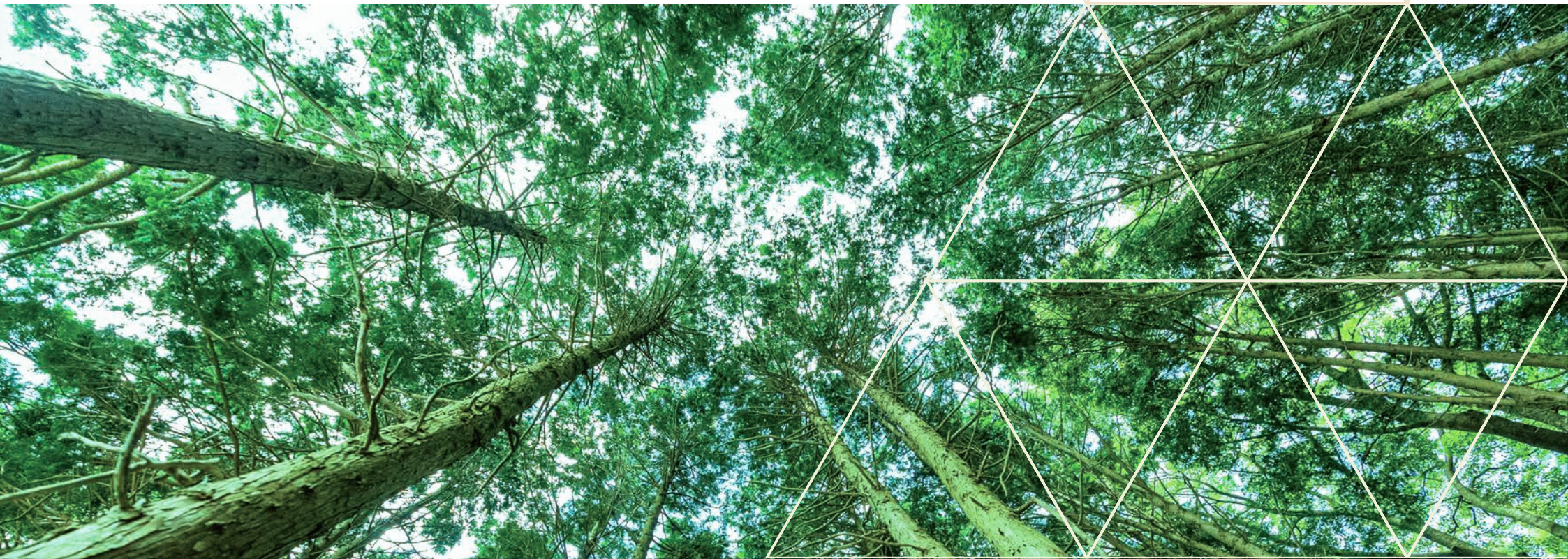




 CLT CELL UNIT



Infinite combination



Units can be stacked and arranged like blocks, and used for various purpose.
we contribute to the expansion of the product lineup.

We established a short-term construction method that completely defies conventional wisdom of wooden construction. We promote an optimization of the business environment.

Shortening to

1/3

Capital efficiency
Until the period at

triple

Appropriate secure profit by short process and cutting costs.

High strength with a small material.

Cristal of technology **1300** years

A Japanese traditional technique that has continued since Horyuji has been constructed.
Japanese research institutes recognized that units are cleared the best earthquake resistance grade.

Cooperate value **130**%*

The top 10 wooden material ESG company ranking showed that an average corporate value increase are 30% during the survey period.
(8/30/2020 to 10/8/2021 according to Nikkei Stock Average rises 21%)

※Tokyo Kenzai ESG company ranking

Units are the ecological structures and sustainable.
CLT CELL UNIT is variable for this century and production
follows the trend in the world.

Global forest investment **\$700** billion*

Reusable after use. It is a sustainable product that eligible for government subsidies.

The inflow of funds into forest resources is accelerating globally.

*Referred to "Solving social issues and investing during the pandemic of COVID-19," SIFF: Social Innovation and Investment Foundation.



INDEX

01
INTRODUCTION

05
INDEX

07
ISSUES

09
PRODUCT

11
HISTORY
TECHNICAL

13
LINE UP
CASE

19
SYSTEM

21
MESSAGE

Protecting Japan's forest is our mission in the construction industry.

Currently, most of wooden houses and buildings in Japan are used imported timber.

As a result, domestic timber usage is decreasing and Japanese forests are abandoned and neglected.

On the other hand, various forest problems occur globally, such as illegal logging, overexploitation, and the forest fires.

Since 1996, Japan established the law for liberalization of importing timber.

The timber self-sufficiency rate had been closed to 80% at that time, but it decreased to 20% in 2002.

In 2016, the self-sufficiency rate recovered to 35%, however, we still use imported timber.

We, Japanese construction industry, are in position to take responsibility for resolving these problems of forests and face for the future.

We, Sai Group Holdings discovered a one of the solutions that is to use domestic CLT materials.

We created a completely new method of construction "CLT CELL UNIT".

In 2013, established the JAS (Japanese Agricultural Standards) in Japan, and started to general use in 2016.

By using CLT materials, we increase the recycling of forest resources and improve the global forest environment.

Also, we are looking for partners to participate in the sustainable project.

The spread of the "CLT CELL UNIT" will be a big step toward restoring the rich forests.

We believe this is the responsibility of the construction industry.

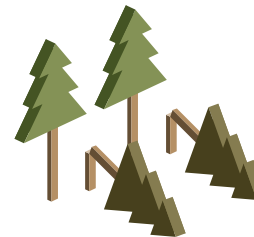


What is the forest environment problems of Japan?

The development of the CLT CELL UNIT, the CO2-saving construction that can be recycled and revive Japanese forests through the use of CLT materials, is one of the solutions to global environmental problems, and is useful for both forests and human being.



More than 60% of timber use are imported



Decreasing use of domestic timber occurs forest devastation and deterioration.



Degraded forests have deteriorated soil, and they cause disasters such as landslide.

CLT CELL UNIT also supports the SDGs among other initiatives.

SUSTAINABLE DEVELOPMENT GOALS





CLT CELL UNIT is the new construction method and structure using 100% domestic materials.



A 100% made with CLT materials, and box-shaped unit that is joined with “tiki lock”

CLT CELL UNIT is the box-shaped wooden unit sized 7.6feet×16.4feet×9.8feet, and can be constructed with stack and arrangement.

This structure has possibilities of new construction method.

For joint, we use the Japanese traditional technology named “Tiki lock”, so we implement this unit is made with 100% wood. In addition,

we pre-build the units at the factories, so we can shorten the construction period.

A pre-build unit transported from the factory needs only placed on a foundation and connection, so the period is also shortened to 1/3.

Units have already used for emergency facilities in disasters in Japan.



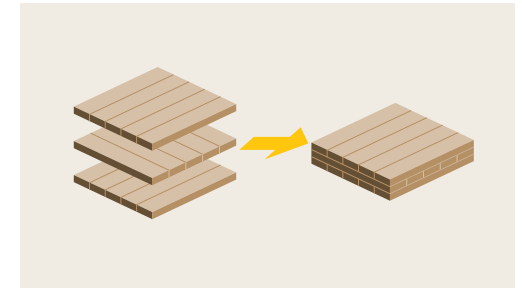
Tiki Lock

Japanese traditional way to join the joints. No metal, only wood to join.

About the CLT materials in recent years

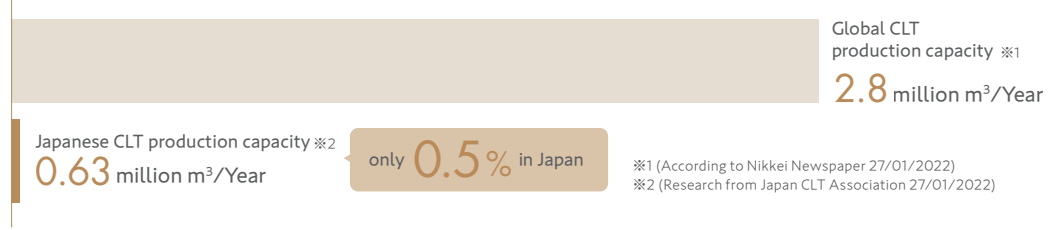
Domestic wooden materials with high strength. It will change the future of wooden construction method

LT means "Cross Laminated Timber". It is made by some boards. Fiber directions are perpendicular to each other, so CLT material becomes stronger than conventional laminated timber, and it is strong as concrete. Because it is difficult to deform, it can be used as a structure to support buildings. In addition, it can be multiple effects such as heat insulation, flame insulation, and sound insulation. It reduces CO2 during manufacturing, so it is one of the biggest attractions



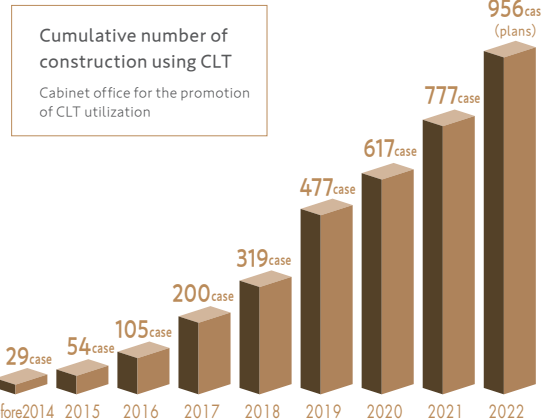
History and prevalence of CLT in the world

CLT has spread especially in Europe and Austria since 1995. Its use is expanded as a structure because it is easy to process. For now, Japan account for producing CLT is about only 0.5% of the world, but believed to become more popular in the future.



Recently, Japanese government has also allocate their budgets for CLT.

In this time, more than 60% of wood materials are from other countries. Producing CLT in Japan supports forest conservation and development in Japan. The Japanese government is promoting various policies related to the use of CLT materials because it is recyclable resource, and has great benefits for the world society.



Japan's policy for CLT -2022- Support for CLT \$60,3billion

- Ministry of the Forest
 - Strengthen use of wood for construction \$15million
 - Growth of the forestry and timber industries \$102million
- Ministry of Land, Infrastructure, Transport and Tourism
 - Business for sustainable buildings \$6.2million
 - Project to promote the development of quality wooden buildings \$245million
 - Development of production system for wooden and urban wooden buildings \$3.5million
- Ministry of the Environment
 - Promoting the decarbonization and resilience of building \$100million
 - ZEH support project \$45million
 - Project of CO2 reduction in collective housing \$45million
 - Evaluation prize project for simultaneous achievement of CE×CN by reusing wood \$1million

※Budget that can be used for CLT buildings Ministry of Health, Labor and Welfare \$3.4billion

HISTORY

2017

Apr. started research and development of structures using CLT

2018

May. Test CLT CELL UNIT No.1 was constructed

Aug. Started development with Japanese system design and certification

Sep. first connected CLT CELL UNITS are constructed
First hexagonal unit constructed

2019

Jan. Started Structural strength test

Jul.

Aug. Tested earthquake resistance and confirmed as two-stories units

Obtained a patent for “box-shaped building units and building” using CLT

Dec. Started joint research with Prof. Hiroshi Isoda, University of Kyoto

Released concept movies of CLT CELL UNIT

2020

Feb. Conducted two-stories units construction experiment of CLT CELL UNIT

Apr. Gave a unit as Mihara Garden tea room (Nagasaki) to Mr. Kazuyuki Ishihara

Apr. Provided units as PCR test buildings to prefectural hospitals (Fukuoka, Kyoto, Saitama, Kumamoto, others)

Jul. Adopted units to Hitoyoshi city, Kumamoto pref. for isolation waiting rooms for COVID-19 and temporary housing

causing flood disaster
Started second-termed unit tests

Aug. Started joint research with Prof. Fujita, University of Kitakyushu

Oct. Conducted a business alliance agreement with Miyoshi Sangyo Co., Ltd for CLT CELL UNIT

Acquired two-story model plan “CCU-01” and 3types of evaluation plan

Nov. Started development with YKK AP Co., Ltd for openings

2021

Jan. Adopted units for “Hitoyoshi recovery container Marche” to Hitoyoshi city, Kumamoto pref.

Apr. Selling CLT CELL UNIT, “CCU1” at Costco in Kumamoto pref.

2022

Mar. Opened a first Bento shop, HottoMotto using CLT CELL UNIT (Using fly ash concrete foundation)

Apr. Started development with Joto Techno Co., Ltd for secondary materials

May. Nikkan Mokuzai Shimbun (Japan wood material newspaper) started a series of articles titled “CCU’s Challenge”

Get trademarks for “Tiki lock” and “Under 50”

“The CLT Cabin” opened at Exhibition place at Nijo city, Fukuoka

May. Opened CLT CELL UNIT facilities (Karatsu city, Saga Pref.)

Dec. Started to sell “HANAREGA” from SAI Kenchikusha Co., Ltd

2023

Mar. conducted a three-story building experiment with MEIKEN Kogyo Co., Ltd

Apr. Established GATE Co., Ltd for CLT CELL UNIT distribution management and design planning

TECHNICAL

Strong, environmentally friendly, latest. Reason why it is chosen



Patented

We have 3 patents for "box-shaped unit building" and patent for "Tiki Lock for jointed structure" in Japan. we also have a patent in the US.



The best score

We examined many times for earthquake resistance test in public experiments, and get the best score, grade 3 in Japan. It shows extremely high strength and safety.



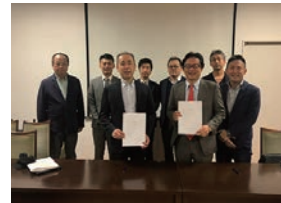
Easy construction

We repeated build and demolish to make sure that everyone can construct and realize the strength of it.



Performance of evaluation

We have appropriately evaluated its performance by the government, Building Center of Japan. It is evaluated in laws.



Collaborating with the best technologists

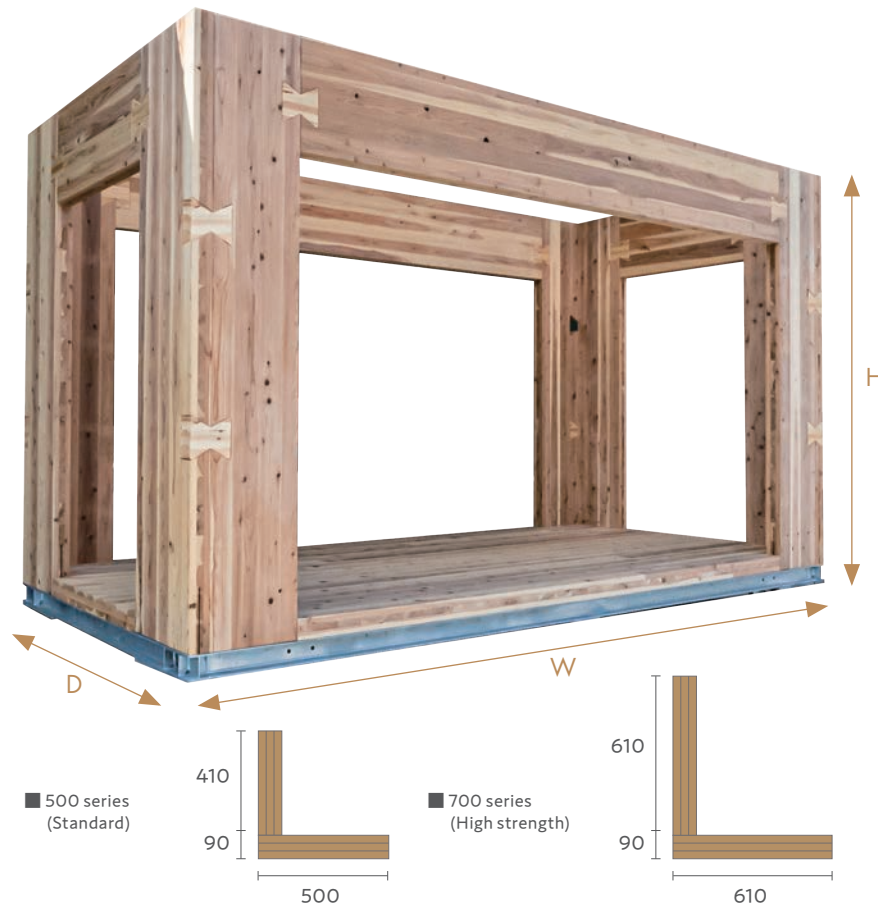
We collaborate with many of the top technologists of CLT, so CLT CELL UNIT evolve every day and evaluated.

Co-studying technology

We have support of a lot of companies and engineers to evolve. We will continue to be a company to evolve not only CLT CELL UNIT, but also companies support us.

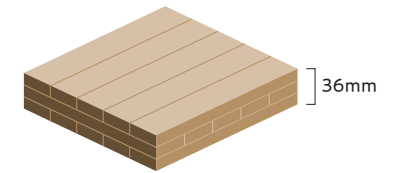


LINE UP



■ Specification

- 1 **Basic Unit** 500 series /700 series
Size 194.5inch×88.2inch×103.5inch
- 2 **Less than** 10m2 sized unit 500 series
Size 180.3inch×88.2inch×103.5inch
- 3 **High strength unit** 700 series
Size 235inch×89.4inch×112.2inch
- 4 **f36** (non-architectural)



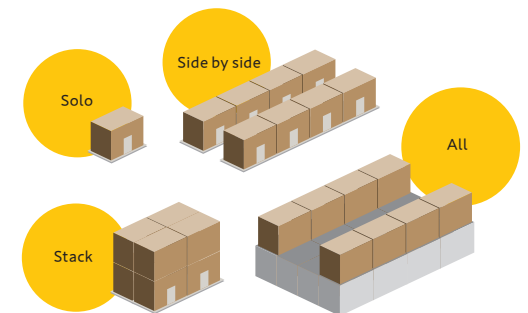
Realized short period of construction and unitization

Units, that are structures. They are assembled at a factory, and transported to the place. One day period when the foundation is already finished because units only need to be placed on it. From there, the interior and exterior need to be finished, but it is possible to shorten the construction period at 1/3 compared with normal period. Its merit also makes use as hospitality and temporarily house when natural disasters occur.



Usable as struct. Diversity of uses through your ideas

Box-shaped units can not only be used alone, but also used in a variety of ways. Arranging multiple units side by side, stacked, combine with other structures. Also, the material is very light compared with concrete and metal, it can reduce the load on ground reinforcement and foundations, it helps you to cut the cost and shorten the construction period.





Experimental model "CCU_01"

CASE 01

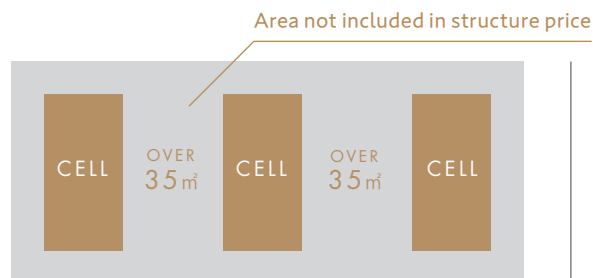
Minimal materials

Reduce construction costs of buildings

A large space without pillars is realized increasing the space of the cells.

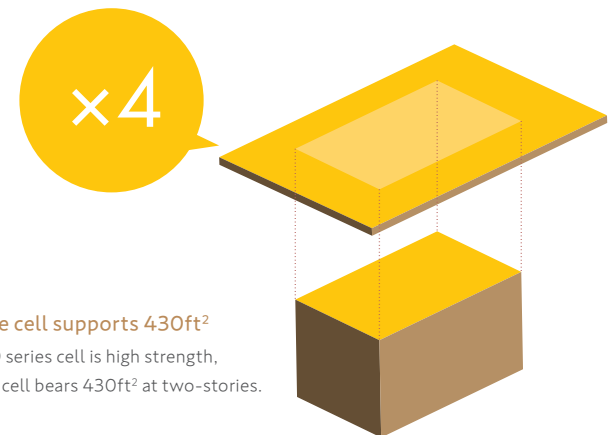
Cells bears the vertical force and horizontal force, so braces are not required on the outer wall.

Having distance creates maximum space while reducing costs.



Space over 377m²

Pillar-free space is wider than wall-type RC. Not only you can design freely, but also cut the cost of the construction.



One cell supports 430ft²

700 series cell is high strength, one cell bears 430ft² at two-stories.



The CLT Cabin "SAI Kenchikusha Co., Ltd"

CASE 02

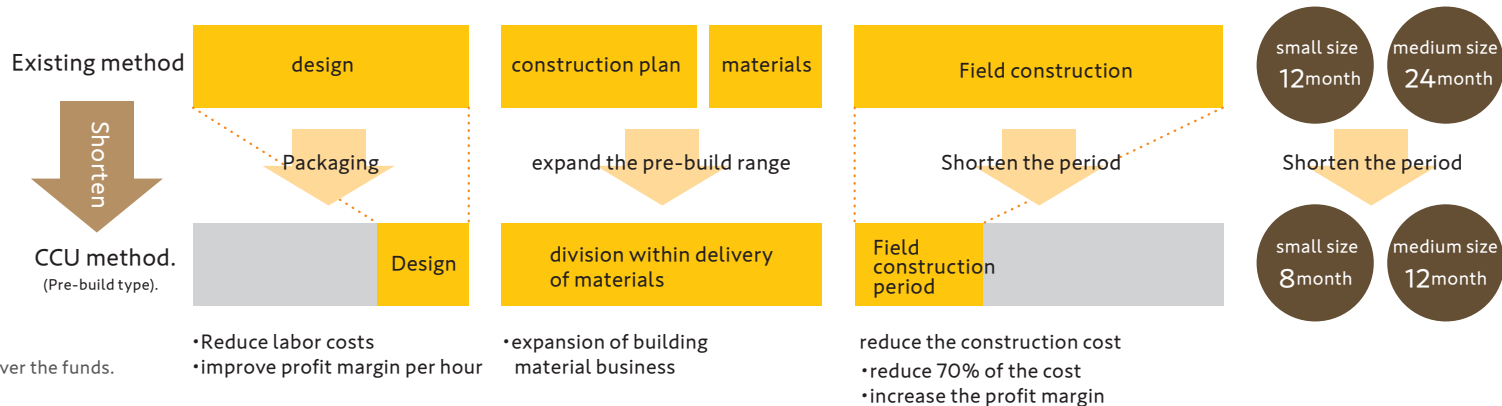
Short-term construction period

Pre-build construction

Pre-build more than 50% at the factory.

Construction period can be 1/3, so it is not only to

reduce the cost, but also greatly increase the turnover the funds.





Store "Hotto Motto"



Auberge akadama

CASE 03

Relocation / Reuse architecture

Construct with assuming relocation

The method of CLT CELL UNIT is easy to relocate since it is used only 4 anchors per cell.

We provide to reuse the cell with a next business.

Reusing the architecture made of recyclable materials is reflected to total costs.



CASE 04

Wooden space

Enhance livability

Wooden material has the good effects on human not only heat insulation, but also sound insulation.

We recommend using CLT materials for livability.





17

Container marché in Hitoyoshi, Kumamoto

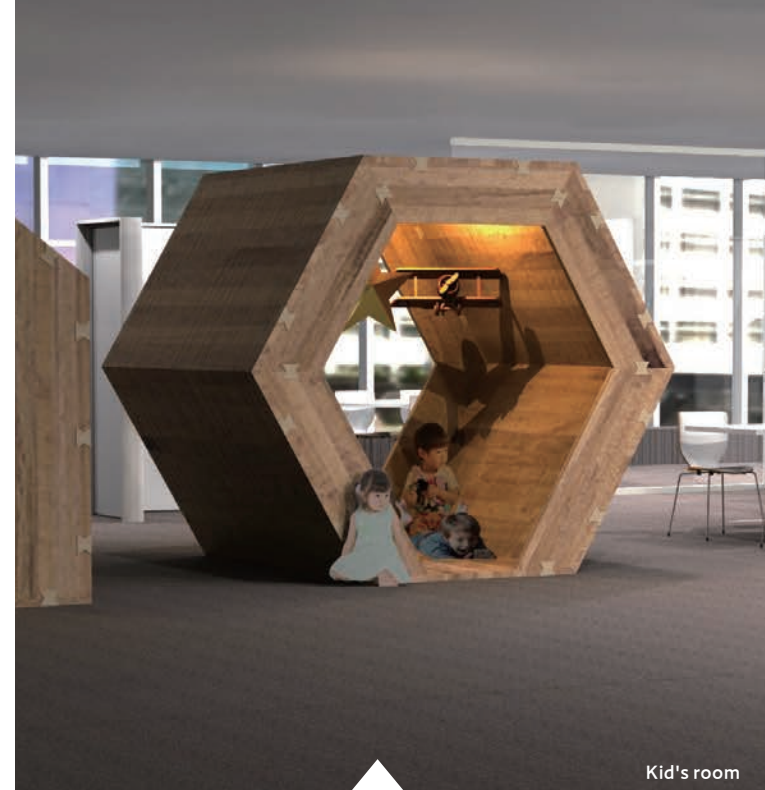
CASE 06

Case of emergency

Fast response of emergency

Usable in role of shelters, goods,
and materials when the disaster occurs.

Fast reaction for emergency is required in this century
due to climate change and social conditions.
there are various ways to use the CLT CELL UNIT
because of the intensity and moving.



Kid's room

CASE 05

Wooden container

Using the unit alone

Container, tiny house and small building are used recently.
CLT CELL UNIT provides high grade space.



Drive-through inspection unit for COVID-19

CASE 07

f36 / for indoor use

Livable space

Kids room, meeting room,
and various function room has become popular.
f36 is wooden and unique shape, and it is easy to install.



Three-stories condominium (idea)

CASE 08

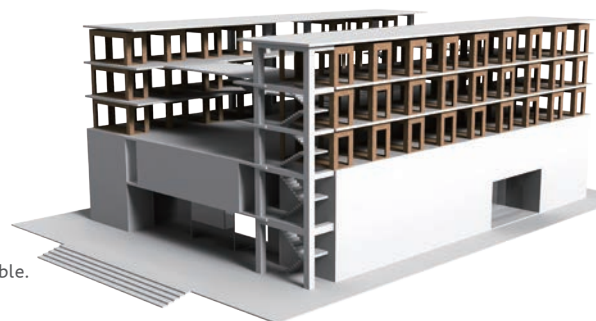
Individual design

Utilization for large or medium-sized architecture

CLT CELL UNIT also can be constructed large or medium-sized and special shape. It is very flexible.

We can provide any types of construction of using CLT.

We can support your any questions and requests.



Technical support for CLT CELL UNIT

We can provide a wide range of support such as design, mediate designers, consultation for construction, and tools etc..



CLT materials



how to build



information

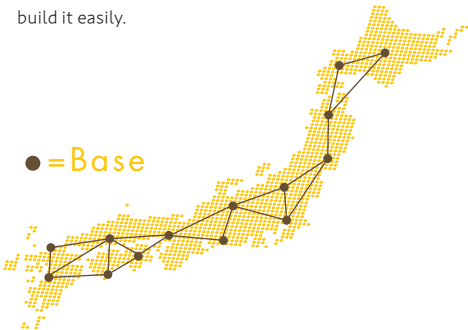


design documents

Anywhere, anybody, for making houses with environmental friendly

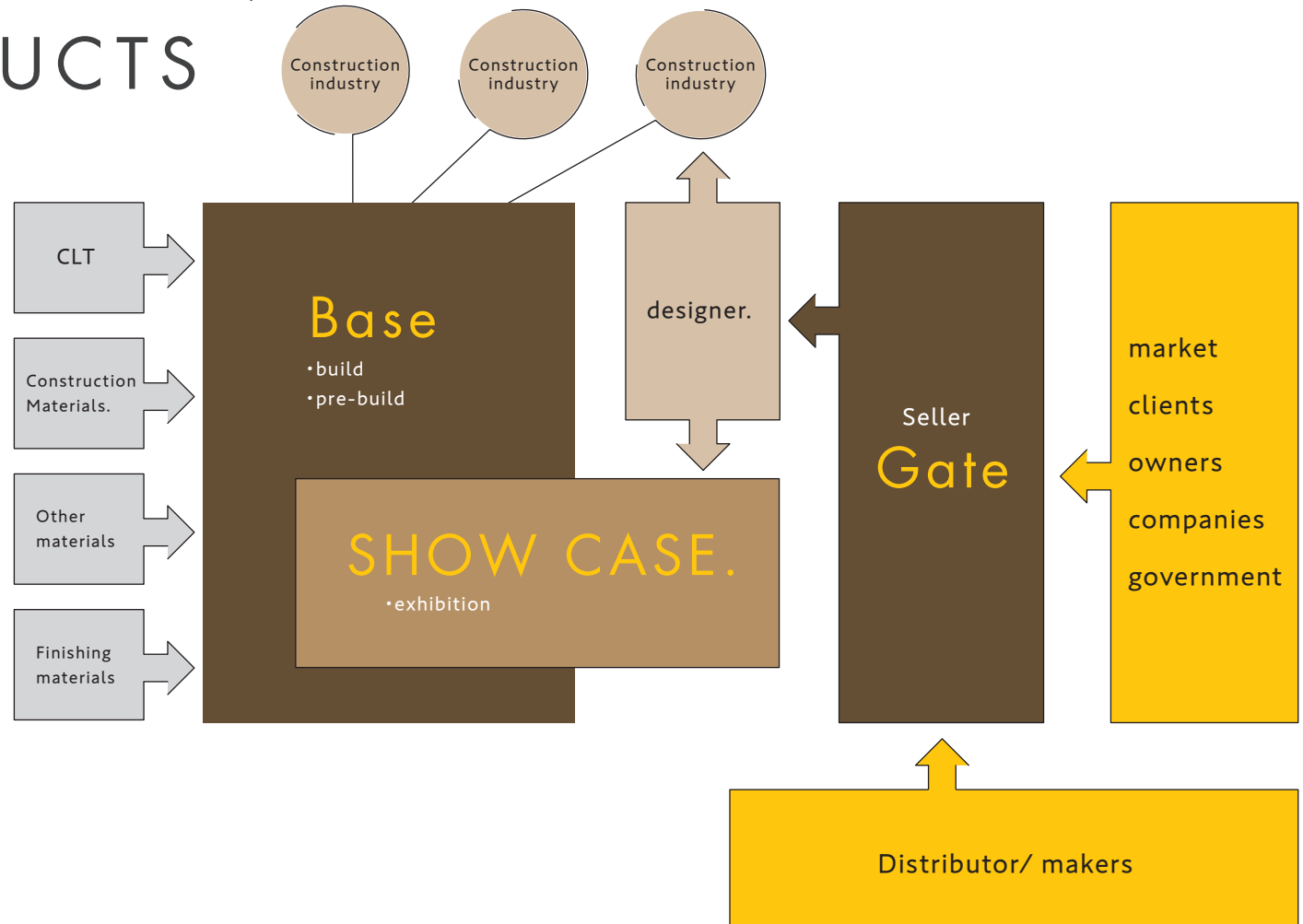
OPEN PRODUCTS

We share all information of CLT CELL UNIT, which means it is open product. We do that because we desire that anybody can construct this new and environmental friendly architecture. For that, we expand the factory to build it easily.



Firstly, exhibition place (Show Case) needs to be made for the local companies to manage and to operate. This Show Case is opened for anyone to see and visit. General customers, local design offices, construction companies, etc..

Also, to promote units efficiently in each region, there is a company names "Gate" that exists only for CLT CELL UNIT.



CHANGING THE FUTURE WITH WORLD ENVIRONMENT

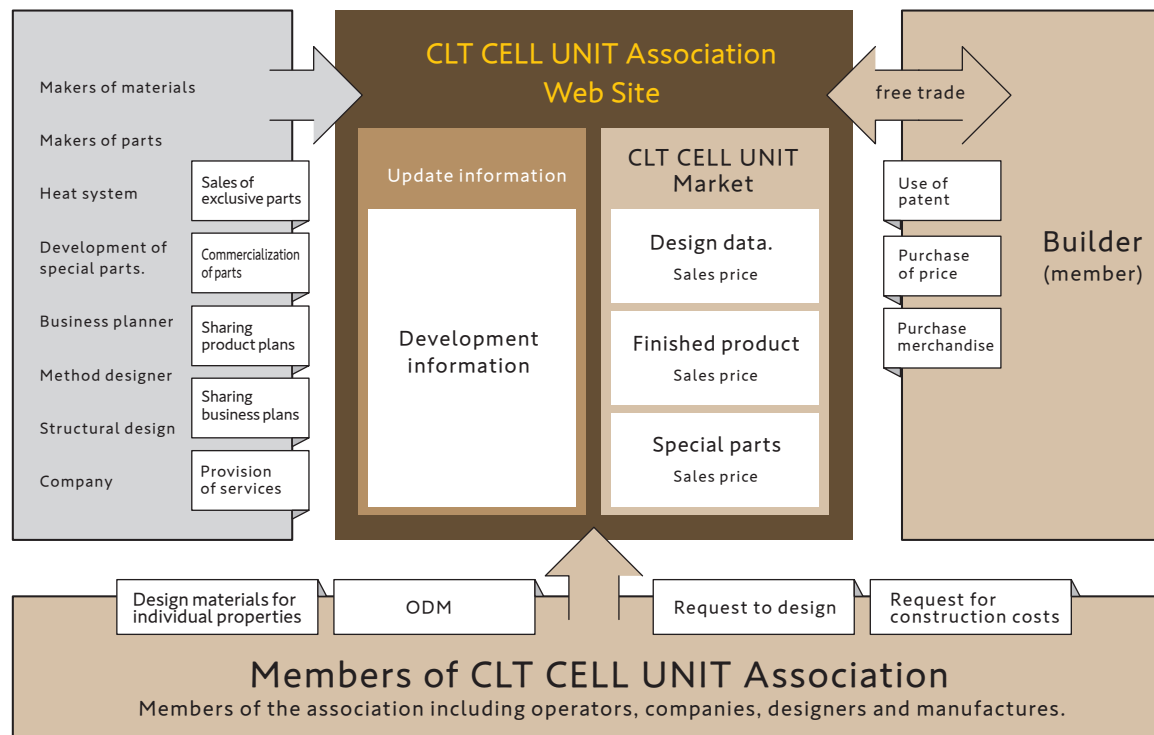
For the future of CLT CELL UNIT, for the future of us

OPEN INNOVATION

"An idea comes from a field". We believe this. We have created the system that ideas of the field connects the evolution of technology.

CLT CELL UNIT evolve with ideas of people who are various positions.

Information is shared on the website.



CLT CELL UNIT ASSOCIATION

You will be able to browse the website for association members. The website of CLT CELL UNIT association is equipped the ideas and products of other companies' members. You can also share your ideas and product.

■ Join the membership fee: ¥2,000

License system

The association has decided to adopt the license to construct the unit for being recognized from people. So that you can get updated technologies any time, anywhere. To get a license, you need to attend the course. Thank you for your understanding.

License for assembling CCU For wood companies and material companies

We will take on the role of a manufacturing the base of CLT CELL UNIT. And then, you can sell units to the companies that have a license for construction. You also take the role to manage the products' accuracy.

■ License for CCU assembling fee : ¥20,000 per month

■ To get a license for assembling CCU : ¥2,150,000

\$21,500 (price can be changed due to price fluctuation)

• Lectured by an engineer who can manage product accuracy.

• We will conduct a unit while the lecture.

• We will give you pamphlets, guidebooks, and novelties.

License for construction Only for companies who have a construction business license.

You can construct CLT CELL UNIT after you attend the course for license. You can construct units with understanding the CLT panel construction. For design, a designer of each company needs to apply for the license.

■ License for CCU construction fee : ¥20,000 per month

■ To get a license for CCU construction : ¥500,000 (Purchasing cell by list price) (price can be changed due to price fluctuation)

• We will give you pamphlets, guidebooks, and novelties.

• Please contact for building material companies for specific information.

Wish to take a responsibility as a company engaging in social activities.

I have built many houses as a carpenter. At some point, I knew most of wooden materials are imported. It made me consider about Japanese forestry industry and the forests of the world. Forests in the world are destroyed to export them to Japan, on the other hand, the use of domestic lumber decreased in Japan. I knew this point is the one that made the problem that Japanese forests are degraded and cause forest disaster and disease. At that point, as a one of the companies engaging in social activities, I was driven to take a responsibility.



At that time, I knew CLT that was born in Europe. It was originally developed from waste of wood when natural disaster occurred. I recognized it is recyclable material functionally, and it can help forests to recovery. For the housing, we have a lot of problems since natural disasters. However, I thought building houses using CLT can solve not only forest industry and forest problems, but also lives of people. This is the reason why I started researching CLT. We had study and repeat the prototype more than a hundred, using a Japanese traditional and special technique that to join parts only using wood. Also, we made an effort to build box-shaped units to function as construction. As a result, our construction method substantiated the highest score of earthquake resistance grade and get some patents. For now, we still keep it evolve with top technologists.

I feel we finally reached the starting point. CLT CELL UNIT is the totally new method of construction for forests, the Earth, and our future. We are looking forward to your join and sharing the future.





SAI GROUP HOLDINGS Co., Ltd

4-45-55 Noke Sawaraku Fukuokashi, Fukuokaken

<https://cltcellunit.com>

