

City of Helsinki as a Platform for Wood Construction Development

Städte im Wandel und die Rolle des Holz(haus)baus
– Helsinki

Les villes en transformation et le rôle de la construction
bois – Helsinki

Kimmo Kuisma
City of Helsinki
City Executive Office, Urban Development
Project Manager
Helsinki, Finland



City of Helsinki as a Platform for Wood Construction Development

1. Helsinki has always been a wooden city

1.1. Early days of wooden city

Helsinki has always been a city of wooden buildings. Since its founding in 1550 until the late 19th century, wood was the main material of buildings. The city structure was formed by one and two storey wooden city blocks, where working-class people lived. Only the state and church could afford construction in brick or stone. Big city fires have destroyed Helsinki totally or partially approximately once a century between 1550-1900.

1.2. Historical wooden house districts

Helsinki expanded rapidly in the early 1900s. Several working-class wooden house districts were developed to ease the considerable housing shortage. Many of these neighbourhoods were demolished in the big wave of urbanization of 1960s and 1970s, but at the same time the remaining wooden house districts were protected.

The formerly working-class neighbourhoods then transformed into middle-class neighbourhoods favoured by urban bohemians, complete with corner bars, cafés and small street-level shops. The districts of Kumpula and Käpylä have today annual block parties, and other wooden house districts are also very lively with flea markets and urban farms, for example. Each with their own unique atmospheres, Puu-Vallila (Wood-Vallila), Puu-Käpylä (Wood-Käpylä), Kumpula and Toukola are now among the most desirable residential districts in Helsinki.

Puu-Vallila was the first wooden house district to be developed specifically for the working class. It was built between the industrial areas of Vallila and Sörnäinen in two phases, in the 1910s and 1920s. The ideals of the 1910s can be seen in the small plots lining the narrow roads that follow the natural terrain. Behind the wooden houses with their mansard roofs are small gardens and outbuildings.

The Puu-Käpylä wooden house district was developed along the railway lines to the north of the city centre in the early 1920s. Designed by Martti Välikangas and built out of log elements, the houses reflected the British ideals of a garden suburb. The focus was on providing a good environment for families with children that was close to nature and included gardens for growing produce.

2. Helsinki is growing fast today

2.1. Harbour issue and new urban project areas

Today Helsinki is one of the fastest-growing metropolitan areas in Europe. The strongest driver of this urban development was the construction of a new harbour in Vuosaari, 15 km east of the city centre. It was completed in 2008.

This change in city structure created opportunities to plan and develop huge harbour-related brownfield areas, altogether almost 10 square-kilometres, near the city centre: West Harbour, Kalasatama, Pasila and Kruunuvuorenranta. All these major project areas are under construction today. Furthermore, there are several in-fill projects in suburban areas of Helsinki.

2.2. New Helsinki City Plan 2050

In the forthcoming decades, Helsinki will expand faster than ever before. The new Helsinki city plan 2050 (Helsinki City Council, 26 October 2016) will steer the development of the city far into the future. The plan secures the prerequisites for the city to grow, to build

new housing and to prosper economically. The reservations made in the city plan will enable the growth of the city to 860,000 residents and 560,000 jobs by 2050. The population of Helsinki is today 620,000.

The solutions of the city plan are based on a vision of Helsinki as a networked city relying on expanding rail transport network, with a strong inner city that is larger than today. One-third of the new construction planned for the next few decades will be in-fill construction. The city will become denser especially in the vicinity of rail stations. Suburban centres will also be developed as dense hubs of housing, jobs and services.

Another one-third of the new floor space allowed by the city plan will be focused on city boulevards as the inner city expands. Large motorway-like access roads will be turned into city boulevards. The new boulevards will allow whole new city districts to be built as extensions of the current inner city.

The remaining one-third of the new construction will consist of large urban development areas. All this growth creates opportunities for wood construction industry as well: city is a platform of development.

3. Wood construction in City Strategy

3.1. City Strategy Programme 2013-16

The City Strategy Programme 2013-16 (Helsinki City Council, 24 April 2013) has brought forward the City's central objectives and development focuses during the council term 2013-2016. The Strategy Programme is divided into four main issues:

1. To promote wellbeing of residents
2. Helsinki full of life force
3. Functional Helsinki
4. Well-balanced economy and good management

The promotion of wood construction in housing projects has been set as a strategic target in the Functional Helsinki -issue: "The construction of wooden buildings and the use of building materials that are renewable and burden the environment as little as possible are promoted".

3.2. Home Town Helsinki 2016 -programme

The long-term planning of housing and the associated land use is guided by the programme for implementation, called Home Town Helsinki 2016 (City Council 22 June 2016). It is drawn up for every council period. The fulfilment of the goals is followed up annually. Responsibilities of increasing wood construction in housing projects has been set in the Home Town Helsinki -programme: City Executive Office and Helsinki Housing Production Department are in charge of achieving this strategic goal.

4. Steering methods of the City in strategical wood construction promotion

4.1. Town planning and wood

The City of Helsinki owns 70% of the land and plots inside borders of Helsinki. The city implements the strategy programme goal of wood construction promotion by using two major steering methods: town planning and land allocation.

Town planning has been the strongest tool used. Wood has been set as an obligatory building material in Myllypuro, Kuninkaantammi and Honkasuo urban development project areas. In Honkasuo, the Finnish concrete industry had its doubts in a legal appeal process, whether this wood regulation was legitimate or not. The Finnish Supreme Administrative Court finally confirmed in 2015, that the use of building materials can be regulated in a town plan.

4.2. Land allocation process and wood

The land allocation process is another major tool for the City to steer land use. After completed town planning and as a land owner, the city allocates the building plots for developers. In this process the city can find and choose the best projects suitable to each plot. In land allocation contracts various regulations can be set if needed. Land allocation is a tool to ensure development opportunities for wood construction. Since the legal appeal case of Honkasuo, there has been some discussion of material-free town planning. A question has been asked: when promoting wood construction, should the city as a land owner rather use land allocation contracts instead of heavy material regulations in town planning?

4.3. Wood in building projects of the City

The city promotes wood construction also in city-owned wooden building projects. Helsinki Housing Production Department (ATT) produces city-owned and state subsidized (reasonable priced) rental apartments, owner-occupied apartments and right-of-occupancy housing. ATT has been a pioneer in developing several wooden multi-storey housing projects in the past ten years, for example in districts Vuosaari and Pukinmäki.

Service facilities and properties owned by the City are developed and managed by the Premises Centre of the Real Estate Department. It has promoted wood construction by implementing several day-care centres and public playground buildings made out of wood.



Figure 1: The Supreme Administrative Court finally confirmed the town plan of Honkasuo

5. Recent wooden projects in Helsinki – city as a platform for wood construction development

5.1. Wooden house districts

A densely built, village-like city district of wooden buildings is under construction in southern **Myllypuro**. Several aspects of the plans promote communality and everyday ecological needs. One of the starting points has been that the proposed houses open up on to living streets. The houses are modifiable, energy efficient, ecological and meet modern housing's high standards. Within the allowances set by town planning, the residents will have the possibility of building extensions to the houses being built now. The land of Wood-Myllypuro is owned by the City of Helsinki. The area of approx. 2,000 residents will be completed in 2017.

Honkasuo is the largest new wood construction area in Helsinki. Former forest and meadow area, located in north-western Helsinki, will be turned into a city village with wooden houses for 2,000 inhabitants by 2025. The residential area is built around a park

and composed of energy-efficient detached houses, connected single-family houses and multi-storey buildings. The construction of the streets and the municipal engineering and housing plots is currently underway.

In Honkasuo special attention will be paid to the ecological sustainability of the construction projects and the housing during the entire lifespan of the buildings. Wood construction is used in an effort to reduce carbon dioxide emissions, while natural methods of delay will be favoured in the management of storm water. The land of the area is owned by the City of Helsinki.

Kuninkaantammi is new urban development project area located in the north-western corner of Helsinki and skirting Vantaanjoki river and the Central Park. This new district will be built to a dense, urban design and consistent with the ecological, experiential and community requirements of modern housing. Kuninkaantammi will replace what has been an area of industry buildings and warehouses with a pleasant residential development for 5,500 inhabitants. The City owns most of the land to be built.

Half of the Kuninkaantammi project area will be wooden city blocks, both low-rise and multi-storey apartment buildings. There will be approx. 2,100 residents living in these new wooden houses. Construction of the wooden blocks will start in 2018-19.



Figure 2: Village-like wooden housing district Myllypuro will be completed 2017.

5.2. Wooden multi-storey apartment buildings

Viikki is one of the oldest urban project areas still under construction in Helsinki. The area is home to one of Finland's first wooden apartment building development projects. Eco-Viikki is a worldwide known example of a 1990's housing district, where ecological sustainability was in the focus and core of town planning. The implementation of new ideas was ensured in land allocation contracts. Several wooden apartment buildings were constructed in Eco-Viikki area, which was completed 2004.

Latest wooden city block in Viikki is the housing project for Etera Mutual Insurance company. The project of 104 non-regulated rental apartments was completed 2012. The multi-storey building system consists of an LVL column-beam frame, ribbed slab intermediate floors and ceiling elements, and exterior walls made of prefabricated wooden modular units.

Eskolantie apartment block was completed in 2014. The project consists of four five-storey buildings. There are 42 right-of-occupancy apartments and 51 city-owned and state-subsidized rental apartments. Project was an implementation of a Design & Build competition, organized by the Helsinki Housing Production Department. The facades of the buildings are in timber as well as the construction. Wood is also used as a finishing material in some of the interior spaces, for ceilings and floors. The loadbearing and stiffening structure of the buildings is of solid timber elements made of CLT. The apartments and balconies are built of spatial elements.

The first wooden multi-storey passivehouse project in Helsinki will be built in **Honkasuo**. The project of 116 non-regulated rental and right-of-occupancy apartments is under construction. First residents will move in by the end of 2016. Honkasuo block is a kind of sister-project of PUUMERA-apartment block represented in Finnish Housing Fair 2015 in City of Vantaa.

Wood City will be Finland's largest wooden quarter, located in West Harbour urban development project area. It is a hybrid building of offices, hotel and apartments. Developers call it "a kind of modern return of wood into downtown Helsinki". Construction of Wood City has started and it will be completed in 2017. The developers of Wood City are Stora Enso, construction company SRV Group and the Helsinki Housing Production Department.



Figure 3: Wood City will be Finland's largest wooden quarter. Picture: Wood City/SRV Group

5.3. Public building projects of the City

The Central Library is under construction and will be opened in 2018. It will offer a public space open to all residents in the heart of the city. The Central Library will complement the Töölönlahti culture cluster. It will be a masterpiece of timber construction, eco-efficient almost zero-energy building.

The modular daycare centre of Kurkimoisio is a pilot building in a concept project completed 2015. Expanding city has to invest a lot into new service facilities. The aim of the project was to create a daycare centre model, that is inexpensive and fast to build and versatile in terms of space utilization.

5.4. Private wooden projects

Kamppi Chapel of Silence is located in a corner of the Narinkkatori square, which is one of the most crowded spots in Helsinki. The Chapel is a quiet space where the busy surroundings disappear. The warmth of wood is strongly present inside, together with indirect lighting filtering down from above.

Löyly (engl. "Steam") is a public sauna with restaurant and outdoor terrace facing to the sea. This piece of wow-architecture is situated in Hernesaari district, former harbour area west of the city centre. The architectural idea is simple: the hot sauna spaces are in a rectangular box covered by a free-form wooden cloak. The project was completed 2016.

Allas Sea Pool is located next to the Helsinki Market Square in the city centre. The wooden sea pool boasts several saunas, swimming pools and a café. Part of the complex was opened in Summer 2016. The main building will be made of Finnish spruce wood, and is scheduled for completion in Spring 2017.