

# Pavilion Metsäwood JO Tokyo 2021

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## Pavilion Metsäwood, Tokyo

The purpose was to create simple and affordable, yet elegant pavilion constructed from prefabricated wooden elements. In other words, a temporary building that would be easily moved and re-used. One of the main ideas was to promote the use of wood and to demonstrate its many advantages and possibilities in construction, as well as to develop the wood prefabrication.

The first location for the movable Metsä pavilion is on the site of the Finnish Embassy in Tokyo, which is centrally located in the city's Roppongi district. Originally designed as event space for the 2020 Olympics that were cancelled due to the COVID-19 pandemic, the pavilion currently provides spaces for various business and cultural events and will stay in Tokyo until the end of 2021.



The fact that Tokyo has a dense urban structure with tiny plots and narrow streets needed to be taken into consideration during the design process. The original idea was that the pavilion would be on ground level but due to the small size of the plot, the pavilion was designed partly on the top of the existing concrete garage building.

The pavilion was built in Finland and assembled in 11 days in Japan. The total size of the building is 520 sqm of which 210 sqm interior space.

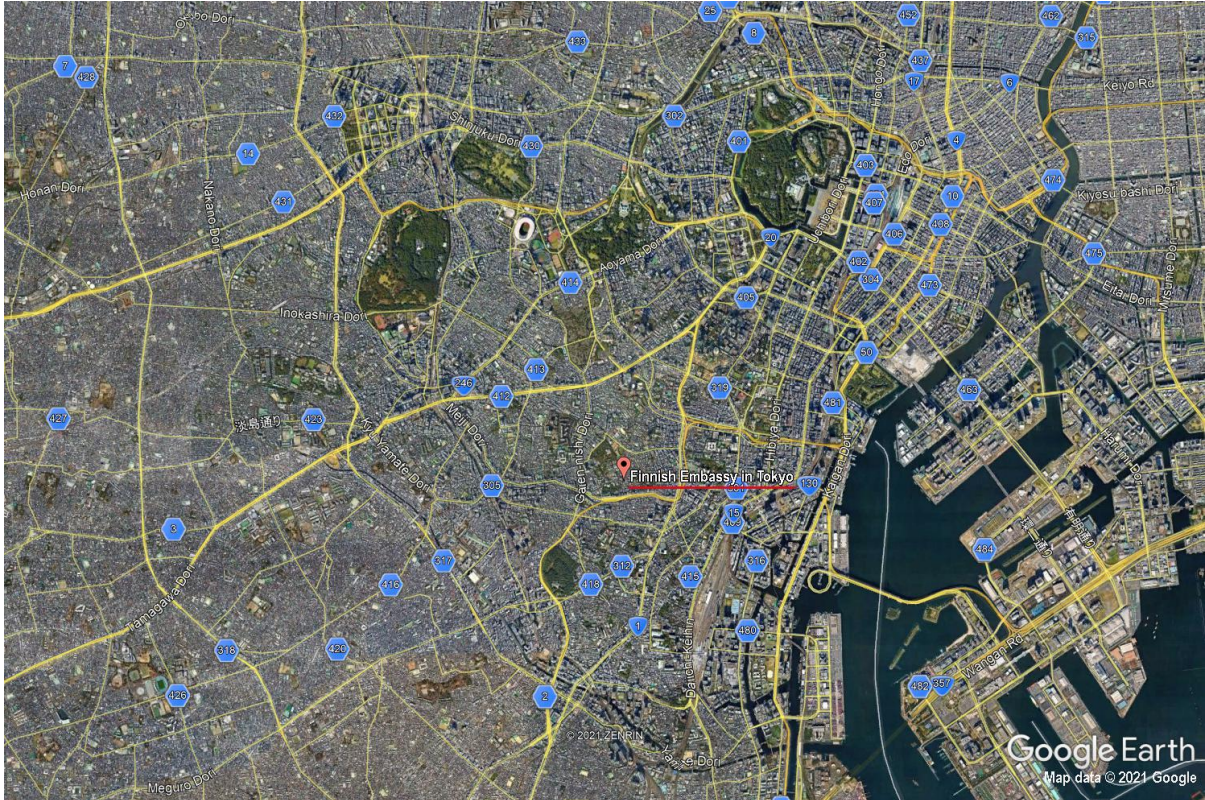


Image: Location in the city. The fact that Tokyo is very earthquake-prone, as well as the dense urban structure of the city where the plots are small and the streets narrow needed to be taken into consideration in the design process.

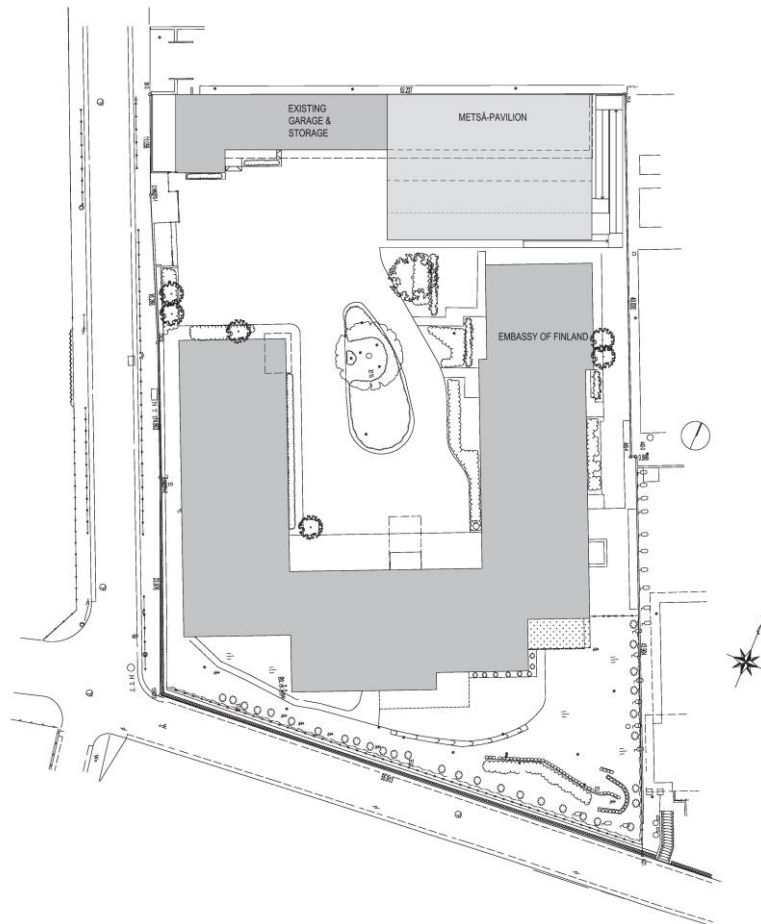
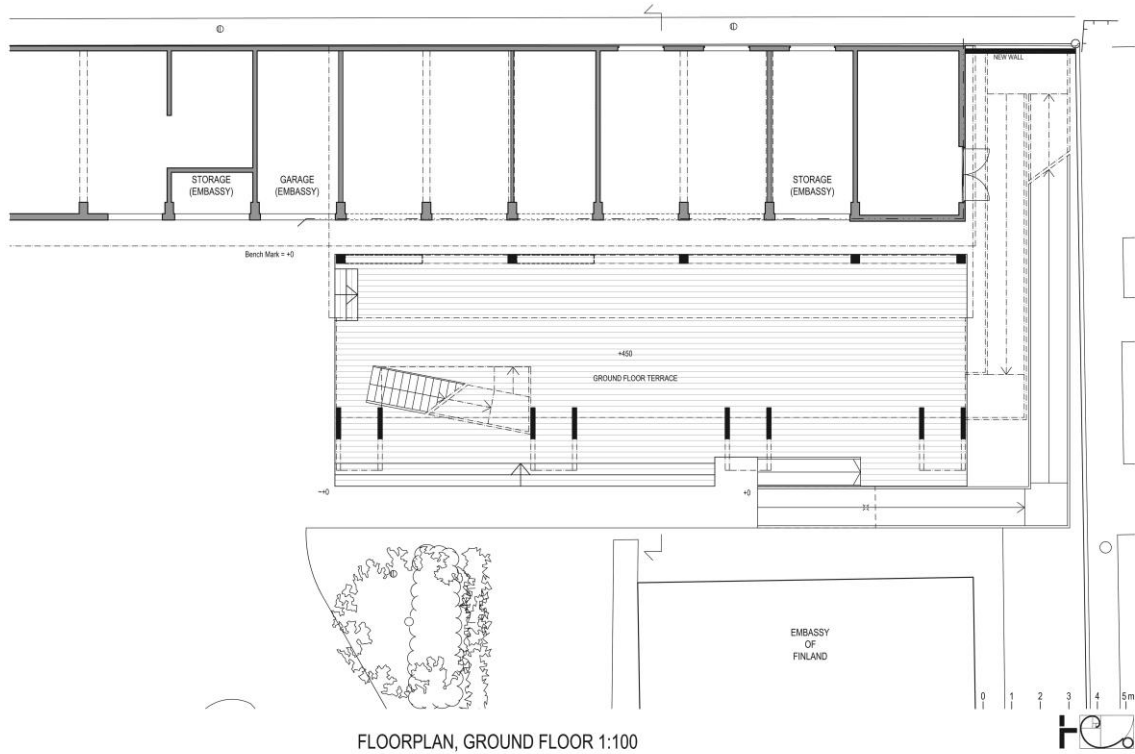
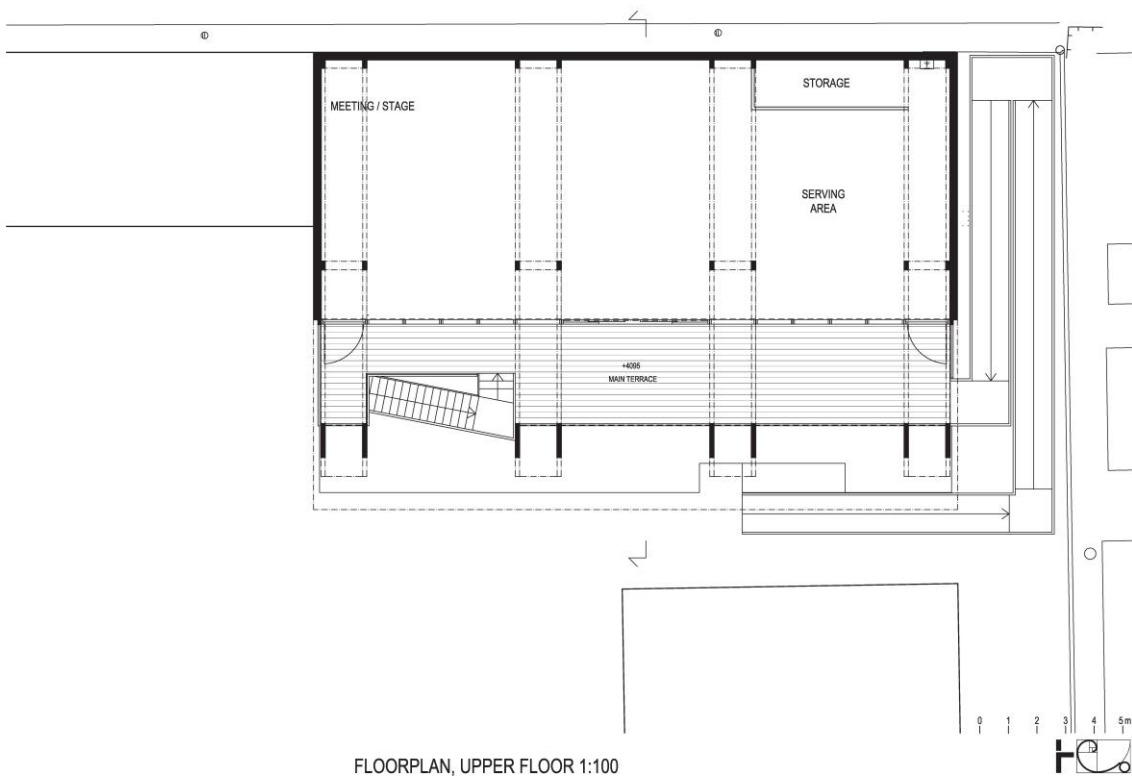


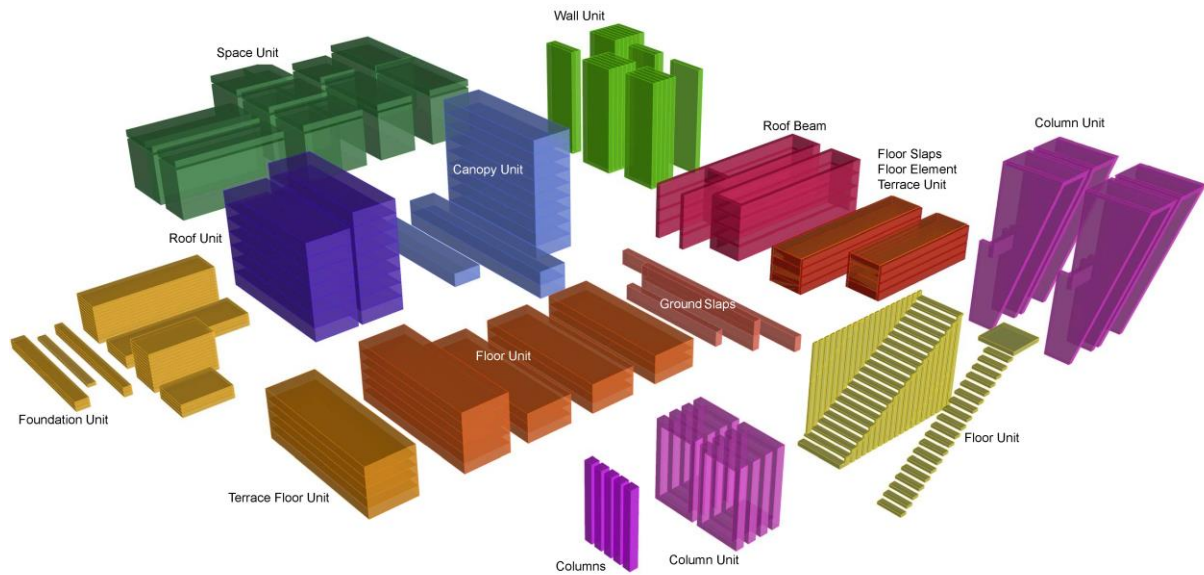
Image: Site plan

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Because of the character of the design task, many organic possibilities with wood and its complex organic joints needed to be forgotten. Thanks to its lego brick-like prefabricated elements made of Metsä Wood's Kerto Kerto LVL® laminated veneer lumber, The Metsä pavilion is a straightforward and uncomplicated industrial product that can be transformed fast and cost-efficiently into different constructions for many diverse purposes. The elements fit into 17 sea containers which makes the pavilion very easily movable and reusable. Once it is no longer needed in its current location, the pavilion can be disassembled, shipped to another location and rebuilt there. With minor modifications the pavilion is easily placed also on flat ground.

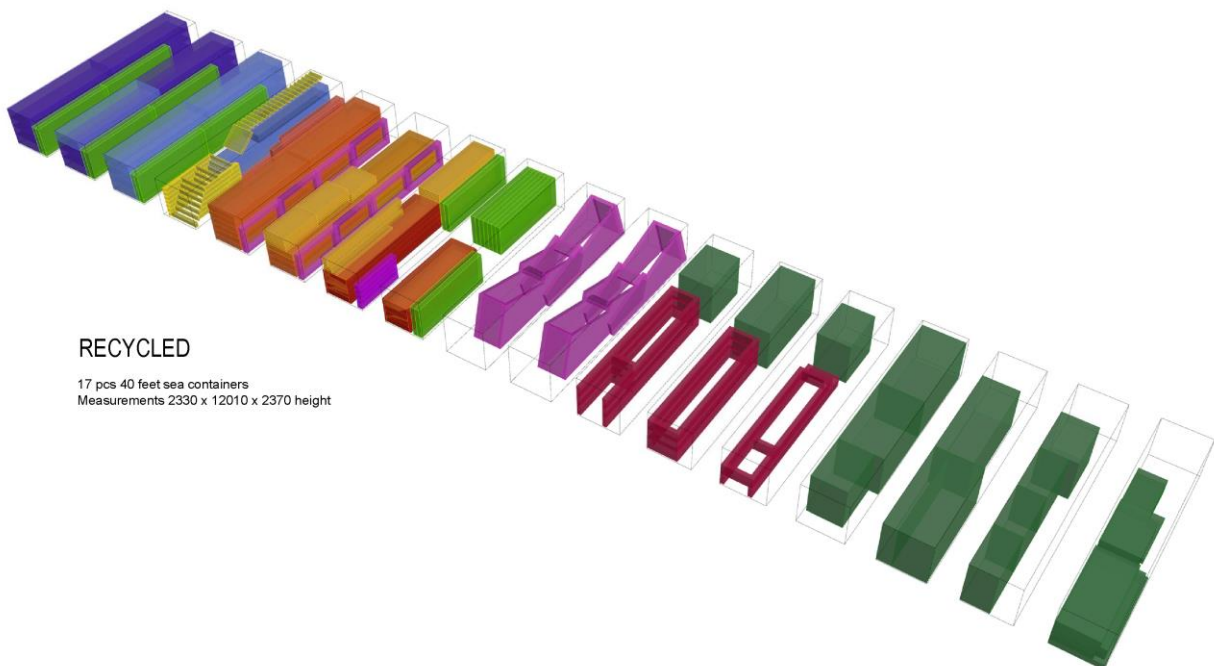


Image: Element types. All the wooden partitions are produced and prefabricated in Finland. The elements are based on the drawings by Helin & Co Architects

Sustainability was one of the main aspects in the design process. Certified wood is an environmentally friendly material, and the prefabrication is effective and ecological as the waste is minimized. Wood constructions provide also excellent opportunities for flexible modifications during the whole life cycle of the building.

The load bearing structure of the Metsä pavilion is made of CNC-machined spruce laminated veneer products as the material has many advantages that were essential for the

task. In addition to being accurate, it has a uniform quality, and it combines excellent technical performance with ease of use. Its essential qualities include strength, dimensional stability, homogenous and light weight: properties demanded also in seismic areas. As being a portable off-site product with a high prefabrication rate it reduces the construction time, minimises the amount of site work needed, it has great workability as only standard wood working tools are needed, it is easy to lift manually or with light cranes, as well as it reduces the amount of transportation to the site and waste on the site. In addition, they give the architect the freedom to cost-efficiently design very complex and ambitious architectural geometry. LVL structures are ideal for complementary or temporary building purposes, short construction times as well as projects where construction weight, noise in situ and transportations are to be minimized.



Image: Wooden elements make the building quick and easy to assemble. The pavilion was built in Finland and assembled in less than two weeks in Japan.

In designing the Metsä pavilion to its first location, beside the tight schedule, the architectural challenge was to create an elegant building of prefabricated elements for 200 persons to a tiny plot, while paying attention to the strict local legislation. The fact that Japan is a seismic country and the Tokyo area being extremely earthquake -prone affected the design solutions as well.



Image: inside, the theme of sustainability continues in the choice of materials and products with emphasis on wood and closeness to nature. Interiors were designed by Ulla Koskinen.

Given the innovative nature of the project, a close collaboration between the architect and Metsä Wood's experts was essential. This came very naturally since for two decades already Helin & Co Architects and Metsä Group have worked together in developing wood constructions and wooden building products. The results of this long and fruitful collaboration can be seen in buildings like Metsä Group headquarters (2013, 2016) with its award-winning restaurant and wooden auditorium showcasing Metsä's own products, or Finnforest Modular Offices which was, when completed in 2005, the biggest wooden office building in Europe.



Image: Metsä Group Headquarters restaurant (2013) & Finnforest Modular Offices (2005) both by Helin & Co Architects

The Metsä pavilion is approachable and authentic while being stylish and of high quality at the same time. It is a fine example of an elegant building created from simple and efficient prefabricated wooden elements. Moreover, the pavilion, regardless of its geographical location, is in accordance with the goal of the Finnish ministry of the Environment that in five years, almost half of built public buildings will be made of wood.



## Other innovative wood projects by Helin & Co Architects



Image: left: Annexe of the Finnish Parliament House (2004), Grand Committee Room  
Right: Terminal Extension of the Jyväskylä Airport (2004)



Image: Metsä Group Headquarters, wooden auditorium (2016)



Image: left: UPM Headquarters, atrium with wooden details (2013)  
centre and right: Villa Krona, private house in the Gullkrona archipelago (2010)