

# Repair of Sakura Gomon's Ishigaki [Stone Wall]

## Damage from Takamatsu Air Raids

When the gate was lost to fire in the air raids, the *Ishigaki* [stone wall] was also severely damaged. The surface was discolored red, and cracks and broken stones were noticeable. The restoration of the Sakura Gomon began with repairing the stone wall that formed its foundation.



Broken Stone (during dismantling)



Dismantled Stone Wall



Reddish Discolored Stone Wall (before repair)

## Restacking and Reinforcing Stone Wall

In repairing a stone wall, the original stones are usually re-stacked in their original positions. Only if it is unavoidable due to deterioration and other reasons, a part of it may be replaced with new stones. After much discussion, we decided to use the burned stones as much as possible for they were a trace of history of the bombing of Takamatsu at the Sakura Gomon. For this reason, many investigations and considerations went into the project. The strength of the stone was also examined by ultrasonic waves and other methods. Broken stones were reused by connecting them with bolts and pins. In addition, the stone wall was tested to verify its stability when the gate structure was revived. Then, the stones were re-stacked on the site.



Cracks were reinforced with stainless steel U-pins.



Broken stones were put together with stainless steel bolts.



The durability of the stone wall was tested by loading steel plates that exceeded the structural weight of the gate.