

OBYASHI WOOD VISION

Circular Timber Construction®

Circle Tomorrow With Wood





Circle Tomorrow With Wood

As we work toward a sustainable society, the importance of timber is growing in efforts to achieve decarbonization, circularity, and symbiosis with nature.

Timber construction helps reduce and store carbon dioxide, contributing significantly to decarbonization by transforming cities into “Second Nature.” Wooden spaces promote both mental and physical well-being, supporting a richer quality of life. By utilizing renewable wood resources, Obayashi is advancing a sustainable circular model known as “Circular Timber Construction.” Through forest cycle management, we help preserve the diverse public functions of forests, including disaster prevention, water source conservation, and biodiversity protection.

The Benefits of Wood

Decarbonization

Trees grow by absorbing CO₂ and releasing oxygen, storing carbon as they mature.

Compared to steel or reinforced concrete (RC), timber requires significantly less energy to produce, helping reduce CO₂ emissions.

Advancing Timber Construction for Decarbonization Through Sustainable Wood

CO₂ emissions Trees absorb CO₂ Carbon storage by utilizing wood

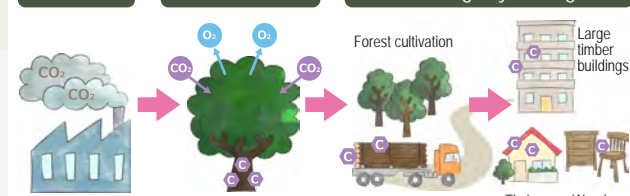
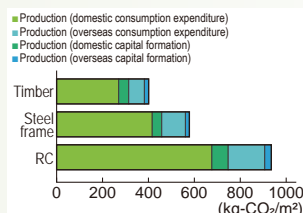


Image: CO₂ storage through wood utilization

Sustainable Timber: Lower CO₂ from Start to Finish



▲ Structural comparison of estimated CO₂ emissions per floor area in office buildings
Created based on “LCA Guidelines for Buildings,” Architectural Institute of Japan, p. 158 (2006)

The Benefits of Wood

Well-being

Wood not only contributes to the environment, but also offers various benefits to people, companies, and communities.

Local and regional timber can be used for promotional purposes, and wood can also have a relaxing effect.

PR Effects by Using Local and Regional Timber



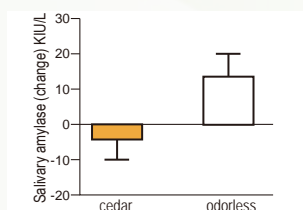
Examples of local timber utilization
“Nara Prefectural Convention Center”

Relaxation Through Scent and Touch of Wood



Examples of wooden interior
“Port Plus”

The Stress-Reducing Effects of Wooden Interior



▲ Effect of the scent of cedar interior materials on amylase (stress indicator substance) activity
Source: Matsubara, E., et al.: Build. Environ., 2, 125-130 (2014).

OBAYASHI WOOD VISION Circular Timber Construction®

A Symbiotic Circular Model Powered by Timber

Obayashi is committed not only to promoting timber construction, but also to revitalizing the entire timber lifecycle—from upstream to downstream and beyond.

Through this approach, we aim to realize a sustainable use of forest resources and foster a society that respects the natural world.



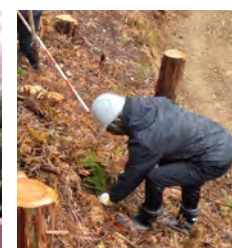
Obayashi Initiatives Upstream

This stage covers the journey from growing seedlings to producing logs. We have developed technology to efficiently cultivate seedlings using artificial light and actively engages in reforestation efforts. In collaboration with MAFF, METI, and MOE*, we promote the use of timber to support decarbonization.

Planting Seedlings Grown Under Artificial Light



Larch Seedlings



Planting

Conclusion of the “Agreement on Promoting the Use of Wood in Buildings” with MAFF, METI, and MOE*



Signing Ceremony

*MAFF: Ministry of Agriculture, Forestry and Fisheries / METI: Ministry of Economy, Trade and Industry / MOE: Ministry of the Environment

Obayashi Initiatives Midstream

This stage involves processing raw timber delivered from upstream sources to produce lumber and wood-based materials.

We together with our group companies specializing in advanced wood processing technologies, is actively working to ensure a stable and efficient supply of timber.

In Partnership with CYPRESS SUNADAYA Strengthening Stable and Efficient Timber Supply



Cypress Sunadaya Co., Ltd. Factory Overview

Obayashi Group Woodworking Technology Expert NAIGAI TECHNOS



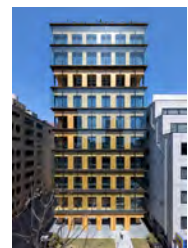
Naigai Technos Co., Ltd. Factory Interior View

Obayashi Initiatives Downstream & beyond

This is the final stage of consumption, where wood products are actually used in construction and other applications.

We have built Port Plus®, Japan's tallest pure timber fire-resistant building, and clean energy generation using wood biomass.

Japan's First Fully-Wooden and Fire-Resistant High-rise Structure Port Plus®



Elevation



Interior View

Clean Energy Generation Using Domestically Produced Wood OTSUKI BIOMASS POWER PLANT



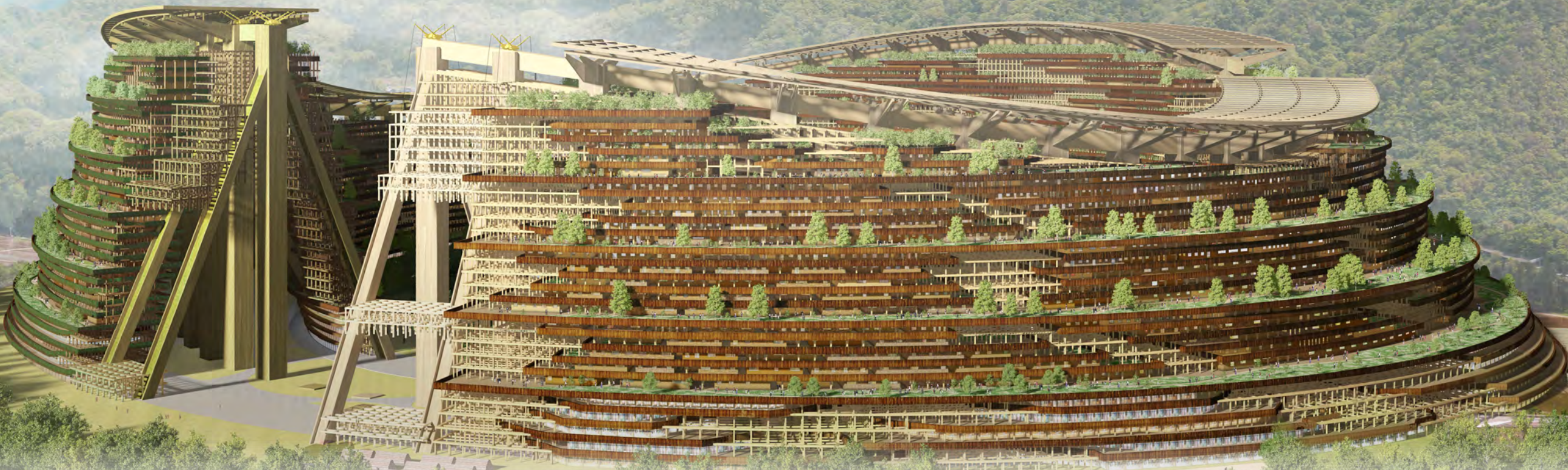
Otsuki Biomass Power Plant

The Future of Circular Timber Construction®

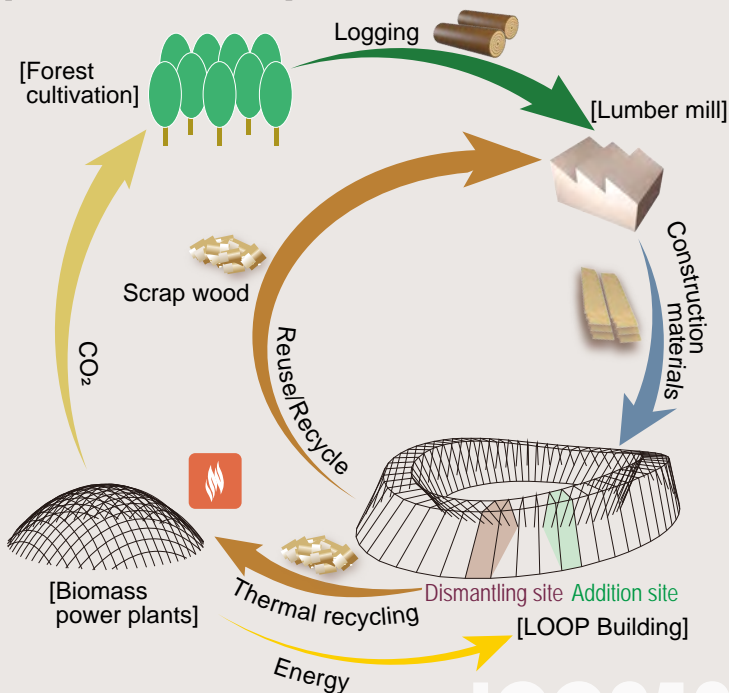
A Timber-Built Sustainable Town in symbiosis with the forest “LOOP50”

As a vision for the timber-based circular town of the future, Obayashi has conceptualized “LOOP50”. This initiative promotes the active use of trees grown over 50 years while preserving rich forests, allowing society to continuously benefit from the gifts of forests. By encouraging the natural cycle of timber, LOOP50 aims to create a town where people live in life with forests and trees.

LOOP50



[Circulation Flowchart]



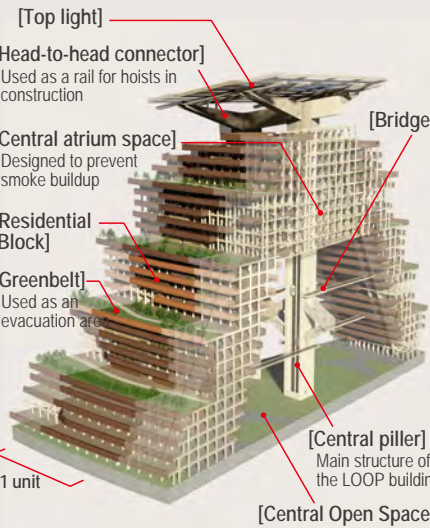
Self-Sufficient Architecture and Energy Through Forest Resource Cycles

LOOP50 is a timber-based circular town concept by Obayashi. Each year, one of its 50 building blocks is added using trees that have grown for 50 years in nearby forests, while another block reaching the end of its 50-year cycle is dismantled. This synchronized process reflects forest growth, enabling continuous renewal. Some dismantled materials are reused; others are converted into clean energy at biomass power plants. LOOP50 envisions a compact urban community where both materials and energy are locally sourced and circulated.

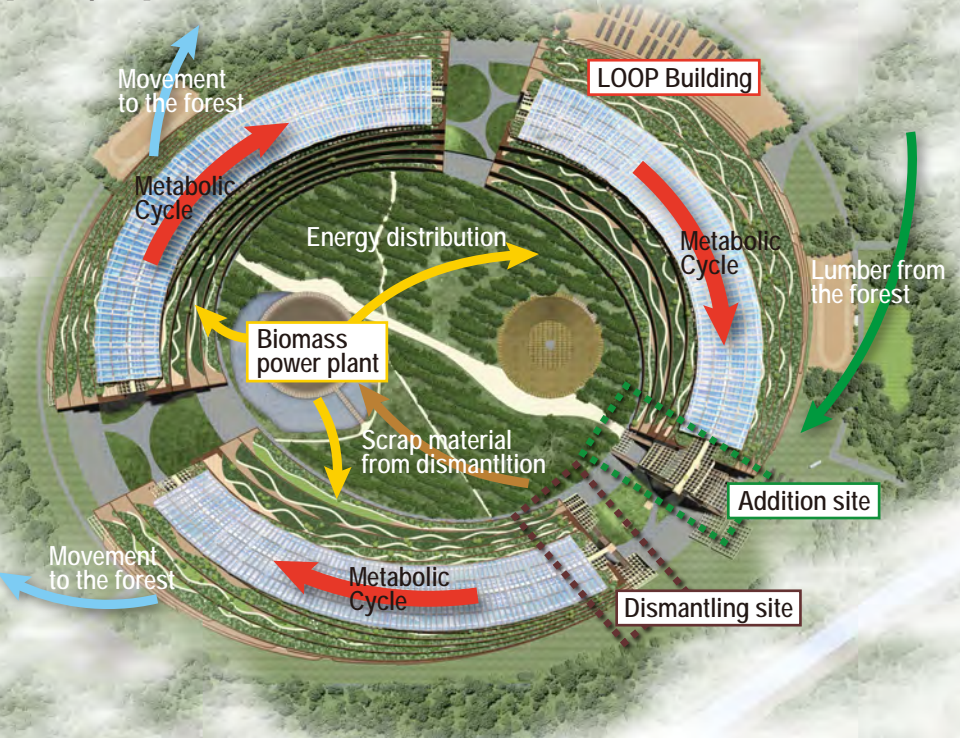


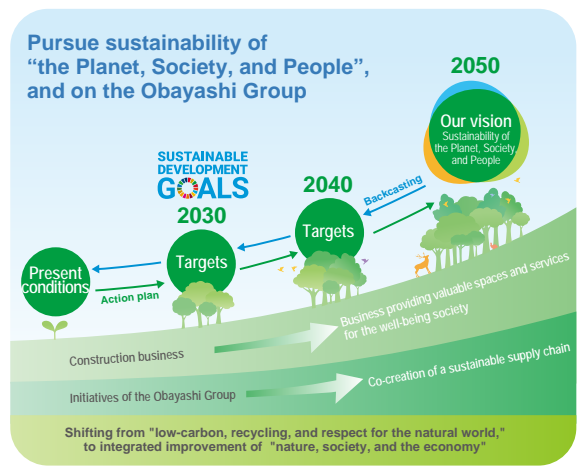
[Unit Composition]

LOOP50 undergoes annual expansion and renewal using a standardized “Unit,” the core of its circular system. With 50 connected units and a consistent timber volume per unit, both logging and carbon emissions stay balanced year by year.



[Floor plan]





Obayashi Sustainability Vision 2050

We established our long-term environmental vision, Obayashi Sustainability Vision 2050, in 2011 and worked to promote the renewable energy business and take other steps to create an environmentally friendly society. In June 2019, we have updated this vision to Obayashi Sustainability Vision 2050 (hereafter, "new Vision") to develop it further. This update of the vision adopts the changes in various social trends and the business environment surrounding the Obayashi Group. The new Vision incorporates our efforts in ESG management and initiatives that will contribute to achieving the Sustainable Development Goals (SDGs). We hereby declare that we will simultaneously, to pursue sustainability of the planet, society, and people, and of the Obayashi Group.



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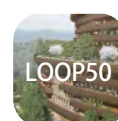
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Contact us



Carbon Neutral & Timber Construction
Solution Department
Marketing Division



A City Living in Harmony with the Forest
LOOP50 HP



Circular Timber Construction
(Youtube)