

Reuse of Steel Case Study no. 16

The deconstruction and reassembly of steel hall in a new location



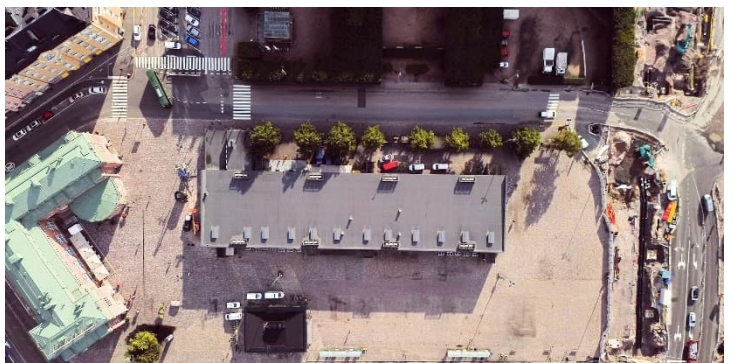
Picture 1 Deconstruction of steel frame hall in Hakaniemi, Finland

Project summary

Location: Helsinki, Finland
Owner of hall: City of Helsinki
New Owner: Veljekset Keskinen Oy
Contractor / client of demolition work: Lehto Tilat Oy
Demolition contractor: Purkupiha Oy
Deconstruction time: Fall 2023
Auction sale price of hall: 440 000€

Description of the existing building

The project deals with dismantling Market Hall building in Hakaniemi district, Helsinki. The building located on Hämeentie 1 Helsinki, Finland was located in the heart of Helsinki metropolitan area. It was designed by Lehto Group. The Market Hall was also known as "The Glass Hall." It opened as temporary market hall opened in January 2018 to enabled the continuation of activities from old historical building market hall building throughout its entire 5-year renovation period. The Glass Hall operated for 5 years before dismantling. Deconstruction begun in fall 2023. The old Hakaniemi Market Hall is a well-known building, and this temporary market hall also became very popular among citizens.



Picture 2 In the middle is the temporary market hall and on the left side is the old Market Hall

The Glass Hall is one-story hall and was built on a pile foundation. The size of the building is about 2 300 square meters (the main building was approximately 92 meters long and 23 meters wide). The load-bearing structure of this 2300 m² hall is a steel frame assembled with



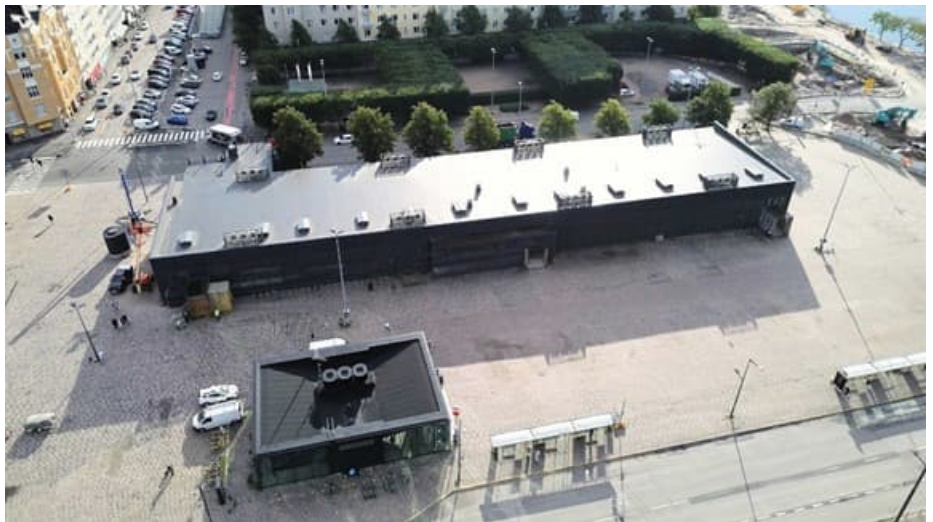
Picture 3 Temporary market hall in Helsinki before deconstruction

bolted connections. The facade of the hall consisted of glass elements and wood cladding. The technical facilities of the building and the social facilities were containerized. About 140 companies operated in the hall.

Design process

The planning of the renovation project and temporary facilities was the responsibility of the construction of the urban environment (Helsinki city) in cooperation with the wholesale market. The goal of the Glass Hall was to use the aid temporarily. During the spring of 2023, the retailers moved back to the renovated premises after the renovation.

Originally the Glass Hall was planned to be temporal and mobile. This aspect was already taken into consideration in the design phase. However, the further use of the hall was not clear to owner, city of Helsinki. A few different alternatives have been presented for the further use of the hall. Different option and alternatives were considered at earlier phase. One option was that the hall would remain in its current location but for another purpose. Another option and the most likely option, the hall was thought to be moved to use as temporary facilities at somewhere else, in different location in Helsinki.



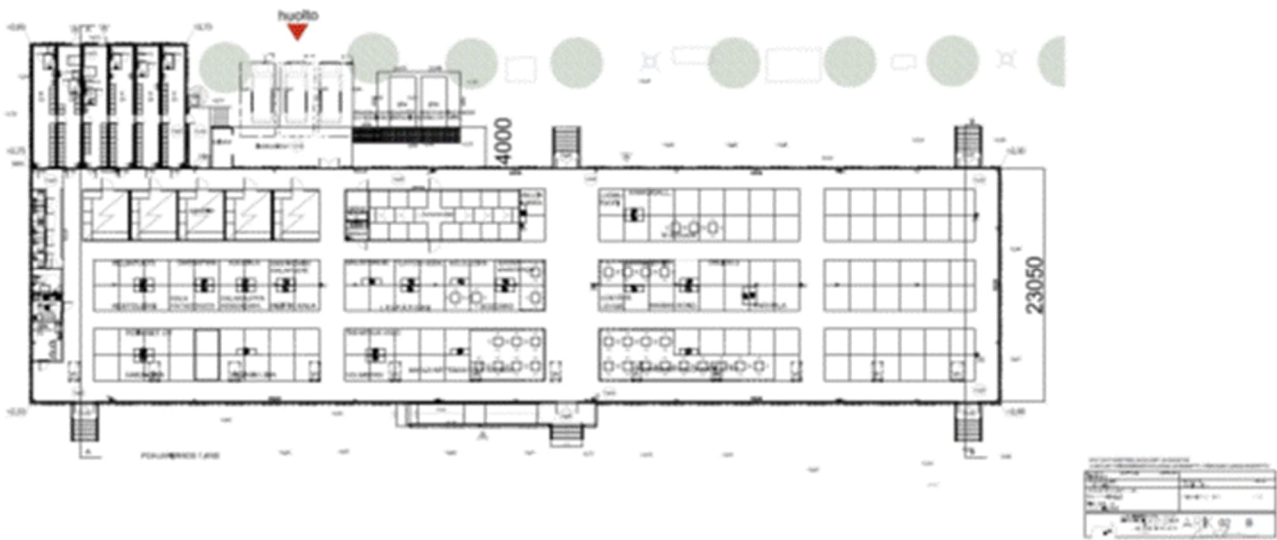
Picture 4 Temporary market hall building of Hakaniemi in Helsinki, Finland (2023)

Since the hall was designed for a temporal use, elements of hall were also designed for easy and possible transport. Elements were design to fit in the trucks.

Deconstruction and Construction processes

The City of Helsinki owned the temporary Market Hall. In the end, the owner decided to sell the temporary hall and it was auctioned because they could not reuse it themselves. The hall was put up for sale in huutokauppa.com and the auction took place between 5.6.-14.6.2023. The highest bid won. A sales brochure and

six attachments contained basic information and structural drawings of the market hall. Additional information from the sales brochure: *"The property will be sold in the condition and equipment it is in the advertisement and at the time of the sale. Before submitting an offer, the bidder is obliged to familiarise himself with the object and documents before making a binding offer. The purchaser cannot subsequently rely on a circumstance that could have been detected during the preliminary inspection or from the documents. A separate visit to the object must be agreed in advance with the seller's representative."*



Picture 5 Structural drawings of market hall from the sales brochure

The highest tender offer was submitted by Vesa Keskinen (Veljekset Keskinen Oy). Keskinen has said in public that the buying decision was made in less than an hour before auction was closing and that the decision might sound an impulse purchase, but it is a deliberate purchase. Keskinen is well-known Finnish public figure who owns Finland's largest and best-known village shop in Tuuri. Tuuri Village Shop is a tourist attraction and an experience destination. The Glass Hall was sold in 6.7.2023.

Deconstruction contract was put out to tender and Purkupiha Oy was chosen as the demolition contractor for the temporal market hall.

The nine-week-long deconstruction programme was carried out in the fall of 2023. Deconstruction begun with the internal strip-out. Deconstruction of the facade involved removal of the wooden cladding panels followed by careful removal of the glass facade elements. After removing the roof elements and ceiling elements and partially dismantling the floor, the steel roof truss elements were dismantled.



Picture 6 Temporal market hall during its deconstruction in fall 2023

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The dismantled parts of the hall were carefully protected for transfers. Due to the limited space and congested location of the hall, logistics required careful planning in terms of scheduling, transportation and the protection of the dismantled parts. The largest elements were transported from the site at nighttime as daytime relocation was not possible. The elements were transferred to the nearby Malmi Airport logistics centre, from where the elements were transported to Tuuri, about 350 kilometres to the north of Helsinki. One estimation is that there were 50 truckloads.



Picture 7 The Market Hall reassembly in Tuuri 2023-2024

Purkupiha cooperated with various parties during and after the deconstruction processes. The protection and transport of the dismantled elements were carried out in cooperation with Purkupiha, the new owner of the Glass Hall, and a logistics company. Purkupiha helped and gave information to the new owner of the hall and helped them for example marking elements during deconstruction and helped with loading and logistics planning. Purkupiha has helped the new owner in the necessary parts even after the deconstruction work.

In Tuuri, the temporal market hall reassembly started soon after its deconstruction. The construction work was completed already in spring 2024. In Tuuri, the Hakaniemi Glass Hall was given a new life as the Village's Fashion Outlet and its opening ceremony was held in 24.2.2024.

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Picture 8 Temporary Market Hall in its new location and in the new context as Village's Fashion Outlet in Tuuri 2024

Conclusions

The following key aspects of the process have been identified:

- Hall was originally planned for temporary use, so the hall was designed to being able to deconstruct and it must had been moveable and transferable.
- Helsinki City could not further use the temporary hall itself and they decided to sell it. Selling the hall made it possible to reuse and reassembly the hall instead of demolishing and recycling it.
- Because the hall was designed to deconstruct the building was simpler and easier to deconstruct compared to permanent buildings, and also the hall was quickly reassembled.
- Transports of elements were thought in the design process because elements fit to the trucks.
- The availability of drawings to buyers
- Right timing of different phases is important to enable reuse: decision of the further use vs. selling, arranging auction, allocate time for dismantling.
- Good communication with all parties included in deconstruction and reuse process.
- Demolition contractors had previous experience of deconstruct of the same designers' buildings and therefore were familiar with this type of hall, which made the deconstruct process even more secure.

In conclusion, the design of this steel frame hall significantly contributed its reuse possibility and offers a model for other projects.

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Further information

References:

- Sales brochure of hall and attachments
- Purkupiha Oy: employee and site manager
- Agenda and Minutes of Helsinki City:
 - o [AAE3B889-0022-CC4E-8F9B-892B86500000.pdf \(hel.fi\)](#)
 - o <https://paatokset.hel.fi/fi/asia/hel-2023-008579/819e9ac0-6598-42d0-9375-cece0d950577>
- Available articles from local and national newspapers:
 - o [5D43695A-41A1-C465-B248-8CF798700009.pdf \(hel.fi\)](#)
 - o [Hakaniemen lasihallin purkutyöt alkavat syyskuun alussa | Helsingin kaupunki](#)
 - o <https://www.hs.fi/pkseutu/art-2000005058871.html>
 - o <https://www.vantaansanomat.fi/paikalliset/1616218>
 - o [Hakaniemen väliaikainen halli pakattiin 50 rekkaan ja vietiin Tuuriin – tältä se näyttää nyt | Etelä-Pohjanmaa | Yle](#)

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