

Renewed Coastal Plane Wave Generator - For assessment of erosion control measures for long-extended coast -

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1. Sole experiment facility for plane wave generation dedicated to coast littoral sediment transport

A test facility with a coastal plane wave generator was built in 1973 when the Public Works Research Institute ("PWRI") was relocated to Tsukuba for organizational integration, in order to obtain technical findings that could help determine policy for coastal protection projects. Since then, in response to the frequent occurrence of coastal erosion, many hydraulic model experiments on movable beds have been conducted in order to develop countermeasure technologies and solve issues along individual coasts. This coastal plane wave generator is Japan's sole plane experiment facility of this scale dedicated to coastal sediment transport.

2. Update of wave generator and long-extended coast tank

The aged wave generator, which has been used over a quarter century, was repaired in a large scale.

First characteristic: The maximum experimental width of the water tank was 24 m in the old facility. In the new facility, the wave generator was extended to 60 m by combining and expanding water tanks. With this extension, a wider area that is required for considering littoral drift management within such limited area as shown by the light blue area in Figure 2 (Model scale: 1/100) can be covered.

Second characteristic: With the number of wave generators and extension of water tanks, a group of these simple wave generators with high reliability can reproduce multiple wave directions with long coastline by changing arrangement. This is expected to contribute to solution of the phenomenon that coastline comes up and down like a seesaw due to change of wave direction resulting from seasonal changes or passage of a typhoon.

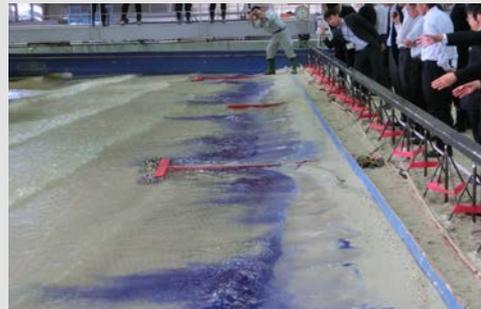


Figure 1: Wave generation facility contributing to study of coastal erosion countermeasure works

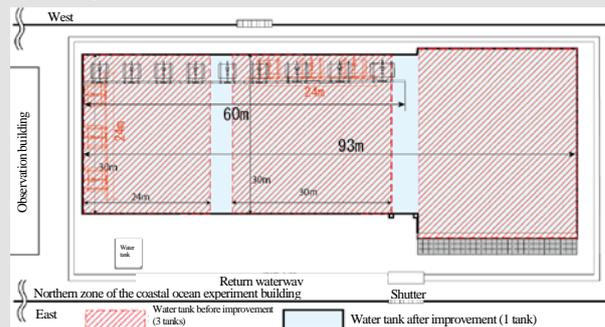


Figure 3: Tank scale after repair

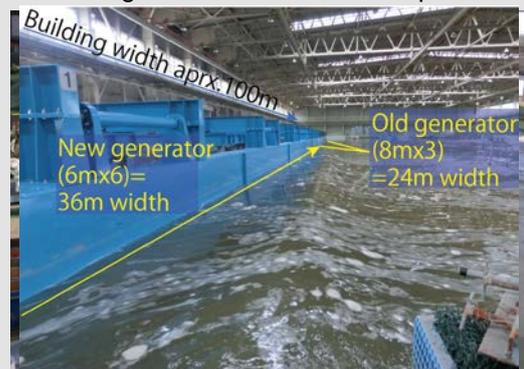


Figure 4: Group of generators after repair



Figure 2: Image of expanded experiment area after repair (Example of Kaike Coast)