



Ympäristöministeriö  
Miljöministeriet  
Ministry of the Environment  
Finland

# National Targets for Public Wood Building

Wood Building Action Plan 2016–2022

# Introduction

Mitigating climate change is one of society's most important environmental goals globally. As an EU Member State and through international agreements, Finland is committed to bringing about a significant reduction in greenhouse gas emissions. One third of emissions come from the construction sector. In order for Finland to achieve its national and international climate goals, emissions from construction and housing must also be reduced.

Municipalities play an important role in curbing climate change. Several municipalities have set climate targets that are even more ambitious than the national target level. Wood construction has been identified as a key measure for reducing regional emissions, as wood materials bind carbon dioxide in the building stock. Wooden buildings are also perceived as pleasant. In recent years, the use of wood has shown a strong upward trend, especially in educational buildings and in buildings for early childhood education. By selecting wood construction, public actors can allocate common funds to achieving social goals: to reduce emissions and support the domestic economy and local businesses.

Prime Minister Sanna Marin's Government Programme from 2019 provides clear guidelines for wood construction. The goal is to double the use of wood in construction during the Government term, set targets for wood construction in public building, and spur know-how and the development of the entire value chain. The Wood Building Programme of the Ministry of the Environment, together with stakeholders, has put together the national targets for public wood construction presented in this publication.

The realisation of the targets set will be monitored closely. The Ministry of the Environment will publish a statistical review of public wood construction at the end of the current Government term in 2023. Public developers are offered support and tools to achieve their targets. These include grants, guides, trainings, a database of good project examples, and communications packages.

Targets are given for the share of wood in all new public construction and for the building types of the greatest building volumes.

## Setting the targets

The Wood Building Programme, together with a group of experts, compiled the first draft on the development of public wood construction in the spring of 2020. The draft targets comprised estimates of the development of the total volume of public building in 2022 and 2025, as well as the development of the total volume of wood construction. The review was conducted by building type.

Stakeholders commented on the estimated development through an online survey and a webinar. Following the reassessment, the targets were processed by the programme steering group. The organisations of the steering group's members were also requested specifically to give their comments. The Climate Policy Programme adopted the targets on 2 September 2020.

In the comments, the targets were considered ambitious, but in the right direction. The Ministry of the Environment published the targets on 8 September 2020.

## To the reader of this publication

In 2019, public developers' activities accounted for about 18% of all new construction. The targets set only apply to new construction by a public developer; renovation and infrastructure construction have not been taken into account in the review. The targets set are based on the construction projections for 2022 and 2025, produced by Forecon Ltd using the construction and housing production statistics of Statistics Finland as source data. Building permits are used as the indicator for monitoring construction forecasts and targets. Monitoring will be done on the quantitative development of wood construction as well as on its market share. The market share of wood construction has been calculated in proportion to the development of the total volume of new construction. The impact of the COVID-19 crisis on building was not taken into account in the statistical review of construction or in the setting of targets.

More information about the impacts of the COVID-19 crisis on construction volumes is available in the Ministry of Environment's publication: Construction outlook, a snapshot of the coronavirus spring 2020 [in Finnish].

# All public building

The target of wood construction in relation to all new public construction



**All public** construction includes the following types of buildings built by a public actor: detached and semi-detached houses; terraced houses; blocks of flats; residential buildings for communities and dwellings for special groups; free-time residential buildings; commercial buildings; office buildings; transport and communications buildings; buildings for institutional care; assembly buildings; educational buildings; industrial and mining and quarrying buildings; energy supply buildings; public utility buildings; warehouses; rescue service buildings; agricultural buildings; and other buildings.

## Grounds for the market trend:

In 2019, the value of new construction by public developers was EUR 2.8 billion, which is about 18 per cent of the value of all new construction. The share of the public builder is predicted to remain at the same level in 2022 and 2025, but the total volume will decrease.

## Grounds for increasing the market share of wood:

The state has set ambitious goals for increasing the use of wood and promoting the development of wood construction through the Government's joint **Wood Building Programme**. To an increasing extent, the public sector is expected to make environmentally friendly and responsible acquisitions. The carbon neutrality targets set by the municipalities support wood construction and, in particular, the use of solid wood in the building stock, which forms long-term carbon stores. In municipalities, the demand for wood construction has increased, especially in recent years. In addition, the competitiveness of industrial wood construction will improve as the use of wood in construction becomes more common and the supply of solutions increases.

All construction	Total volume of construction, 1000 m <sup>3</sup>	Buildings with timber frames, 1000 m <sup>3</sup>	Market share of wood, %
2019	6 907	1 039	15%
2022	5 661	1 760	31%
2025	5 221	2 296	45%

# Educational buildings

## Goal of wood construction in the construction of educational buildings



**The following types** of buildings are classified as educational buildings: early childhood education buildings; general education buildings; vocational education buildings; university and research institute buildings; and other educational buildings.

### Grounds for the market trend:

The number of educational buildings is currently large and is expected to decline slightly in the coming years. Much renovation of educational buildings is predicted for the future, but the quantitative need will be smaller.

### Grounds for increasing the market share of wood:

The use of wood in the construction of educational buildings has increased, especially in recent years, and large projects are also being implemented. When designing educational buildings, it is especially important to take into account the creation of a healthy, safe and comfortable learning environment. Indoor air problems in the existing old buildings is one of the main reasons why the use of wood in educational buildings is of interest to municipalities. Municipal residents have also woken up to this and are demanding responsible construction decisions from municipal decision-makers. In wood construction, municipalities are also interested in good adaptability. A modular wooden building can be modified easily and cost-effectively to meet current teaching needs and even different uses later. In modular construction, prefabricated parts of the building, i.e. modules, are produced industrially. Under factory conditions, the modules can be fabricated to a very high degree, so that on the construction site they are merely connected to each other as well as to water supply, sewer, power and telecommunication networks.

Educational buildings	Total volume of construction, 1000 m <sup>3</sup>	Buildings with timber frames, 1000 m <sup>3</sup>	Market share of wood, %
2019	1998	614	31%
2022	1220	671	55%
2025	1100	715	65%

# Buildings for institutional care

Goal of wood construction in the construction of buildings for institutional care



The following types of buildings are classified as buildings for institutional care: health care buildings; social work activity buildings; and prisons. Buildings intended for treating sick animals are also classified as buildings for institutional care.

## Grounds for the market trend:

The volume of constructing buildings for institutional care is currently at a historically high level. In particular, very many large hospital projects are under construction. Many new projects are being planned and the volume will remain high, although it will decrease slightly from the 2019 level. The share of public builders in the construction of buildings for institutional care is expected to decline.

## Grounds for increasing the market share of wood:

In the future, hybrid solutions will be increasingly popular in the construction of buildings for institutional care, both in structures and in different parts of hospitals, which will increase the use of wood in construction. Modularity and adaptability are also seen as a future trend in this building category. The health effects of wood in hospital environments have been studied widely internationally, and to some extent nationally. The research results favour the use of wood, and it can be predicted that the health effects of wood will be utilised increasingly often in future hospital planning. In addition, wooden structures are well suited for small nursing homes, in-patient wards of hospitals, entrance halls and the like.

Buildings for institutional care	Total volume of construction, 1000 m <sup>3</sup>	Buildings with timber frames, 1000 m <sup>3</sup>	Market share of wood, %
2019	1178	66	6%
2022	870	174	20%
2025	700	245	35%

# Residential blocks of flats

## Goal of wood construction in the construction of residential blocks of flats



All multi-storey blocks of flats with at least two storeys intended for continuous residential use, in which the living space is at least half of the floor area, are classified as residential blocks of flats. Residential buildings for communities and dwellings for special groups are also classified as residential blocks of flats.

### Grounds for the market trend:

The volume of residential construction in Finland is foreseen to decrease from the current level. The public builder accounts for about 10% of all residential construction. The share of public construction is predicted to increase slightly in the construction of residential blocks of flats. Housing production has been dominated by blocks of flats, and this trend is expected to remain the same.

### Grounds for increasing the market share of wood:

The agreements concerning land use, housing and transport (MAL) for the years 2020–2031 will also provide financial incentives for cities to build with wood. The Housing Finance and Development Centre of Finland (ARA) offers **increased start-up grants for constructing wooden rental housing**. The development of industrial wood construction improves the competitiveness of wood use, which enables the increase in the construction of wooden residential blocks of flats. In addition, wood is ideal for building additional storeys and renovation. Complementary construction is predicted to grow, especially in densely built-up areas, where the speed of industrial wood construction is a positive factor.

Residential blocks of flats	Total volume of construction, 1000 m <sup>3</sup>	Buildings with timber frames, 1000 m <sup>3</sup>	Market share of wood %
2019	674	18	3%
2022	570	122	21%
2025	520	239	46%

# Assembly buildings

## Goal of wood construction in the construction of assembly buildings



**The following types** of buildings are classified as assembly buildings: cultural buildings; association and club buildings; buildings of religious communities (excluding those built by parishes); buildings for sports and physical exercise; and other assembly buildings.

### Grounds for the market trend:

Municipalities are actively building sports halls and other hall buildings. The volume is expected to fall slightly short of the 2019 level. The public builder is responsible for about 50% of Finland's hall construction projects.

### Grounds for increasing the market share of wood:

Over the last decade, wood construction techniques have evolved to the point where they can be applied even to large scales and different uses, which supports the use of wood in large hall construction projects. For municipalities, large assembly buildings are often landmarks that require impressive architectural solutions. As a framework material, wood is also excellently suited for free base forms and solutions where wood is used innovatively in both interior materials and facades. In addition, increasing attention will be paid to the adaptability of large buildings in the future.

Assembly buildings	Total volume of construction, 1000 m <sup>3</sup>	Buildings with timber frames, 1000 m <sup>3</sup>	Market share of wood, %
2019	950	63	7 %
2022	650	130	20 %
2025	550	165	30 %



**More information about wood construction:**

[www.ym.fi/en/wood-building](http://www.ym.fi/en/wood-building)

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