



BIM at the Government Buildings Department in Japan

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2010

Three BIM pilot projects



Shinjuku Government Building
for Ministry of Labor



Fujieda Government Building for
Ministry of Justice



Maebashi Common Building for
the government offices



We established “The guidelines for development and use of BIM models for government projects” in March 2014.

→ The guidelines contain the basic principles and notes in BIM models.

For Design-Bid-Build method. (major method in GBD projects)
To follow and use the existing standards.



Before 2018 (in Japan)

We must provide equal opportunities for participating in public works projects to most companies. But, there are few architects and constructors that can use BIM in Japan.



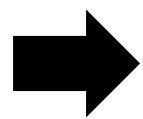
Therefore, it is still difficult to make the use of BIM mandatory in the public procurement.

The guideline is applied only if architects or constructors propose the use of BIM.

Before 2018 (in Japan)

Number of projects that proposed use of BIM by architects or constructors.

Fiscal Year	BIM in design			BIM in construction		
	Use of BIM	Number of projects	BIM Utilization rate	Use of BIM	Number of projects	BIM Utilization rate
2014	5	29	17.2%	0	23	0%
2015	6	35	17.1%	3	30	10.0%
2016	7	27	25.9%	1	44	2.3%
Total	18	91	19.8%	4	97	4.1%



In the project of GBD, BIM is used in design more than in construction.

◆ Since 2018, we use BIM more than ever.

- We will order construction on condition of using BIM in 2018.
- This is the first try for us to make the use of BIM mandatory in construction.

Takayama Common Building for the government offices

Construction period 2018 to 2020

Build of reinforced concrete 4 stories 1 basement

Total area about 5,800 sqm



Tochigi Common Building for the government offices

Construction period 2018 to 2020

Build of reinforced concrete 5 stories

Total area about 4,200 sqm



Japan Coast Guard Academy international exchange center

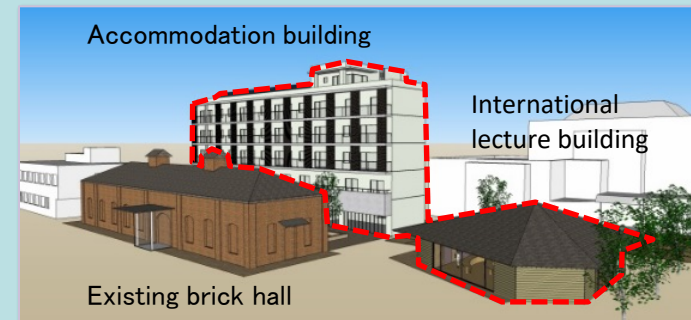
Construction period 2018 to 2019

Accommodation building; Build of reinforced concrete 6 stories

Total area 2,200 sqm

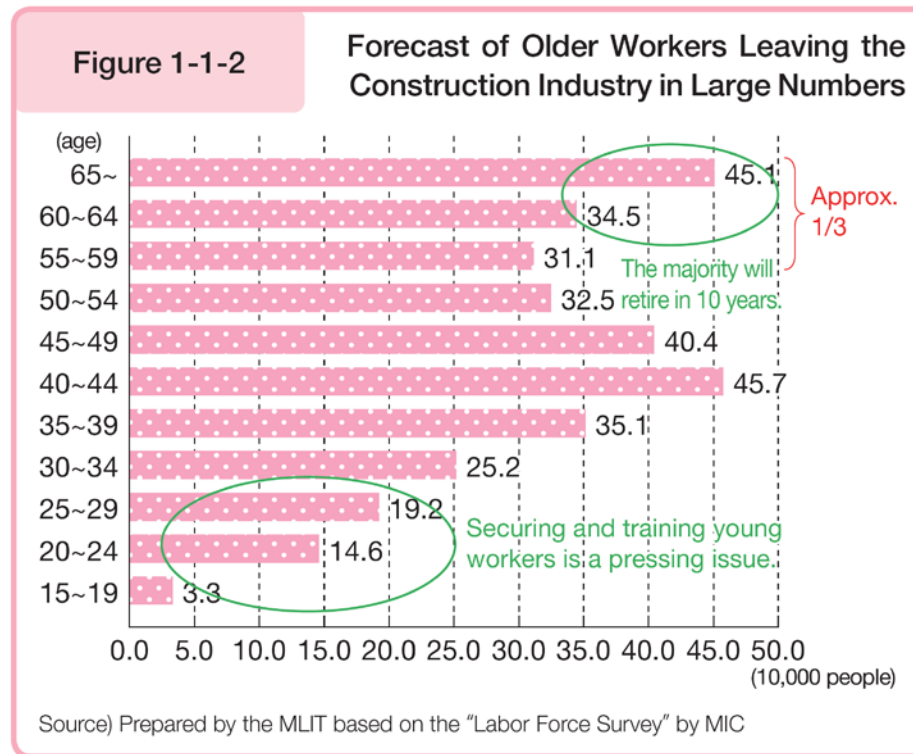
International lecture building; Build of wood 1 story

Total area 160 sqm



In Japan, Birthrate declines and population ages.

As its Birthrate declines and its population ages, Japan's total population has been falling. In the construction field, workers aged 55 and older account for around a third of the approximately 3,260,000 skilled workers at construction sites.



White paper on MLIT



Japan needs to create innovation, and implement the innovations created throughout the world to increase productivity.



Council on Investments for the Future September 12, 2016

Based on the discussion, the Prime Minister said,
We aim to increase productivity at construction sites by 20% by 2025.
To that end, within the next three years, we will introduce surveying drones and other cutting-edge technology at public construction sites where bridges, tunnels and dams are being built, tie together the entire construction process, from construction to inspections, through three dimensional data, and introduce new construction methods.

➡ We use BIM at only bridges, tunnels and dams.



New Economic Policy Package December 8, 2017 Cabinet Decision

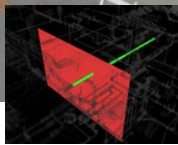
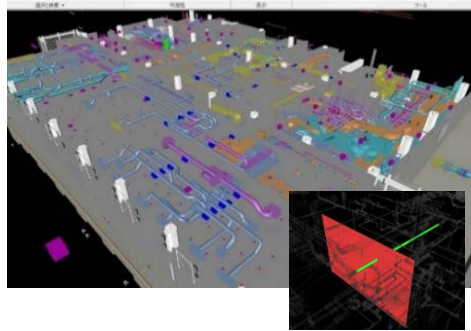
- Regarding i-Construction,*1 the government will expand the range of application to all processes, including construction and maintenance of bridges, tunnels, and dams, as well as building sector, by the FY2019 and strongly support the use of three dimensional data and the adoption of ICT for their application to small and medium constructors and local governments.

*1 to integrate ICT technologies into construction sites in order to increase productivity.

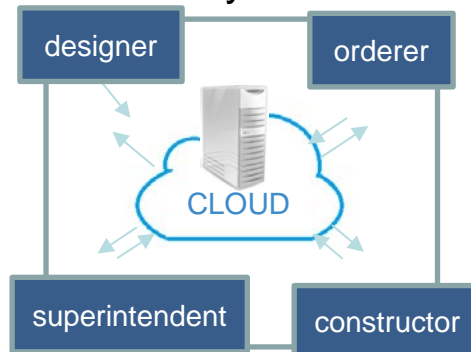
- We will order construction on condition of using efforts to increase productivity.
- We evaluate efforts to increase productivity in bidding and records after completion.

Efforts to do

- We will order construction on condition of using following;
 - (1) BIM in construction
 - (2) information sharing system
 - (3) ICT earthworks



trial



use



trial

- (4) Electronic blackboard



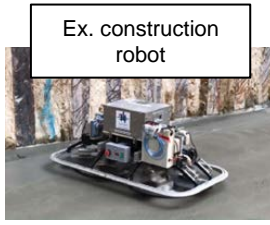
trial

Evaluation at bidding

- We evaluate technical proposals to increase productivity in bidding.



Ex. PREFABRICATED REINFORCEMENT UNIT



Ex. construction robot

Evaluation after complete

- We evaluate efforts to increase productivity of construction in records after completion.

I am in charge of “Wooden Government Building Office”.

We promote to use wood in public buildings.

- To build government buildings with wood structure/interior etc.
- To develop technical standards for wooden government buildings.

background

Resolution for Promotion of Incombustibility of Urban Buildings.
(1950 RESOLUTION OF THE HOUSE OF REPRESENTATIVES)

- Government buildings should be built by noncombustible materials.

➡ Government buildings have been mainly built of reinforced concrete or steel.



The act for Promotion of Use of Wood in Public Buildings(2010)

▪ In order to contribute to the increase in demand for wood, National government shall endeavor to take the lead in wood utilization in public buildings.

➡ The Government is promoting wooden structures and wooden interior decorations in public buildings.

Building government buildings with wood structure/interior etc.

(1) The Low-rise government buildings should be build with wood structure.

➡ Approx. 50% of Low-rise government buildings were build with wood structure in 2016.



Hiratsuka Common Building for the government offices
conference building



Yokohama Plant Protection Station Tsukuba Center

(2) All the government buildings should be decorated by wooden interior etc.

➡ Approx. 100% of government buildings that have visitors were build with wood interior in 2016.



Shizuoka District Legal Affairs Bureau Fujieda



Sendai Common Building for the government offices
entrance hall

Developing technical standards for wooden government buildings.

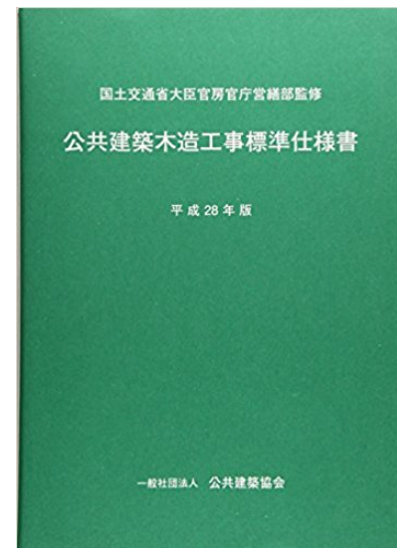
(1) Planning and Designing Standard for wooden Constructions(2011)

Technical matters and standard methods for Planning and Designing about durability, structural design, fire-resistant etc. are compiled.



(2) Standard Specification for wooden constructions(2013)

Standard materials and methods etc. for wooden public constructions are compiled.





Thank you for listening !