Fig. 14: Time series of water surface displacement near the coast:
comparison between (a) measured and (b) calculated
target points for photograph analysis.
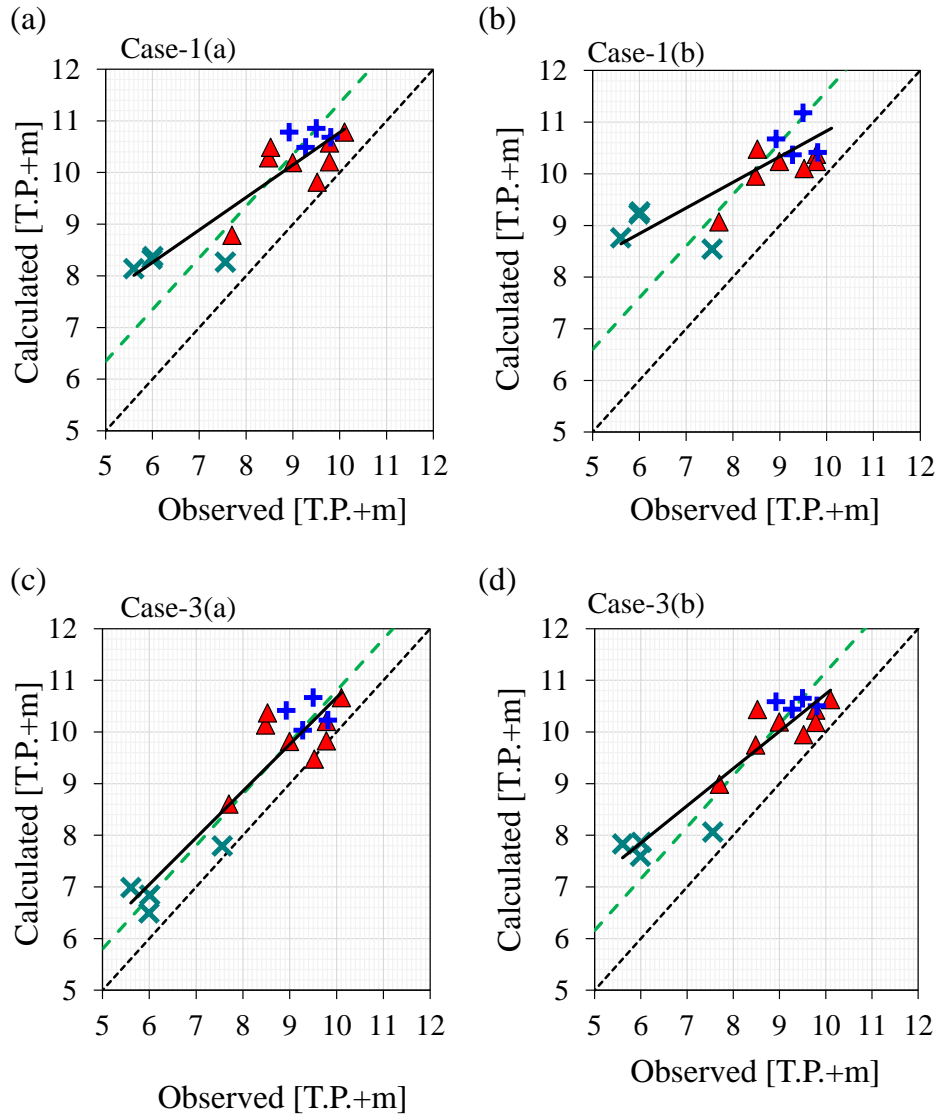
Fig. 15: Comparison between calculated and measured maximum heights. Symbols are the
same as those used for Fig. 11:

(a) Case-1(a) – C=0.0, buildings before tsunami;

(b) Case-1(b) – C=0.0, buildings after tsunami;

(c) Case-3(a) – C=0.01, buildings before tsunami;

(d) Case-3(b) – C=0.01, buildings after tsunami.

Elapsed time: 2120 s (+0 s)   Elapsed time: 2143 s (+23 s)   Elapsed time: 2152 s (+32 s)
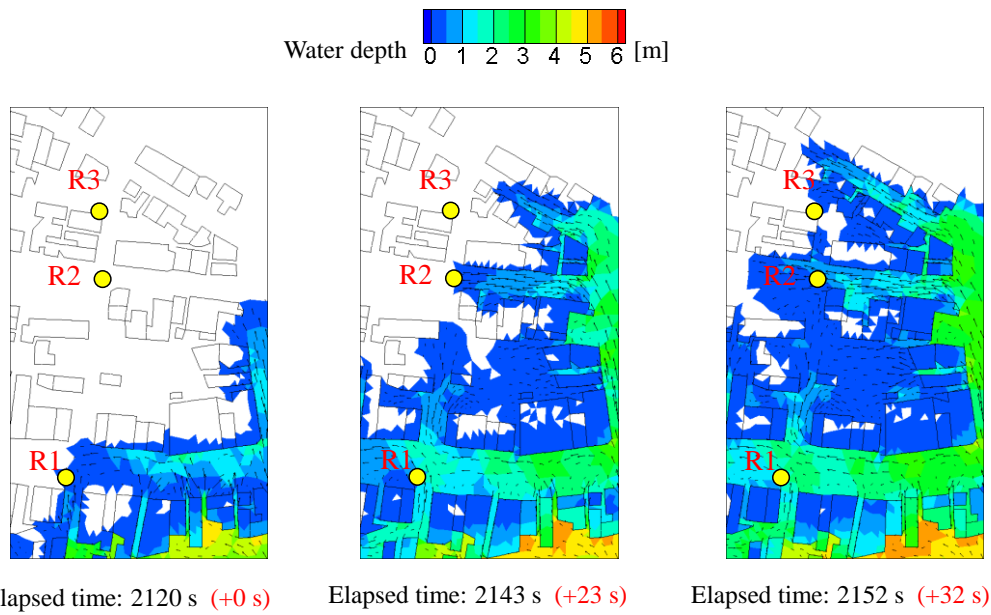
Fig. 16: Calculated wavefront propagation corresponding to the measured values in Fig. 13.
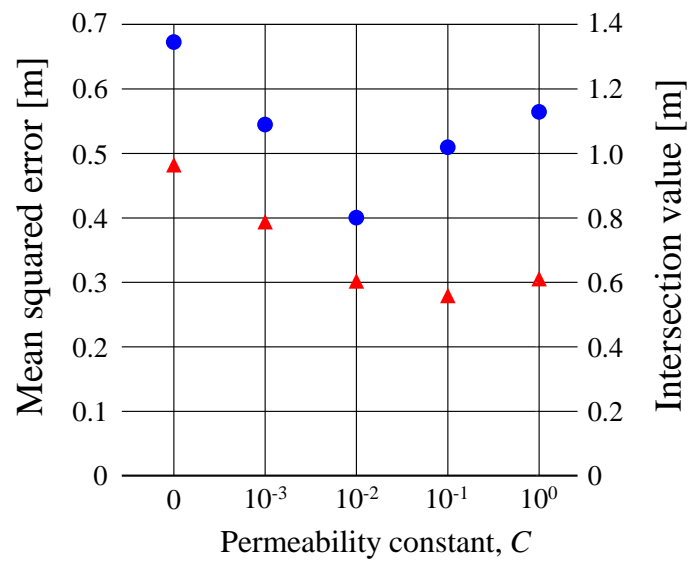

Fig. 17: Degree of regression by 1:1 slope line:

▲, mean squared error; ●, intersection value (difference from perfect agreement).
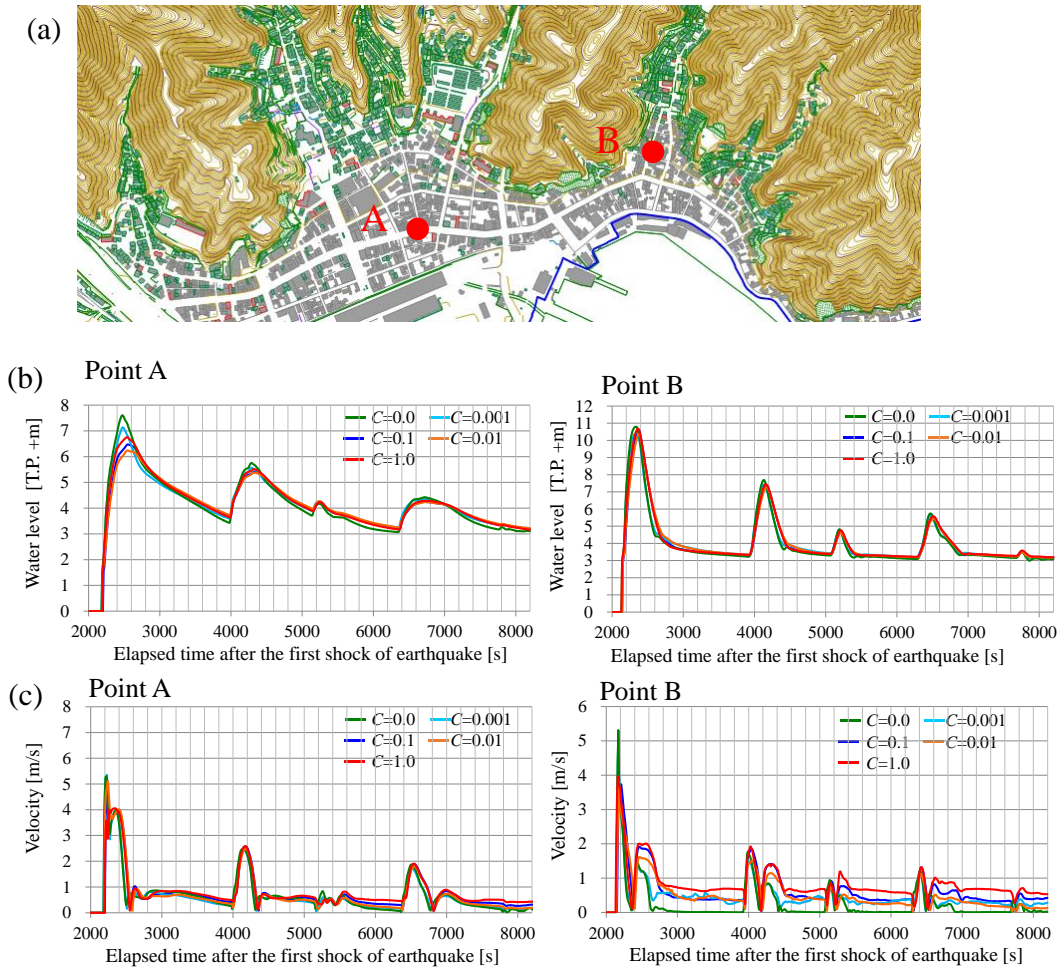
Fig. 18: Time series of flow variables at the city center:
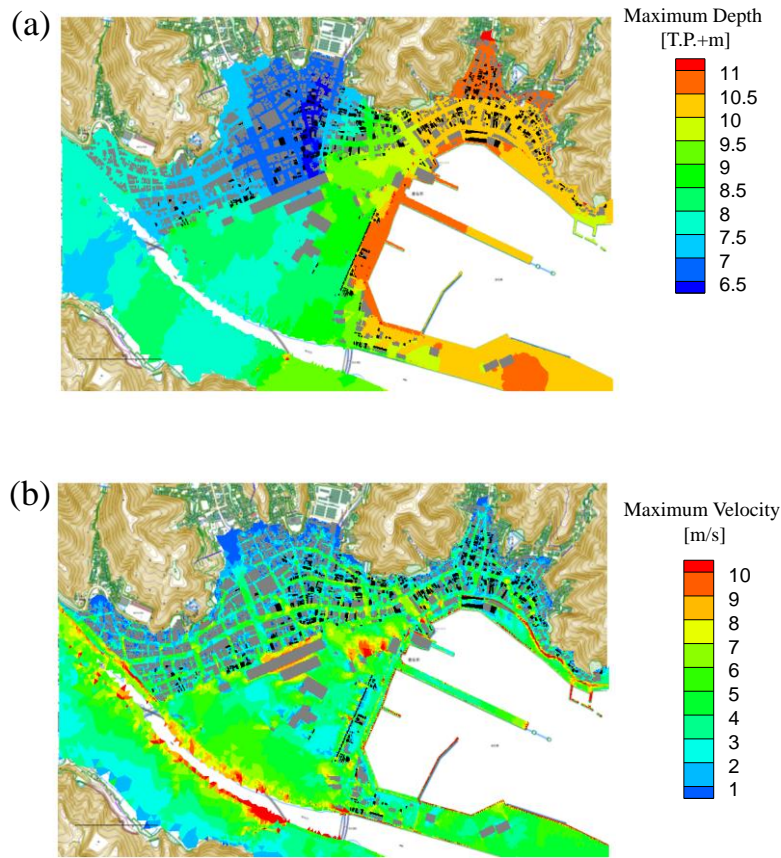(a) examination point, (b) water depth, and (c) flow velocity.

(a)

Maximum Depth
[T.P.+m]

	11
	10.5
	10
	9.5
	9
	8.5
	8
	7.5
	7
	6.5

(b)

Maximum Velocity
[m/s]

	10
	9
	8
	7
	6
	5
	4
	3
	2
	1

Fig. 19: Mappings of maximum depth and maximum flow velocity during flooding (Case-3(a)): (a) maximum depth and (b) maximum velocity.

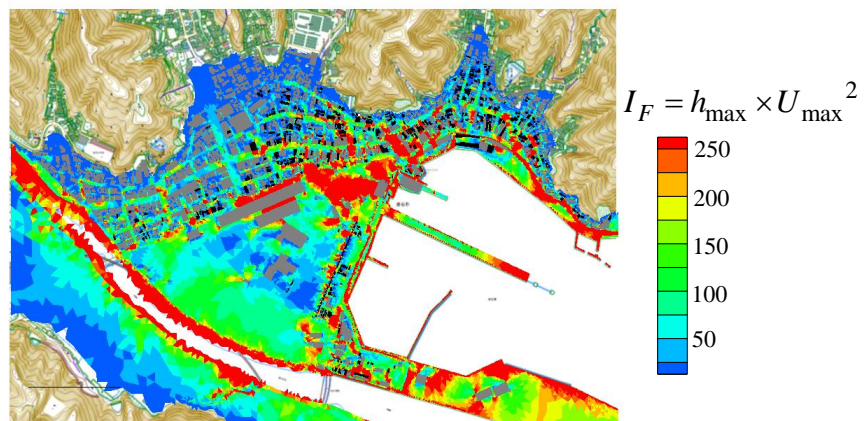$$I_F = h_{\max} \times U_{\max}{}^2$$

	250
	200
	150
	100
	50

Fig. 20: Z-value mapping for the original building array ($C = 0.01$).

(a)

40 m

10 m

Building Building Road Building

Road 10 m 10 m

Building Building

(b)

$$I_F = h_{max} \times U_{max}^2$$
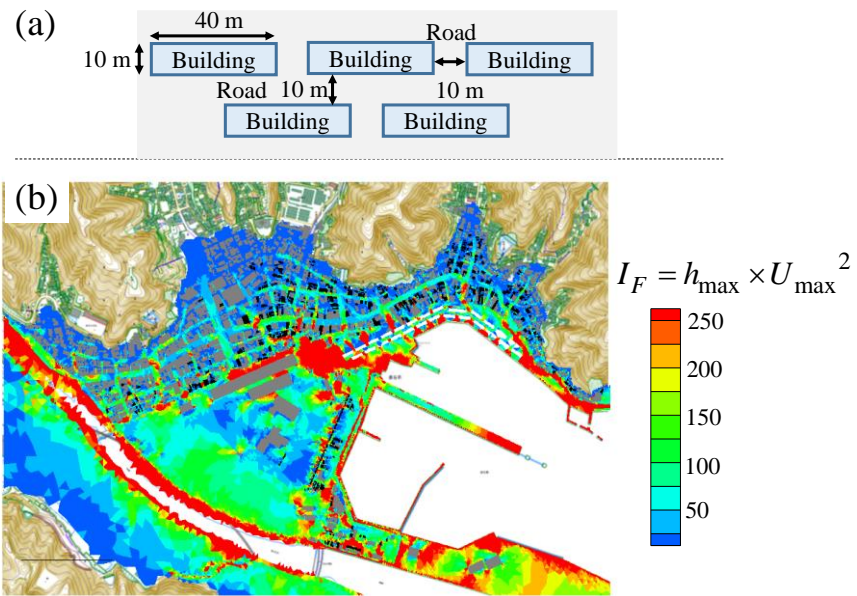
250
200
150
100
50

Fig. 21: Z-value mapping for the testing building plot ($C = 0.01$):
(a) building plot and (b) Z-value mapping.