

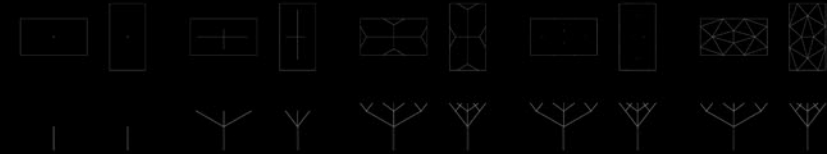
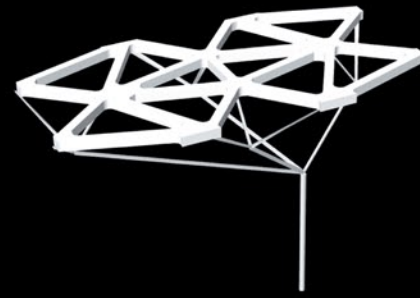
plastic-OPACITY 05/06.
An underground train station.
Architecture without facades.
The tools are construction and light.
And concrete...

FRACTAL UNDERGROUND

Taking construction as a starting point this project sought to find a precise method of manufacturing a seemingly irregular concrete structure. The structure also had to solve the situation of lack of daylight. The result became an abstract forest of concrete and steel. The structure is built up by a reinforced concrete frame work system where every individual frame distribute the pressure from above down to nodes, from where a steel tree structure takes the load down to a pillar. The frame work repeats itself and form a concrete grid that stretches throughout the station. The frame work system has few visible joints and thanks to the plasticity of the concrete, the grid achieve a soft, simple and homogenous expression that could not have been performed with a steel grid.

Depending on how the tree structure is designed - number of branches and levels, the grid will appear differently. By stretching the tree structure itself the system can find a rythm and a spatial relation to its surroundings. The concrete frame and its steel tree structure is meant to be manufactured framewise and then be put together at the very location.

All along the station runs a mezzanine level, which could be described as a walk in a foliage, with the sky present behind a glass roof. Directly above the mezzanine level the grid needs to be reinforced with crossing beams that distribute the pressure to the nearest tree structure node. The grid will be lit up by artificial lights and cast effectful shadows on the platforms.



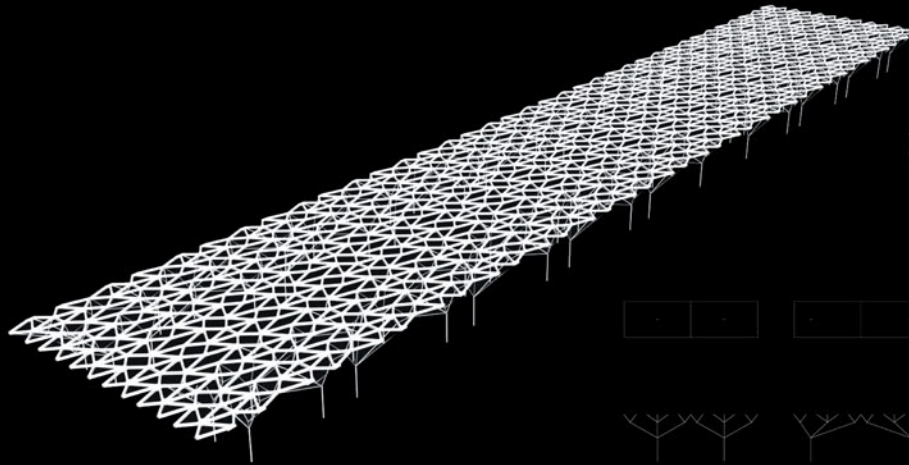
Concrete/tree structure. Frame 650x1200 cm. Pillar centered.

A fractal structure branches off in four.

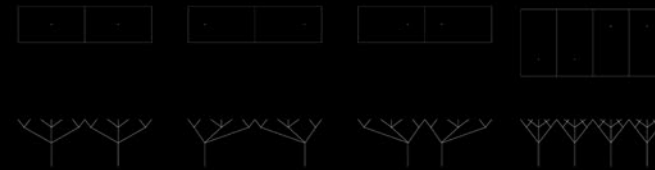
Continues in three branches.

Contact surface where concrete structure can operate.

The contact surfaces is connected to each other by non-perpendicular lines. Every node needs to have at least three connections.



The structural pattern repeats itself in all directions and creates an effectful grid. With its supporting tree structure underneath it becomes a concrete foliage.



Tree structure. Pillars centered.

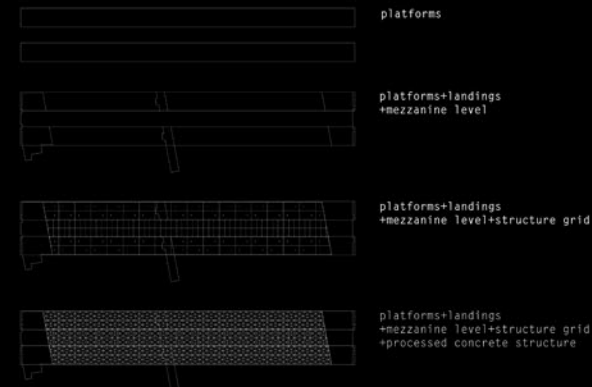
The pillars are dislocated in one direction while the contact surfaces remain in place.

With this possibility of variation the structure gets rythm and spatial qualities.

The cross section is not affected by the dislocation.



view from platform

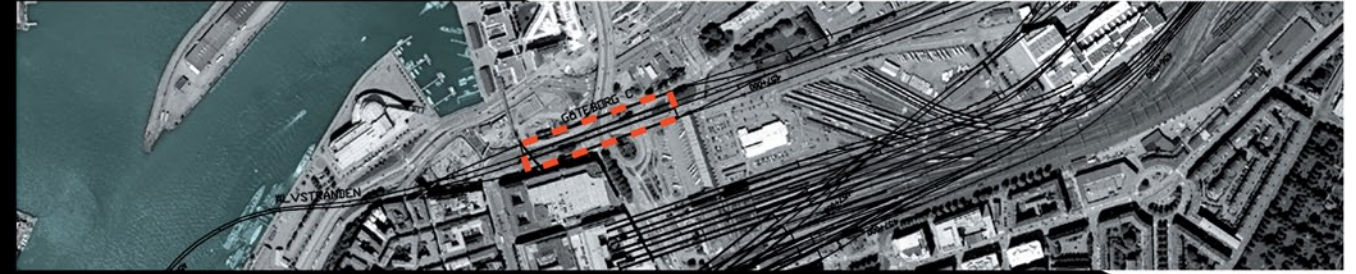


platforms

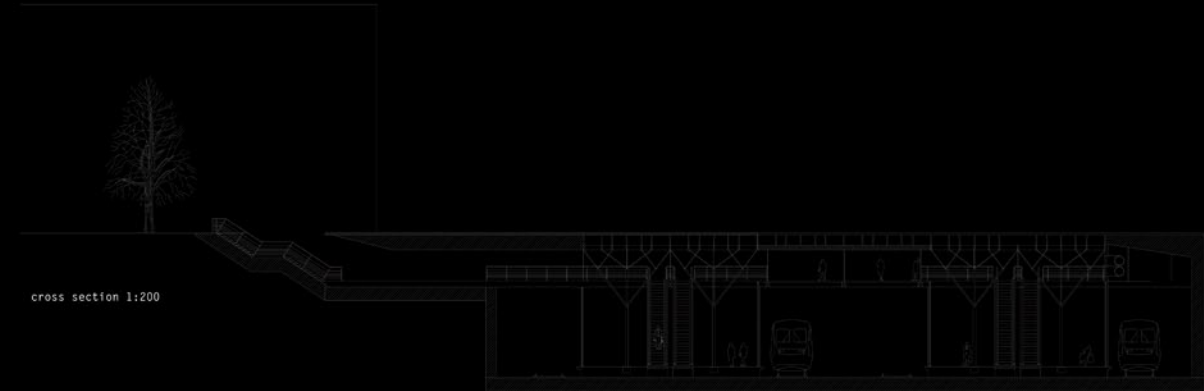
platforms+landings
+mezzanine level

platforms+landings
+mezzanine level+structure grid

platforms+landings
+mezzanine level+structure grid
+processed concrete structure



location : Gothenburg C. Sweden



cross section 1:200



level -2 1:500

length section 1:500



view mezzanine level