7943.67 N
Decking	Swiss Pine Wood	200	3x0.1m	2.52 kg	4942.73 N
Primary Beam	Stainless Steel (H400)	2	20m	3100 kg	60803.4 N
Secondary Beam	Stainless Steel (I240)	18	3m	108.6 kg	19162.88 N
Roof	Tempered and Laminated Glass	5	4x3x0.016m	4800 kg	23536.8 N



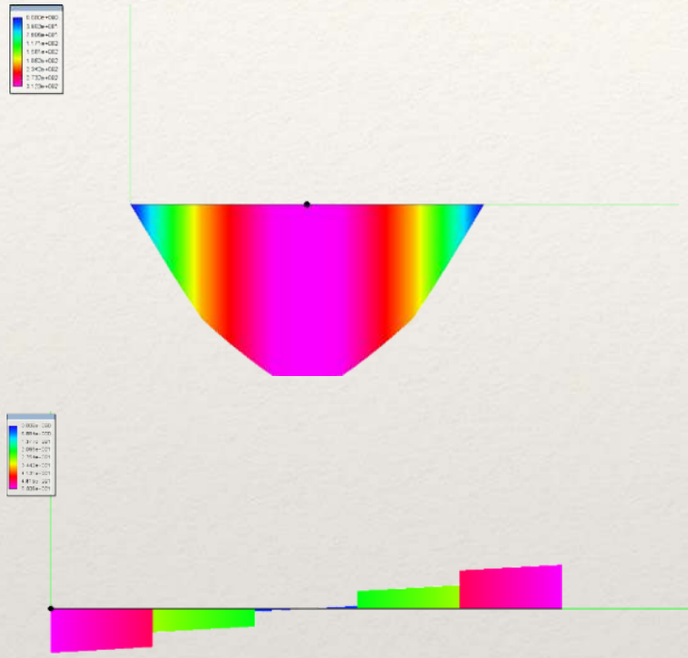
Decking

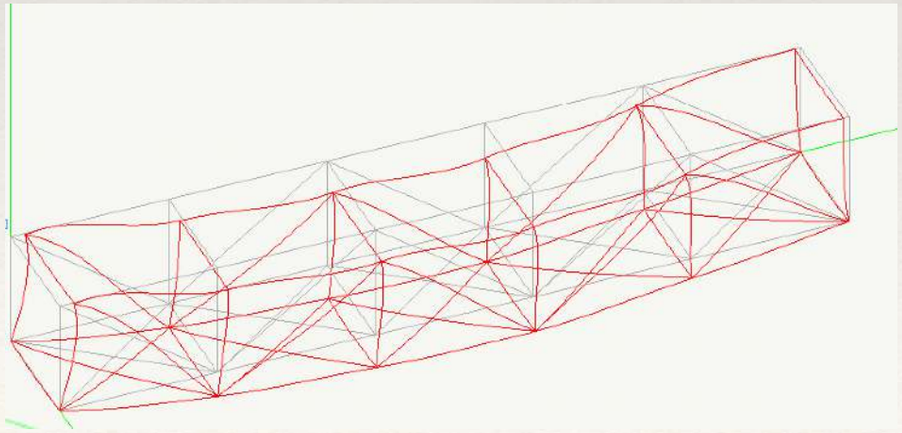
Before using the beam H400, we used the H260 but it has very less moment stress value and it is not a realistic result. So that is why, we used H400.



NOLIAN

Primary Beams HEB 400





Secondary Beams IPE 240

UNIFORM LOADS : Snow Load+ Live Load+ Flooring

PUNCTUAL LOADS : Secondary Beam + Bracing