

# Damage to and Restoration of Kumamoto Castle

Kumamoto City Tourism Exchange Division

## Kumamoto Castle

- Built by Kiyomasa Kato in 1607
- Consists of many important cultural properties (turrets and stonewalls) and reconstructions (the castle keeps are reconstructions)
- Japan's no. 1 castle for 3 consecutive years on Tripadvisor (2013-2015)
- 1.7 million annual visitors (as of 2015); the largest tourist attraction of Kumamoto City

## [Details of the Damage]

April 14, 2016, 21:26 JST , 'foreshock M 6.5'

Type	Quantity	Details
Important cultural properties	10 structures	80 m of the Long Wall destroyed and 9 structures with fallen roof tiles and collapsed outside walls
Reconstructions	7 structures	The castle keeps with fallen roof tiles, cracked walls and collapsed stonewalls
Stonewalls	Collapsed in 6 places	Swollen and distorted in many places

April 16, 2016, 01:25 JST, 'main shock M 7.3'

\*Including the damage caused by the foreshock

Type	Quantity	Details
Important cultural properties	13 structures	2 collapsed structures, 3 partially collapsed structures and others with damaged roofs and walls
Reconstructions	20 structures	5 collapsed structures and others with collapsed stonewalls in the lower section and damaged roofs and walls
Stonewalls	517 collapsed, swollen or distorted surfaces (of which collapse in 50 places of 229 surfaces)	Approx. 23,600 m <sup>2</sup> (29.9% of the total surface area) (of which 8,200 m <sup>2</sup> (10.3% of the total surface area))
Ground	Sunken and cracked in 70 places	Approx. 12,345 m <sup>2</sup>
Conveniences / Management facilities	26 structures	Damaged roofs and walls

# The Castle Keeps after the Main Shock (April 16)

No significant change is seen from the west, but notice the damage to the main keep's roofs and to the top left corner of the small keep's stonewall.



Aerial view of the castle  
keeps from the east

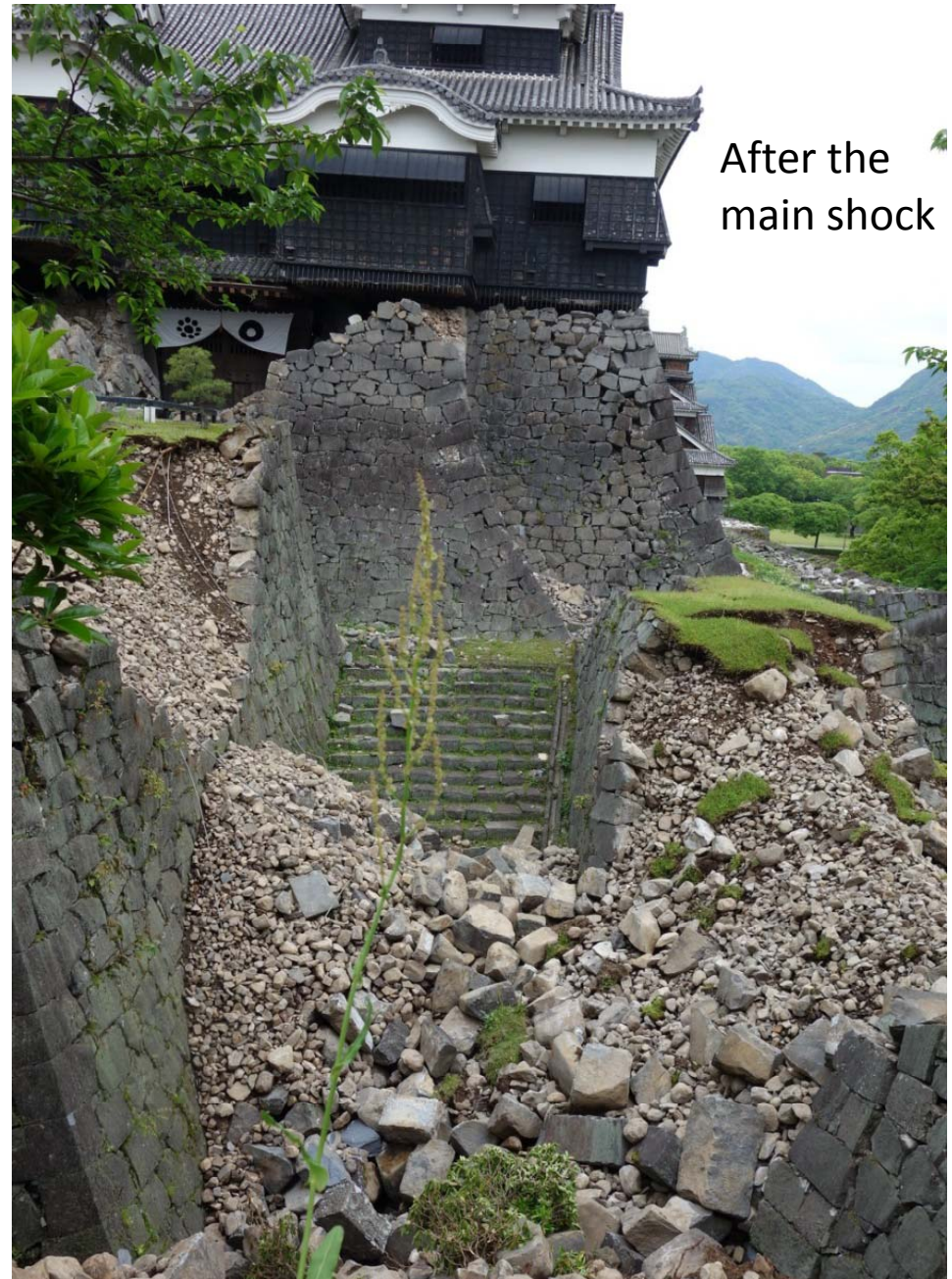


# Collapsed Stonewalls of the Small Castle Keep

Before the earthquake



After the main shock



# Important Cultural Properties – Uto Turret and Tsuzuki Turret

**The morning of April 15**



**After the main shock**



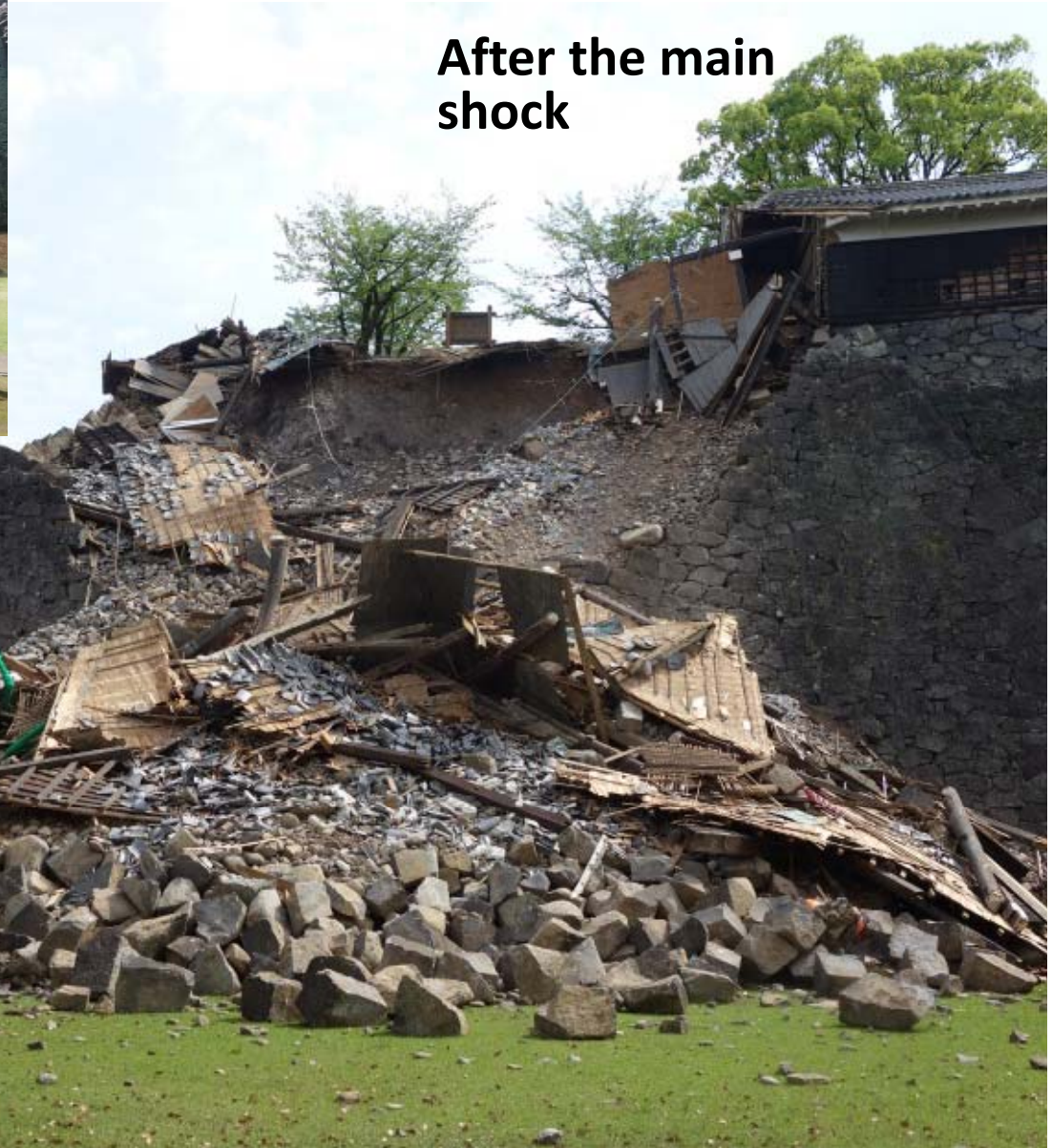
# Important Cultural Property – Akazumon Gate



# Important Cultural Property – Kita Juhachiken Turret



**Before the earthquake**



**After the main shock**



# Square Entrance to Nishi Otemon Gate

**Before the earthquake**



**After the main shock**



# South Eastern Corner of Iidamaru Gokai Turret

The morning of April 15

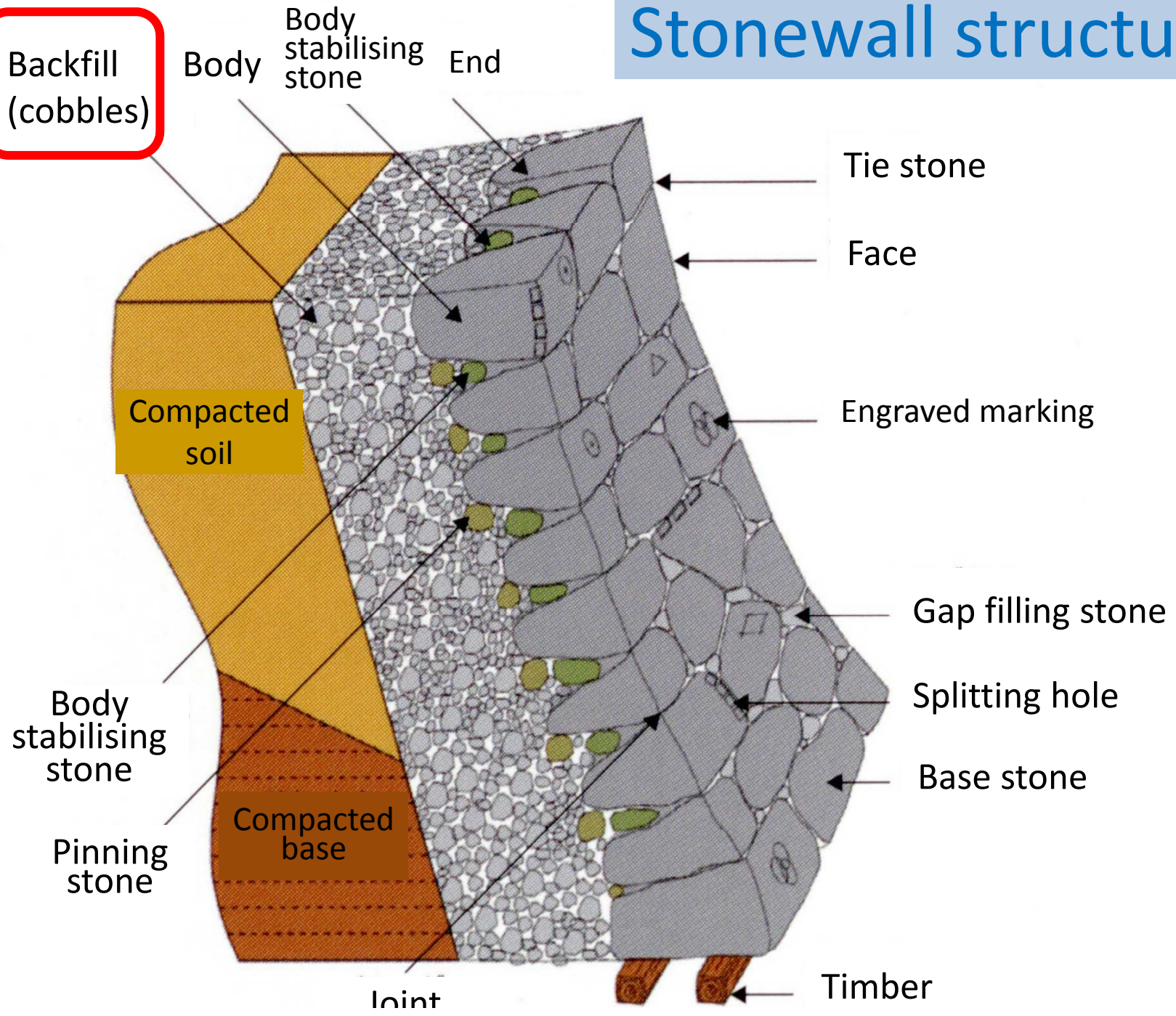


After the main shock



# Stonewall structure

Backfill (cobbles)



Body Body stabilising stone End

Tie stone

Face

Compacted soil

Engraved marking

Body stabilising stone

Gap filling stone

Pinning stone

Compacted base

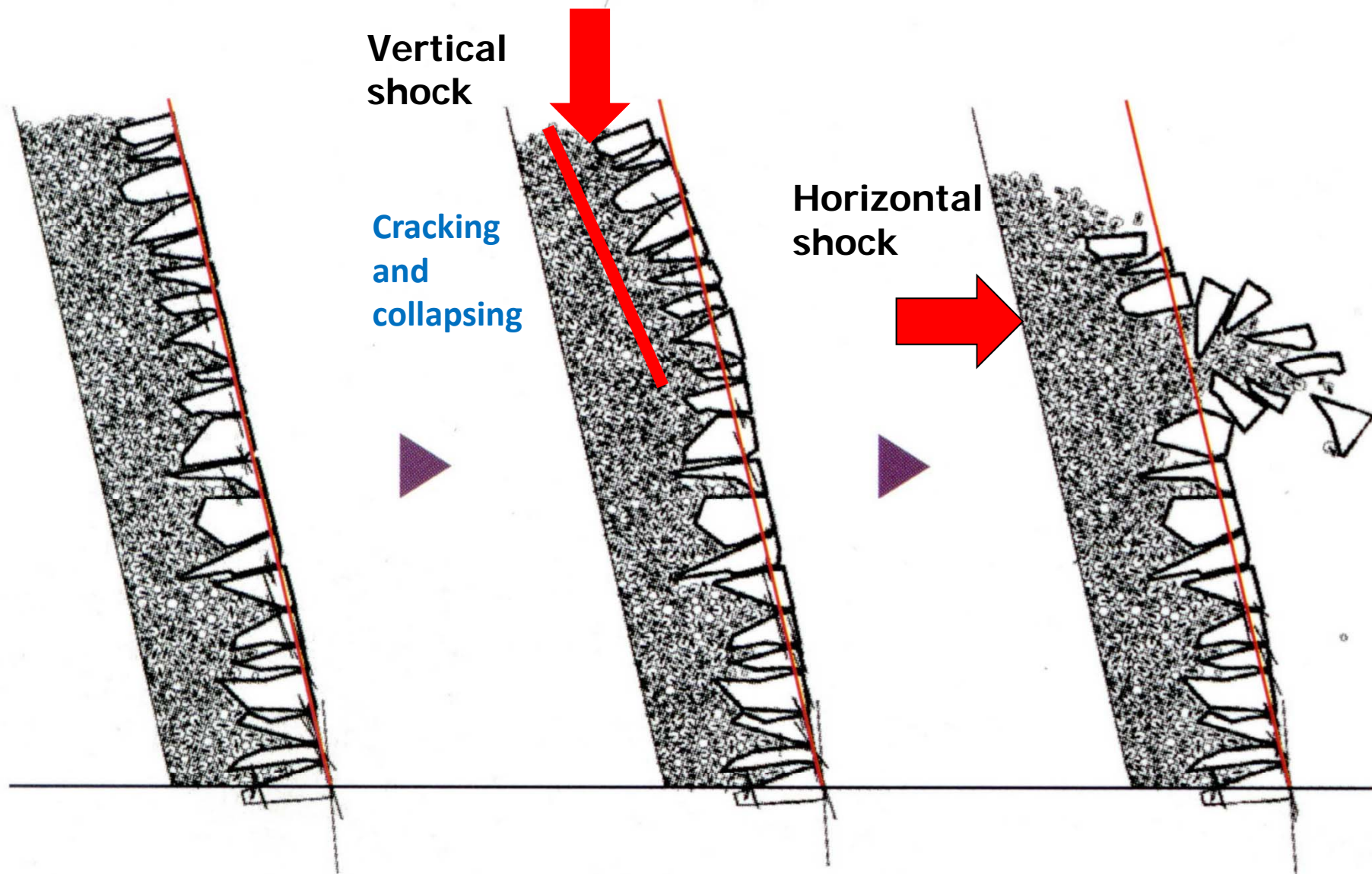
Splitting hole

Base stone

Joint

Timber

# Stonewall Damage – Model 1





Stonewall damage by the collapsed backfill

# The First Step to the Restoration of the Castle

- Prevention of cracks in the ground by using sheets and protection of construction members
- Implementation of temporary work



**Sheet curing for  
important cultural  
property members**



Tsuzuki Turret of Uto Turret



The Long Wall

# Stone removal after the collapse





# Iidamaru Gokai Turret

The first stage of collapse prevention completed



# Higashi Juhachiken Turret (Important Cultural Property)



**Before the disaster**



**After the main shock**

Sorting and storing of removed construction members



# Basic Concept of Kumamoto Castle Restoration

On the basis of Basic Policy for  
Kumamoto Castle Restoration (Draft)

- 1 The earliest possible reconstruction of the castle keeps as the top priority
- 2 Careful restoration without losing cultural property values
- 3 The earliest possible regeneration of the castle as a tourist attraction while showing the stage-by-stage restoration process to the public
- 4 Consideration of restoration methods involving cutting-edge technologies in the light of safety

## Point ① Preservation of Cultural Property Values

- The 'important cultural properties', such as stonewalls and buildings, should be essentially restored using traditional methods and the same members as before.
- Careful restoration by traditional methods is time consuming but helps to preserve cultural property values.

## Point ② Part of Tourist Attraction

- Castle restoration in progress is 'a must see now' which has a high tourist value.
- Plans are needed to show the restoration progress to the public.

## Point ③ Consideration for Safety

- The earthquake occurred during closing time (at night), hence no casualties or deaths – a blessing in disguise .
- If the earthquake occurred during opening time...
  - ⇒ 5,000 visitors a day
  - ⇒ Several hundred people could have been injured by collapsed stonewalls, etc.
  - ⇒ ‘Cultural properties’ should not be exempt from safety measures.

# Points of Kumamoto Castle Restoration (Summary)

- So far ▪ ▪ ▪ A main focus on the balance between ‘cultural property preservation’ and ‘tourist attraction’
- From now on ▪ ▪ ▪ ‘Cultural property preservation’ and ‘tourist attraction’, plus ‘safety improvements’
  - Reinforcement of the stonewalls and buildings (by combining traditional methods and cutting-edge technologies)
  - Plans needed to ensure safety by providing visitor routes, evacuation routes, disaster prevention facilities, etc.

## Future Plans (Targets)

By the end of 2016

- ▪ ▪ Finalisation of the Basic Policy for Kumamoto Castle Restoration

By the end of 2017

- ▪ ▪ Formulation of basic restoration plans
- Clarification of the restoration work schedule

2019 ▪ ▪ ▪ Restoration of the Castle Keeps

Around 2036 (approx. in 20 years time)

- ▪ ▪ Completion of the restoration