



# Mass Timber Construction

Australia • Austria • Canada • Italy • Japan  
New Zealand • Norway • Sweden  
Switzerland • United Kingdom

September 2022

LL File No. 2022-021572  
LRA-D-PUB-002590

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# Comparative Summary

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## I. Introduction

This report covers the jurisdictions of **Australia, Austria, Canada, Italy, Japan, New Zealand, Norway, Sweden, Switzerland,** and the **United Kingdom.**

## II. “Wood First” Legislation

A number of countries and their subnational jurisdictions have adopted laws promoting the use of wood in new construction. In 2020, **Austria’s** parliament enacted the Forest Fund Act (Waldfondsgesetz) to promote the use of raw material wood for construction as an “active contribution to climate protection,” among other objectives.

In **Canada** in 2009, the province of British Columbia’s legislature enacted the Wood First Act, with the purpose of “facilitating a culture of wood by requiring the use of wood as the primary building material in all new provincially funded buildings, in a manner consistent with the building regulations.” A bill promoting the use of wood in federal government buildings was introduced in **Canada’s** senate in 2021.

Because of seismic conditions, **Italy** generally discourages the use of wood for construction purposes.

In 2010, **Japan** enacted legislation to promote the use of timber in public buildings.

Although **Norway’s** government is in favor of promoting the use of timber in buildings, no “wood first” laws have been adopted. Similarly, **Sweden** has no legislation that specifically promotes the construction of buildings using timber. However, in 2020, **Sweden’s** government devoted SEK2 million (about US\$200,000) to promote increased construction of wood buildings, especially multifamily buildings.

In **Switzerland**, the Forest Ordinance emphasizes that the use of timber and timber products must be promoted in the planning, construction, and operation of federal buildings and installations.

The **United Kingdom** does not have any “wood first” legislation; however, its 25-year environmental plan, released in 2018, and clean growth strategies recognize the use of commercial woodlands as a key carbon-capture method. **Australia** has not enacted any legislation dealing specifically with the use mass timber or cross-laminated timber, but Wood Encouragement Policies are prevalent, and set by local councils. In 2021, the **New Zealand** government introduced a “timber-first policy” the aim of which is to “help combat climate change”.

### III. Regulation of Mass Timber in Construction

A few countries have building codes or other regulations concerning the use of mass timber in construction. In **Canada**, the National Building Code, a model code for provinces to adapt or adopt, allows for encapsulated mass timber construction for buildings up to 12 stories or 42 meters in height. In 2019, **Australia** updated the National Construction Code to allow for the construction of mass timber buildings up to 8 stories. Structures made of mass timber products in **Italy** and **Sweden** must comply with a number of criteria concerning elasticity and resistance standards, in accordance with European Union (EU) regulations. Likewise, **Norway**, as a member of the European Economic Area, must comply with EU standards.

In 2017, the **United Kingdom** revised its restrictions on the use of combustible building materials in tall buildings, but noted that the restrictions should not inhibit innovation in the field of cross-laminated timber technologies. **Japan's** government has set up a website to promote the use of fire resistant cross-laminated timber technology in tall buildings. In **New Zealand** it appears that no changes to the Building Code have been proposed specifically with respect to cross-laminated timber technologies, 2022 changes include updates with respect to fire protection.

# Australia

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**SUMMARY** Australia has not enacted any legislation dealing specifically with the use mass timber or cross-laminated timber (CLT). That said, the Australian government has been proactive in developing policies, updating codes, and amending standards to promote the use of mass timber in the construction industry.

Many of Australia’s mass timber policies stem from its commitment to reduce greenhouse gas emissions. These policies were predominantly developed under the previous conservative Coalition government, which had set an Emissions Reduction Target in 2015 of 26-28 per cent below 2005 levels by 2030. It is likely that some policies may soon be updated or amended following the election of Australia’s center-left Labor Party in May of 2022. While the Labor Party has not yet announced any new initiatives with respect to mass timber or CLT, the new government recently updated Australia’s emissions targets to 43% below 2005 levels by 2030 with the United Nations Framework Convention on Climate Change. Accordingly, the policies, authorizations, and requirements set out below relate to the initiatives undertaken by the previous Coalition government during its term from 2013 to 2022.

At present, mass timber building construction is governed by the Australia’s existing National Construction Code (NCC) which is a performance-based code that sets out minimum standards for health, safety, accessibility, amenity and sustainability of buildings. Standards that have been developed relate to the use of timber and do not appear specifically to address CLT.

## I. Incentives, Authorizations, and Requirements to Use Mass Timber

### A. Government Policies

Many of Australia’s mass timber policies stem from its commitment to reduce greenhouse gas emissions.<sup>1</sup> These policies were predominantly developed under the previous conservative Coalition government, which had set an Emissions Reduction Target in 2015 of “26-28 per cent below 2005 levels by 2030.”<sup>2</sup> During its term, the Australian Coalition government (the government) launched a number of initiatives to incentivize the use of mass timber and CLT. In February 2022, the government launched the Timber Building Program,<sup>3</sup> which was developed in response to a report produced by the Sustainability Council of Australia (SCA), and the Green

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<sup>1</sup> *More Timber in Construction to Lower Emissions*, Department of Climate Change, Energy, the Environment and Water (Feb. 4, 2022), <https://perma.cc/V39T-XFCS>.

<sup>2</sup> Australian Government, *Australia’s 2030 Emissions Reduction Target* (2015), <https://perma.cc/BV66-NTL9>.

<sup>3</sup> *More Timber in Construction to Lower Emissions*, *supra* note 1.

Building Council of Australia (GBCA),<sup>4</sup> setting out guidance on how Australia’s building sector could use innovative approaches in manufacturing and design to reduce its carbon footprint.<sup>5</sup> The aim of the Timber Building Program is to cut emissions in the construction sector by promoting greener alternatives such as mass timber.<sup>6</sup> As part of this initiative, the government allocated AU\$300 million (about US\$206 million) for investment, through the Clean Energy Finance Corporation (CEFC), to promote “mass timber construction across the property sector”<sup>7</sup> in both commercial developments and multi-residential apartments.<sup>8</sup> According to the CEFC’s guidelines, the types of projects suitable for finance include those that use “low carbon engineered wood products in large-scale construction,” those that comply with CEFC’s investment policies, guidelines, and risk approach,<sup>9</sup> and those that comply with the Australian Building and Construction Work Health and Safety Accreditation Scheme.<sup>10</sup>

To date, a number of buildings have been constructed using CLT in Australia. The table below sets out a list of CLT buildings, predominantly under eight stories high, that have been constructed between 2011 and 2018.<sup>11</sup> Both the Forte building,<sup>12</sup> and Aveo Norwest buildings, which were made with CLT<sup>13</sup> and hybrid construction respectively,<sup>14</sup> stand at over 10 stories high.

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<sup>4</sup> SCA & GBCA, *Australian Buildings and Infrastructure: Opportunities for Cutting Embodied Carbon* (2021), <https://perma.cc/XP6Q-VWFH>.

<sup>5</sup> *Huge Potential: Australia's Opportunity to Cut Embodied Carbon in Buildings and Infrastructure*, Clean Energy Finance Corporation (CEFC) (Nov. 23, 2021), <https://perma.cc/CL3B-5YST>.

<sup>6</sup> *Where We Invest: Property*, CEFC, <https://perma.cc/YW5Z-9V9R>.

<sup>7</sup> *Australian Programme to Invest \$300 Million in Mass Timber Buildings, Panels & Furniture Asia* (Feb. 4, 2022), <https://perma.cc/V4WT-V8CR>.

<sup>8</sup> CEFC, *CEFC Timber Building Program*, <https://perma.cc/2668-RVHM>.

<sup>9</sup> *About Our Finance*, CEFC, <https://perma.cc/TEV4-WDEA>.

<sup>10</sup> *CEFC Timber Building Program*, supra note 8; *Australian Government Building and Construction Workplace Health and Safety Accreditation Scheme*, Australian Business Licence and Information Service, <https://perma.cc/M2L7-JG3E>.

<sup>11</sup> David Craig Evison, Paul D Kremer & Jason Guiver, *Mass Timber Construction in Australia and New Zealand – Status, and Economic and Environmental Influences on Adoption*, 50 *Wood and Fiber Science* 128, 133 (2018), <https://perma.cc/6UFR-6E96>.

<sup>12</sup> *Forte Living*, WoodSolutions, <https://perma.cc/Y2CR-3GQT>.

<sup>13</sup> *Id.*

<sup>14</sup> *Aveo Norwest at Sydney's Northwest Business Park*, Architecture & Design (Oct. 29, 2018), <https://perma.cc/3SP2-XURA>.

## Mass Timber Construction: Australia

Table 1. Recently completed mass timber buildings in Australia.

Building name	Completed	Location	Storys	Public building?	Timber features
The Good Shed	2011	Southbank, Melbourne	2	Y	LVL box truss system and I-joists
Forte	2012	Docklands, Melbourne	10	N	Full CLT design, honeycomb construction
The Green	2013	Parkville, Melbourne	6	N	TecBeam, LVL Cassette flooring system with light timber framing
Library at the Dock	2013	Docklands, Melbourne	2	Y	CLT and Glulam
Netball Central	2014	Sydney	1	Y	40 m clear span LVL portal
International House	2017	Barangaroo, Sydney	6	Y	CLT, Glulam and glass curtain wall system
Monash University Business School	2017	Caulfield, Melbourne	4	N	CLT vertical extension on top of an existing concrete structure.
Aveo Norwest	2018	Hills Shire, Sydney	10	Y	CLT structure comprising a multifunction center, library, restaurant and cafe, wellness center, and 449 independent living units over 10 buildings of varying heights (4-9 storys) and a 144 bed residential aged care facility
The Gardens, McAuthor	2018	Campbelltown, Sydney	6, 7, and 8	N	Full CLT design, honeycomb construction

CLT, cross-laminated timber; LVL, laminated veneer lumber.

There are currently three proposals to construct hybrid timber buildings between 590 and 721 feet, or 180 and 220 meters high.<sup>15</sup> According to the architects of these buildings, the structures will be hybrid as it is “not technically possible” to construct them only out of mass timber products.<sup>16</sup>

### B. Authorizations and Requirements: Codes and Schedules

The National Construction Code (NCC) is a performance-based code that sets out minimum standards for health, safety, accessibility, amenity, and sustainability of buildings.<sup>17</sup> It is managed by the Australian Building Codes Board on behalf of the Australian Government and consists of the Building Code of Australia (BCA) and the Plumbing Code of Australia (PCA).<sup>18</sup> In order to give effect to the NCC, each state and territory has enacted legislation that sets out “the legal framework and administration mechanisms for the NCC to support the design and construction of buildings.”<sup>19</sup> In 2019, the NCC was updated to accommodate the rise in mass timber structures.<sup>20</sup> This change resulted in the removal of onerous processes associated with obtaining approval for the construction of mass timber, or “fire-protected timber constructions” up to eight

<sup>15</sup> Angus Mackintosh, *Timber Skyscrapers Reach for Record Heights and Sustainable Australian Cities*, ABC News (Aug. 5, 2022), <https://perma.cc/L6PM-8W6L>.

<sup>16</sup> *Id.*

<sup>17</sup> *National Construction Code (NCC)*, Australian Building Codes Board (2019), <https://perma.cc/5SWC-V3YN>.

<sup>18</sup> *Id.* Vol. One Amendment 1: *Introduction to NCC* (registration required to access the NCC).

<sup>19</sup> *Id.*

<sup>20</sup> *2019 changes to the National Construction Code (NCC)*, WoodSolutions, <https://perma.cc/VJR6-F53L>.

stories high,<sup>21</sup> by introducing “Deemed-to-Satisfy” provisions that allow construction to proceed if designs meet the relevant requirements.<sup>22</sup>

At present, it appears that the NCC, which regulates design and performance, is being relied upon, along with standards, to address issues that may arise with the use of CLT.<sup>23</sup> In a matter heard before the Building Appeals Board of Victoria (Board),<sup>24</sup> the Board considered whether a CLT beam for a commercial complex complied with the NCC with regard to the structure, performance, and fire safety of the design. In that case, the Board found that the proposed design did not comply with the NCC because it failed to meet safety and performance requirements.<sup>25</sup> This decision indicates that the assessment of buildings is focused on a building’s performance, safety, and structural integrity, as opposed to the use of a particular technology or material itself.

In an article published by the Structural Engineering Society of New Zealand (SESOC), which considered building regulations that use “Performance-Based Codes (as in New Zealand and Australia),”<sup>26</sup> SESOC determined that there is an “increasing gap between the routine design methods codified in Standards and the knowledge . . . of the performance of mass timber structures in fire.”<sup>27</sup> According to SESOC, with respect to CLT, these issues are apparent “when designers seek approval to use timber as the structural material for structures that are taller or more complex than the Codes anticipated.”<sup>28</sup>

### C. Standards on Timber

In addition to the guidance set out in the NCC, a number of standards have been developed for the manufacture and use of timber and CLT. Many of these standards were developed through a joint standards development committee<sup>29</sup> between Australia and New Zealand,<sup>30</sup> and disseminated by both Standards Australia<sup>31</sup> and Standards New Zealand.<sup>32</sup> In Australia, industry

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<sup>21</sup> Id.

<sup>22</sup> Id.; see also Robert L. McGavin et al., *Mass-timber Construction in Australia: Is CLT the Only Answer?*, 15 *BioResources* 4642-4645 (2020), <https://perma.cc/4HS4-HMZN>.

<sup>23</sup> Timber Queensland, *Benefits of Wood: Factsheet 7*, <https://perma.cc/J76L-TDDQ>.

<sup>24</sup> In the matter of 300 Lonsdale Street, Melbourne [2020] VBAB 66 (Sept. 17, 2020), <https://perma.cc/6H3G-YWET>.

<sup>25</sup> NCC Vol. One Amendment 1: *Introduction to NCC*.

<sup>26</sup> See *CLT and Mass Timber Structures: A SEAOC/SESOC Article Series*, Structural Engineers Association of California (SEAOC), <https://perma.cc/7DAB-JK3X>; Structural Engineering Society New Zealand (SESOC), <https://perma.cc/4EYW-FWLN>.

<sup>27</sup> See *CLT and Mass Timber Structures: A SEAOC/SESOC Article Series*, *supra* note 26.

<sup>28</sup> See *id.*

<sup>29</sup> *Joint Australian/New Zealand Standards*, Standards New Zealand, <https://perma.cc/58L8-GGR3>.

<sup>30</sup> Id.

<sup>31</sup> *Home*, Standards Australia, <https://perma.cc/J26W-92ZH>.

<sup>32</sup> *Home*, Standards New Zealand, <https://perma.cc/MR2K-XBE9>.

standards with respect to timber are set by the “Australian Timber Preservation Standards AS or AS/NZS 1604 series (Australian Standard 1604).”<sup>33</sup>

Generally speaking, there are a number of standards that apply to timber, but not necessarily CLT. These cover the following topics, among others:

- glued laminated structural timber;<sup>34</sup>
- residential timber-framed construction;<sup>35</sup>
- timber structures;<sup>36</sup>
- termite management;<sup>37</sup>
- preservative-treated wood-based products;<sup>38</sup>
- specifications for preservative treatment;<sup>39</sup> and
- sawn and round timber.<sup>40</sup>

Each standard above is comprised of a number of chapters or sections that relate to the use of timber in different contexts. In 2022, a standard on structural laminated veneer lumber was updated to specify requirements with respect to “the manufacture, structural characterization, and structural verification of laminated veneer lumber intended for structural applications.”<sup>41</sup>

## II. Wood Encouragement Policies

Wood Encouragement Policies (WEPs) are prevalent in Australia. Such policies have not been adopted nationally, but have been adopted by local councils. The policies do not mandate the use

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<sup>33</sup> *Australian Timber Preservation Standards Relevant to Biosecurity*, Department of Agriculture, Fisheries and Forestry (DAFF) (Aug. 10, 2021), <https://perma.cc/PDC9-FWD8>.

<sup>34</sup> Australian/New Zealand Standard, *Glued laminated structural timber*, AS/NZS 1328.1 (1998).

<sup>35</sup> Australian Standard, *Residential timber-framed construction*, AS 1684.2 (2021).

<sup>36</sup> Australian Standard, *Timber Structures*, AS 1720.1 (2010). “This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TM-001, Timber Structures, to supersede AS 1720.1 – 1997.” The purpose of this Standard is to “provide a code of practice for the design and acceptance of timber structures and elements. It includes design methods and design data appropriate for commonly encountered structural elements and materials and requirements to be met for specification of the design, installation and maintenance of timber structures.” See *AS 1720.1-2010: Abstract, Scope*, Sai Global Infostore, <https://perma.cc/5R5R-VBA5>.

<sup>37</sup> Australian Standard, *Termite management, Part 1: New building work*, AS 3660.1 (2014), Amendment 1 (2017).

<sup>38</sup> Australian/New Zealand Standard, *Preservative-treated wood-based products*, AS/NZS 1604.1 (2021).

<sup>39</sup> Australian Standard, *Specification for preservative treatment - Sawn and round timber*, AS 1604.1 (2005); *Australian Timber Preservation Standards Relevant to Biosecurity*, *supra* note 33.

<sup>40</sup> Australian Standard, *Specification for preservative treatment - Sawn and round timber*, AS 1604.1 (2005).

<sup>41</sup> Australian/New Zealand Standard, *Structural laminated veneer lumber – Specifications*, AS/NZS 4357.0 (2022). See *AS/NZS 4357.0:2022*, Standards New Zealand, <https://perma.cc/G9WK-Q7BC>.

of timber, but rather establish a set of guidelines to foster the use of wood, which is seen as a renewable construction product with both environmental and economic benefits, in construction.<sup>42</sup> For the most part, WEPs have been developed in councils with ties to the forestry industry.<sup>43</sup> Many of these policies encourage the use of wood in the construction of government buildings and in government procurement,<sup>44</sup> and promote the use of “responsibly sourced wood . . . as the primary construction material.”<sup>45</sup>

In Australia, local councils<sup>46</sup> in the states of Victoria, Western Australia and Tasmania have adopted WEPs.<sup>47</sup> Both the States of Western Australia<sup>48</sup> and Tasmania have adopted WEPs that apply across the state,<sup>49</sup> with Western Australia using its policy to “encourage the use of responsibly sourced wood,” whether alone or with other materials, in both the construction of buildings and within building fit-outs.<sup>50</sup>

### III. Other Policies and Developments

It is likely that some policies may soon be updated or amended following the election of Australia’s center-left Labor Party in May of 2022.<sup>51</sup> While the Labor Party has not yet announced any new initiatives with respect to mass timber or CLT,<sup>52</sup> the new government recently updated Australia’s emissions targets to “43% below 2005 levels by 2030” with the United Nations Framework Convention on Climate Change.<sup>53</sup>

In April 2022, the government announced that it would provide AU\$112.9 million (about US\$76 million) to invest in the upgrade of existing wood processors so wood processors can adopt new

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<sup>42</sup> Scott N. Milestone & Paul D. Kremer, *Encouraging Councils and Governments Around the World to Adopt Timber-First Policies: A Systematic Literature Review*, 1 *Mass Timber Construction J.* 8 (2019), <https://perma.cc/CXJ8-XYSC>.

<sup>43</sup> *Id.*

<sup>44</sup> Mick Stephens & Rob McGavin, *Timber: Trends in Availability, Sustainability and Durability for Bridges*, 9th Australian Small Bridges Conference 2019, <https://perma.cc/G5A6-Z464>.

<sup>45</sup> Planet Ark, *Wood Encouragement Policies Factsheet*, <https://perma.cc/6KKU-NVL7>.

<sup>46</sup> See Stephens, *supra* note 44, fig. 2 on p. 5 for references to councils that have adopted such policies.

<sup>47</sup> *Wood Encouragement Policies Continue to Grow*, Forest & Wood Products Australia, <https://perma.cc/XVK8-5HFW>.

<sup>48</sup> *FPC: Wood Encouragement Policy*, Western Australian Government (May 1, 2019), <https://perma.cc/JP9F-KSKG>.

<sup>49</sup> Planet Ark, *supra* note 45.

<sup>50</sup> *FPC: Wood Encouragement Policy*, *supra* note 48.

<sup>51</sup> Byron Kaye & John Mair, *Australia’s Centre-Left Labor Party Says it Will Govern Outright*, Reuters (May 31, 2022), <https://perma.cc/4J4K-6QXX>.

<sup>52</sup> *A Future Grown in Australia*, Australian Labor Party, <https://perma.cc/EUM7-LD25>.

<sup>53</sup> *Australia Submits New Emissions Target to UNFCCC*, Department of Industry, Science and Resources (Jun. 16, 2022), <https://perma.cc/Y7J7-B4EC>.

technologies and provide higher value wood products.<sup>54</sup> According to the Department of Agriculture, Fisheries and Forestry, funding will be available to states and territories so long as states and territories participate in the program.<sup>55</sup> The investment follows the government's "Growing a Better Australia - A Billion Trees for Jobs and Growth" plan, which was introduced in 2018,<sup>56</sup> aimed at addressing the demand for timber and its use in the construction of high rise timber.<sup>57</sup> The government also funds the not-for-profit Forest & Wood Products Australia, which is focused on promoting "the benefits of . . . wood products, both direct to consumers and to specifiers in the design and build industry."<sup>58</sup>

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<sup>54</sup> *Forestry: Accelerated Adoption of Wood Processing Innovation Program*, DAFF (Apr. 29, 2022), <https://perma.cc/W35J-AMQD>.

<sup>55</sup> *Id.*

<sup>56</sup> *Growing a Better Australia - A Billion Trees for Jobs and Growth*, DAFF (May 27, 2022), <https://perma.cc/RDR7-FPZ3>.

<sup>57</sup> *Id.*

<sup>58</sup> *Our Programs: Promoting the Advantages of Wood Products*, Forest & Wood Products Australia, <https://perma.cc/W8VB-FPTA>.

# Austria

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**SUMMARY** In Austria, the nine provinces (states) are competent to enact building codes. Even though building regulations have been harmonized in the uniform building directives (OIB-Richtlinien), differences remain.

The federal Forest Fund Act provides funding to promote, among other objectives, the construction of residential buildings, buildings for public use, or public infrastructures with wood containing a high proportion of renewable raw materials from sustainable sources. Eligible applicants may receive funding for up to 50% of their costs, with a maximum funding amount of 500,000 euros (about US\$501,000).

In addition, the Austrian Forest Strategy 2020+ and the Working Programme for the Implementation of the Forest Strategy 2020 call upon federal, state, and municipal authorities to consider wood as a construction material for construction contracts with public financing.

## I. Introduction

Almost one half (47.9%) of Austria's surface area, meaning about 4 million hectare, consists of forests.<sup>1</sup> In particular, the province (state) of Styria (Steiermark) is covered with 1 million hectare of forest (62% of the area).<sup>2</sup> Eighty-nine percent of the wood grown is harvested.<sup>3</sup> In 2020, around 11.5 million cubic meters (m<sup>3</sup>) (about 406 cubic feet (ft<sup>3</sup>)) of timber harvested were used as material, such as construction timber, and 5.3 million m<sup>3</sup> (about 187 ft<sup>3</sup>) of timber were harvested for energetic use.<sup>4</sup> A study conducted over the course of 20 years by the University of Natural Resources and Life Sciences, Vienna, on behalf of proHolz Austria found that around one quarter of the buildings (24%) were constructed out of wood in 2018.<sup>5</sup> The largest amount of timber was used for the construction of residential buildings (53%), followed by agricultural buildings (29%), commercial buildings (11%), and public buildings (7%).<sup>6</sup> In particular, the use of timber for the

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<sup>1</sup> *Waldinventur: Waldfläche. Gesamtwald (ha). 2016-2021. Österreich*, Bundesforschungszentrum für Wald [BFW], <https://perma.cc/6FQR-FVQ7>.

<sup>2</sup> *Waldinventur: Waldfläche. Gesamtwald (ha). 2016-2021. Bundesland*, BFW, <https://perma.cc/W65Q-3PAZ>.

<sup>3</sup> *Waldinventur des BFW zeigt Zunahme an Laub- und Mischwäldern sowie Biodiversität*, Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft [BML], <https://perma.cc/PTN9-5UEM>.

<sup>4</sup> Fed. Ministry Agric., Regions & Tourism, *Facts and Figures 2021* 77 (1st ed. Nov. 2021), <https://perma.cc/L59P-9CTN>.

<sup>5</sup> Alfred Teischinger et al., *Holzbauanteil in Österreich. Statistische Erhebung aller Holzbauvorhaben in den Jahren 1998-2008-2018* 5 (2018), <https://perma.cc/Z9JU-55K4>.

<sup>6</sup> Id. at 6.

construction of multiple-family dwellings and public buildings increased to 11% and 19%, respectively, in comparison to 1998.<sup>7</sup>

Currently, the highest timber building in Austria is the 84-meter, 24-story high “HoHo Tower” in Vienna, Austria. Around 75% of the concrete-wood hybrid structure is constructed from wood, with 16,000 square meters of cross-laminated timber and 800 glued laminated timber supports.<sup>8</sup> It is the third tallest concrete-timber hybrid building in the world.<sup>9</sup>

## II. Legal Framework

### A. General Overview

The Austrian Constitutional Act (Bundes-Verfassungsgesetz, B-VG) provides that the Austrian provinces are competent to legislate in all matters not expressly assigned to the Federation.<sup>10</sup> Building law is not expressly assigned to the federal legislator and, therefore, remains with the provinces, meaning there are different building codes and ordinances enacted by the nine provinces. Even though the provinces have agreed to harmonize their building rules and declared the uniform building directives (OIB-Richtlinien) legally binding in their respective building codes, differences remain, and derogations are possible.<sup>11</sup> In particular, a derogation from the harmonized rules is possible if the person requesting a building permit can prove that an equivalent level of protection as under the uniform rules may be achieved.<sup>12</sup> Timber constructions are therefore subject to different rules depending on the location of the project.

In 2020, the Austrian parliament enacted the Forest Fund Act (Waldfondsgesetz) to promote the use of raw material wood for construction as an “active contribution to climate protection,” among other objectives.<sup>13</sup> Details regarding what kind of measures are eligible for funding are specified in the Special Directive Forest Fund of the Federal Ministry of Agriculture and Forestry, the Environment and Water Management (Sonderrichtlinie Waldfonds).<sup>14</sup>

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<sup>7</sup> Id. at 9, 10.

<sup>8</sup> *Information*, HoHo Wien, <https://perma.cc/JU33-STWB>.

<sup>9</sup> Press Release, Council on Tall Buildings and Urban Habitat [CTBUH], CTBUH Certifies Ascent, Milwaukee, as the World’s Tallest Mass Timber Hybrid Building (July 20, 2022), <https://perma.cc/8AE9-UVVL>.

<sup>10</sup> Bundes-Verfassungsgesetz [B-VG], Bundesgesetzblatt [BGBl.] No. 1/1930, art. 15, para. 1, <https://perma.cc/Z8N5-NVAF> (original), <https://perma.cc/DSF5-GRUU> (English translation).

<sup>11</sup> Vereinbarung gemäß Art. 15a B-VG über die Zusammenarbeit im Bauwesen sowie die Bereitstellung von Bauprodukten auf dem Markt und deren Verwendung, Nov. 12, 2012, Landesgesetzblatt für Wien [LGBl. Wien] No. 21/2013, <https://perma.cc/8ARA-RLYT>; OIB-Richtlinien 2019, Apr. 2019, <https://perma.cc/Q3RK-QPXY>. See also, as an example, the Structural Engineering Order for Vienna which declares the OIB-Richtlinien binding: Wiener Bautechnikverordnung 2020 [WBTV 2020], LGBl. Wien No. 4/2020, as amended, § 1, <https://perma.cc/Q4K5-PJQZ>.

<sup>12</sup> See, for example, WBTV 2020, § 2.

<sup>13</sup> Waldfondsgesetz, BGBl. I No. 91/2020, as amended, <https://perma.cc/36ZN-V459>.

<sup>14</sup> Sonderrichtlinie Waldfonds, Jan. 25, 2021, reference no. GZ 2020-0.812.965, as amended, <https://perma.cc/9JNT-RJ92>.

## B. Forest Fund Act and Special Directive

The Forest Fund Act establishes a forest fund to achieve the objectives of the law.<sup>15</sup> Three-hundred fifty million euros (about US\$349 million) federal funds are allocated.<sup>16</sup> In particular, to promote the use of wood as a construction material, the following measures are eligible for funding:

- measures to share knowledge and raise awareness regarding building with wood,
- research regarding the use of wood for construction,
- measures to strengthen the use of wood from sustainable forest management, and
- construction of residential buildings, buildings for public use, or public infrastructures with wood containing a high proportion of renewable raw materials from sustainable sources (“CO2-bonus”).<sup>17</sup>

Natural persons, registered partnerships, legal persons, and associations composed of these persons established in Austria may apply for funding.<sup>18</sup> Only institutions that disseminate knowledge and perform research are eligible for funding for “research regarding the use of wood for construction.”<sup>19</sup> Public authorities, such as federal, provincial, or municipal authorities, are only eligible to apply for funding regarding the last measure.<sup>20</sup>

With regard to the construction of residential buildings, only multi-story buildings may be funded.<sup>21</sup> The raw material used for the construction of buildings in general cannot have been harvested more than 500 kilometers (about 311 miles) away from the construction site, and the wood must have a Programme for the Endorsement of Forest (PEFC) or Forest Stewardship Council (FSC) certification.<sup>22</sup> The construction of wood buildings may be funded up to an amount of 50% of the costs, with a maximum amount of 500,000 euros (about US\$501,000).<sup>23</sup>

More information on the Forest Fund can be found on a dedicated website set up by the Federal Ministry of Agriculture and Forestry, the Environment and Water Management.<sup>24</sup>

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<sup>15</sup> *Waldfondsgesetz*, § 2, para. 1.

<sup>16</sup> *Id.* § 2, para. 2.

<sup>17</sup> *Sonderrichtlinie Waldfonds*, supra note 14, at 42, para. 10.2.

<sup>18</sup> *Id.* at 42, para. 10.3.

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* para. 10.4.2.2.

<sup>22</sup> *Id.* para. 10.4.2.3. The PEFC and FSC certificates verify the sustainability of forest management by farm owners.

<sup>23</sup> *Sonderrichtlinie Waldfonds*, at 43, para. 10.5.1.

<sup>24</sup> *Der Waldfonds. Das Zukunftspaket für unsere Wälder*, Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft [BML], <https://perma.cc/2TXB-9QR4>.

### C. Austrian Forest Strategy 2020+ and Working Programme

The Austrian Forest Strategy 2020+ (Österreichische Waldstrategie 2020+) prepared by the Federal Ministry of Sustainability and Tourism (Bundesministerium für Nachhaltigkeit und Tourismus, BMNT) defines seven forest-policy fields of action to “ensure and optimize all dimensions of sustainable forest management in a balanced way, paying special attention to the added value and the potential of the Austrian forest and timber sector for an ‘Austria worth living in’.”<sup>25</sup> The third field of action is entitled “Productivity and Economic Aspects of Austrian Forests.”<sup>26</sup> One of the strategic goals within this field of action is to “[i]ncrease [the] use of wood as renewable, climate-friendly raw material and energy source in terms of bioeconomy.”<sup>27</sup> Among other priorities, it aims to “creat[e] and use building codes that are in favour of wood construction and “[s]trengthen [the] establishment and consideration of wood as a building material, raw material and work material and as energy source in public procurement (green procurement).”<sup>28</sup>

The main tool to implement the Forest Strategy 2020+ is the “Working Programme for the Implementation of the Forest Strategy 2020+.”<sup>29</sup> It lists concrete measures and projects that implement the strategic goals. As an example, federal, state, and municipal authorities are called upon to consider wood as a construction material for construction contracts with public financing by requiring it in the tender documents and by promoting the “Austrian Action Plan on Sustainable Public Procurement” (Österreichischer Aktionsplans zur nachhaltigen öffentlichen Beschaffung).<sup>30</sup> This measure requires amending the calls for tender and the funding guidelines, in particular by taking climate protection into account when evaluating the offers.

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<sup>25</sup> BMNT, *Österreichische Waldstrategie 2020+* (Mar. 2018), <https://perma.cc/CQR8-FPSH> (original), <https://perma.cc/7QYF-8C45> (English translation).

<sup>26</sup> Id. at 44.

<sup>27</sup> Id. at 48.

<sup>28</sup> Id.

<sup>29</sup> Id. at 94; BMNT, *Arbeitsprogramm zur Umsetzung der Österreichischen Waldstrategie 2020+*, <https://perma.cc/ZRQ7-W9FH>.

<sup>30</sup> BMNT, *Arbeitsprogramm*, supra note 29, no. 3.2.1.

# Canada

Michael Chalupovitsch  
Foreign Law Specialist

**SUMMARY** Although Canada's provinces have jurisdiction over building codes, the National Building Code provides a model code that most provinces have adopted or adapted to their own circumstances. The 2020 edition of the National Building Code allows construction of encapsulated mass timber buildings of up to 12 stories, with certain conditions. Wood-first legislation has been adopted in British Columbia, and a federal version is currently before the federal parliament.

## I. National Building Code

Under the Canadian constitution, the regulation of building codes is within the provinces' exclusive power over "local works and undertakings," with the exception of those considered to be for the "general advantage of Canada."<sup>1</sup> However, the Canadian Commission on Building and Fire Codes, a division of the National Research Council, issues the National Building Code as a model for the provinces and territories to use, modify, or adopt. The 2020 edition of the National Building Code provides at part 3.2.2.48 that

- A *building* classified as Group C is permitted to conform to Sentence (2), provided
- a) it is *sprinklered* throughout,
  - b) it is not more than 12 *storeys* in *building height*,
  - c) it has a height not more than 42 m measured between the floor of the *first storey* and the uppermost floor level that does not serve a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*, and
  - d) it has a *building area* not more than 6 000 m<sup>2</sup>. [Emphases in the original.]<sup>2</sup>

Sentence 2 refers to buildings "permitted to be of encapsulated mass timber construction or noncombustible construction, used singly or in combination." Encapsulated mass timber is defined as "that type of construction in which a degree of fire safety is attained by the use of encapsulated mass timber elements with an encapsulation rating and minimum dimensions for structural members and other building assemblies."<sup>3</sup>

The National Building Code was adopted as the provincial building code with respect to the encapsulated mass timber requirements by New Brunswick, Nova Scotia, Newfoundland and Labrador, Manitoba, and Saskatchewan.<sup>4</sup> As well, most major municipalities in Prince Edward

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<sup>1</sup> Constitution Act, 1867 (UK), 30 & 31 Vict., c 3 (UK), § 92(10), <https://perma.cc/LWS6-ACLC>.

<sup>2</sup> Canadian Comm'n on Bldg. & Fire Codes, *National Building Code of Canada 2020*, vol. 1, pt. 3.2.2.48, <https://perma.cc/8UAQ-EQVX>.

<sup>3</sup> *Id.*

<sup>4</sup> *Model Code Adoption Across Canada*, Nat'l Rsrch. Council (July 2, 2020), <https://perma.cc/H7L6-8L8T>.

Island have also adopted the National Building Code.<sup>5</sup> In addition, it has been largely adopted by the three territories: the Northwest Territories, Nunavut, and Yukon.<sup>6</sup>

British Columbia and Alberta have their own building codes that are “substantially the same” as the National Building Code.<sup>7</sup> On March 13, 2019, the premier of British Columbia announced that the then-expected 2020 changes to the National Building Code would be reflected in British Columbia’s new code.<sup>8</sup> British Columbia also released a Mass Timber Action Plan in 2022 to “accelerat[e] demand for mass timber construction to stimulate supply – of mass timber product, talent, and technology.”<sup>9</sup>

Quebec and Ontario have their own building codes, which may vary in part from the National Building Code.<sup>10</sup> The 2022 update to the Ontario Building Code includes language identical to that of the National Building Code concerning encapsulated mass timber buildings of up to 12 stories.<sup>11</sup> In 2015, Quebec released directives guiding the construction of mass timber buildings,<sup>12</sup> and the 2022 revisions to its construction code adopt the National Building Code with regard to additions to existing buildings, except where the 2015 guidance supplants it.<sup>13</sup>

In 2021, Natural Resources Canada released its *State of Mass Timber in Canada* report, which documents the use of mass timber in Canada as well as market trends.<sup>14</sup>

## II. Wood-First Legislation

There have been a number of proposals guiding the use of wood as the primary material in new construction. In 2009, the British Columbia legislature enacted the Wood First Act, with the purpose of “facilitat[ing] a culture of wood by requiring the use of wood as the primary building material in all new provincially funded buildings, in a manner consistent with the building regulations.”<sup>15</sup> It allows the government to prescribe best practices on the use of wood in

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<sup>5</sup> Id.

<sup>6</sup> Id.

<sup>7</sup> Id.

<sup>8</sup> Press Release, Office of the Premier, Code Changes Create Jobs, Opportunities in B.C. Forest Communities, British Columbia Gov’t. (Mar. 13, 2019), <https://perma.cc/SP4E-4UUH>.

<sup>9</sup> British Columbia Gov’t., *B.C.’s Mass Timber Action Plan* (2022), <https://perma.cc/XCQ8-B5XA>.

<sup>10</sup> *Model Code Adoption Across Canada*, supra note 4.

<sup>11</sup> Ontario Regulation 451/22, § 16, <https://perma.cc/R3EF-ANUR>.

<sup>12</sup> Quebec Gov’t., *Mass Timber Buildings of Up to 12 Storeys: Directives and Explanatory Guide* (2015), <https://perma.cc/9NVR-UL3U>.

<sup>13</sup> Regulation to Amend the Construction Code, *Gazette Officielle du Québec*, vol. 153, no. 47, Nov. 24, 2021, p. 4862, <https://perma.cc/3TG3-8JSE>.

<sup>14</sup> Natural Resources Canada, *The State of Mass Timber in Canada 2021* (2021), <https://perma.cc/9P9K-B322>.

<sup>15</sup> *Wood First Act*, S.B.C. 2009, c. 18, § 2, <https://perma.cc/VN8M-SJFV>.

provincially funded buildings and may promulgate regulations requiring reporting on the use of wood.<sup>16</sup> To date, no regulations have been issued under the Wood First Act.

On November 24, 2021, then-Senator Diane Griffin of Prince Edward Island introduced Bill S-222, An Act to Amend the Department of Public Works and Government Services Act (Use of Wood) in the Senate of Canada.<sup>17</sup> It is currently at the third reading stage in the Senate, after which it will need to go through the legislative process in the House of Commons in order to become law. The bill has only one clause, which states

In developing requirements with respect to the construction, maintenance and repair of public works, federal real property and federal immovables, the Minister must consider any potential reduction in greenhouse gas emissions and any other environmental benefits and may allow the use of wood or any other thing—including a material, product or sustainable resource—that achieves such benefits.<sup>18</sup>

Similar bills have been introduced as private members' bills in the House of Commons and the Senate: Bills C-429 and C-574, which were defeated, Bill C-354, which passed the House of Commons but died in the Senate when the parliament was dissolved, and Bill S-206, which also died at the dissolution of the parliament.<sup>19</sup> In May 2021, the House of Commons Standing Committee on Natural Resources also recommended that the National Building Code be amended "to allow the construction of tall wood buildings in Canada."<sup>20</sup>

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<sup>16</sup> Id. §§ 3, 4.

<sup>17</sup> Bill S-222, An Act to Amend the Department of Public Works and Government Services Act (Use of Wood), 44th Parl., 1st Sess., <https://perma.cc/6PMP-FYKR>.

<sup>18</sup> Id. cl. 1.

<sup>19</sup> See similar bills, Bill S-222, An Act to Amend the Department of Public Works and Government Services Act (Use of Wood), LEGISinfo, <https://perma.cc/4RWS-YSFD>.

<sup>20</sup> Economic Recovery in Canada's Forestry Sector: Green and Inclusive, House of Commons Standing Comm. on Natural Resources, 3d Report, 43d Parl., 2d Sess., May 2021, <https://perma.cc/T2DM-983E>.

# Italy

Dante Figueroa  
Senior Legal Information Analyst

**SUMMARY** No wood-first legislation was found in Italy. EU legislation, federal legislation and regulations, and regional and local zoning ordinances, cover the use of “mass timber” (*legno massiccio*) and “cross laminated timber” (*legno lamellare incrociato*). At the EU level, Eurocodes 5 and 8 apply. At the national level, a Decree of 2018 and its implementing legislation of 2019 regulate the use of glued laminated wood, glued solid wood, and mass timber in construction. Samples of these technical norms are included in the report. No national legislation or regulations on the use of wood in tall buildings was found, and this report did not cover regional and local zoning ordinances concerning the use of wood in tall buildings.

This report describes Italy’s legal framework concerning the use of “mass timber” and “cross laminated timber” in construction.

## I. Normative Framework on the Use of “Mass Timber” and “Cross Laminated Timber”

The legislative and regulatory framework on the use of “mass timber” and “cross laminated timber for construction in Italy comprehends four levels: the European Union, domestic legislation, implementing regulations, and the regional and local levels.

### A. European Union Legislation

European Union legislation on construction is mandatory in Italy.<sup>1</sup> In particular, the following Eurocodes on construction apply:

- Eurocode 5, on the Design of Timber Structures “applies to the design of buildings and other civil engineering works in timber (solid timber, sawn, planed or in pole form, glued laminated timber or wood-based structural products) or wood-based panels jointed together with adhesives or mechanical fasteners.”<sup>2</sup> Interestingly, the National Appendix to the implementing legislation of Eurocode 5 on “Design of Wooden Structures,” contains a “National Parameter” on the use of “mass timber” (*legno massiccio*) and “cross laminated timber” (*legno lamellare incollato*), as follows:

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<sup>1</sup> Decreto 31 luglio 2012, Ministero delle Infrastrutture e dei Trasporti, Approvazione delle Appendici Nazionali recanti i Parametri Tecnici per l’Applicazione degli Eurocodici, <https://perma.cc/9GJV-VQLW>.

<sup>2</sup> Eurocode 5: Design of Timber Structures, European Commission, <https://perma.cc/ZE7J-B6EM>.

3) **Decisioni nazionali**

Paragrafo	Riferimento	Parametro nazionale - valore o prescrizione -																																		
- 2.3.1.2(1)	Nota	Si adottano i valori raccomandati (vedi nota al §2.3.1.2 e prospetto 2.2 dell'EN1995-1-1). Le azioni durante l'esecuzione si assumono di breve durata, come raccomandato.																																		
- 2.4.1	Nota	<p>Si adottano i valori dei coefficienti <math>\gamma_M</math> della tabella seguente</p> <table border="1"> <thead> <tr> <th>Stati limite ultimi</th> <th><math>\gamma_M</math></th> </tr> </thead> <tbody> <tr> <td><i>Legno e derivati</i></td> <td></td> </tr> <tr> <td>- combinazioni fondamentali</td> <td></td> </tr> <tr> <td>legno massiccio</td> <td><math>\gamma_M=1.50</math></td> </tr> <tr> <td>legno lamellare incollato</td> <td><math>\gamma_M=1.45</math></td> </tr> <tr> <td>pannelli di particelle o di fibre</td> <td><math>\gamma_M=1.50</math></td> </tr> <tr> <td>compensato, pannelli di scaglie orientate</td> <td><math>\gamma_M=1.40</math></td> </tr> <tr> <td>- stato limite di fatica</td> <td><math>\gamma_{M,Sr}=1.00</math></td> </tr> <tr> <td><i>Unioni</i></td> <td></td> </tr> <tr> <td>- combinazioni fondamentali</td> <td><math>\gamma_M=1.50</math></td> </tr> <tr> <td>- stato limite di fatica</td> <td><math>\gamma_{M,Sr}=1.00</math></td> </tr> <tr> <td><i>Acciaio usato in elementi composti</i></td> <td><math>\gamma_{M,e}=1.15</math></td> </tr> <tr> <td><i>Calcestruzzo usato in elementi composti</i></td> <td><math>\gamma_{M,e}=1.50</math></td> </tr> <tr> <td><i>Unioni a taglio in elementi composti legno-calcestruzzo</i></td> <td></td> </tr> <tr> <td>- combinazioni fondamentali</td> <td><math>\gamma_M=1.25</math></td> </tr> <tr> <td>- stato limite di fatica</td> <td><math>\gamma_{M,Sr}=1.00</math></td> </tr> <tr> <td><i>Combinazioni eccezionali</i></td> <td><math>\gamma_M=1.00</math></td> </tr> </tbody> </table>	Stati limite ultimi	$\gamma_M$	<i>Legno e derivati</i>		- combinazioni fondamentali		legno massiccio	$\gamma_M=1.50$	legno lamellare incollato	$\gamma_M=1.45$	pannelli di particelle o di fibre	$\gamma_M=1.50$	compensato, pannelli di scaglie orientate	$\gamma_M=1.40$	- stato limite di fatica	$\gamma_{M,Sr}=1.00$	<i>Unioni</i>		- combinazioni fondamentali	$\gamma_M=1.50$	- stato limite di fatica	$\gamma_{M,Sr}=1.00$	<i>Acciaio usato in elementi composti</i>	$\gamma_{M,e}=1.15$	<i>Calcestruzzo usato in elementi composti</i>	$\gamma_{M,e}=1.50$	<i>Unioni a taglio in elementi composti legno-calcestruzzo</i>		- combinazioni fondamentali	$\gamma_M=1.25$	- stato limite di fatica	$\gamma_{M,Sr}=1.00$	<i>Combinazioni eccezionali</i>	$\gamma_M=1.00$
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<i>Combinazioni eccezionali</i>	$\gamma_M=1.00$																																			
- 7.2	Nota	Si adottano i valori di inflessione limite raccomandati della tabella 7.1.																																		
- 7.3.1(2)	Nota I	Valori del coefficiente di smorzamento diversi da quelli indicati possono essere adottati per specifiche strutture, previa adeguata giustificazione su base sperimentale.																																		
Utilizzo appendici informative		Le Appendici informative A e B mantengono il carattere informativo.																																		

This table sets forth the values for the coefficient  $\gamma_M$ , which is “the partial safety factor on the compressive strength, including model and geometry uncertainties,”<sup>3</sup> concerning, among others, mass timber and cross laminated timber.

- Eurocode 8, on the Design of Structures for Earthquake Resistance also requires compulsory application in Italy.<sup>4</sup>

<sup>3</sup> Murature Pportanti: Atti Seminario Tecnico. Variabilità delle Tipologie Edilizie, Monitoraggio Strutturale, Comportamento Statico e Dinamico, Verifiche e Rinforzi in FRP, at 8, <https://perma.cc/GR7W-622X>.

<sup>4</sup> Eurocode 8: Design of Structures for Earthquake Resistance, European Commission, <https://perma.cc/73B9-SAMM>.

## B. Domestic Legislation

In general, and due to seismic conditions, Italian legislation discourages the use of wood for construction purposes.<sup>5</sup> A ministerial decree of 2018 and its implementing regulation of 2019 cover the use of glued laminated wood, glued solid wood, and mass timber.

### 1. Ministerial Decree of 2018

A Ministerial Decree of January 17, 2018, containing the consolidated text on Technical Standards for Construction, regulates the design, execution, and testing of buildings in order to guarantee public safety for established safety levels.<sup>6</sup> In particular, this decree covers glued laminated wood and glued solid wood as well as mass timber.

#### a. Glued Laminated Wood and Glued Solid Wood

Per this Decree, structural elements of glued laminated wood and glued solid wood must comply with the harmonized European standard UNI EN 14080,<sup>7</sup> on Timber Structures, Glued Laminated Timber and Glued Solid Timber.<sup>8</sup> They also must bear the CE mark.<sup>9</sup>

Furthermore, individual boards for the composition of laminated wood must meet the requirements of the harmonized European standard UNI EN 14081-1<sup>10</sup> in order to ensure correct attribution to a resistance class.<sup>11</sup> Individual slats are all individually classified by the manufacturer as established in the Decree.<sup>12</sup>

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<sup>5</sup> See *Cosa dice la Legge sulle Case Prefabbricate in Legno? Normativa e Approfondimenti*, Guida Case Prefabbricate (July 24, 2022), <https://perma.cc/U5YV-GHAU>, indicating that due to seismic conditions, as a general rule, it is not easy to obtain an authorization to build a wooden dwelling in Italy.

<sup>6</sup> Decreto Ministeriale 17 gennaio 2018, aggiornamento delle “Norme Tecniche per le Costruzioni” (Decree of 2018), <https://perma.cc/D4SD-SNKX>.

<sup>7</sup> Id. § 11.7.4.

<sup>8</sup> We were unable to access BS EN 14080:2013, Timber Structures: Glued Laminated Timber and Glued Solid Timber: Requirements outside of paywalls but this harmonized standard falls under EU Regulation No. 305/2011 of the European Parliament and of the Council of 9 March 2011 Laying down Harmonised Conditions for the Marketing of Construction Products and Repealing Council Directive 89/106/EEC, 2011 O.J. (L 88) 5, <https://perma.cc/LV6B-C8KH>.

<sup>9</sup> Decree of 2018 §11.1 referring to the “*Marcatatura CE*.” The CE marking of a machine indicates that the machine complies with the essential safety requirements established in Annex I on “Essential Health and Safety Requirements relating to the Design and Construction of Machinery” of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on Machinery, which also Amends Directive 95/16/EC (recast), <https://perma.cc/UD9C-ZXEL>.

<sup>10</sup> BS EN 14081-1:2016+A1:2019, Timber Structures. Strength Graded Structural Timber with Rectangular Cross Section: General Requirements, <https://perma.cc/V5NM-VTYW> (note that this link provides access to the 2016 document as we were unable to find the 2019 document outside of paywalls).

<sup>11</sup> Decree of 2018 §11.7.4.

<sup>12</sup> Id. § 11.7.2.

b. Mass Timber

Solid wood for structural use is a natural product, selected and classified by size of use according to resistance, element by element, on the basis of applicable regulations.<sup>13</sup> Classification criteria provide a guarantee that the material has been statistically determined to comply with the minimum mechanical performance requirements, without the need for further experimental tests and verifications.<sup>14</sup> The classification may occur by assigning a category to the material, defined in relation to the quality of the material itself with reference to the wood species and its geographic origin. Timber belonging to a specific category, species and origin is assigned a specific resistant profile, harmonized with the resistance classes established in accordance with UNI EN 338.<sup>15</sup>

The production of solid wood structural elements with a rectangular section must comply with the harmonized European standard UNI EN 14081-1 and bear the CE marking.<sup>16</sup> When the CE marking is not required, producers of solid wood elements for structural use must be qualified according to specific procedures.<sup>17</sup>

The design and verification of structures made with solid wood, laminated wood, or with products for structural use derived from wood must comply with the established resistance standards, elastic modes and density values, which must include the minimum criteria set forth in the following table<sup>18</sup>:

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<sup>13</sup> Id. § 11.7.2, para. 3.

<sup>14</sup> Id. § 11.7.2, para. 4.

<sup>15</sup> Id. § 11.7.2, para. 5, referring to BS EN 338:2016 Structural timber - Strength classes. See note 8 regarding harmonized standards under EU Regulation No. 305/2011.

<sup>16</sup> Id.

<sup>17</sup> Id. §§ 11.1(B) & 11.7.10.

<sup>18</sup> Id. § 11.7.1.1, Table 11.7.I.

Tab. 11.7.I – Profilo resistente per materiali e prodotti a base di legno

Resistenze caratteristiche		Moduli elastici		Massa volumica	
Flessione	$f_{m,k}$	Modulo elastico parallelo medio **	$E_{0,mean}$	Massa volumica caratteristica	$\rho_k$
Trazione parallela	$f_{t,0,k}$	Modulo elastico parallelo caratteristico	$E_{0,05}$	Massa volumica media *, **	$\rho_{mean}$
Trazione perpendicolare	$f_{t,90,k}$	Modulo elastico perpendicolare medio **	$E_{90,mean}$		
Compressione parallela	$f_{c,0,k}$	Modulo elastico tangenziale medio **	$G_{mean}$		
Compressione perpendicolare	$f_{c,90,k}$				
Taglio	$f_{v,k}$				

\* La massa volumica media può non essere dichiarata.

\*\* Il pedice *mean* può essere abbreviato con *m*

This table sets forth the resistance profile for wood-based materials and products.

## 2. Circular of 2019

Circular No. 7 of January 21, 2019 issued by the Ministry of Infrastructure and Transportation, containing instructions for the implementation of Ministerial Decree of January 17, 2018, complements the Decree of 2018 as follows:<sup>19</sup>

Mass timber (solid wood products) with rectangular sections must be subject to a classification according to resistance, in order to receive a resistance class for each individual sawn timber, usually consistent with what is proposed by UNI EN 338.<sup>20</sup> Solid wood with an irregular section means those products which, due to the geometry of the section and/or the tapering of the stem, are not subject to UNI EN 14081-1. In default of a specific European Technical Assessment (ETA) for such products, the qualification procedure established in § 11.7.10 NTC applies.<sup>21</sup>

Glued laminated wood and glued solid timber must be subjected to the CE marking in accordance to UNI EN 14080.<sup>22</sup>

## C. Regional and Local Level Regulations

It is likely that there are also regional and local zoning regulations on the use of mass timber and cross laminated timber throughout the national territory.

<sup>19</sup> Circolare 21 gennaio 2019, n. 7 C.S.LL.PP., Ministero delle Infrastrutture e dei Trasporti, Istruzioni per l'Applicazione del Decreto Ministeriale 17 gennaio 2018, <https://perma.cc/4KU2-V8AJ>.

<sup>20</sup> Id. § C11.7.2.1.

<sup>21</sup> Id. § C11.7.2.2, para. 1.

<sup>22</sup> Id. § C11.7.4, para. 1.

## **II. Use of Wood for the Construction of Tall Buildings**

No provisions at the national level were found concerning the use of wood for the construction of tall buildings. It is likely that there are regional and local zoning regulations on the use of wood for the construction of tall buildings throughout the national territory.

# Japan

*Sayuri Umeda*  
*Senior Foreign Law Specialist*

**SUMMARY** The Timber Promotion Act promotes the use of wood for buildings. At first, the act covered public buildings, but currently it also promotes the use of wood for all buildings and structures. The government has promoted CLT for mid to high-rise wooden buildings.

## I. Law to Promote Use of Timber

### A. Background

Japan enacted the Act on Promotion of Use of Timber in Public Buildings in 2010.<sup>1</sup> The name of this act was changed to the Act on Promotion of Use of Timber in Buildings to Contribute to the Realization of a Decarbonized Society (Timber Promotion Act) in 2021.<sup>2</sup> The Act states that promoting the use of wood contributes to the prevention of global warming, the formation of a recycling-oriented society, the conservation of national land, the replenishment of water resources and other multifaceted functions, and the revitalization of mountain villages and other regional economies.<sup>3</sup> Based on the Act, the Ministry of Agriculture, Forestry and Fisheries (MAFF) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) formulated the first basic policy on promotion of use of timber in public buildings in 2010.<sup>4</sup> It gives a significant and basic direction of promoting the use of wood in public buildings. Further, it addresses basic matters concerning measures to promote the use of timber in public buildings and goals for the use of timber in government-developed public buildings, among other things.<sup>5</sup> The ratio of wooden structures based on floor area of public buildings has increased from 8.3% in 2010, when the law was enacted, to 13.9% in fiscal year<sup>6</sup> 2019.<sup>7</sup>

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<sup>1</sup> Act on Promotion of Use of Timber in Public Buildings, Act No. 36 of 2002, <https://perma.cc/68RB-2QZ6> (in Japanese).

<sup>2</sup> Act to amend Act on Promotion of Use of Timber in Public Buildings, Act No. 77 of 2021, <https://perma.cc/N72Z-67TC> (in Japanese).

<sup>3</sup> Act on Promotion of Use of Timber in Buildings to Contribute to the Realization of a Decarbonized Society (Timber Promotion Act), Act No. 36 of 2002, as amended by Act No. 77 of 2021, art. 1, <https://perma.cc/9DZA-Q9WJ> (in Japanese).

<sup>4</sup> Basic Policy on Promotion of Use of Timber in Public Buildings, MAFF & MLIT Notification No. 3 (Oct. 4, 2010), <https://perma.cc/22NT-74L5> (in Japanese).

<sup>5</sup> Act on Promotion of Use of Timber in Public Buildings, Act No. 36 of 2002, art. 7.

<sup>6</sup> Japan's fiscal year runs from April 1 to March 31.

<sup>7</sup> Act on Promotion of Use of Timber in Buildings to Contribute to the Realization of a Decarbonized Society (Before Amendment: Act on Promotion of Use of Timber in Public Buildings), Forestry Agency (Oct. 1, 2021), <https://perma.cc/9N3V-ACUN> (in Japanese); Regarding Ratio of Timber Buildings among Public Buildings in Fiscal Year 2020 (Mar. 23, 2022), <https://perma.cc/GC9E-SY2B> (in Japanese).

## B. Measures for Timber Promotion

The 2021 amendment of the Timber Promotion Act expands its coverage to private buildings. The amendment obligated the government to set up the Timber Utilization Promotion Headquarters within the MAFF as a special organization to deliberate on important matters related to the promotion of timber utilization, such as the formulation of basic policies, and annual examination of the status of implementing timber promotion measures.<sup>8</sup> The Headquarters issued a new basic policy on Promotion of Use of Timber in October 2021.<sup>9</sup> The policy provides for the national government to do the following:

- promote the dissemination of advanced technology related to the design and construction of wooden buildings;
- develop human resources with knowledge and skills related to the design and construction of mid to high-rise wooden buildings or large-scale wooden buildings;
- provide information on the safety of architectural timber and wooden structures;
- promote the system of agreements to promote the use of wood in buildings (see below);
- rationalize the building standards;
- promote the use of timber for government buildings; and
- ensure the quality of timber and stable supply.<sup>10</sup>

The policy also states that local governments use wood in the public buildings they maintain; and that local governments promote the use of timber in private buildings, disseminate the benefits of wooden buildings, provide technical information on the use of wood, develop human resources with knowledge and skills related to the design and construction of wooden buildings, and promote the systems of agreements regarding the use of wood in buildings.<sup>11</sup>

The Timber Promotion Act and the basic policy state that, in order to disseminate the use of wood in buildings, the national government make October 8th a day for promoting the use of wood and designate a month, October, for promoting the use of wood. The national government and local governments implement projects to promote use of wood in buildings.<sup>12</sup>

Agreements to promote the use of wood in buildings<sup>13</sup> are made between a person or business who seeks to build a building and the local or national government, or among such persons or business, a builder, and a government. The person or business who seeks to build a building, and

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<sup>8</sup> Timber Promotion Act art. 25.

<sup>9</sup> Basic Policy on Promotion of Use of Timber (Timber Utilization Promotion Headquarters decision, Oct. 1, 2021), <https://perma.cc/9X9M-R4JG> (in Japanese).

<sup>10</sup> Id. at 3; see also Timber Promotion Act art. 4.

<sup>11</sup> Basic Policy on Promotion of Use of Timber, at 3; see also Timber Promotion Act art. 5.

<sup>12</sup> Basic Policy on Promotion of Use of Timber, at 5; see also Timber Promotion Act art. 9.

<sup>13</sup> Timber Promotion Act art. 15.

plans to use wood in the building, applies to the government for support, such as information, technical assistance, and points given to the person that may be used for government financial support concerning the building. The government also publicizes the project, thus the person may gain publicity.<sup>14</sup>

## II. Mid to High-Rise Buildings

The Building Standards Act restricted mid to high-rise wooden buildings to avoid fires. However, the act has been amended to ease restrictions on the use of wood. Most recently, the 2018 amendment changed the height restriction for non-fire-resistant wooden houses from 13 meters (42.65 feet) to 16 meters (52.49 feet). For mid to high-rise buildings, it became possible to use timbers for main structures and expose them as long as fire resistant standards are satisfied.<sup>15</sup>

For mid to high-rise wooden buildings, development and use of strong and fire resistant timber is important. For such timber, the government has promoted cross-laminated timber (CLT) since 2014. The Cabinet Secretariat set up a unified website to promote CLT in 2016.<sup>16</sup>

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<sup>14</sup> Agreements to Promote the Use of Woods in Buildings, Forestry Agency (June 3, 2022), <https://perma.cc/695Q-3BN9> (in Japanese).

<sup>15</sup> Forestry Agency, Annual Report on Forest and Forestry in Japan, 181 (2019), <https://perma.cc/XV8B-QLVU> (in Japanese).

<sup>16</sup> *Unified Window of the Government to Promote CLT*, Cabinet Secretariat, <https://perma.cc/2KQL-FQQU> (in Japanese).

# New Zealand

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**SUMMARY** A number of buildings using cross-laminated timber (CLT) were constructed in New Zealand between 2009 and 2017. In recent years, the New Zealand government has invested in policies to promote the use of CLT in mid-rise buildings, with many of these policies tied to New Zealand’s international commitments to reduce greenhouse gas emissions. To date, it appears that mass timber buildings in New Zealand remain under six stories high; however, with the introduction of the Mid-Rise Wood Construction Partnership, this may soon change. At present, New Zealand’s construction and building sector remains governed by the Building Act 2004, the Building Regulations 1992, and the Building Code. Requirements regarding use of timber products appear to be updated via either the Building Code or industry standards.

## I. Introduction

A number of buildings using cross-laminated timber (CLT) were constructed in New Zealand between 2009 and 2017.<sup>1</sup> In recent years, the New Zealand government has invested in policies to promote the use of CLT in mid-rise buildings, with many of these policies tied to New Zealand’s international commitments to reduce greenhouse gas emissions. Although it appears that mass timber buildings in New Zealand remain under six stories high, this may soon change with the introduction of the Mid-Rise Wood Construction Partnership.<sup>2</sup>

## II. Incentives, Authorizations, and Requirements to Use Mass Timber

The New Zealand government’s investment in mass timber is connected to its climate change goals as part of the Building for Climate Change Programme,<sup>3</sup> and the “initiative to deliver a zero-carbon construction sector” by 2050.<sup>4</sup> To achieve this goal, the New Zealand government has set a number of policy initiatives for the construction sector. In 2022, the minister for Housing and the minister for Building and Construction launched the Construction Sector Transformation Plan 2022-2025 (Plan).<sup>5</sup> The Plan followed the implementation of New Zealand’s 2019 Construction Sector Accord, which established an Infrastructure Commission as well as a

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<sup>1</sup> David C. Evison et al., *Mass Timber Construction in Australia & New Zealand – Status, and Economic and Environmental Influences on Adoption*, 50 *Wood & Fiber Sci.* 128, 134 (2018), <https://perma.cc/X9VP-W4MP>.

<sup>2</sup> *NZ Government Design Funding for Large-Scale Mass Timber Buildings, Built Offsite* (Sept. 12, 2021), <https://perma.cc/WS8N-JBF2>.

<sup>3</sup> *Background: The Building for Climate Change Programme Is Leading the Building and Construction Sector’s Response to Climate Change*, Building Performance, <https://perma.cc/2L9N-DDVB>.

<sup>4</sup> *Built Offsite*, supra note 2.

<sup>5</sup> *Construction Sector Accord Launches \$37 Million Transformation Plan*, Construction Sector Accord (July 29, 2022), <https://perma.cc/85MD-DK99>.

Construction Skills Action Plan.<sup>6</sup> Overall, the Plan promotes “carbon and waste minimising practices” in the construction sector and aims to facilitate innovation in order to create a “highly-productive and low-emissions construction sector.”<sup>7</sup>

A number of buildings under six stories high have been constructed in New Zealand using CLT, as set out in the table below.<sup>8</sup>

Table 2. Recently completed mass timber buildings in New Zealand.

Building name	Completed	Location	Storeys	Public building?	Timber features
Waitomo Caves Visitor Center	2009	Waitomo	1	Y	LVL grid-shell structure
NMIT Arts and Media Building	2010	Hardy Street, Nelson	3	Y	Posttensioned LVL shear walls, LVL gravity frames, and timber floors
Events Center	2011	Carterton	2	Y	LVL long-span truss and LVL posttensioned shear walls
MOTAT Aviation Display Hall	2011	Auckland	1	Y	LVL portal
Massey University COCA Building	2012	Wellington	3	Y	Posttensioned LVL beams and columns.
Tumu ITM	2012	Napier	1	N	LVL portal frames
Merritt Building	2013	Victoria Street, Christchurch	3	N	Posttensioned LVL beams and columns
Trimble Building	2014	Birmingham Drive, Christchurch	2	N	Posttensioned LVL shear walls and columns.
Lucas House	2014	Halifax Street, Nelson	2	N	LVL timber gravity frames
The Warehouse	2014	Richmond	2	N	CLT LVL shear walls and LVL timber gravity frames
Wynn Williams Building	2015	Montreal Street, Christchurch	6	N	Posttensioned LVL beams (posttensioned concrete columns)
Tait Communications Building	2015	Roydvale Street, Christchurch	2	N	LVL timber gravity frames
Bealey Avenue Backpackers	2015	Bealey Avenue, Christchurch	2	N	CLT honeycomb structure and LVL beams
ACC Building	2015	Rotorua	2	Y	CLT tilt slabs, LVL beams and columns, and CLT floors
Bed Bath and Beyond	2015	Richmond	1	N	CLT/LVL shear walls, LVL timber gravity frames, and composite concrete/LVL floor system
Mt Pleasant Center	2016	Mt Pleasant, Christchurch	1	Y	LVL “folded wave” structure
Kaikoura Museum	2016	Kaikoura	3	Y	CLT/LVL shear walls, LVL post and beam gravity frames, and LVL floors
Kahukura Building, Te Ara	2017	Moorehouse Avenue, Christchurch	4	Y	LVL timber gravity frames and CLT façade.

CLT: cross-laminated timber; GLT: glue laminated timber; LVL: laminated veneer lumber

Source: David C. Evison et al., *Mass Timber Construction in Australia & New Zealand – Status, and Economic and Environmental Influences on Adoption*, 50 *Wood & Fiber Sci.* 128, 134, tbl. 2 (2018).

As part of its commitment to reduce greenhouse gas emissions, the New Zealand government has invested in design funding for “large scale mass timber buildings” more than six stories high.<sup>9</sup> The investment is part of the Ministry for Primary Industries Mid-Rise Wood Construction program, in partnership with Red Stag Wood Solutions, which encourages the use of CLT.<sup>10</sup> It aims to encourage use of mass timber and associated products in the “construction of mid-rise

<sup>6</sup> *The Accord*, Construction Sector Accord (Jan. 26, 2020), <https://perma.cc/74H3-SDFJ>.

<sup>7</sup> *Transformation Plan*, Construction Sector Accord, <https://perma.cc/ZCM2-28Z4>.

<sup>8</sup> David C. Evison et al., *supra* note 1, at 134, tbl. 2.

<sup>9</sup> Built Offsite, *supra* note 2.

<sup>10</sup> *Mid-Rise Wood Construction*, New Zealand Ministry for Primary Industries (Feb. 24, 2022), <https://perma.cc/P96F-6NYR>.

buildings” over materials such as concrete and steel. Between \$100,000 and \$300,000 in design funding is available “per project.”<sup>11</sup>

### III. Building a Regulatory Framework

All building work and construction is governed by New Zealand’s Building Code.<sup>12</sup> As set out by the Ministry of Business, Innovation and Employment (MBIE), the Building Code sets out standards that should be met with respect to matters including durability, structural stability, access, energy efficiency, and protection from fire. It is considered a “performance-based Building Code,” in that it sets standards for how buildings should perform as opposed to specifications on how they must be designed or constructed.<sup>13</sup>

The overall regulatory framework is set through the Building Act 2004, which specifies, “all building work must comply with the building code,”<sup>14</sup> and the Building Regulations 1992, which set out the Building Code in Schedule 1.<sup>15</sup> Each year the Building Code is updated through a consultation process that allows both the public and private sectors to provide feedback on any changes proposed, with each update available through the MBIE.<sup>16</sup> While it appears that no changes have been proposed specifically with respect to CLT, the 2022 changes include updates regarding fire protection.<sup>17</sup>

A relatively recent administrative decision addressing the use of CLT in New Zealand indicates that, under the Building Code, the authorities look to whether a structure meets performance requirements as opposed to the use of particular materials. In a 2018 case before the Ministry of Business, Innovation and Employment, the ministry considered whether certain glazing panels could be used in a CLT structure. While the matter did not consider the use of CLT, its reasoning indicates that the determination was one that considered the adequacy of the plans submitted.<sup>18</sup>

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<sup>11</sup> *Mid-Rise Wood Construction*, Carbon Zero Wood, [midrisewood.co.nz](http://midrisewood.co.nz).

<sup>12</sup> *Building Code Compliance*, New Zealand Ministry of Bus., Innovation & Emp., <https://perma.cc/K9K4-WXSV>.

<sup>13</sup> *How the Building Code Works*, New Zealand Ministry of Bus., Innovation & Emp., <https://perma.cc/JYY5-DYWQ>.

<sup>14</sup> Building Act 2004 § 17, <https://perma.cc/B3T4-RH29>.

<sup>15</sup> Building Regulations 1992, sched. 1, <https://perma.cc/DAW8-QMEP>.

<sup>16</sup> *Maintaining the Building Code*, New Zealand Ministry of Bus., Innovation & Emp., <https://perma.cc/E733-6TDD>.

<sup>17</sup> *2022 Building Code Update*, New Zealand Ministry of Bus., Innovation & Emp., <https://perma.cc/46DU-TN9Y>.

<sup>18</sup> Regarding the Refusal to Issue a Building Consent in Respect of a Fixed Glazing System at 6 Island Bay Road, Beach Haven, Auckland [2018] NZMBIEBldg 40 (30 August 2018), Determination 2018/040, at 6.1, <https://perma.cc/SD5S-CFYQ>. The ministry considered the application of section 49 of the Building Code, which states, “building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.”

A 2020 article in the newsletter of the Structural Engineering Society of New Zealand (SESOC) noted that, at present, the building codes of both Australia and New Zealand do not adequately account for the challenges associated with building high-rise mass timber buildings.<sup>19</sup> In particular, the author asserted that the standards concerning fire resistance do not account for the challenges that may arise in mass timber structures.<sup>20</sup>

#### IV. Standards

As with the Building Code, standards in New Zealand are regularly updated. In December 2017, a consultation on timber standards in New Zealand was opened. The consultation was initiated by Standards New Zealand. In 2019, a second round of consultation “on the draft revisions of NZS 3640:2003 *Preservation of timber and wood-based products* (DZ 3640) and NZS 3602:2003 *Timber and wood-based products for use in buildings* (DZ 3602)” took place.<sup>21</sup> The most recent version of NZS 3602:2003, which relates to timber and wood-based products for use in building, references glue-laminated timber and laminated veneer lumber.<sup>22</sup> The standard NZS 3640:2003, addressing the chemical preservation of round and sawn timber, provides specifications with respect to laminated veneer lumber and glued laminated timber products.<sup>23</sup>

Examples of other standards addressing timber include

- NZS 3622:2004: Verification of timber properties,<sup>24</sup>
- AS/NZS 1748.1:2011: Timber - Solid - Stress-graded for structural purposes - General requirements,<sup>25</sup> and
- AS/NZS 4063.1:2010: Characterization of structural timber - Test methods.<sup>26</sup>

#### V. “Wood First” Policies

A number of “wood first” policies apply in New Zealand, both across the state with respect to government buildings and at the local level. In 2021, the New Zealand government introduced a

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<sup>19</sup> Martin Feeney, *Mass Timber Structures: Design for Fire Resistance – Current Status in New Zealand*, SESOC (2020), <https://perma.cc/9ABX-EKXP>.

<sup>20</sup> Id.

<sup>21</sup> *Public Consultation Open for Timber Standards NZS 3640 and NZS 3602*, New Zealand Ministry of Bus., Innovation & Emp. (Aug. 5, 2019), <https://perma.cc/MP2L-JKR6>.

<sup>22</sup> New Zealand Standard, *Timber and wood-based products for use in buildings*, NZS3602 (2003), <https://perma.cc/77FM-LT99>.

<sup>23</sup> New Zealand Standard, *Chemical preservation of round and sawn timber*, NZS3640 (2003), <https://perma.cc/EFS5-NNFU>.

<sup>24</sup> New Zealand Standard, *Verification of timber properties*, NZS3622 (2004), <https://perma.cc/8XME-QA5H>.

<sup>25</sup> Australian/New Zealand Standard, *Timber - Solid - Stress-graded for structural purposes - General requirements*, AS/NZS 1748.1 (2011), <https://perma.cc/L3UC-M67H>.

<sup>26</sup> Australian/New Zealand Standard, *Characterization of structural timber - Test methods*, AS/NZS 4063.1 (2010), <https://perma.cc/4C7F-UQNC>.

“timber-first policy” with the aim of combatting climate change.<sup>27</sup> The policy is linked to the MBIE’s “Procurement guide to reducing carbon emissions in building and construction,”<sup>28</sup> which serves as a guide for procurement on government projects.<sup>29</sup> At the local council level, the “Rotorua Lakes Council . . . implemented a Wood-First Policy” mandating “the use of wood for all public buildings in the area” and encouraging “all others to think about using wood as an option for construction.”<sup>30</sup>

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<sup>27</sup> *Govt Adopts “Timber-First” Policy for Building Industry in Bid to Combat Climate Change*, WoodWorks (June 15, 2021), <https://perma.cc/X4V2-JHRS>.

<sup>28</sup> *Procurement Guide to Reducing Carbon Emissions in Building and Construction: A Practical Guide*, New Zealand Ministry of Bus., Innovation & Emp. (Apr. 2022), <https://perma.cc/U57T-3N42>.

<sup>29</sup> *NZ Has a Plan for Timber First*, Daily Timber News (June 18, 2021), <https://perma.cc/B9QG-YMGX>.

<sup>30</sup> *Wood Encouragement Policies*, Planet Ark, <https://perma.cc/N284-FXJ7>.

# Norway

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**SUMMARY** Norway is currently home to the tallest building built using cross-laminated timber (CLT) in Europe, Mjøstårnet, which measures 86 meters (about 282 feet) tall.

There is no outright requirement that buildings be built using CLT technology but the use of Norwegian timber and CLT technology is encouraged as per Norwegian government strategy documents. Buildings that are built with CLT must comply with the requirements of harmonized standard EN 16351 to be considered fire-safe.

The Norwegian Government financially sponsors initiatives that promote increased use of timber in building construction through Innovation Norway.

Some local governments have adopted local strategies to promote the use of Norwegian timber and CLT technology in their public procurement of public buildings.

## I. Introduction

Forests account for 39% of the land area in Norway, with 8.6 million hectares of active forests that produce more than 1 cubic meter of timber per hectare and year.<sup>1</sup>

Norway has a long history of building houses with wood materials.<sup>2</sup> However, until recently most of its CLT products have been manufactured abroad using Norwegian timber.<sup>3</sup>

Norway is home to the second tallest timber building in the world, Mjøstårnet, at 85.4 meters (about 283 feet) tall compared to the 86-meters-tall building (284 feet) in Milwaukee.<sup>4</sup> Mjøstårnet is a 18-storey building built in 2019, making it the highest building built out of mass timber (glue-laminated timber and cross-laminated timber) at that time.<sup>5</sup> Other prominent CLT technology initiatives include student housing built through CLT.<sup>6</sup>

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<sup>1</sup> *Våre skoger*, Statsskog, <https://perma.cc/P4TZ-K7ER>.

<sup>2</sup> *Norwegian Architecture: Our Love for Wood*, Visit Norway, <https://perma.cc/N4NX-LENP>.

<sup>3</sup> Tracey Lindeman, *The Timber Architecture Revolution Has Arrived in Norway. (Almost.)*, Bloomberg (Nov. 4, 2019), <https://perma.cc/9Q99-BCMG>.

<sup>4</sup> *Mjøstårnet*, Moelven, <https://perma.cc/7BYD-E2S5>; Tom Daykin, *The Construction of an Unusual Downtown Milwaukee Apartment Tower, the Mass Timber Ascent, Has Achieved a Key Milestone*, Milwaukee Journal Sentinel (Dec 21, 2021), <https://perma.cc/JKK7-7XBJ>.

<sup>5</sup> *Tallest Wooden Building*, Guinness World Records, <https://perma.cc/EL2A-RWUA>.

<sup>6</sup> *Bygger Flera Studentbostäder i Massivträ*, AF Gruppen (Jun. 6, 2022), <https://perma.cc/LM7X-TEFQ>.

## II. Legal Framework

### A. Legislation

The construction of buildings is regulated in the Building Plan Act and the Regulation on Technical Requirements for Buildings.<sup>7</sup> While the Government can make national plans for areas and certain buildings, such as government buildings, the municipalities are responsible for creating local building plans.<sup>8</sup> Because Norway is a member of the European Economic Area (EEA), Norwegian buildings must meet European Union (EU) law requirements with regards to building construction and building materials.<sup>9</sup>

The Norwegian Regulation on Technical Requirements for Buildings requires that

- 1) Materials and products in the construction must have such properties that basic requirements for the construction's mechanical resistance and stability are satisfied.
- (2) The construction work must be designed and executed so that satisfactory safety against breakage and sufficient rigidity and stability for loads that may occur during intended use are achieved. The requirement applies to buildings under construction and in their final state.
- (3) Basic requirements for the building's mechanical resistance and stability, including ground conditions and security measures during construction and in the final state, can be met by designing structures according to Norwegian Standard NS-EN 1990 Eurocode: Basis for designing structures and underlying standards in the series NS- EN 1991 to NS- EN 1999, with associated national supplements.<sup>10</sup>

In addition, with regards to fire safety, the Norwegian Regulation on Technical Requirements stipulates that

- (1) Buildings must be designed and executed in such a way that satisfactory safety is achieved in the event of fire for persons staying in or on the building, for material values and for environmental and social conditions.
- (2) There must be a satisfactory opportunity to save people and livestock and for effective extinguishing efforts.
- (3) Buildings must be placed, designed and constructed so that the probability of fire spreading to other buildings is small.
- (4) Construction works where fire could pose a major danger to the environment or affect other significant societal interests must be designed and executed so that the probability of damage to the environment or other significant societal interests is small.<sup>11</sup>

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<sup>7</sup> Lov om planlegging og byggesaksbehandling (Plan- og bygningsloven) (LOV-2008-06-27-71), <https://perma.cc/RP8C-FLVX>; Forskrift om tekniske krav til byggverk (Byggteknisk forskrift) (FOR-2017-06-19-840), <https://perma.cc/3PQT-LSEB>.

<sup>8</sup> §§ 6-1,6-2, 6-3, 6-4, 6-5, 7-1 Plan- og bygningsloven.

<sup>9</sup> See e.g., Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 Laying down Harmonised Conditions for the Marketing of Construction Products and Repealing Council Directive 89/106/EEC (Text with EEA relevance), 2011 O.J. (L 88) 5, <https://perma.cc/LV6B-C8KH>.

<sup>10</sup> § 10-2 Byggteknisk forskrift.

<sup>11</sup> Id. § 11-1.

## B. Harmonized Standards

Norway is bound by the European building standards; specifically for mass timber, the harmonized standard EN 16351 (CLT timber) and harmonized standard EN 14374 (laminated veneer lumber (LVL)) apply.<sup>12</sup> Norwegian fire codes place no additional limitation on the use of mass timber and CLT in buildings.<sup>13</sup>

## C. Government Policy

Both past and current Norwegian governments support the use of Norwegian timber and CLT in building construction. In 2015, the Norwegian Ministry of Local Government and Modernisation published a joint report with the building industry on how building construction was being modernized in Norway, reporting on the completion of a five-year pilot project that included the increased use of timber in building construction.<sup>14</sup> In 2019, the Ministry of Agriculture and Food published a strategy for how timber and the forest industry can work as a driver for a green transition, noting in particular the potential of CLT technology to create a more environmentally friendly building industry.<sup>15</sup>

The current Norwegian government (made up of Arbeiderpartiet and Senterpartiet) has expressed that it wants to continue to prioritize the use of Norwegian timber in building construction, specifically stating that it wants to “take necessary measures to prioritize Norwegian timber in all public building projects when possible, both for new construction and renovations.”<sup>16</sup> In addition, the Norwegian government wants to create a development program that would focus on building timber houses and making the building industry more climate friendly and innovative.<sup>17</sup> The government also wants to focus on public procurement measures via Statsbygg, the Norwegian Directorate of Public Construction and Property, to increase the demand for Norwegian timber overall.<sup>18</sup> Statsbygg has not adopted any standards or recommendations for the use of Norwegian timber in public procurement of public buildings.

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<sup>12</sup> Commission Delegated Regulation (EU) 2017/22, 93 of 3 August 2017 on the Conditions for Classification, Without Testing, of Cross Laminated Timber Products Covered by the Harmonised Standard EN 16351 and Laminated Veneer Lumber Products Covered by the Harmonised Standard EN 14374 with Regard to their Reaction to Fire (Text with EEA relevance), 2017 O.J. (L 329) 1, <https://perma.cc/34EB-GL7S>.

<sup>13</sup> For more on the fire safety requirements for CLT timber see Fokus på tre, *Tre og Brann* (Feb. 2012), <https://perma.cc/L4D3-8X86>.

<sup>14</sup> Ministry of Local Government and Modernisation, *Buildings of the Future, Pilot Project 2009-2015, Environmentally Friendly Buildings and Planning*, <https://perma.cc/KEW3-C3VK>.

<sup>15</sup> Landbruks- og matdepartementet, *Skog- og Trenæringa – ein Drivar for Grøn Omstilling, Strategi for Auka Forsknings-, Utviklings- og Innovasjonsaktivitet i Skog- og Trenæringa, Strategi for å Stimulere Etterspørselen Etter Grøne, Trebaserte Produkt* at 38 (2019), <https://perma.cc/7KL2-5249>.

<sup>16</sup> Arbeiderpartiet og Senterpartiet [Regjeringen], *Hurdalsplattformen for en Regjering Utgått fra Arbeiderpartiet og Senterpartiet 2021-2025* at 36, <https://perma.cc/U2YA-SMYS>.

<sup>17</sup> Id.

<sup>18</sup> Id. at 21.

The timber industry itself has adopted national goals of increasing the use of timber to represent 1m<sup>3</sup> (one cubic meter) per Norwegian inhabitant.<sup>19</sup> In 2019, the figure was 0.9m<sup>3</sup> per inhabitant.<sup>20</sup> Innovation Norway, a government agency, which by law acts on behalf of the national and local governments to support innovation,<sup>21</sup> financially supports the innovative use of timber in building construction.<sup>22</sup> Nevertheless, Norwegian law does not currently require that timber be used over other building materials.

#### D. Parliament

In 2019, members of the Standing Committee on Finance and Economic Affairs proposed increased support for innovation in CLT technology.<sup>23</sup> No “timber first laws” have been adopted.

#### E. Local Governments

As mentioned above, local building plans are created by the municipalities. Some municipalities have adopted policies that specifically address the use of CLT technology in public building. For example, Stranda Kommune has adopted a strategy document that specifies that it “shall facilitate the use of solid wood and other forest products in constructions and set requirements for climate- and environmentally friendly building materials in own projects. The municipality must consider the climate in the entire value chain and throughout the entire life of the building.”<sup>24</sup>

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<sup>19</sup> *Trebruk*, Statsforvaltaren for Inlandet, <https://perma.cc/F5Y2-F5XA>.

<sup>20</sup> *Id.*

<sup>21</sup> 1 ch. 1 § Lov om Innovasjon Norge (LOV-2003-12-19-130), <https://perma.cc/PY48-8W2E>.

<sup>22</sup> *Tilskudd til innovativt bruk av tre*, Innovasjon Norge, <https://perma.cc/5ADS-T9T8>.

<sup>23</sup> *Innstilling fra Finanskomiteen om nasjonalbudsjettet 2020 og forslaget til statsbudsjett for 2020*, Stortinget: Finanskomiteen, <https://perma.cc/WF9T-9GUZ>.

<sup>24</sup> Stranda Kommune, *Kommunedelplan for Energi og Klima 2022-2025* (Jan. 26, 2022), <https://perma.cc/P5YB-KX3X>.

# Sweden

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**SUMMARY** Forests make up a large part of Swedish landscape. The production value of the timber industry is about 47 billion Swedish Krona (about US\$4.7 billion). The tallest building in Sweden built using cross-laminated timber (CLT) technology is about 273 feet tall. CLT technology is used as the foundation in about 20% of new multistory buildings and 90% of single-family homes.

All new construction must meet safety requirements. CLT products that meet the requirements of harmonized standard EN 16351 and harmonized standard EN 14374 are considered safe from a fire safety perspective. They may be used in buildings without restrictions in Sweden.

The Swedish government has publicly promoted the use of timber in buildings but there are no national laws or regulations requiring that public buildings use CLT technology specifically.

Local municipalities have adopted procurement policies for local building construction where the use of timber is promoted as more climate effective than other building materials.

## I. Introduction

Forests make up about 69 percent of the Swedish land area, or 28.1 million hectares.<sup>1</sup> The Swedish timber industry production value is about 47 billion Swedish Krona (SEK) (about US\$4.7 billion).<sup>2</sup>

The tallest building built using CLT technology is the Sara kulturhus building in Skellefteå, completed in 2021.<sup>3</sup> It is 74 meters (about 273 feet) tall and 20 stories high, and it was reportedly built using local timber, approximately 15,000 trees.<sup>4</sup> Other prominent CLT buildings under construction include a 6,750 square meter (about 72,600 square feet) office building in Östersund. According to a news report, it will house the Swedish Tax Authority.<sup>5</sup> Reportedly, Swedish

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<sup>1</sup> *Marken I Sverige*, SCB (Apr. 8, 2022), <https://perma.cc/X2AK-Z95V>.

<sup>2</sup> *Fakta om den Svenska Trä- och Möbelindustrin*, TMF, <https://perma.cc/9THT-X89K>.

<sup>3</sup> *Plan- och bygglag* (SFS 2010:900), <https://perma.cc/2DMZ-LNDD>.

<sup>4</sup> John Bergendorff, *Här Byggs Sveriges Högsta Trähus – Krävd Hel Skog*, SVT (July 4, 2021), <https://perma.cc/FW6J-567Y>.

<sup>5</sup> Lena Lidberg, *Skatteverket får Luftigt Kontor i Trä*, Setra (June 16, 2022), <https://perma.cc/MX9B-JPTW>.

opinion favors increased use of CLT, with 75% of Swedes favoring more housing being built with wood.<sup>6</sup>

The use of CLT in buildings has increased in recent years. Between 2018 and 2019, the number of apartment buildings built using CLT technology reportedly increased by 48%, making the total share of new buildings built using this technology 20% in 2019.<sup>7</sup> In a 2019 report, the Skogstyrelsen projected that Swedish industry would need to move from traditional industry to focus more on CLT technology as the demand increases globally for this type of building.<sup>8</sup>

## II. Legal Framework

### A. The Planning and Building Act

The construction of buildings is regulated by the Planning and Building Act (PBL).<sup>9</sup> As specified in chapter 8, section 4

A construction work must have the technical characteristics that are essential in regard to

1. bearing capacity, hold and durability,
2. safety in case of fire,
3. protection with regard to hygiene, health and the environment,
4. safety in use,
5. protection against noise,
6. energy management and thermal insulation,
7. suitability for the intended purpose,
8. accessibility and usability for people with impaired mobility or orientation,
9. management of water and waste,
10. broadband connection, and
11. charging of electric vehicles.

What is required for a construction work to be considered to fulfill the first paragraph appears from regulations that have been issued with the support of chapter 16 Section 2 [of this Act].<sup>10</sup>

Construction of new buildings must also support the environment and be suitable aesthetically. Specifically, chapter 2, section 3 provides that:

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<sup>6</sup> *Ny Sifundersökning: Svenskarna Vill att Fler Bostäder Byggs i Trä*, Nock (Dec. 22, 2020), <https://perma.cc/D52A-LZZB>.

<sup>7</sup> Press Release, TMF, *Markant Ökning av Andelen Trästommar Inom Nyproduktion av Flerbostadshus* (Nov. 24, 2020), <https://perma.cc/YJ2S-GN6U>.

<sup>8</sup> Skogsstyrelsen, *Rapport 2019/17 Omvärldsanalys Svensk Skogsnäring: Dancing with the Future or with Wolves* (June 2019), <https://perma.cc/E4YD-8DAL>.

<sup>9</sup> Plan- och bygglag (PBL) (SFS 2010:900), <https://perma.cc/2DMZ-LNDD>.

<sup>10</sup> Id. 8 ch. 4 §.

Planning according to this Act shall, with regard to natural and cultural values, environmental and climate aspects and inter-municipal and regional conditions, promote

1. an appropriate structure and an aesthetically pleasing design of buildings, green areas and communication routes,
2. a socially good living environment that is accessible and useful for all social groups,
3. long-term good management of land, water, energy and raw materials as well as good environmental conditions in general,
4. good economic growth and effective competition, and
5. housing construction and development of the housing stock.<sup>11</sup>

In addition, the construction of buildings is governed by the Regulation on Buildings.<sup>12</sup> The regulation specifies that a technical assessment body, approved by the government, will determine what materials qualify as meeting the technical standards specified in the PBL.<sup>13</sup> Currently, Boverket (the Swedish National Board of Housing) approves the technical assessment bodies.<sup>14</sup>

Boverket has proposed that the Swedish PBL Act be revised, but the proposal does not include specific provisions related to CLT.<sup>15</sup> Additionally, Boverket has identified a need to update rules to promote climate smart solutions in building construction, and it also sees a need to clarify the role and interpretation of the legal significance of its guidelines (*allmänna råd*).<sup>16</sup> New rules are expected to be introduced in 2024.<sup>17</sup>

## B. Standards

In determining whether a building meets the technical requirements of the PBL, the construction of buildings is also regulated by national and international standards. Specifically, for massive timber, the European Union Regulation 2017/22 specifies that CLT timber that meets the requirements of the harmonized standard EN 16351 or harmonized standard EN 14374 is

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<sup>11</sup> Id. 2 ch. 3 §.

<sup>12</sup> Plan- och byggförrättning (SFS 2011:338), <https://perma.cc/TKR5-RGZ5>.

<sup>13</sup> Id. 4 ch. 5, 9, 10 §§.

<sup>14</sup> Id. 4 ch. 5 §.

<sup>15</sup> Boverket, *Översyn av ombyggnad i PBL: Förslag till en förtydligad reglering, Rapport 2021:9*, <https://perma.cc/RH5N-E3S8>. The proposal is currently out for stakeholder review, with a deadline of September 30, 2022, <https://perma.cc/BE3X-RR4>. See also Boverket, *Möjligheternas byggregler: vad säger aktörerna?*, <https://perma.cc/6FVF-57AU>, in which Boverket discusses how Swedish construction must become more climate friendly, with the aim of adopting new provisions by 2024.

<sup>16</sup> Boverket, *Möjligheternas byggregler: vad säger aktörerna?*, supra note 15.

<sup>17</sup> Id.

considered safe for construction from a fire construction perspective.<sup>18</sup> The Swedish Institute for Standards has replaced its previous standard (SE 16351-2015) with the EN 16351.<sup>19</sup>

### C. Policies

Sweden has a history of promoting wood as part of building construction. In 2004, it adopted a plan for the use of more timber in building construction.<sup>20</sup> In his 2018 government declaration (*regeringsförklaring*), Swedish Prime Minister Stefan Löfven specifically mentioned the increased use of timber in building construction.<sup>21</sup> Similarly, in his government declaration of 2021, Prime Minister Löfven highlighted the importance of reducing emissions from construction, which has been perceived as advocating for increased use of timber in building construction because CLT timber is considered more climate friendly than other building materials.<sup>22</sup>

The government has published a policy document for direction on the use of timber in buildings.<sup>23</sup> Moreover, government representatives have stated that an increase in the use of timber in buildings must be promoted through climate declarations and the creation of procurement criteria.<sup>24</sup> Boverket is the government agency responsible for building construction standards in Sweden.<sup>25</sup> It has been tasked with implementing measures for a more harmonized and integrated standard across the Nordic construction market by working with the other Nordic countries and focusing on climate smart solutions to limit the climate effects associated with the building industry.<sup>26</sup>

As of August 2022, no legislation has been proposed in parliament and no legislation adopted that specifically promotes the construction of buildings using timber. However, in 2020, the

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<sup>18</sup> Commission Delegated Regulation (EU) 2017/2293 of 3 August 2017 on the Conditions for Classification, Without Testing, of Cross Laminated Timber Products Covered by the Harmonised Standard EN 16351 and Laminated Veneer Lumber Products Covered by the Harmonised Standard EN 14374 with Regard to Their Reaction to Fire (Text with EEA relevance), 2017 O.J. (L329/1), <https://perma.cc/34EB-GL7S>.

<sup>19</sup> EN 16351-2021, Timber structures – Cross laminated timber – Requirements, <https://perma.cc/CA42-WAU9> (available in English and Swedish), also available for purchase in English at <https://perma.cc/RQS9-NAGG>. The standard replaced SS-EN 16351:2015 "Träkonstruktioner – Massivträ för byggsystem – Krav."

<sup>20</sup> Regeringskanslit, *Näringsdepartementet, DS 2004:1 Mer trä i byggandet: Underlag för en nationell strategi att främja användning av trä i byggandet*, <https://perma.cc/NZ9W-T7Q5>.

<sup>21</sup> Stefan Löfven, *Regeringsförklaringen den 21 januari 2019* (Jan. 21, 2019), <https://perma.cc/X6NL-VZ6H>.

<sup>22</sup> Stefan Löfven, *Regeringsförklaringen den 14 september 2021* (Sept. 14, 2021), <https://perma.cc/C56H-S3ZX>.

<sup>23</sup> Regeringskanslit, *Inriktning för Träbyggande*, <https://perma.cc/A9KV-SDZR>.

<sup>24</sup> Press Release, Regeringskanslit, *Per Bolund deltar vid invigningen av byggnationen av Stockholms första innerstadskvarter i trä* (Oct. 12, 2020), <https://perma.cc/BAV2-SWF8>.

<sup>25</sup> Regeringen, *Regeringsbrev för budgetåret 2022 avseende Boverket* (Dec. 22, 2021), <https://perma.cc/V3RA-URZZ>.

<sup>26</sup> Id.

Swedish Government devoted SEK2 million (about US\$200,000) to promote increased construction of wood buildings, especially of multifamily buildings.<sup>27</sup>

By law, building plans are decided on the municipal level (*kommun*).<sup>28</sup> An example of one municipality that has adopted a policy for the use of wood in building construction is the Järfälla municipality.<sup>29</sup> Specifically, Järfälla specifies that wood and timber should be highlighted as beneficial and promoted as part of public procurements, including requiring bidders to disclose and prioritize low climate impact.<sup>30</sup>

Not everyone is in favor of the increased use of wood in buildings. A cement company published an interview with an official of the Swedish Firefighters' Association who criticized the increased use of timber in tall buildings, arguing that it creates a fire risk, including to the nearby buildings.<sup>31</sup>

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<sup>27</sup> Press Release, Regeringskansliet, Regeringen beslutar om 2 miljoner kronor för att öka byggandet i trä (Jun. 12, 2020), <https://perma.cc/85FH-ABXV>.

<sup>28</sup> 1 ch. 2 § PBL.

<sup>29</sup> Järfälla, *Trähusstrategi För Järfälla kommun och dess bolag*, Dnr: Kst 2019/510, <https://perma.cc/4Q7F-9QPH>.

<sup>30</sup> Id. at 5.

<sup>31</sup> Ylva Carlsson, *Ökat Byggande med Brännbara Material Hotar Brandmännens Säkerhet*, Cementa (undated), <https://perma.cc/KY92-6JVZ>.

# Switzerland

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**SUMMARY** The Swiss Constitution provides in article 77 that “[t]he Confederation shall ensure that the forests are able to fulfil their protective, commercial and public amenity functions.” The Forest Act and the Forest Ordinance specify this goal. They provide that the federal government must promote the marketing and use of sustainably produced timber, in particular by supporting innovative projects, and “encourage the use of sustainably produced timber where appropriate in the planning, construction and operation of its own buildings and installations.” The federal Forest Policy 2020, the federal Wood Resource Policy 2030, and action plans based on them set out several policy objectives, objective indicators to measure success, concrete strategic guidelines and measures, and target values. Financial assistance for projects that further the objectives of the Wood Action Plan is available.

Other relevant provisions with regard to using timber as a construction material may be found in public procurement law and the fire code. With regard to building codes, the Swiss cantons (states) have jurisdiction, resulting in a variety of different building codes. The federal government has a coordinating function only with regard to spatial planning but is not competent to adopt a federal building code.

## I. Introduction

About one-third (32%) of Switzerland’s surface area, meaning about 1.32 million hectares, consists of forests.<sup>1</sup> In particular, in the southern part of the Swiss Alps, 54% of the area is covered with forests.<sup>2</sup> In 2021, around five million cubic meters (m<sup>3</sup>) (about 177 cubic feet (ft<sup>3</sup>)) of timber were logged.<sup>3</sup> A study conducted on behalf of the Swiss Federal Office for the Environment (FOEN) (Bundesamt für Umwelt, BAFU) found that 1.5 million m<sup>3</sup> (about 53 ft<sup>3</sup>) of timber were used for construction in 2018, split between 65% for the outside of buildings and 35% for the inside.<sup>4</sup> That is an increase of 6.7% in comparison to 2012. The largest amount of timber was used for the construction of multiple-family dwellings (19.9%), followed by commercial buildings (15.1%), single-family dwellings (13.6%), and public buildings (9.8%).<sup>5</sup> In particular, the use of

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<sup>1</sup> Urs-Beat Brändli et al., *Schweizerisches Landesforstinventar, Ergebnisse der vierten Erhebung 2009–2017*, at 37 & 39, para. 2.1 (2020), <https://perma.cc/P7EA-RL63>.

<sup>2</sup> Id.

<sup>3</sup> Bundesamt für Statistik [BFS], *Schweizerische Forststatistik. Holzernte 2021* (2022), <https://perma.cc/VQ5B-LYZ9>.

<sup>4</sup> Christoph Flühmann et al., *Holzverbrauch Schweiz 2018 - Datenbericht*, Berner Fachhochschule, Institut für digitale Bau- und Holzwirtschaft IDBH, im Auftrag des Bundesamtes für Umwelt BAFU Abteilung Wald (2020), at 9, <https://perma.cc/4VEE-VUSN>.

<sup>5</sup> Id.

timber for the construction of multiple-family dwellings and public buildings increased by 10% and 72.4%, respectively, in comparison to 2012.<sup>6</sup> A new study covering the time period from November 2018 to September 2022 is currently underway.<sup>7</sup>

Currently, the highest timber building in Switzerland is a 60-meter-high tower (about 297 feet), which is part of the University of Lucerne campus.<sup>8</sup> A 100-meter-high residential building (about 328 feet), slated to be completed in 2026 in the city of Winterthur, would become the tallest timber residential tower upon completion.<sup>9</sup> It will consist of a mass timber structural core and load-bearing system with four volumes of different heights.<sup>10</sup>

## II. Legal Framework

### A. General Overview

The Swiss Constitution (Bundesverfassung, BV) provides in article 77 that “[t]he Confederation shall ensure that the forests are able to fulfil their protective, commercial and public amenity functions.”<sup>11</sup> The Forest Act (Waldgesetz, WaG) and the Forest Ordinance (Waldverordnung, WaV) specify this goal.<sup>12</sup> The federal Forest Policy 2020 (Waldpolitik 2020), the federal Wood Resource Policy 2030 (Ressourcenpolitik Holz 2030), and action plans based on them set out several policy objectives, objective indicators to measure success, concrete strategic guidelines and measures, and target values.<sup>13</sup> Other relevant provisions may be found in public procurement law and the fire code. With regard to building codes, the Swiss cantons (states) have jurisdiction, resulting in a variety of different building codes.<sup>14</sup> The federal government has a coordinating

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<sup>6</sup> Id. at 10.

<sup>7</sup> Forschungsprojekt. Holzendverbrauch Schweiz, Berner Fachhochschule [BFH] (2022), <https://perma.cc/M49P-X7AC>.

<sup>8</sup> Mirella Wepf, Bauen mit Holz – traditionell und hochmodern, Casafair (Sept. 22, 2021), <https://perma.cc/CC6L-KJ9B>; Press Release, Drees & Sommer, Integration of BIM, LCM and Timber Construction: Campus of Lucerne University of Applied Sciences and Arts on Suurstoffi Site wins Swiss Architecture Prize Arc-Award (Oct. 26, 2018), <https://perma.cc/TQA7-KQ44>.

<sup>9</sup> James Parkes, Schmidt Hammer Lassen Unveils Design for World's Tallest Timber Building, de zeen (Apr. 14, 2022), <https://perma.cc/9Z44-6B7N>.

<sup>10</sup> Id.

<sup>11</sup> Bundesverfassung [BV], Apr. 18, 1999, Systematische Rechtssammlung [SR] 101, as amended, art. 77, <https://perma.cc/VHG2-VMA4> (original), <https://perma.cc/6CGK-PUTM> (English translation).

<sup>12</sup> Waldgesetz [WaG], Oct. 4, 1991, SR 921.0, as amended, <https://perma.cc/Z4Q5-8767> (original), <https://perma.cc/WNU2-6SMB> (English translation); Waldverordnung [WaV], Nov. 30, 1992, SR 921.01, <https://perma.cc/VX8E-JKVF> (original), <https://perma.cc/4ADD-RKRS> (English translation).

<sup>13</sup> Waldpolitik 2020, Aug.31, 2011, Bundesblatt [BBl.] 2011, 8731, <https://perma.cc/582M-A9RV>; Wood Resource Policy 2030: Strategy, Objectives and Wood Action Plan 2021–2026 (FOEN et al. eds., 2021), <https://perma.cc/5LE9-KEMU>.

<sup>14</sup> BV art. 75.

function only with regard to spatial planning but is not competent to adopt a federal building code.<sup>15</sup>

## B. Forest Act and Forest Ordinance

One of the aims of the Forest Act is to “ensure that the forest can fulfil its functions, in particular its protective, social and economic functions (forest functions).”<sup>16</sup> Article 34a and 34b of the Forest Act, which were inserted in 2016 to implement certain objectives of the Forest Policy 2020, deal with timber production. Article 34a provides in general that the federal government must promote the marketing and use of sustainably produced timber, in particular by supporting innovative projects. The Forest Ordinance clarifies that it must only be promoted in pre-competitive circumstances and not with regard to a particular company.<sup>17</sup> In fulfillment of the statutory mandate, the federal government developed the Wood Resource Policy 2030.<sup>18</sup> The Action Plan Wood (Aktionsplan Holz) implements the goals of the Wood Resource Policy 2030 with concrete projects.<sup>19</sup> For more information on the Wood Resource Policy 2030 and the Action Plan Wood, please consult the next section of this report.<sup>20</sup>

Article 34b states that the federal government must “encourage the use of sustainably produced timber where appropriate in the planning, construction and operation of its own buildings and installations.” The Forest Ordinance emphasizes that the use of timber and timber products must be promoted in the planning, construction, and operation of federal buildings and installations.<sup>21</sup> Their sustainability must be assessed in accordance with applicable guidelines and recommendations.<sup>22</sup> One example listed is the recommendations published by the Coordination Group for Construction and Property Services (Koordinationskonferenz der Bau- und Liegenschaftsorgane der öffentlichen Bauherren, KBOB).<sup>23</sup>

Furthermore, article 31 of the Forest Act states that financial assistance may be provided for, among other things, research and development of measures to boost the market for wood and the use of wood.<sup>24</sup> Periodic studies of the production and use of wood must be carried out by the federal government.<sup>25</sup>

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<sup>15</sup> Id.; Raumplanungsgesetz [RPG], Jun 22, 1979, SR 700, as amended, art. 1, para. 1, <https://perma.cc/4LUL-ACVU> (original), <https://perma.cc/PN3B-8GD9> (English translation).

<sup>16</sup> WaG art. 1, para. 1(c).

<sup>17</sup> WaV art. 37b, para. 1.

<sup>18</sup> Wood Resource Policy 2030, *supra* note 13, at 23.

<sup>19</sup> Id. at 39.

<sup>20</sup> See II.C.

<sup>21</sup> Id. art. 37c, para. 1.

<sup>22</sup> Id. art. 37c, para. 2.

<sup>23</sup> *Standard Nachhaltiges Bauen Schweiz SNBS 2.1 – Hochbau*, KBOB, <https://perma.cc/CPF6-W6SG>; KBOB, *Empfehlung, Nachhaltiges Bauen mit Holz* (2020), <https://perma.cc/AK7V-5PRH>.

<sup>24</sup> WaG art. 31, para. 1(d).

<sup>25</sup> Id. art. 33, para. 1.

### C. Forest Policy 2020 and Wood Resource Policy 2030

The federal Forest Policy 2020 was approved by the Federal Council, the Swiss government, in August 2011. The Department of the Environment, Transport and Communications (DETEC) was tasked to develop an action plan based on it that establishes concrete guidelines and measures to fulfill the policy objectives.<sup>26</sup> The Action Plan was updated in 2020 and approved by DETEC in 2021.<sup>27</sup> The updated version aims to “guarantee sustainable forest management and create favourable conditions for an efficient and innovative forestry and timber sector.”<sup>28</sup> In particular, it states that the sustainable wood utilization potential must be exploited.<sup>29</sup> This objective is to be continued in the federal Wood Resource Policy 2030 (Ressourcenpolitik Holz 2030) through the “forestry and wood value chain.”<sup>30</sup> In furtherance of this goal, sections 34a and 34b were inserted into the Forest Act.<sup>31</sup>

The Wood Resource Policy 2030 pursues the following three objectives:

1. Increase the use of Swiss wood and wood-based products.
2. Supply, process, and use sustainably and in line with demand wood and wood-based products from Switzerland.
3. Ensure through innovation that the forestry, timber and energy wood industry is competitive.<sup>32</sup>

Every year, four million Swiss Francs (about US\$4.15 million) from the federal budget are allocated to achieve these objectives.<sup>33</sup> Partners contribute at least 50% of the financing to specific projects.<sup>34</sup>

The main instrument to implement these objectives is the Wood Action Plan. For the period from 2021-2026, it proposes to “add Swiss wood value” and to build “eco-friendly buildings.”<sup>35</sup> Swiss wood value is meant to be added by “revitali[zing] and develop[ing] Swiss forestry and timber value added networks and by revitali[zing] and develop[ing] the market for wood from Switzerland’s forests.” The priority to build eco-friendly buildings is meant to be achieved by “increase[ing] the use of Swiss wood in construction, refurbishment, and heating and by

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<sup>26</sup> *Forest Policy 2020: Visions, Objectives and Measures for the Sustainable Management of Forests in Switzerland* (FOEN, 2013), <https://perma.cc/28LU-FA3U>.

<sup>27</sup> *Forest Policy: Objectives and Measures 2021–2024. For the Sustainable Management of Forests in Switzerland* (FOEN ed., 1st revised ed. 2021), <https://perma.cc/WZV9-RZVT>.

<sup>28</sup> *Id.* at 11.

<sup>29</sup> *Id.* at 8.

<sup>30</sup> *Id.* at 13.

<sup>31</sup> Botschaft zur Änderung des Bundesgesetzes über den Wald, BBl. 2014, 4909 (4933 et seq.), para. 2.4.2., <https://perma.cc/7FGQ-A6XE>.

<sup>32</sup> Wood Resource Policy 2030, *supra* note 13, at 34.

<sup>33</sup> *Id.* at 44.

<sup>34</sup> *Id.*

<sup>35</sup> *Id.* at 41, 42.

highlight[ing] the environmental advantages of wood and wood-based products.”<sup>36</sup> Annex two of the Wood Resource Policy 2030 lists objective indicators to measure success and target values for the individual objectives.<sup>37</sup> Annex three describes selected projects that were performed to implement the previous Wood Action Plan 2017–2020.<sup>38</sup> For example, measures were adopted in four subprojects to raise awareness among building investors about timber construction.<sup>39</sup> Furthermore, a series of seminars, tools, and recommendations to inform, raise awareness, and help with implementation of article 34b of the Forest Act (timber use for public buildings) were offered.<sup>40</sup> Another example is the campaign “Woodvetia,” which was launched by the FOEN and the forestry and wood industry as part of Swiss wood marketing to sensitize investors for using sustainably produced wood.<sup>41</sup> It implements article 34a of the Forest Act.<sup>42</sup>

In addition, every three years, the *Prix Lignum* is awarded to innovative construction projects with wood.<sup>43</sup> The project is supported by the FOEN within the framework of the Wood Action Plan.<sup>44</sup>

The Swiss forestry and wood industry, the cantons, and universities may apply to the FOEN to receive financial assistance for projects that further the objectives of the Wood Action Plan.<sup>45</sup>

#### D. Public Procurement Law

In 2021, an amended Federal Act on Public Procurement (PPA) (Bundesgesetz über das öffentliche Beschaffungswesen, BöB) entered into force, which supports the objectives of a sustainable economy by incorporating quality and sustainability criteria.<sup>46</sup> The contracting authority evaluates the tenders by taking into account, in addition to price and quality, sustainable development, among other criteria (performance-related award criteria). The contract is awarded to the most advantageous tender.<sup>47</sup> Previously, only price considerations

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<sup>36</sup> Id. at 41-43.

<sup>37</sup> Id. at 52 et seqq.

<sup>38</sup> Id. at 56 et seqq.

<sup>39</sup> Id. at 57.

<sup>40</sup> Id.

<sup>41</sup> Id. at 30, 64; *Willkommen im Land der Holzvielfalt*, Schweizer Holz, <https://perma.cc/2QAF-5KPA>.

<sup>42</sup> Schweizer Parlament, 17.4057: *Interpellation, Werden die neuen Technologien für das Bauen mit Holz genügend gefördert?*, Stellungnahme des Bundesrates vom 14.02.2018, no. 1, <https://perma.cc/X9S6-XLEE>.

<sup>43</sup> *Über uns, Prix Lignum*, <https://perma.cc/284L-NG6Y>; *Prix Lignum*, Timbatec, Feb. 17, 2021, <https://perma.cc/P24B-TY2Z>.

<sup>44</sup> *Prix Lignum*, supra note 43.

<sup>45</sup> *Projektgesuche Aktionsplan Holz*, BAFU, <https://perma.cc/GS3R-7549>.

<sup>46</sup> Bundesgesetz über das öffentliche Beschaffungswesen [BöB], June 21, 2019, SR 172.056.1, as amended, art. 2, letter a, <https://perma.cc/Q48G-AV2L> (original), <https://perma.cc/H8AH-6AR6> (English translation).

<sup>47</sup> Id. art. 29, para. 1; art. 41.

(“economically most advantageous tender”) were relevant in the procurement process.<sup>48</sup> Contracting authorities, such as a Swiss municipality, may stipulate that the successful bidder uses wood provided by the municipality from the municipal forest as building material (in-house procurement of the building material).<sup>49</sup>

The Swiss cantons harmonized the Intercantonal Agreement on Public Procurement (Interkantonale Vereinbarung über das öffentliche Beschaffungswesen, IVöB) with the federal PPA.<sup>50</sup> An overview of the cantons that have acceded or are in the process of acceding to the 2019 revised agreement may be found on the website of the Swiss Conference for the Directors for Building, Planning, and Environment (Bau-, Planungs- und Umweltdirektoren-Konferenz, BPUK).<sup>51</sup>

## E. Fire Code

Up until the end of 2004, timber was only allowed to be used for the construction of two-story buildings due to fire hazards.<sup>52</sup> In 2005, the fire code of the Association of Cantonal Fire Insurances (Brandschutzvorschriften (BSV) der Vereinigung Kantonaler Feuerversicherungen (VKF)) was revised and made nationally applicable and legally binding.<sup>53</sup> The revision allowed timber constructions with up to six stories to be used as residential, office, and school buildings.<sup>54</sup> In 2015, the currently applicable fire code entered into force.<sup>55</sup> It abolished all remaining differences between timber and other types of construction with regard to fire code purposes and gave equal status to timber constructions with robust, non-combustible cladding and non-combustible construction, such as steel and concrete.<sup>56</sup> Timber may therefore be used for the construction of all buildings categories and applications.<sup>57</sup>

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<sup>48</sup> Bundesgesetz über das öffentliche Beschaffungswesen [BöB] Dec. 16, 1994, SR 172.056.1, not in force, art. 21, para. 1, <https://perma.cc/Y78J-HU57>.

<sup>49</sup> Marc Steiner, *Das neue Beschaffungswesen als Paradigmenwechsel: Chancen und Möglichkeiten für Holz* (Maz 20, 2021), at 25, <https://perma.cc/E7KY-XTJG>.

<sup>50</sup> Interkantonale Vereinbarung über das öffentliche Beschaffungswesen [IVöB], Mar. 15, 2001, <https://perma.cc/6ARJ-S8BM>; *Revidierte IVöB (IVöB 2019)*, BPUK, <https://perma.cc/8HBF-YDDB>.

<sup>51</sup> BPUK, *supra* note 50.

<sup>52</sup> Dino Augustin, *Von Feuer und Holz – Die neue Gleichberechtigung im Brandschutz*, Renggli AG (Apr. 14, 2015), <https://perma.cc/Y9LE-HHGY>.

<sup>53</sup> Vereinigung Kantonaler Feuerversicherungen [VKF], *Archiv VKF-Brandschutzvorschriften 2003*, <https://perma.cc/WNL7-BBWG>.

<sup>54</sup> *Brandschutz bei Holzbauten: Grenzenloses Bauen mit Holz*, BAFU, <https://perma.cc/SMH4-87RY>.

<sup>55</sup> VKF, *Brandschutzvorschriften 2015 [BSV 2015]*, <https://perma.cc/A9CA-PDY4>.

<sup>56</sup> BAFU, *supra* note 54; Dino Augustin, *supra* note 52.

<sup>57</sup> *Id.*

# United Kingdom

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**SUMMARY** The global timber industry has been steadily increasing for the past half-decade. The UK government has issued a number of policy papers stating that it is taking steps to expand woodland across England and measures to encourage the use of timber in low-rise buildings. Currently, there are neither laws that require the use of wood or cross-laminated timber in construction nor a stand-alone “wood first” policy. A number of individual policies, however, commit the government to increasing the use of timber in construction.

## I. Introduction

Four countries comprise the United Kingdom of Great Britain and Northern Ireland (UK): England, Wales, Scotland, and Northern Ireland. The four separate countries were united under a single parliament in London, known as the Parliament at Westminster, through a series of acts called the Acts of Union. The UK recently has undergone a period of devolution, with the creation of a Scottish Parliament, a Welsh Parliament, and a Northern Ireland Assembly that can legislate in certain areas.

The woodlands of Britain contribute 2.3 billion British pounds annually to the economy, not just through timber, but also by providing carbon sequestration, air pollutant removal, and the provision of recreational activities.<sup>1</sup> The UK harvested over 11 million tons of wood in 2021 and exported £2 billion worth of wood products. The UK is the second largest importer of wood in the world, with almost 75% of its wood products being imported,<sup>2</sup> valued at £8.5 billion in 2021.<sup>3</sup>

## II. “Wood First” Policies

While there does not appear to be a specific “wood first” policy in the UK, the government has issued a number of policy papers that encourage the use of timber in construction in a sustainable manner. These papers include the *25 Year Environment Plan*, the *England Trees Action Plan*, the *Clean Growth Strategy*, and the *Net Zero Strategy*, which “commit the government to work closely with others to increase the use of timber in construction.”<sup>4</sup> This is because trees continue to store

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\* Legal Intern Hillary Woo assisted in the preparation of this report.

<sup>1</sup> HM Gov’t, *The Clean Growth Strategy* 107 (Oct. 2017), <https://perma.cc/AHL6-KV9P>.

<sup>2</sup> *Guidance: Timber in Construction Innovation Fund*, Forestry Comm’n, <https://perma.cc/6T84-ALSE>.

<sup>3</sup> *UK Wood Production and Trade: Provisional Figures*, Forest Rsch. (May 19, 2022), <https://perma.cc/V8XY-VEEL>.

<sup>4</sup> Forestry Comm’n., *supra* note 2.

carbon in them when they are harvested and have the “lowest embodied carbon of any mainstream building materials.”<sup>5</sup>

### A. 25 Year Environment Plan

The *25 Year Environment Plan*, published in 2018, states that the government wants to increase the amount of timber grown across Great Britain and increase its use in construction in England.<sup>6</sup> It specifically states that the government will

work with industry and support Grown in Britain to increase the amount of home grown timber used in England in construction, creating a conveyor belt of locked-in carbon in our homes and buildings. A wide range of economic and environmental benefits will flow from commercial afforestation to meet the growing demand for timber.<sup>7</sup>

The plan further notes that it aims for the

promotion of large scale woodland creation to give investors the confidence to renew and expand wood-processing capacity, thereby securing the supply of current wood products and stimulating further innovation with new products such as cross-laminated timber used in construction.<sup>8</sup>

### B. Clean Growth Strategy

In its *Clean Growth Strategy*,<sup>9</sup> published in October 2017, the UK government stated it would

Establish a new network of forests in England including new woodland on farmland, and fund larger-scale woodland and forest creation, in support of our commitment to plant 11 million trees, and increase the amount of UK timber used in construction.

The government set a goal in this strategy of reaching 12% woodland cover in England by the year 2060.<sup>10</sup>

### C. Net Zero Strategy

The *Net Zero Strategy* was published by the government in October 2021 and sets out the steps the government intends to take to help avoid catastrophic climate change.<sup>11</sup> Among other things, the UK will work to

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<sup>5</sup> HM Gov't, *Net Zero Strategy: Build Back Greener* 178 (Oct. 2021), <https://perma.cc/XK9J-S9S5>.

<sup>6</sup> HM Gov't, *A Green Future: Our 25 Year Plan to Improve the Environment* 49 (2018), <https://perma.cc/JRC6-EEDD>.

<sup>7</sup> *Id.* at 48.

<sup>8</sup> *Id.*

<sup>9</sup> HM Gov't, *The Clean Growth Strategy*, *supra* note 1, at 16.

<sup>10</sup> *Id.* at 107-08.

<sup>11</sup> HM Gov't, *Net Zero Strategy: Build Back Greener*, *supra* note 5, at 14.

develop a policy roadmap to increase the use of timber in construction in England, and will create a cross-government and industry working group tasked with identifying key actions to safely increase timber use and reduce embodied carbon.<sup>12</sup>

The government noted that the key opportunities for the use of timber is in low-rise buildings and that it would encourage the use of this material by

- Providing financial support to develop innovative timber products through the Forestry Innovation Fund;
- Working with key construction stakeholders, including the Green Construction Board, Construction Leadership Council, Home Builders Federation, and Federation of Master Builders to develop a policy roadmap on use of timber;
- Driving an increase in the use of certain modern methods of construction, some forms of which can encourage use of sustainable materials such as timber;
- Working with Homes England and delivery partners to explore ways to increase timber use in the delivery of housing programmes;
- Increasing public demand for sustainably sourced timber through procurement policies; and
- Encouraging research into barriers to uptake of timber, including looking at timber strength grades and the fire resistance of engineered timber structures.<sup>13</sup>

#### **D. England Trees Action Plan**

In May 2021, the UK government published *The England Trees Action Plan 2021-2024*, in which it noted that it was working to

encourage demand for UK grown timber which can reduce our carbon footprint from imports and reduce emissions by replacing carbon-intensive materials and encourage innovative green finance for trees and woodlands.<sup>14</sup>

The plan notes there are significant discrepancies in the use of timber in new build home construction across Scotland and England. In Scotland, 75% of new build homes are constructed using timber frames, while in England, only 22% of new homes are constructed in this manner.<sup>15</sup>

The actionable items to encourage the use of timber in construction in England mirror those listed above in the *Net Zero Strategy*.<sup>16</sup>

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<sup>12</sup> Id. at 167.

<sup>13</sup> Id. at 179.

<sup>14</sup> HM Gov't, *The England Trees Action Plan 2021-24* 7 (May 2021), <https://perma.cc/J55W-JUQN>.

<sup>15</sup> Id. at 19.

<sup>16</sup> Id. at 20.

## E. Funds

The UK had a Woods into Management Timber in Construction Innovation Fund that closed to applicants on May 9, 2022. The fund was “designed to increase the volume of carbon stored in the built environment”<sup>17</sup> and aimed to increase the use of English timber in construction.<sup>18</sup> The Forestry Commission noted that

[o]nly a small proportion of [its] hardwood resource is suitable for use in conventional sawn timber products but could potentially be used in composite products . . . there is potential to develop new ways of working with this underutilised resource.<sup>19</sup>

Thus, while the expansion of woodlands will be encouraged across the UK, it appears that innovation regarding the wood for use in construction will be necessary, and the fund was designed to aid this.

To be eligible for funding, lead applicants were required to be based in England and

demonstrate how their proposals are innovative and will:

- increase the use of home-grown English timber in construction
- increase the amount of carbon stored in the built environment
- bring novel or improved wood-rich products, systems and/ or processes to market.<sup>20</sup>

The commission noted that the development of engineered timber products would likely fall within the scope of the fund.<sup>21</sup> The fund had £1.5 million (about US\$1.72 million) that was available “to support the development of innovative timber products, supply chains and ways of working with wood.”<sup>22</sup> Such funding appears necessary if the industry is to develop, because the UK is currently importing 100% of engineered wood products, including cross-laminated timber.<sup>23</sup>

A question was asked in the House of Commons in 2017 about what steps the government was taking to encourage the use of cross-laminated timber in construction. The government responded that it was on its agenda and appeared to indicate that it fell under the term “modern methods of construction” and within the home building fund, which consists of £1 billion (about US\$1.15 billion) of funding through loans “for people who are innovating.”<sup>24</sup>

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<sup>17</sup> Id.

<sup>18</sup> Id.

<sup>19</sup> Forestry Comm’n, *supra* note 2.

<sup>20</sup> Id.

<sup>21</sup> Id.

<sup>22</sup> Id.

<sup>23</sup> Dep’t for Bus., Energy & Indus. Strategy, *Greenhouse Gas Removal Methods and Their Potential UK Deployment* 50 (Oct. 2021), <https://perma.cc/6QVN-8UM8>.

<sup>24</sup> 622 Parl Deb HC (6th Ser.) (2017), <https://perma.cc/MY7R-7NMQ>.

### III. Regulation

Under the UK Timber and Timber Products (Placing on the Market) Regulations 2013,<sup>25</sup> British businesses must implement due diligence systems to confirm that the timber they use is legally harvested under a series of safeguards.<sup>26</sup> Although the UK withdrew from the European Union (EU)<sup>27</sup> and formally left on January 30, 2019,<sup>28</sup> the substance of the UK regime still mirrors that of the EU.<sup>29</sup> For example, Commission Delegated Regulation (EU) 2017/2293 on the classification, without testing, of cross-laminated timber products concerning their reaction to fire, is incorporated in the UK's domestic laws as "retained EU legislation."<sup>30</sup>

The UK tightened restrictions on the use of combustible materials in the external wall or attachment of buildings over 18 meters tall (approximately 59 feet) following a high profile fire at Grenfell Tower, a high-rise London apartment building, in 2017.<sup>31</sup> The fire resulted in 72 fatalities.<sup>32</sup> It was widely believed to have been exacerbated by the use of combustible cladding.<sup>33</sup>

The government later considered reducing the height threshold to 11 meters (approximately 36 feet) and taller but decided against this following a public consultation in which 44% of respondents were against the reduction. In its response to the consultation, the government noted the

large number of responses [from the public] considered that any ban should not hinder innovation, and any beneficial advancement, in the use of Cross Laminated Timber (CLT) and similar engineered timber structural products.<sup>34</sup>

The responses expressed "concern over the impact to industry by applying a blanket restriction to such a large number of buildings and restrictions on the use of structural timber, which is seen as having significant environmental benefits."<sup>35</sup> As a result, the government considered "a strict

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<sup>25</sup> The Timber and Timber Products (Placing on the Market) Regulations 2013, SI 2013/233, <https://perma.cc/5CAF-9WAW>.

<sup>26</sup> *Regulations: Timber and FLEGT Licences*, Gov.uk (last updated Feb. 23, 2022), <https://perma.cc/C3L6-2NT2>.

<sup>27</sup> European Union (Withdrawal) Act 2018, c. 16, <https://perma.cc/8NXQ-4ZUS>.

<sup>28</sup> *Brexit*, European Council, <https://perma.cc/7KF5-KJ9J>.

<sup>29</sup> *Regulations: Timber and FLEGT Licences*, Gov.uk, *supra* note 26.

<sup>30</sup> Commission Delegated Regulation (EU) 2017/2293, <https://perma.cc/4ANJ-X6S3>.

<sup>31</sup> Building Regulations 2010, SI 2010/2214, <https://perma.cc/4RBZ-ZNWQ>, as amended by the Building (Amendment) Regulations 2018, SI 2018/1230, <https://perma.cc/Y2DU-HVXJ>.

<sup>32</sup> Press Release, Metropolitan Police, Commander Stuart Cundy Updates on Grenfell Tower Policing Operation (Nov. 16, 2017), <https://perma.cc/345B-2N9C>.

<sup>33</sup> Estelle Shirbon, *Combustible Cladding on London's Grenfell Tower Key to Deadly Fire*, Reuters (Oct. 30, 2019), <https://perma.cc/MAP5-FCZH>.

<sup>34</sup> *Government Response: Review of the Ban on the Use of Combustible Materials in and on the External Walls of Buildings* (last updated June 1, 2022), Gov.uk, <https://perma.cc/F36H-9U9E>.

<sup>35</sup> *Id.* ¶ 90.

ban on these materials for buildings between 11 and 18m could be disproportionately restrictive”<sup>36</sup> and declined to move forward with further regulations in this area.

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<sup>36</sup> Id.