

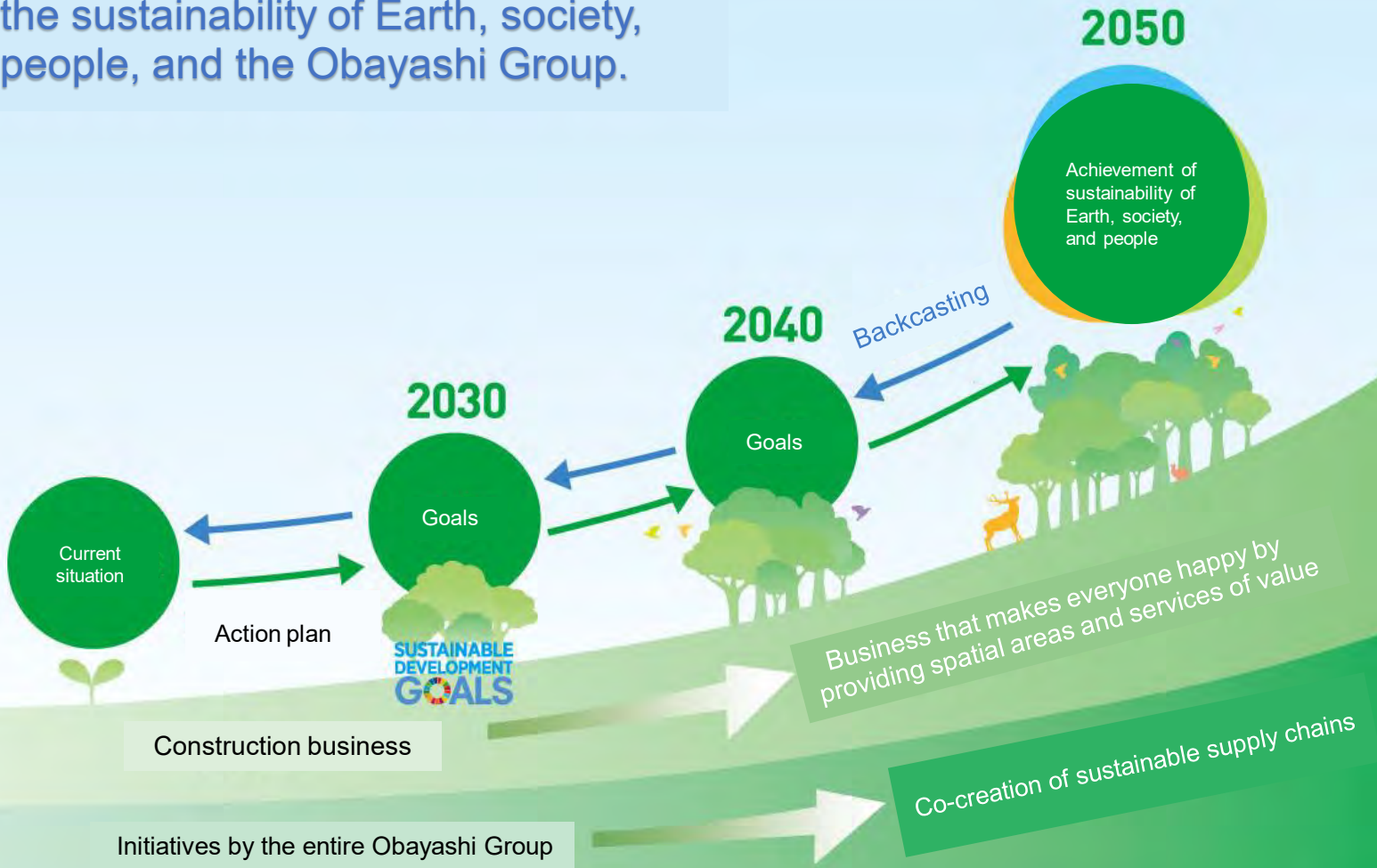
The background of the entire slide is a close-up, circular cross-section of a tree trunk, showing concentric growth rings in shades of brown and orange. Several small, dark silhouettes of birds are scattered across the upper left and center, appearing to fly. On the right side, there is a dark silhouette of a tree with dense foliage.

OBAYASHI WOOD VISION

Promoting wooden buildings that create new corporate value

Our goal is to make a significant contribution toward the creation of a sustainable society by promoting the cyclic usage of forest resources and the utilization of wood as a low-carbon material.

We seek to simultaneously achieve the sustainability of Earth, society, people, and the Obayashi Group.



Making integrated progress from “low-carbon, recycling, and being in harmony with nature” to “environment, society, and economy”

Why wood?



Stimulate the forestry industry and regional development, preserve the national land

- Cyclic usage of forest resources—which covers cutting, usage, planting, and nurturing—will lead toward **revitalizing the regional economy by developing the forestry and logging industries.**
- Appropriate cyclic usage of the forests is necessary to **preserve national land and manifest functions that serve the public interest**, such as protecting the mountainsides to prevent erosion and preserving our water resources.
- Use of forestry resources creates employment, and the money generated will be reinvested in the mountains, thus serving to protect Earth's environment. The cyclic use of trees is essential, not only for certain industries, but for our society as a whole.



Carbon storage and emissions reduction by serving as a secondary forest

- Using wood that has absorbed CO₂ to make buildings means that **carbon is fixed (stored) as being a part of the building**. This is why wooden buildings could be considered a “second forest.”
- New trees will be planted in the area that has been logged, so the function of the “primary forest” will remain unchanged.
- Increasing the number of wooden buildings means **increasing the expansion of “second forests” throughout the various parts of the country**, while being able to continue keeping our primary forests.
- Wood not only stores carbon but also has **fewer CO₂ emissions during manufacturing** compared to steel and concrete.



Provide health and comfort for the mind and body, and improve productivity

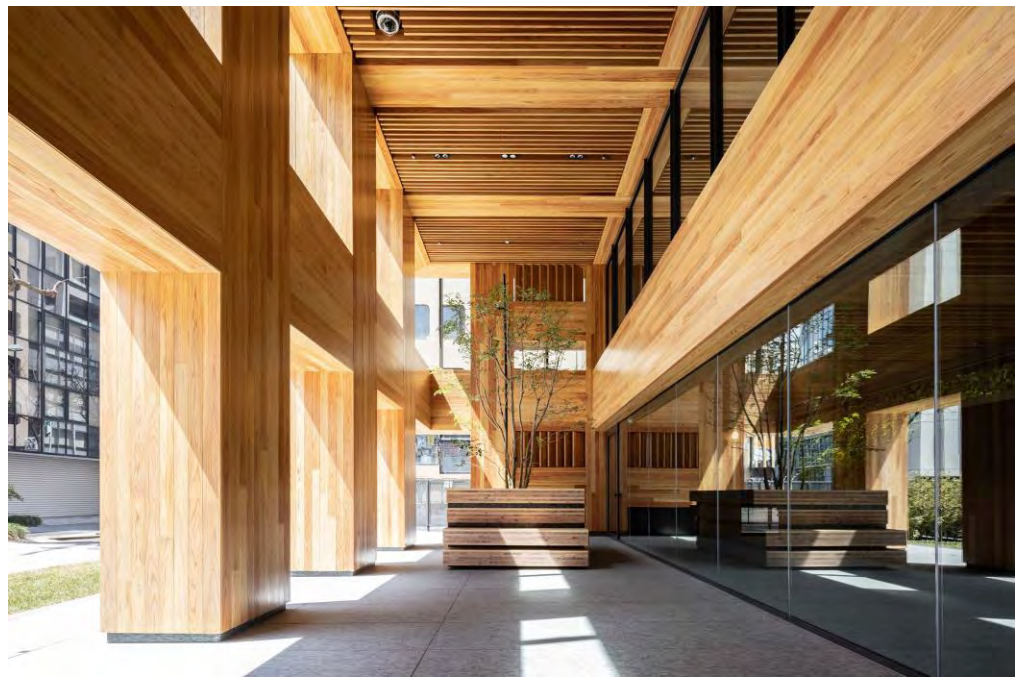
- Wood has an effect on a person's mind and body. **Its aroma and the way it feels to the touch have the benefit of reducing stress.**
- Wood also controls the humidity of a room, as well as absorbing odors and having an anti-bacterial effect.
- The relaxation effect, when used for office environments, has the benefit of **enhancing health, providing comfort, and improving productivity.**
- The imperfections (knots, variance in color and texture) and warping that are characteristic of wood help create a sense of warmth and ease in the environment.



Using wood helps create sustainability for people, Earth, and society



1. Japan's first fully wooden and fire-resistant high-rise structure 「Port Plus」



1. Japan's first fully wooden, fire-resistant high-rise structure – Port Plus



2nd floor stairs



3rd floor promotion space



1st floor entrance hall



2nd floor promotion space



6th floor training room



9th floor training room



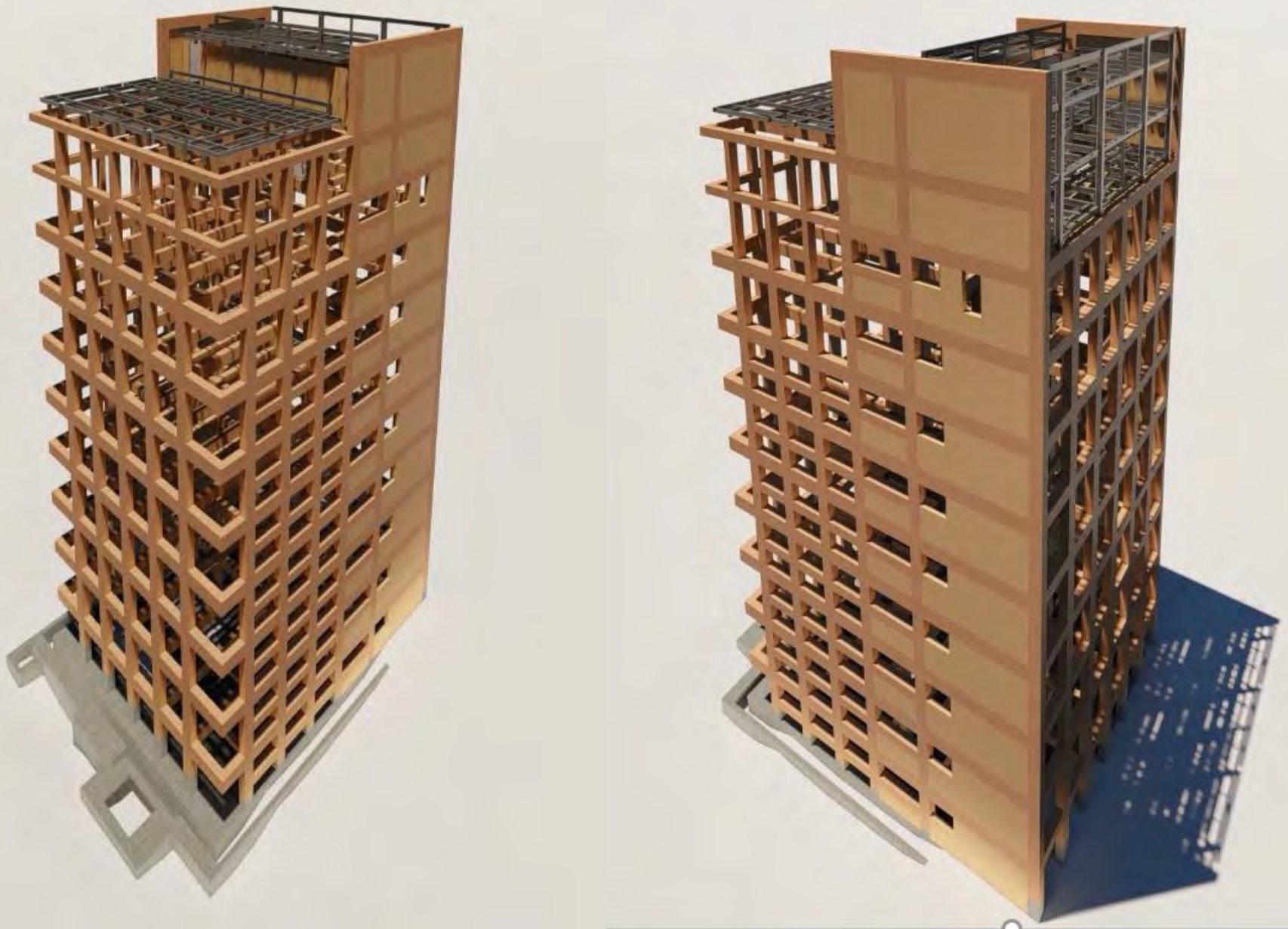
5th floor training room



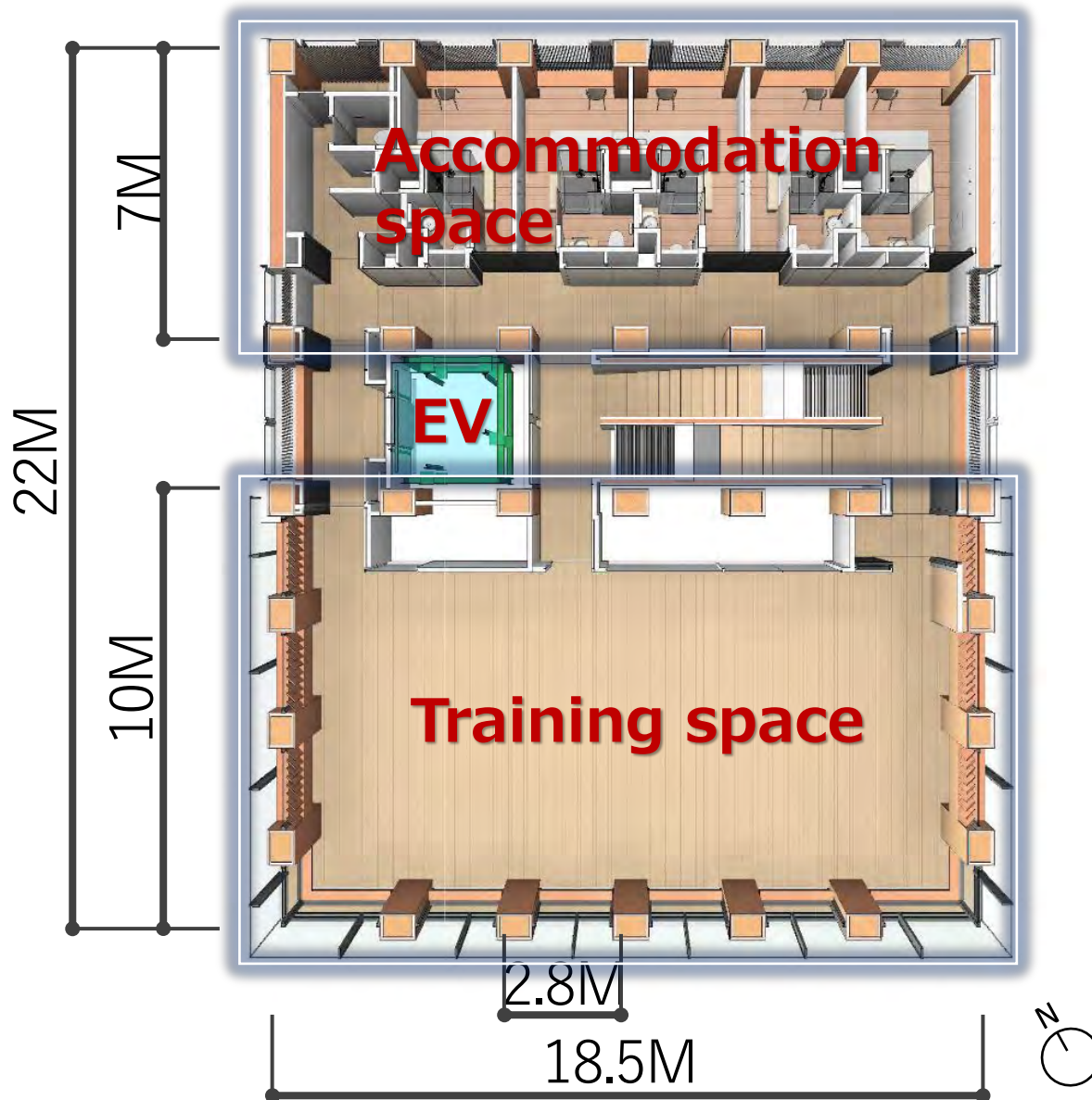
8th floor training room

1. Japan's first fully wooden, fire-resistant high-rise structure – Port Plus

Composition of fully wooden, fire-resistant high-rise structure



1. Japan's first fully wooden, fire-resistant high-rise structure – Port Plus



Amount of wood usage / CO2 storage and reduction amount



Wood usage amount
1,990m³
 Wood structure: 1,675m³
 Wood interior material: 315m³

→ Made with one-third or more of the amount of annual wood used in public buildings

		2017	2018	2019
Low-rise public buildings that actively promote the use of wood* (low-rise buildings that fall into target)	Number of buildings (A)	104	85	80
	Number of buildings (B)	80	77	72
Of these, public buildings that were built with wood	Total area	9,457 m ²	9,051 m ²	13,698 m ²
	Wood ratio (B/A)	76.9%	90.6%	<u>90.0%</u>
Public buildings that used woody material in the interior	Number of buildings	171	169	132
Amount of wood usage	m ³	3,139	4,206	5,372

Source: Results on the use of wood in Japan's public buildings and interior areas, etc.
 : Ministry of Land, Infrastructure and Transport

https://www.mlit.go.jp/report/press/eizen09_hh_000023.html

1. Japan's first fully wooden, fire-resistant high-rise structure – Port Plus

Amount of wood usage / CO2 storage and reduction amount



CO2 storage amount

1,652 t-CO2

≒ 450 t-C

Amount of stored CO2 by use of wood

Note: Preliminary calculation of simplified "visualization" calculation sheet
(calculation material announced by the Forestry Agency)

⇒ Equivalent of carbon absorbed in 50 years by a Japanese cedar forest with an area (4.5 hectare) that is 80 times the size of the building project site (565 m²)

Carbon absorption (storage) amount per one hectare of forest

Tree age group	1	2	3	4	5	6	7	8	9	10
Timber volume (m ³ /hectare)	0	7	58	111	168	224	279	328	371	406
Carbon volume (ton/hectare)	0	2	18	34	41	54	67	79	90	98

Indicates that 98 tons/hectare of carbon is absorbed by the time the trees reach age group 10 (ages 46 to 50 years)

Source: Average amount of carbon absorbed (fixed) by the trees in the forest: Forestry and Forest Products Research Institute
<http://www.ffpri.affrc.go.jp/research/dept/22climate/kyuushuuryou/documents/page1-3-per-ha.pdf>

1. Japan's first fully wooden, fire-resistant high-rise structure – Port Plus



2. Future concept for a recycling-oriented city of wood buildings 「LOOP50」



Town that can be managed only with forest resources

Number of residents: 15,000 people

Total building floor area: 749,430 m²

Energy calculation

- Power demand: 14,510 MWh per year
- Cold heat demand: 18,531 GJ per year
- Thermal heat demand: 53,515 GJ per year

Necessary biomass amount (one year)

- Heat conversion: 230,664 GJ per year
- Weight conversion: 33,381 t per year
- Cubic capacity conversion: 41,728 m³ per year

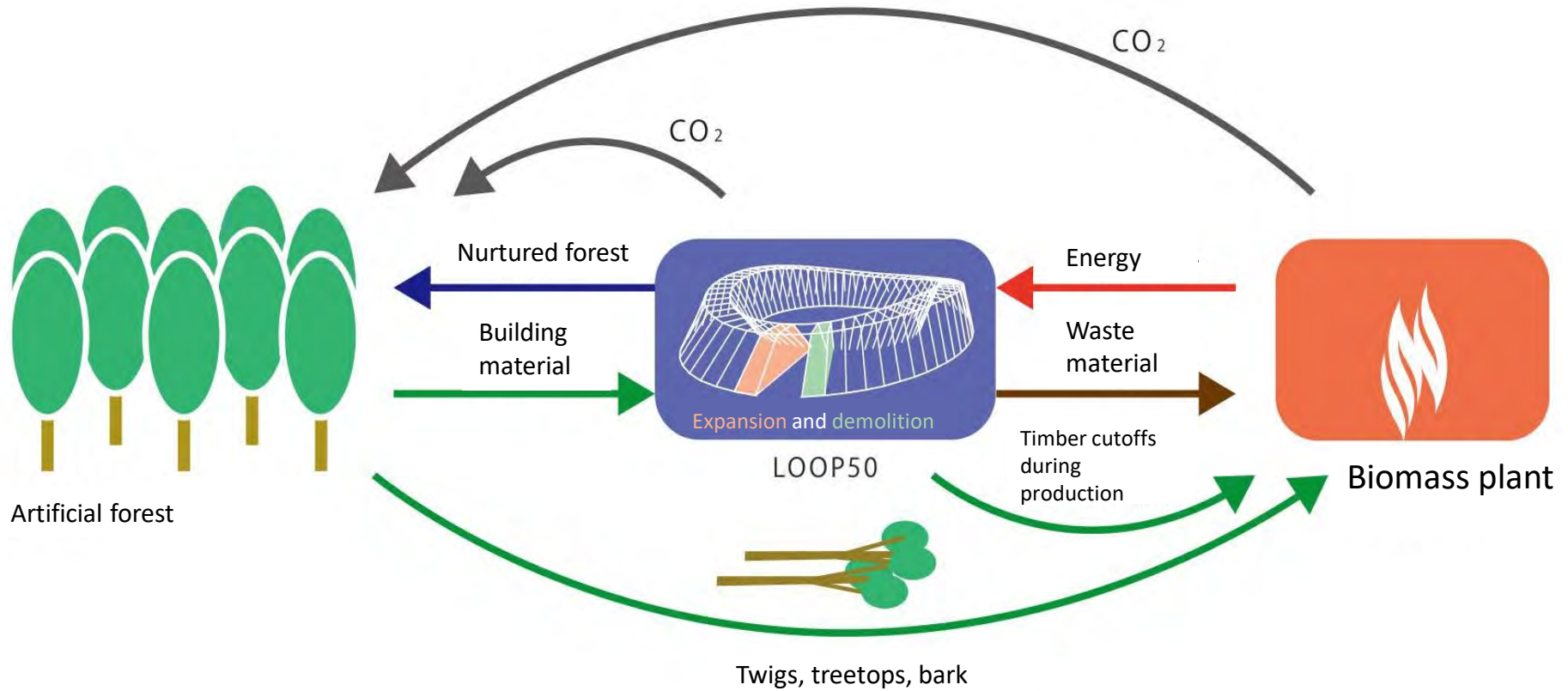
Required forest area (one year)

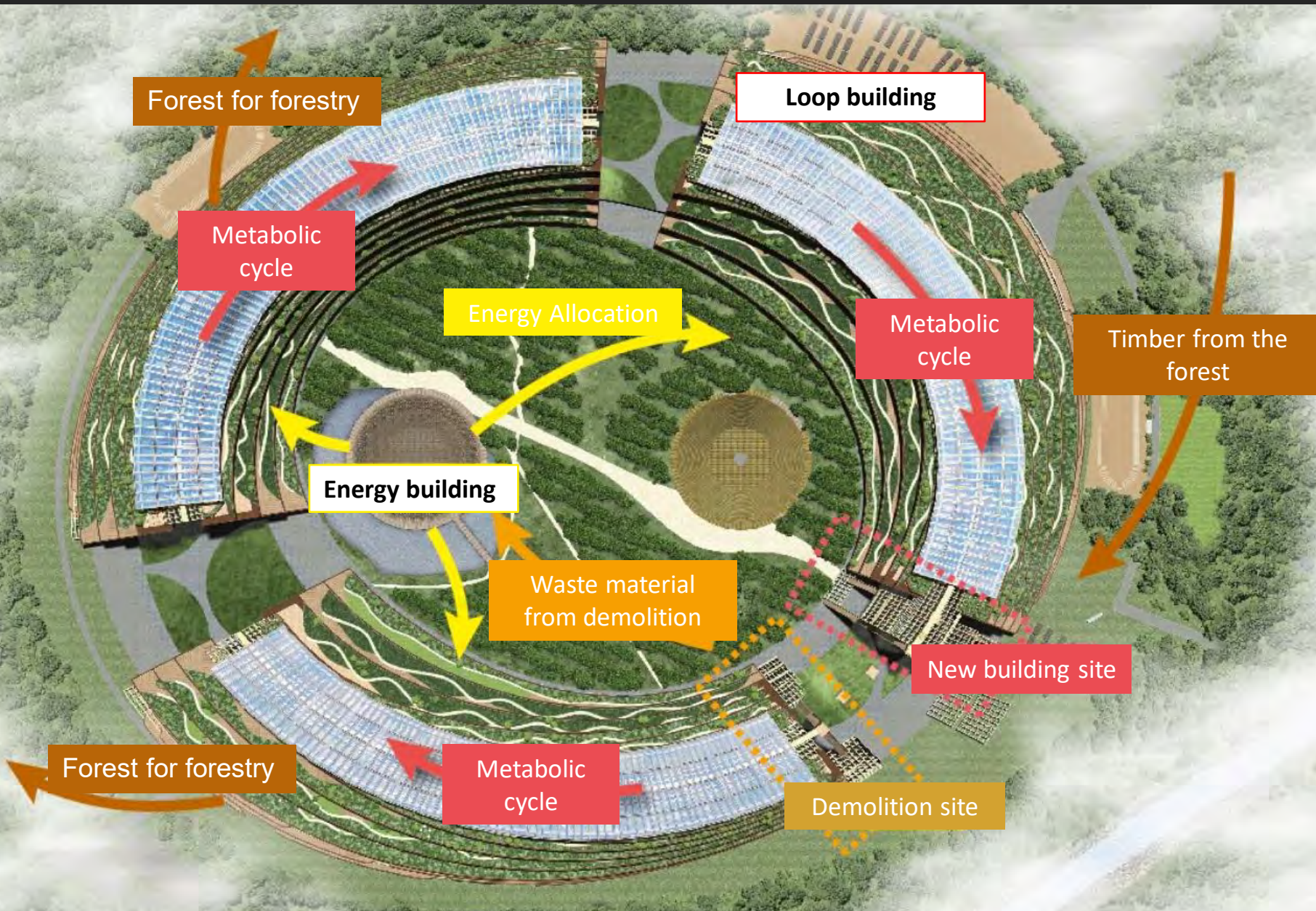
19,408 hectares

CO₂ reduction amount

(Comparison with use of city gas)
11,943 t-CO₂ per year

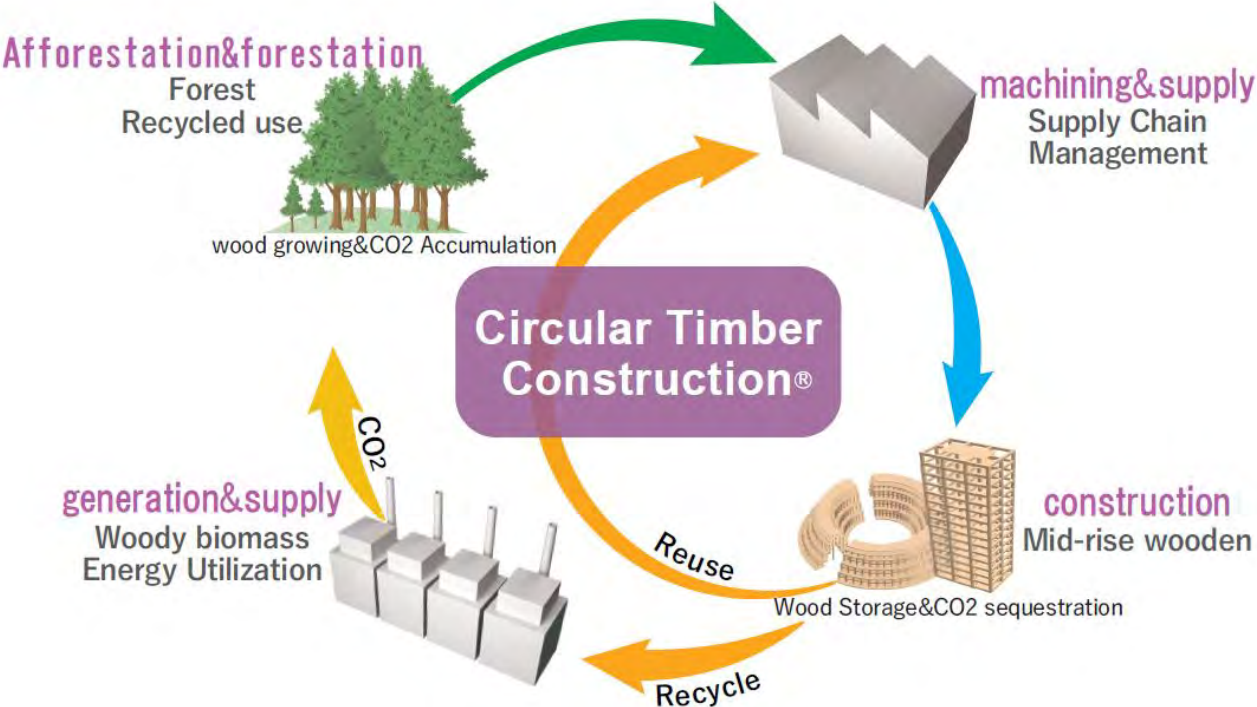
2. Future concept for a recycling-oriented city of wood buildings





2. Future concept for a recycling-oriented city of wood buildings





つくるを拓く

MAKE BEYOND