Supporting highly original pavilion architecture

We can consult with you on the entire process from planning to design, estimates and construction

Joint support provided by the Japan Cross Laminated Timber Association and the Association of Local Leaders

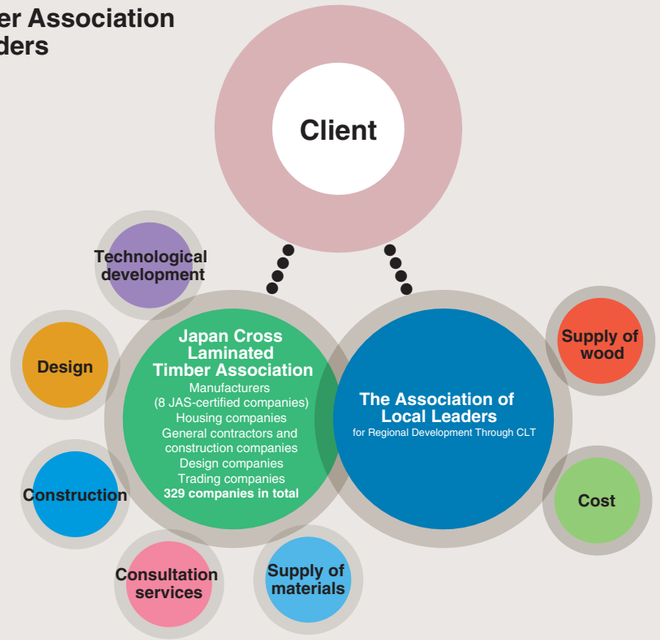
The Japan Cross Laminated Timber Association and the Association of Local Leaders for Regional Development Through CLT will work together to support the client for the construction of pavilions using CLT at Expo 2025 Osaka, Kansai.

The Japan Cross Laminated Timber Association

The Association will act as a general point of contact for CLT, providing comprehensive advice on the construction of the pavilions, including design, introductions to contractors and the supply of materials.

The Association of Local Leaders for Regional Development Through CLT

This is an association that aims to promote the development of CLT-related industries while boosting regional economies and empowering local communities. Participating organizations are 29 prefectures, including Kochi Prefecture, and 81 municipalities, including Maniwa City in Okayama Prefecture. The Association mainly provides support for the supply of wood.



We can also support planning, design and construction contractors

Public use of CLT began with the promulgation and implementation of a public notice about CLT based on the Building Standards Act in April 2016. The CLT panel construction method is recommended for design and construction, and is being employed by architect's offices and construction contractors throughout the country. The Japan Cross Laminated Timber Association can introduce design and construction companies to meet the client's needs, as well as liaise between the client and the Association's member companies.

Planning ▪▪▪ Design ▪▪▪ Estimate ▪▪▪ Construction ▪▪▪ Completion

INFORMATION

Inquire here about the construction of pavilions for the Expo 2025 Osaka, Kansai!

Consultation Service for All Things CLT Free of Charge

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OSAKA, KANSAI, JAPAN EXPO 2025

A Guide to CLT-Based Pavilion Architecture

Japan Cross Laminated Timber Association

Why CLT will be in the spotlight at Expo 2025 Osaka, Kansai, Japan

"Designing Future Society for Our Lives" as expressed through large-scale wooden architecture

As a building material, wood feels alive

Faster to build, gentler on the environment

Effective use of wood contributes to SDGs

Established in Europe as a construction method for large wooden structures

2017 Japan Cross Laminated Timber Association Awards
Life in a CLT Forest: Bringing the Joy of Wood to Urban Homes
Working Group for Modern Wooden Structures, Design Division, TAISEI CORPORATION [TAISEI DESIGN Planners Architects & Engineers]
Yasutada Sekiyama, Hiroki Matsuo, Satoru Shimizu, Atsushi Tsuchiya, Marina Muta, Ryo Deguchi, Kohei Shimamura, Hiroshi Umemori, Yumi Sakaguchi, Kenya Kawasaki, Masahiro Kaite, Ryoko Nojima, Nobuhiro Yamazaki, Kosuke Tazawa, Kota Tange

Goals of Expo 2025 Osaka, Kansai

Theme

Designing Future Society for Our Lives

Sub-themes

Saving Lives
Empowering Lives
Connecting Lives

Concept

A laboratory for a future society

- A space where 8 billion people from around the world will not only view exhibits but will co-create our future society.
- Even before the Expo begins, an online platform for sharing challenges and solutions from around the world will be launched.
- A place where the world's knowledge such as cutting-edge technology will be brought together, used to create new ideas, and shared, all to help resolve global issues facing mankind.

In line with its theme of "Designing Future Society for Our Lives," Expo 2025 Osaka, Kansai will aim to educate the public on the improvement of healthy life expectancy, pursue business possibilities and create technological innovations. Efforts will be made to share information online in addition to exhibits at the Expo site, with an expected economic ripple effect of approximately 2 trillion yen.

Courtesy of the Ministry of Economy, Trade and Industry

CLT is a new building material suitable for pavilion construction

CLT (Cross-Laminated Timber) is a wood-based material made by laminating and gluing together sawn boards so that the fibers run perpendicular to each other. It is used for walls and floors of condominiums and commercial facilities, mainly in Europe and the United States, and is increasingly being used in Japan as a construction material that is suitable for large wooden structures. In addition, the use of locally sourced materials for CLT manufacturing contributes to promote local industries and empower its communities, and hence, many local governments are now starting to employ. CLT is the ideal material for the theme of Expo 2025 Osaka, Kansai, "Designing Future Society for Our Lives." The buildings themselves are expected to attract attention as a symbolic expression of "a society where the United Nations' Sustainable Development Goals (SDGs) can be achieved successfully."

Creative pavilion architecture made possible by the use of wood

The texture of wood allows creating a variety of original, imaginative designs

2019 Minister of Land, Infrastructure and Transport Award “CLT Wall Tower”
Yoji Yamaguchi, Wataru Minegishi, Natsumi Hirose, Shoma Ogino, Kaori Furuta [Obayashi Corporation’s Middle-high-rise Wooden Architecture Team]

2019 Minister of Agriculture, Forestry and Fisheries Award “komorebi-CLT that sunlight shines through-” mimoa, Hiroyuki Moriyasu/Takayuki Mizuno

2019 Special Award, Japan CLT Association Award
“CLT-Geometric-Dome” by Hirotaka Kukimoto and Akihito Muromachi [Toda Corporation]

CLT that points the way to the future of wood construction

Kiyonori Miisho,
Professor Emeritus
Shibaura Institute of Technology

The use of CLT can significantly reduce CO_2 emissions during manufacturing and construction compared to steel or reinforced concrete construction. Combined with the large amount of carbon stored in CLT itself, this allows for the most sustainable buildings possible.
Leveraging the characteristics of hitherto unseen large CLT wooden panels allows creating large wooden structures. Of course, CLT can also be used in combination with appropriately placed steel, concrete, and other materials to create memorial or symbolic structures. Design possibilities are endless. CLT is becoming more and more popular in Europe and the United States, but has only just started gaining momentum in Japan. The concept of this World Expo is “A laboratory for a future society.” New ideas are needed to solve the problems shared by all humanity. I hope we will be able to give the world a glimpse of our future society by making proactive use of CLT.

CLT IDEA CONTEST
The CLT Idea Contest has been held since 2015 to promote CLT and develop new techniques. The examples on this page show the best entries from the past. Professor Emeritus Kiyonori Miisho of the Shibaura Institute of Technology is the current chairman of the judging committee.

2019 Minister of the Environment Award “CLT Web with Nature Drops : Porous voids visualize the natural environment”
Keisuke Inoue, Masamichi Oura, Hisatoshi Nakao, Takahiro Sashio, Tomoya Shitanishi, Mikiko Kato [NIKKEN SEKKEI LTD]

2019 Special Award
Japan CLT Association Award
FOLDING SHELL
Wan-Ching Lin [National Cheng Kung University/ PROTOTYPE STUDIO]
Wong King Tong/Jiang Yuan Yi [PROTOTYPE STUDIO]

CLT is a sustainable material with ex tensive applications

Also contributes to empowering local communities

About CLT

CLT (Cross-Laminated Timber) is a wood-based material made by laminating and gluing together sawn boards so that the fibers run perpendicular to each other. In addition to supporting buildings as a structural frame, CLT can be expected to have multiple other benefits, including heat insulation, flame shielding, heat shielding and sound insulation. Further major advantages include shorter construction periods thanks to the use of prefabricated structures, and lighter materials than those used in RC structures. When wood surfaces are left exposed, CLT creates comfortable spaces that allow visitors to experience the texture of wood. Wood is also a sustainable and recyclable resource, and can be used to build low-carbon buildings.

Cross Laminated Timber

Excellent seismic resistance

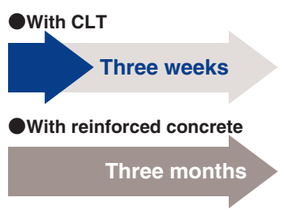
Structures are supported by the entire surface of thick panels, making it possible to build earthquake-resistant buildings. A shaking table test that simulated the Great Hanshin-Awaji Earthquake did not result in any significant damage, demonstrating the high seismic resistance of CLT.

Excellent insulation performance

The insulation performance of wood is 10 times higher than that of concrete and 400 times higher than that of steel. This allows creating comfortable indoor spaces that are cool in the summer and warm in the winter.

Short construction times

The panels can be manufactured and processed at the factory, even for large surface areas, so installation on site is easy and fast. In turn, this means less noise and waste.

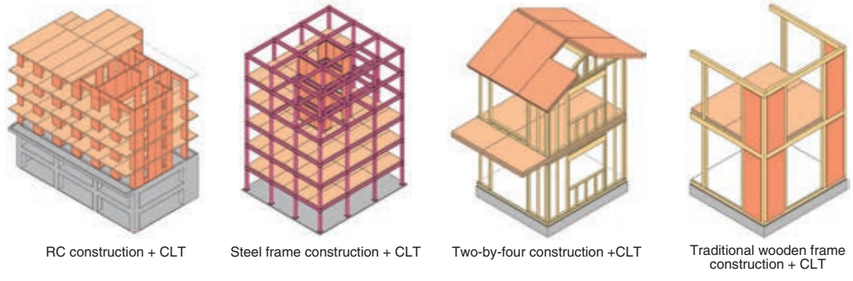


Helping empower local communities by using locally sourced materials

Although Japan's forest resources are reaching maturity, they are not yet being fully utilized. It is therefore important to promote the use of wood and the cyclical use of resources by creating new demand. More extensive use of CLT, which entails the utilization of large quantities of wood, can be expected to promote the forestry and wood industry in hilly and mountainous regions, create new jobs, foster sustainable local businesses and help empower local communities.

Expanding the possibilities of construction in combination with other methods

CLT comes in large, thick wooden panels and is used as construction material for buildings. In addition to CLT panel construction-based design and building works, CLT is also used in other construction methods. It is mainly employed as a material for walls, floors and roofs, and can be used for both traditional wooden frame construction and two-by-four construction. In large buildings, a range of possible applications can be considered. For example, CLT can be used for wall and floor panels in steel-framed structures, and wooden structures can be built on top of RC structures.



RC construction + CLT | Steel frame construction + CLT | Two-by-four construction +CLT | Traditional wooden frame construction + CLT

Relaxation of restrictions on temporary buildings

For temporary buildings to be set up at the Expo site, the provisions of the Building Standard Law on fire prevention, etc. will be relaxed in cases where the Designated Administrative Agency (Osaka City) deems that the building does not interfere with safety, fire prevention and sanitation (Article 85, Paragraph 5 of the Building Standard Law). Please Inquire with Osaka City's contact point for more information.

City of Osaka, City Planning Bureau, Building Guidance Division, Building Verification Department

Can also be used in civil engineering

In addition to buildings, use of CLT in civil engineering is also being considered. Research is currently underway on the use of CLT floorboards for bridges, and CLT has been found superior to concrete flooring in terms of transportation and bridge construction work. With these characteristics, the use of CLT in civil engineering is expected to expand in the future.

Contributing to the SDGs

The timber that makes up CLT is a recyclable forest resource. The forestry industry and the forests where the trees are grown will contribute to achieving virtually all of the SDGs, and especially Goal 15 ("Life on Land"). CLT is a material that has small impact on the environment, and leads to various benefits such as the reduction of CO_2 emissions and the restoration of forest functions. CLT will help us achieve a sustainable society from the standpoint of both the environment and the empowerment of local communities.