”De Oförutsedda Alliansernas Teater”
”The Theater of Unforeseen Affiliations”

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The Statue of Liberty might seem like a complicated woman at first glance. But her metallic, sculptural shell is supported by a quite conventional truss-system on the inside. This “unforeseen affiliation” of building elements is a marriage between the orthogonal and the curved, the structural and the artistic. The old-fashioned in disguise of something new.

I seek to investigate the load-bearing role of the truss in relation to its cladding, surface. Can something that looks advanced and sculptural be supported by something simple almost banal? My take on this question has been to design a theater building in the park “Hagaparken”, a hallmark of Swedish landscape planning à la Rokoko.

In terms of construction and aesthetics my reference project has been one of the treasures of the history of Hagaparken, the 17th century building “Koppartälten”.

In this building one has with very simple building principles and traditional materials achieved an ambiance of the theatrical and spectacular without the involvement of parametric and digital tools.

Through regular site visits and examination of the construction drawings of “Koppartälten”, I have inferred the cladding principle of the building to be; Load bearing wood, with interlocking wood boards running horizontally along its edge (see the picture below) and on top of it - copper cladding.

I have applied the same principle in my project with some variations. The load-bearing structure can fore instance range from a very simple, A-shaped truss to a more complicated, multi-membered, wide spanning truss (see drawing + model).

I have sought new ways to apply the principle, but stucked to the reference materials wood and copper.

Why is it relevant to adapt old construction principles in contemporary architecture? I think that sometimes it’s smarter not to reinvent the wheel. We commonly see the solution to future problems (the sustainability issue for instance), in digitalism, robotics and other technically advanced solutions and righteously so. But sometimes in order to progress one need to “regress”. Because old ideas are not irrelevant ideas.
Interior perspective of foyer
Koppartälten
Section 1:50

Drawn on the basis of observations and drawings from SFV, by Ragnar Hjort.
Koppartälten
Section 1:50

Drawn on the basis of drawings by Mikael Bergquist and Ragnar Hjort.
Kopparölten
Plan 1:50

Drawn on the Basis of observations on site and Mikael Bergqvist drawing material, M.B.A office
Koppartälten
Section 1:50

Drawn on the Basis of observations on site and Mikael Bergqvist drawing material, M.B.A office, drawings from sfv and solna stad.
Koppar-
tälten, reference image
Details of Koppartälten from A - D

Detail A - copper meets wood edge.

Detail B - roof meets wall that consists of lining boards.

Detail C - load bearing latches supports lining boards.

Detail E - load bearing latches supports lining boards.

Detail D - gap between inner cealing and outer cealing + truss meets curved wall.

Detail E - behind the curved wall in detail D.
Gustav III initiated the project of Hagaparken during his reign in the 18th century. Together with his squad of well-renowned architects, he planned the landscape and several buildings — including a giant palace of which we still can see the remains. The King lavished the funds of his kingdom on extravagant buildings and theaters.

On a positive note he enriched the cultural life of Sweden. The darker side of the story is that his priorities eventually got him murdered. People thought — and maybe righteously so — that the basal needs of the population were more important than Gustav’s rokokoean dreams.

Louis Deprez, one of the stars from Gustav III design team, drew the plans of Koppartälten between 1787–1790. Initially the building served as logement and stable for the soldiers. Its facade sought to resemble a Roman military tent camp and illusion of Roman grandeur facing the strollers of the royal park.

The History of Hagaparken
Construction-Perspective

The guiding principles, “abducted” from the project of “Koppartälten” can be viewed from a macro perspective in the large axo. the smaller axos are demonstrating more in detail how these principles work and are applied.

The construction is constituted by two building systems. One orthogonal standardized and one diagonal, with a multimembered truss network. Read more on plan 1:50.
Elevation
South
The location

The building is located in a quiet valley in south western direction to recieve the maximum of evening sun.

The public parts and most prominently the restaurant are benefits the most from this placement.

The back-stage space of the building is located in the northeren direction and connects with the main road leading through the valley.

In this way cars can acces from the rear of the scene space and unload stage props easily.

The site is well connected to the main strolling-road of Hagaparken.
And park visitors can easily access the building on their way from Hagaparken to the city centre.
Moleric
interior
perspective-section
Elevation, North

1:100

(Windows are marked in black)
Elevation, South 1:100
(Windows are marked in black)
Section B-B, 1:100
(Measurements in mm
furniture has been removed)
Section, 1:100
(Measurements in mm)
1. Restaurant, serving space.
2. Specially constructed dining space, with built in "scenario curtain walls"
3. Kitchen with bench-land in its center
4. Foyer space + extended serving space
5. Dishes / Storage
6. Loge
7. Wardrobe with access to rest - rooms
8. Stairs leading up to second floor
9. Wardrobe with entrance for props to be unloaded
10. Scene space + salon
11. Toilets
12. Roof plan, 1:400
13. Plan 0, 1:100
14. Roof plan, 1:400 (Stair leading up to second floor)
15. Plan 0, 1:100 (Stair leading up to second floor)
The scene and salon space are built up from a network of trusses. The design of the trusses is functional in the sense that it allows for large span widths. One critical force on the construction is bending, with enough pressure the truss could break like a twig. Therefore on certain locations there are pillars leading down, distributing the load vertically.

The truss system is constructed of laminated wood. Its sandwich structure makes the material even stronger than regular wood.

The truss consists of different modules that can be put together on site. The upper and under chord of the truss clamps the diagonal struts together with a CNS milled membrane according to the sandwich principle.
1. - 2.
Perspective images showing the intersection point between two building systems.
On one hand the wide spanning trussystem with diagonal direction and on the other hand the more standardized trussystem with orthogonal direction.
The intersecting systems are bolted together at their intersection point.
To see it's spatial implications, see section B-B.