BIM at the Government Buildings Department in Japan

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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.

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>BIM in design</th>
<th></th>
<th>BIM in construction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use of BIM</td>
<td>Number of projects</td>
<td>BIM Utilization rate</td>
<td>Use of BIM</td>
</tr>
<tr>
<td>2014</td>
<td>5</td>
<td>29</td>
<td>17.2%</td>
<td>0</td>
</tr>
<tr>
<td>2015</td>
<td>6</td>
<td>35</td>
<td>17.1%</td>
<td>3</td>
</tr>
<tr>
<td>2016</td>
<td>7</td>
<td>27</td>
<td>25.9%</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>91</td>
<td>19.8%</td>
<td>4</td>
</tr>
</tbody>
</table>

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

* Since 2018, we use BIM more than ever.
Three BIM projects (2018)

- 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.

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

![Diagram: 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.
To increase productivity in Government Buildings Department in Japan

- 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
  4. Electronic blackboard

**Evaluation at bidding**

- We evaluate technical proposals to increase productivity in bidding.

**Evaluation after complete**

- We evaluate efforts to increase productivity of construction in records after completion.
Appendix, Introduction of my work.

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.

(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.
(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.


Standard materials and methods etc. for wooden public constructions are compiled.
Thank you for listening!