

Tall Timber: A Global Audit (also see next page)

In the past few years, the tall building industry has become increasingly interested in the use of timber as a major structural element in skyscrapers. This has resulted in a now-worldwide wave of research, built projects, and ever more daring speculative proposals using “mass timber” – engineered wood products that are just as robust as their concrete and steel counterparts. This study examines recently completed and under construction timber structure buildings as well as a wave of new proposals.*

Timber Towers Built, Under Construction or Proposed**

Buildings in **bold** are featured in the map on page 48.

Building	City	Country	Floors	Construction System***	Status	Completion Date
Baobab	Paris	France	35	Hybrid Timber & Steel	Proposed	
Abebe Court Tower	Lagos	Nigeria	26	Hybrid Timber & Steel	Proposed	
HoHo	Vienna	Austria	24	Hybrid Timber & Concrete	Under Construction	2017
HAUT	Amsterdam	Netherlands	22	All Timber	Proposed	2019
Barentshus	Kirkenes	Norway	20	Hybrid Timber & Steel	Proposed	
Doorman	Rotterdam	Netherlands	20	Hybrid Timber & Steel	Proposed	
Terrace House	Vancouver	Canada	19	Hybrid Timber & Concrete	Proposed	
Mjøstårnet	Brumunddal	Norway	18	All Timber	Proposed	2018
Silva	Bordeaux	France	18	Unknown	Proposed	2020
TallWood House at Brock Commons	Vancouver	Canada	18	Hybrid Timber & Concrete	Topped Out	2017
The Hyperion	Bordeaux	France	18	Unknown	Proposed	2019
Canopia	Bordeaux	France	17	All Timber	Proposed	
55 Southbank Boulevard	Melbourne	Australia	16	Hybrid Timber & Concrete	Proposed	2020
Kulturhus Skellefteå	Skellefteå	Sweden	16	Hybrid Timber & Steel	Proposed	2019
The Treet	Bergen	Norway	14	All Timber	Completed	2015
Origine	Quebec	Canada	13	All Timber	Under Construction	2017
Framework	Portland	United States	12	Hybrid Wood & Steel	Proposed	2018
5 King	Brisbane	Australia	10	All Timber	Proposed	2018
Banyan Wharf	London	United Kingdom	10	All Timber	Completed	2015
Forte Tower	Melbourne	Australia	10	All Timber	Completed	2013
Lagerhuset	Eslov	Sweden	10	All Timber	Completed	2008
Trafalgar Place	London	United Kingdom	10	All Timber	Completed	2015
Wenlock Cross / The Cube	London	United Kingdom	10	Hybrid Timber & Steel	Completed	2015
Cenni di Cambiamento	Milan	Italy	9	All Timber	Completed	2013
Dalston Lane	London	United Kingdom	9	All Timber	Under Construction	2017
Îlot Bois et Biosourcé	Strasbourg	France	9	Unknown	Proposed	
Moholt 50/50	Trondheim	Norway	9	All Timber	Completed	2016
Ternes Villiers	Paris	France	9	All Timber	Proposed	
Arbora	Montreal	Canada	8	All Timber	Completed	2016
Bridport House	London	United Kingdom	8	All Timber	Completed	2014
Carbon 12 Building	Portland	United States	8	All Timber	Proposed	
Holz8 (H8)	Bad Aibling	Germany	8	All Timber	Completed	2011
Life Cycle Tower (LCT) One	Dornbirn	Austria	8	Hybrid Timber & Concrete	Completed	2012
Limnologen	Växjö	Sweden	8	Hybrid Timber & Concrete	Completed	2009
Pentagon II	Oslo	Norway	8	Unknown	Completed	2013
Puukuokka	Jyväskylä	Finland	8	All Timber	Completed	2015
St. Diè-des-Vosges	St. Diè des Vosges	France	8	All Timber	Completed	2014
Stadthaus	London	United Kingdom	8	All Timber	Completed	2009
Strand Parken	Stockholm	Sweden	8	All Timber	Completed	2014
E3 Berlin	Berlin	Germany	7	Hybrid Timber & Steel	Completed	2008
Kingsgate House	London	United Kingdom	7	All Timber	Completed	2014
Maison de l'Inde	Paris	France	7	Hybrid Timber & Concrete	Completed	2013
Panorama Giustinelli	Trieste	Italy	7	Unknown	Completed	2013
Sanctuary	Yoker	United Kingdom	7	All Timber	Under Construction	2017
T3 Building	Minneapolis	United States	7	All Timber	Completed	2016
Tamedia	Zurich	Switzerland	7	All Timber	Completed	2013
UEA (University East Anglia) Blackdale Student Residence	Norwich	United Kingdom	7	All Timber	Completed	2016
Wagramerstrasse	Vienna	Austria	7	Hybrid Timber & Concrete	Completed	2013
Wood Innovation Design Centre	Prince George	Canada	7	All Timber	Completed	2014

* For the purposes of this study, only timber buildings using “mass timber” technologies are included. Conventional “stick-framed” construction can rise as high as six stories in some countries, so only buildings over seven stories are included.

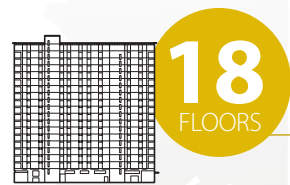
**A building is considered to be “Proposed” (i.e., a real proposal) when it fulfills all of the following criteria: 1) Has a specific site with ownership interests within the building development team; 2) Has a full professional design team progressing the design beyond the conceptual stage; 3) Has obtained, or is in the process of obtaining, formal planning consent/legal permission for construction; 4) Has a full intention to progress the building to construction and completion. Only buildings that have been announced publicly (and the source is credible) by the client and fulfill all the above criteria are included in the CTBUH “proposed” building listings. There are many theoretical/concept/study designs for timber buildings, but such “Vision” projects are not included in the table above as it would be impossible to find and track them all. However, a selection of Vision projects are profiled in the orange bar at the bottom of pages 48–49.

***For the purpose of clarity, structural types are simplified here to indicate the primary structural system only, e.g., core, floor beams or horizontal trusses, and vertical columns. In reality, most “mass timber” buildings use some combination of timber, steel and concrete. “All Timber” generally means the core and the horizontal and vertical structure are all timber.

Tall Buildings in Numbers

Tall Timber: A Global Audit

This map highlights several examples of tall timber buildings currently built, under construction, or proposed around the world (see page 47 for table).



18
FLOORS

TallWood House at Brock Commons
Status: **Architecturally Topped Out**
Location: Vancouver

Due to be the largest mass-timber building in the world at opening.



19
FLOORS

Terrace House
Status: **Proposed**
Location: Vancouver

This residential tower will be a hybrid timber-concrete-steel structure, using locally-sourced wood.



12
FLOORS

Framework
Status: **Proposed**
Location: Portland
Framework uses an unusual "Low Damage" post-tensioning system in its cross-laminated timber (CLT) shear walls, to counter seismic activity.



13
FLOORS

Origine
Status: **Under Construction**
Location: Quebec

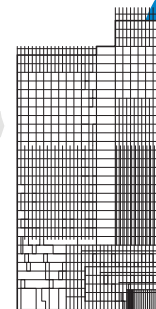
Set to become the new tallest all-timber building in North America in Fall 2017.



8
FLOORS

Stadthaus
Status: **Completed, 2009**
Location: London

The first high-density housing building to be built from pre-fabricated cross-laminated timber panels.



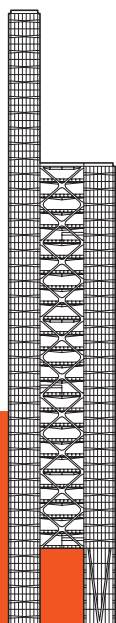
35
FLOORS

Baobab
Status: **Proposed**
Location: Paris

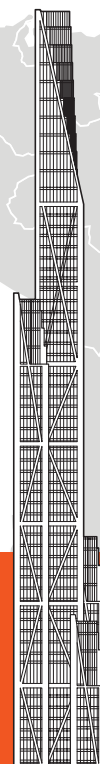
The wood used in this building sequesters 3,700 metric tons of CO₂, equal to operating 2,207 cars for a year.

Key

- Completed
- Under Construction
- Proposed



River Beech Tower, Chicago
This concept tower uses an innovative system of diagrids and prefabricated modules to gain height (see page 40 for more details).



Oakwood Tower, London
At 80 stories and 300 meters, this building would be London's second-tallest building if it were actually built today.

VISIONS

14
FLOORS



The Treet

Status: **Completed**, 2015
Location: Bergen

The current tallest timber building in the world, Treet stacks CLT modules on every 4th floor, which is a concrete slab.

16
FLOORS

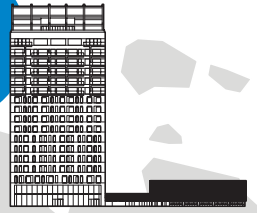


Kulturhus Skellefteå

Status: **Proposed**
Location: Skellefteå

The first floor of the museum portion of the complex will express its timber structure dramatically with wooden steps and wide-spanning, column-free spaces.

18
FLOORS



Mjöstårnet

Status: **Proposed**
Location: Brumunddal

The top seven floorplates will be cast concrete, to give extra stability to an almost 100% wood structure.

22
FLOORS

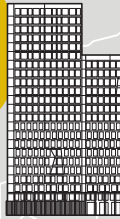


HAUT

Status: **Proposed**
Location: Amsterdam

The project will store 3 million kg of carbon in its cross-laminated pieces and is planned to achieve BREEAM Outstanding rating.

24
FLOORS



HoHo

Status: **Under Construction**
Location: Vienna

Currently under construction, this mixed-use tower is set to become the world's next tallest timber building.

8
FLOORS

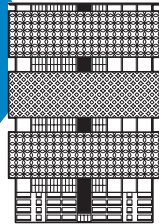


Life Cycle Tower (LCT) One

Status: **Completed**, 2012
Location: Dornbirn

This experimental building had a fire-safety strategy so robust, sprinklers were deemed unnecessary.

26
FLOORS

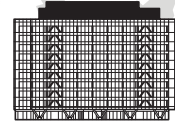


Abebe Court Tower

Status: **Proposed**
Location: Lagos

The first major tall timber building proposed for Africa, this project would support live plants on several open-air skygarden levels.

10
FLOORS



5 King

Status: **Proposed**
Location: Brisbane

The designers of this building chose engineered timber to deliver a contemporary, healthful office interior.

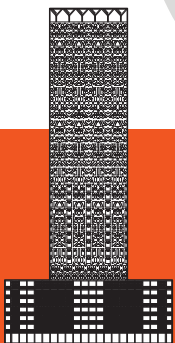
10
FLOORS



Fortè Tower

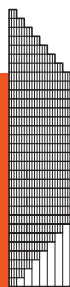
Status: **Completed**, 2013
Location: Melbourne

Australia's first mass-timber high-rise was the world's tallest when completed in 2013.



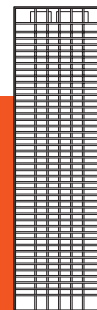
Tratoppen, Stockholm

The wood panels cladding this envisioned building would be shaped as the number of each floor.



HSB 2023 - Vasterbroplan, Stockholm

This 34-floor project would use pillars and beams constructed of solid and cross-laminated timber.



SOM Timber Tower, Chicago

This building reimagines the 40-story concrete Plaza on Dewitt in wood.