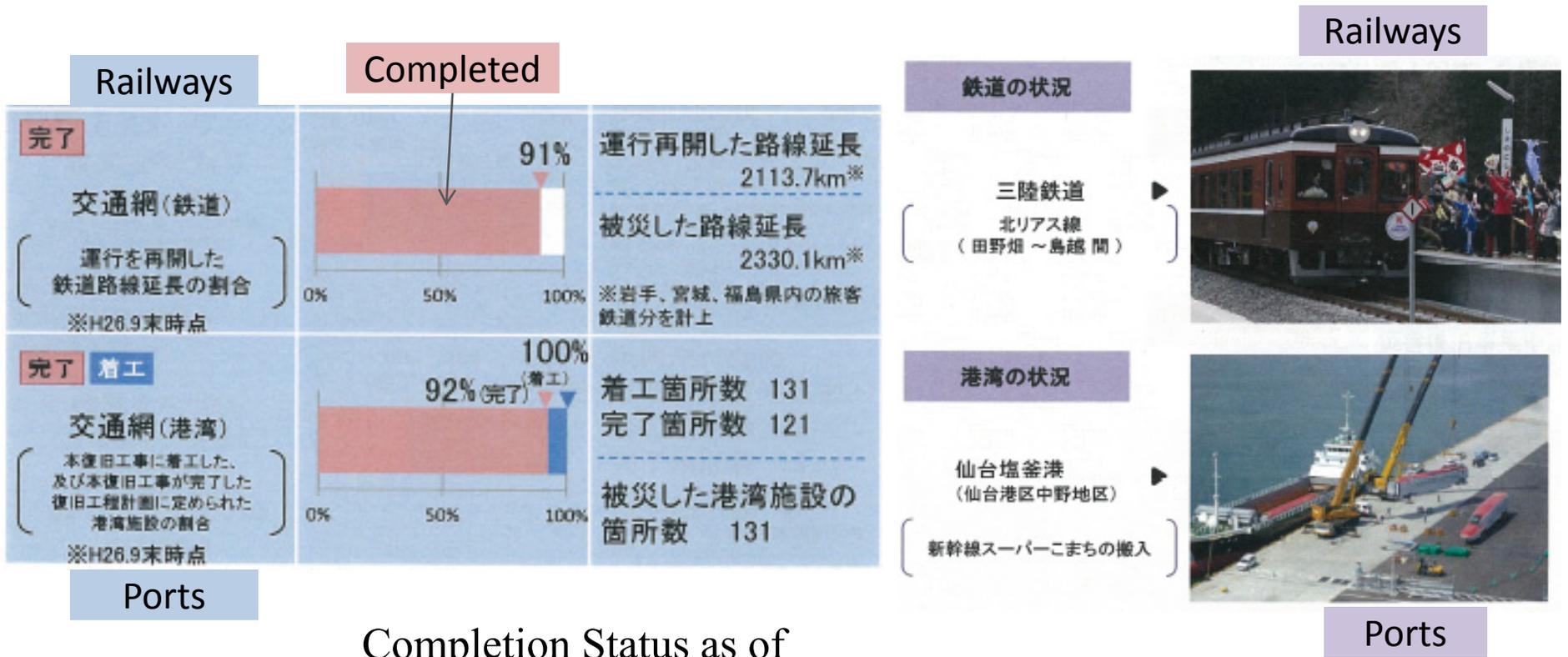


# **Report: Examples of Recovery Proposals and Recovery Process**

Mitsuru Kawamura  
Nihon Sekkei, Inc.  
Tokyo/Japan

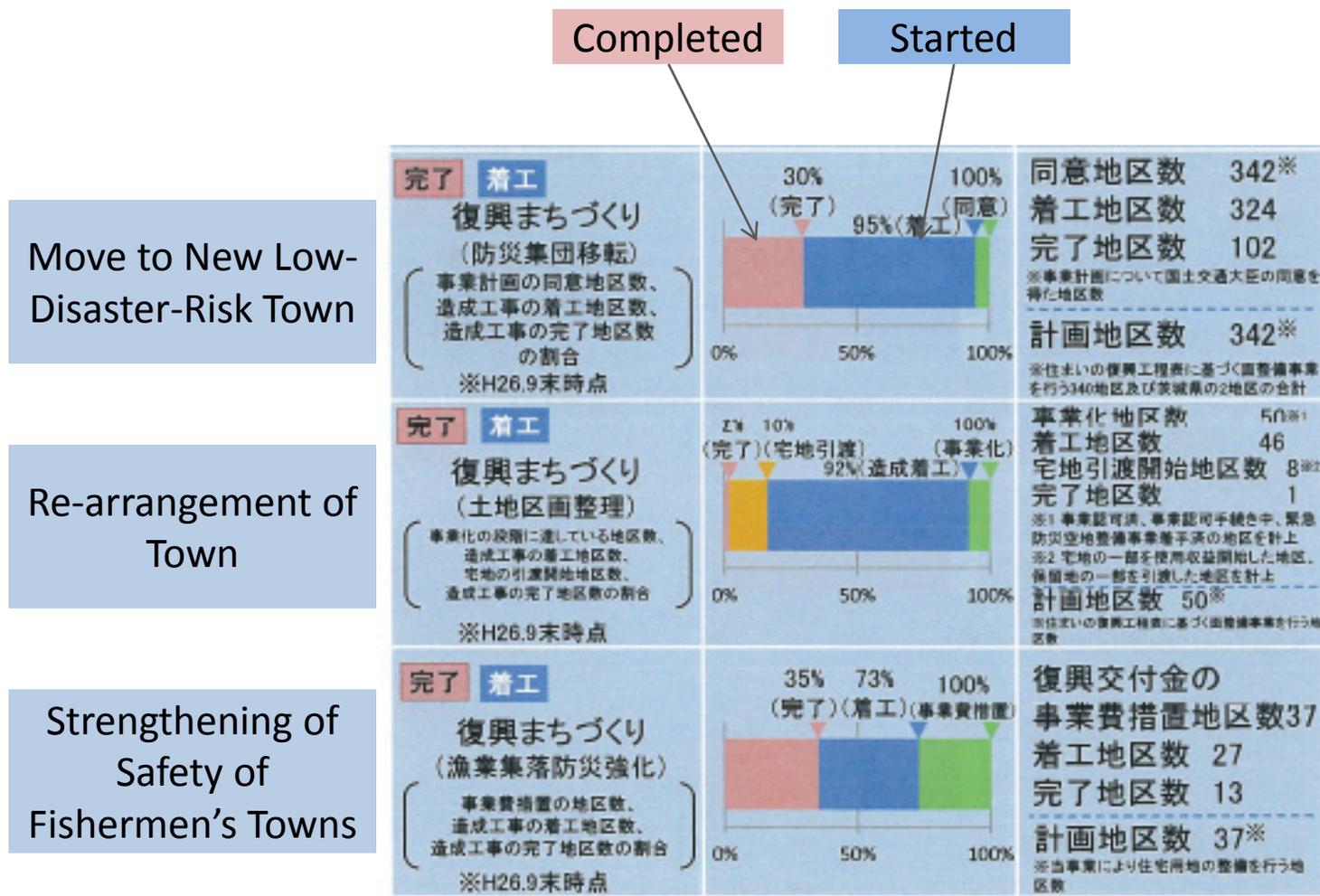
# Re-construction Status Information by Reconstruction Agency

According to the information by Reconstruction Agency under Minister of Re-construction, re-construction completion status is pretty high, some are over 90% especially for the road or infrastructure in the city.



Completion Status as of September 2014

However, restoring of towns and residential might be relatively slow.



Completion Status as of September 2014

City Center  
Infrastructure



After  
Disaster



March  
2013

*Especially in such*

Local Seaside Towns  
which was totally damaged  
as a whole town





図2-16 三陸大津波の教訓を伝える石碑(1).

大津波の教訓  
高き住居は  
児孫に和楽  
想へ惨禍の  
大津浪  
此処より下に  
家を建てるな



図2-17 三陸大津波の教訓を伝える石碑(2).

### Stone Monument of Large Tsunami

**A house at the heights is well-being for your children and grand children.  
Remember the large Tsunami that caused a great terrible disaster.  
Don't build your house under this level.**

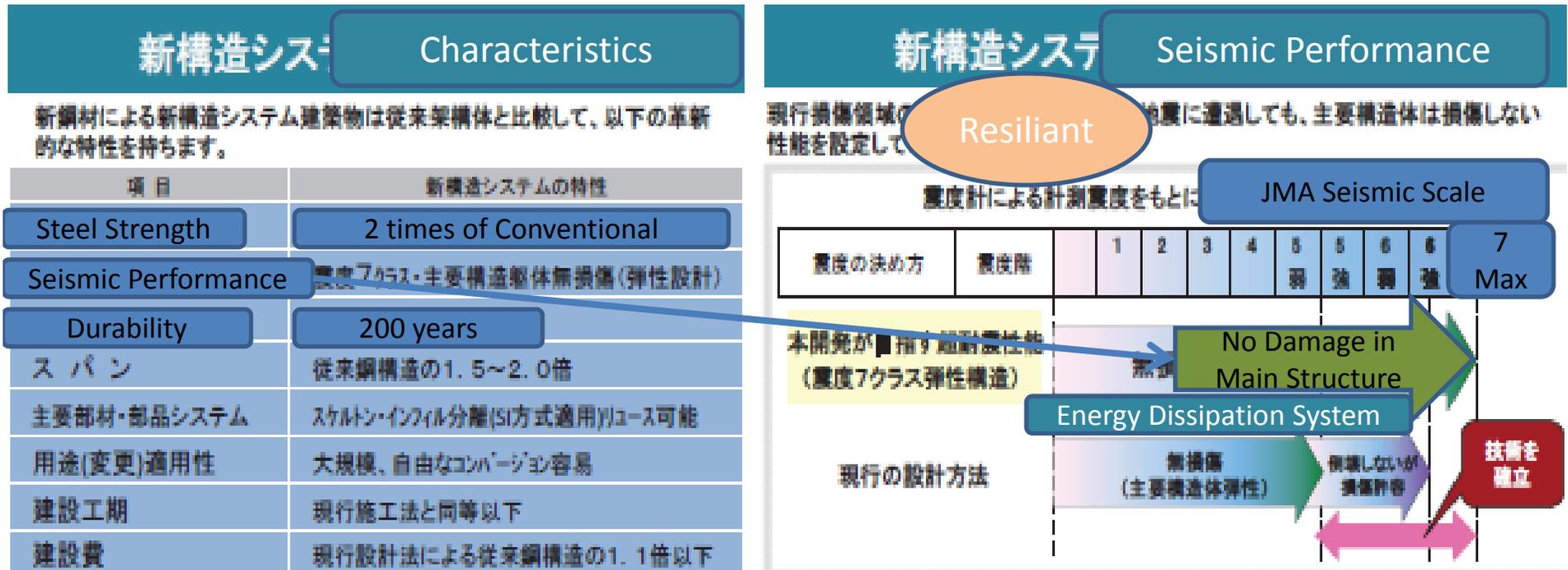
Stone monuments were build on the position which Sanriku tsunami run-upped in 1896

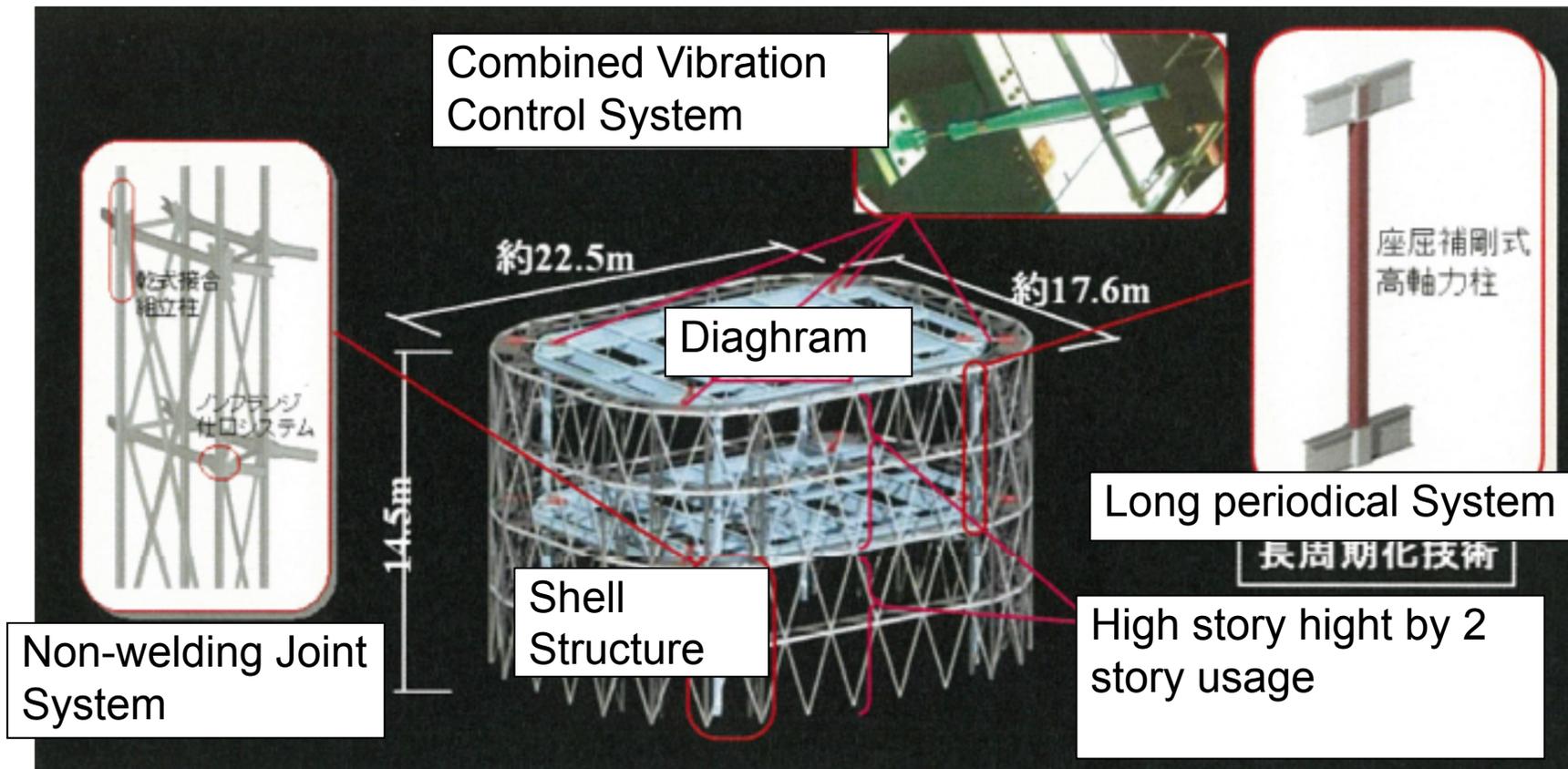
*We do something. Proposing some ideas.*

## An example of Unique Proposals for Reconstruction

### A Proposal with Using New Structure System Building

This New Structure System Building was studied from 2004 to 2008 by the combined organization of government body and industrial sectors. It was a system using Innovative Structural Materials and the concept is described as below.





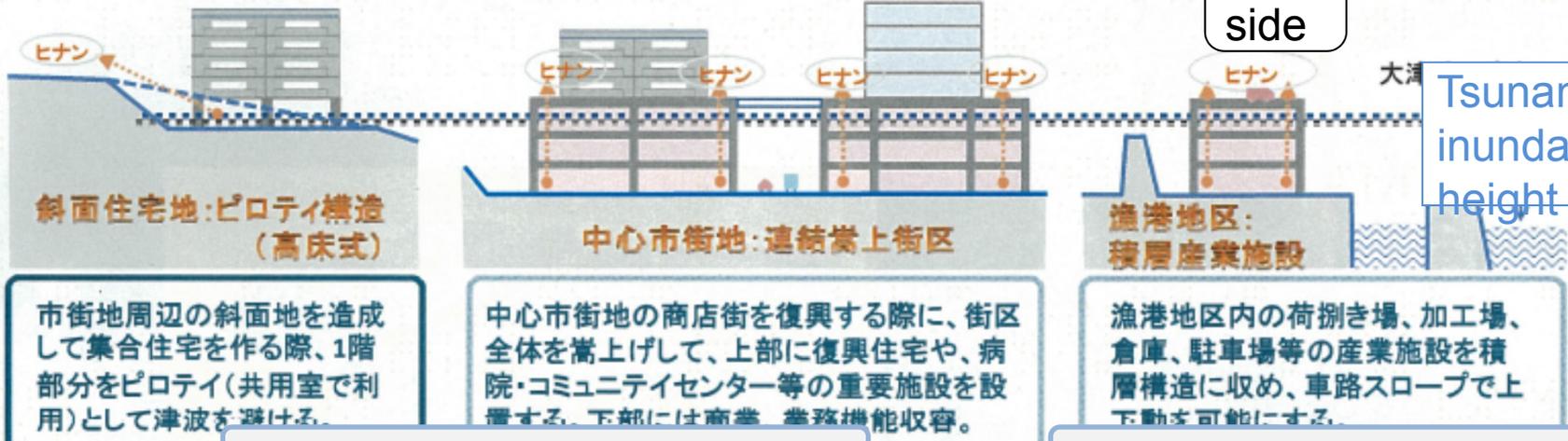
Basic Concept of System

Higher Sites

Mid-center of Seaside City

Sea side

Tsunami inundation height



Towns Uplifted by Base Structure

Long-span Multi-story Structure



Concept of Proposed Re-constructed City with New Structure System Buildings

# *Implemented?*

## **Some examples of Re-constructed or Repaired Projects**

Aqua-Marine Aquarium



埠頭に並ぶよ  
リンふくしま

As Built



震災直後の

Damaged



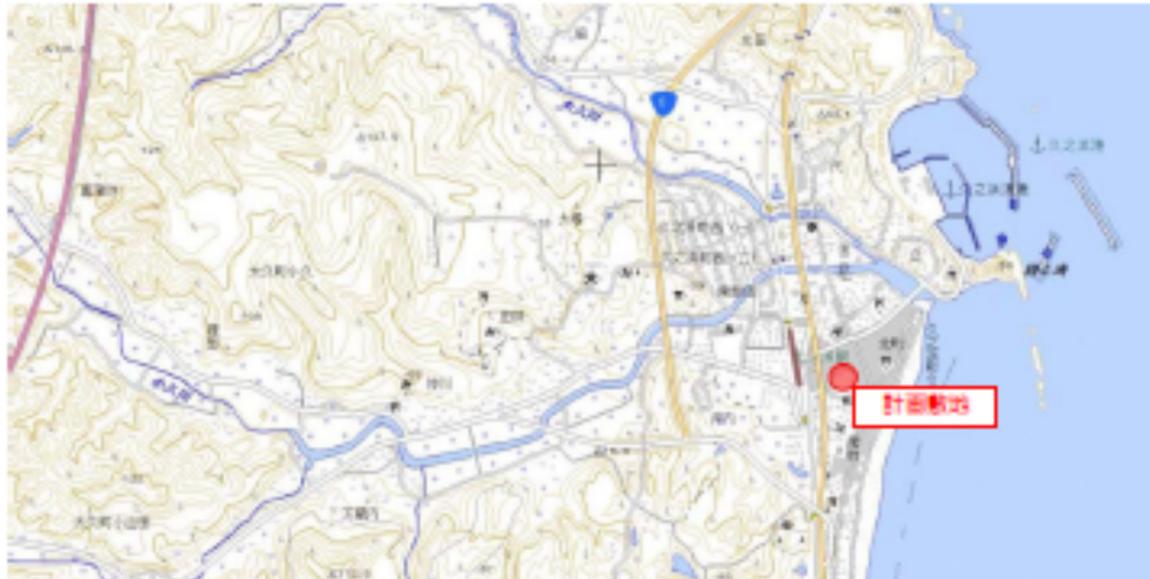
再

Repaired and Re-used

## A Tsunami Evacuation Building

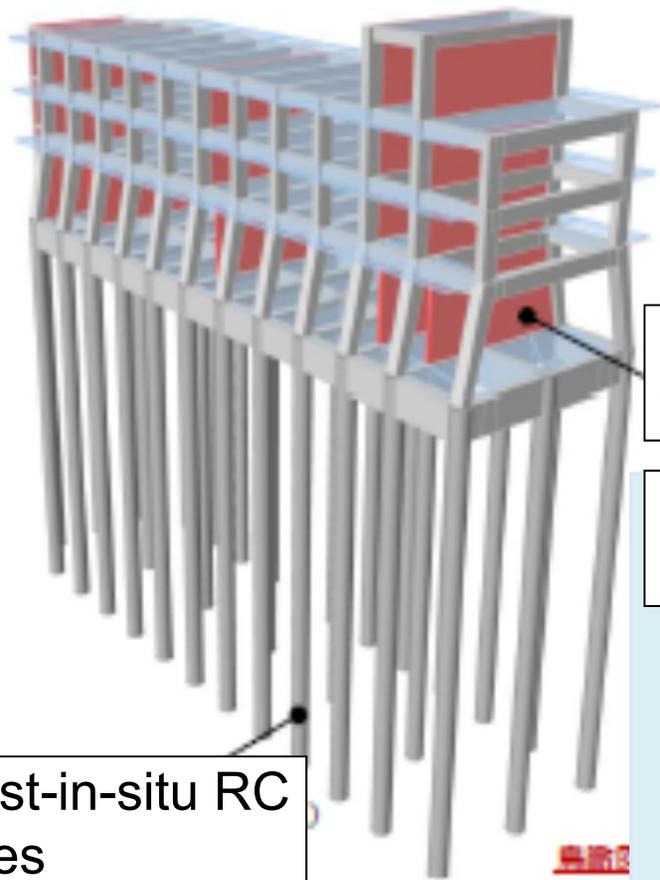
This is an example of a Tsunami evacuation building actually designed and to be constructed at seaside of Iwaki City in Fukushima Prefecture.

The design considered the allocation of structural walls against Tsunami load, column shape at 1<sup>st</sup> floor and the core system, etc..



Site

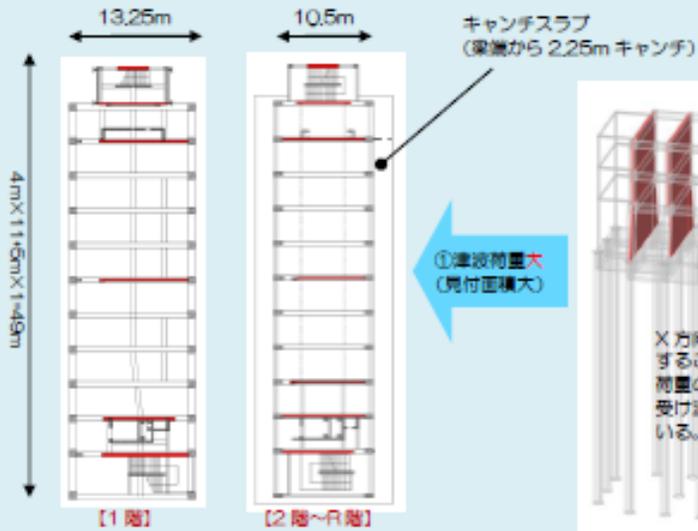
Cast-in-situ RC Piles



Structural walls

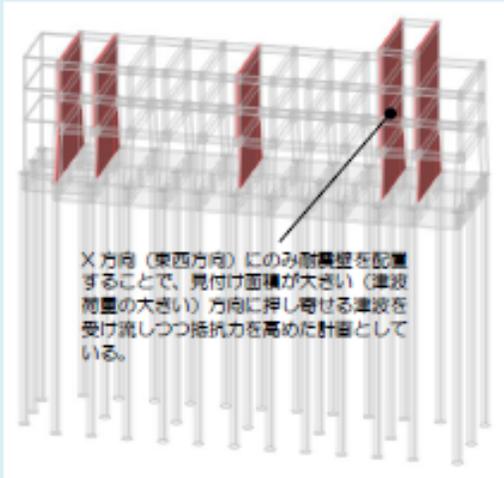
Design Concept 1

### Structural Wall System and Pure Framing System



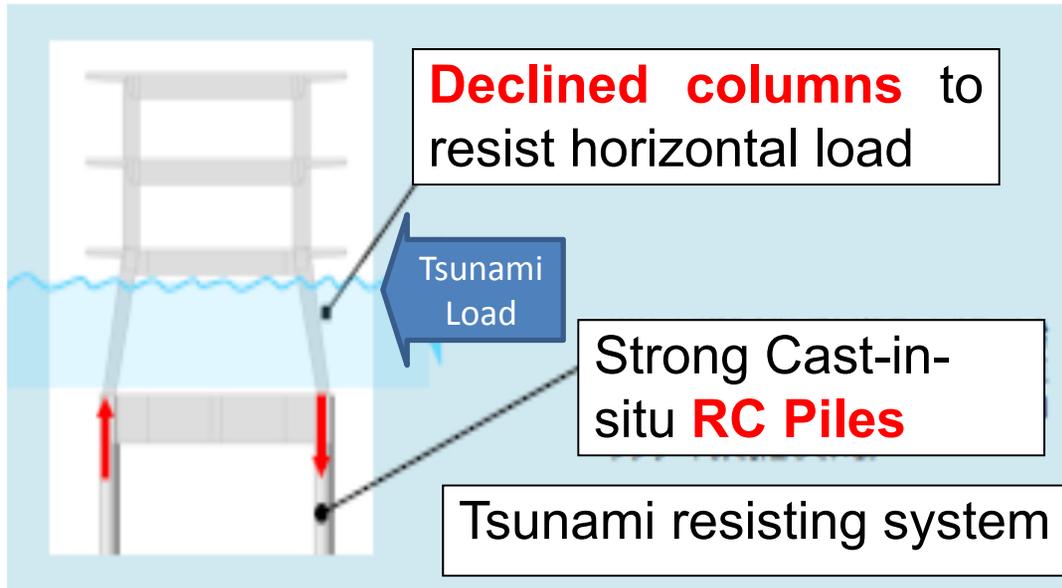
②津波荷重小  
(見付面積小)

津波荷重方向と架構形式



X方向 (東西方向) にのみ耐震壁を配置することで、見付け面積が大きい (津波荷重の大きい) 方向に押し寄せる津波を受け流しつつ抵抗力を高めた計画としている。

耐力壁配置概略図



Design Concept 2

New Tsunami Load

Tsunami resisting system in the short-span direction

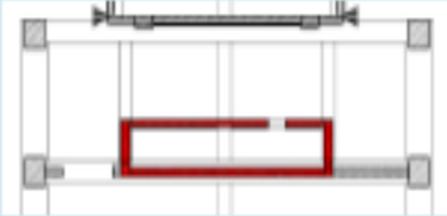
Design Concept 3

Survival Core

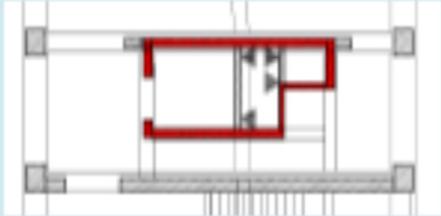
サバイバルコア

RC Core contains supply routes

ルートをRCコア(柱間部材)の設計時に津波



[Y11-Y12/1F]



[Y2-Y3/1F]

Should we design and construct any building in the area inundated by high Tsunami?

What kind of design concept shall we apply, not only Structural Design but Architectural and Town Planning Design?