Measures for aging public facilities and infrastructure in Japan

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The deterioration of infrastructure built in the 1960s and 1970s is a growing problem in Japan.

Sasago Tunnel accident (2012)

- Corrosion of a bridge pier (MIHARASHI Bridge (Built in 1971))
- Corrosion of rebar and peeling of concrete (A bridge on Metropolitan Expressway (Built in 1963))
Deterioration of Government Buildings

Built in 1954.
Although damaged by the Great East Japan Earthquake, still in use after minimal repairs.

Touhoku Regional Development Bureau, MLIT
Background

Proportion of total floor area by age
results from a survey on national government buildings, conducted by MLIT in July 2014

Facilities over 30 years old account for about 40% of the total and the share is expected to keep increasing.

The total floor area of existing government buildings (about 15,000 in number) is about 49 million m²
A low birth rate and an aging population will make it difficult to finance proper maintenance of infrastructure.

<table>
<thead>
<tr>
<th></th>
<th>1965</th>
<th>2014</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 65 and over</td>
<td>6%</td>
<td>26%</td>
<td>39%</td>
</tr>
<tr>
<td>Age 19 and under</td>
<td>37%</td>
<td>17%</td>
<td>13%</td>
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### Goals

1. To establish safe and resilient infrastructure systems
2. To establish comprehensive infra-management systems
3. To strengthen the competitiveness of maintenance business

### Role sharing between MLIT and Ministries

<table>
<thead>
<tr>
<th>MLIT</th>
<th>Ministries</th>
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<tbody>
<tr>
<td>Development and Revise of Technical Standards</td>
<td>Maintaining Buildings</td>
</tr>
<tr>
<td>Giving some advises on site</td>
<td>Maintenance System</td>
</tr>
<tr>
<td>Lecture, discussion, BIMMS-N etc.</td>
<td>Maintenance Plan</td>
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Database system for national government buildings

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**MLIT**
- Head Office
- Branch Office

**Ministries**
- Head Office
- Branch Office

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Building Information System for Maintenance and Management Support in National Government (BIMMS-N)

- Survey on maintenance of government buildings
- Basic information of facilities
- Records of repairs
- Medium- and long-term maintenance plan
- Records of periodic checks
Optimizing facility utilization (Renewal)

-YOKOHAMA Local Meteorological Observatory-

Before

- Built in 1927
- Important Tangible Cultural Properties designated by Yokohama City

Extension

Refurbishment of existing building

After

- Design by Tadao ANDO

Built in 1927
Important Tangible Cultural Properties designated by Yokohama City

Extension

Refurbishment of existing building

designed by Tadao ANDO
Optimizing facility utilization (Renewal)

- IBUSUKI tax office -

Before

Built in 1975

After

Refurbishment of existing building

Extension (entrance, stairs, elevator etc.)
Optimizing facility utilization (Conversion)

- National Archives of Modern Architecture -

**Before**
Legal Training and Research Institute
(Built in 1971, 1984)

**After**
National Archives of Modern Architecture
Optimizing facility utilization (Conversion)

- Examples of Local Government -

Elementary school → Nursing home

Junior high school → Hot-spring resort
Appendix

- BIM at the Government Buildings Department in Japan -
Three BIM pilot projects since 2010

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

Now (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 will be applied only if architects or constructors propose the use of BIM.
Thank you for listening!