
Measurement of microtremors in Kuroshima Church before and after seismic retrofitting

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We measured microtremors in Kuroshima Church before and after seismic retrofitting in order to obtain basic data of the vibration characteristics of a wooden and brick building. We checked the changes in vibration characteristics before and after the seismic retrofitting. The peak frequencies of the transfer functions were shifted to the high frequency region after the seismic retrofitting. The natural frequency of the primary vibration mode calculated at the top of the building increased by about 10% in the NS direction and 25 ~ 33% in the EW direction after the seismic retrofitting. We calculated the equivalent stiffnesses (horizontal component) of the building based on the transfer functions. As a result, we confirmed that the stiffnesses were increased by about 15% in the NS direction and about 50 ~ 70% in the EW direction, after the seismic retrofitting.
