

# Research Trends and Results

## Evaluating the Location of Manufacturing Establishments in Cities by Utilizing a Preliminary Tool to Monitor Neighboring Noise Effects

**KIUCHI Nozomu** (Doctor of Engineering), Head, Urban Planning Division, Urban Planning Department

**HIRAMITSU Atsuo** (Doctor of Engineering), Head, Equipment Standards Division, Building Department

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### 1. Foreword

In Japanese cities, where historically, many urban built-up areas with a mixture of land uses have been formed, it is necessary to realize a livable urban environment and functional urban activities by limiting and harmonizing the conflicts of different land uses that may arise under the regulation of use districts. Given government policies and social trends toward promoting the creation of cities with centralized urban structure, fostering and protecting traditional industries and manufacturing *monozukuri* (Japanese art of manufacturing) industries, and introducing new forms of manufacturing and service activities, it may be appropriate to promptly and accurately evaluate and identify major external factors that may affect the location of manufacturing industries in cities during urban planning.

Based on that recognition, in the last fiscal year, we focused our study on the noise generated from manufacturing establishments in cities, and developed a calculation sheet designed to calculate the levels of noise generated from manufacturing equipment at any outdoor evaluation point.<sup>1</sup> In this fiscal year, we evaluated advantages and disadvantages in using this calculation sheet as a preliminary evaluation tool to monitor neighboring noise effects (hereinafter referred to as the “Evaluation Tool”) for the purpose of the procedures for granting permission pursuant to the provisions of the proviso to Article 48.1 of the Building Standards Act.

### 2. Issues with Permission under the Proviso and Utilization of Evaluation Tool

Appendix 2 to Article 48 of the Building Standards Act specifies for each use district the uses for which buildings or structures can or cannot be built or constructed. In addition, even with regard to the uses for which buildings or structures cannot be built or constructed, if a specific administrative agency agrees that such prohibited uses do not compromise the environment of residential areas or are both necessary and unavoidable from the standpoint of public interest for any particular use district, it may grant permission to such prohibited uses after holding a public hearing and obtaining the approval of the relevant building examination committee (hereinafter referred to as “Permission under the Proviso”).

With regard to the location of manufacturing establishments in cities, the levels of noise are one of the most important metrics in terms of environmental impacts in urban built-up area and thus for granting Permission under the Proviso. In this connection, we have confirmed that the following advantages can be expected from the use of the Evaluation Tool by applicants for Permission under the Proviso and specific administrative agency officials, among other people: (i) It is possible for them to forecast the levels of noise and therefore to use the forecast results as objective evidentiary materials for reviewing and granting permission by the building examination committee, and (ii) as it is possible to quantitatively and objectively identify the effects of noise control measures, the data obtained can be used to help resolve troubles

with neighbors, among other things.

Then, with the cooperation of several specific administrative agencies, based on past examples in which the granting of Permission under the Provision was examined, we examined the possibility of making calculations

based on submitted materials, verified the appropriateness of the calculation results and verified that it was possible for specific administrative agency officials, et al., to input data into the Evaluation Tool and operate it. Accordingly, we have confirmed that the use of this Evaluation Tool is appropriate for the purpose. With regard to the mechanism and processes for examining the granting of Permission under the Proviso by the use of the Evaluation Tool (see the figure), which is focused on the levels of noise, we have prepared, on a trial basis, a sample noise calculation sheet format and also sample entries in the evaluation document used for review by the building examination committee (equivalent to a staff report in the United States), by reviewing, for reference, a mechanism for issuing a conditional use permit in the United States.

In addition, we have identified issues, such as verifying the completion of buildings or structures and taking action when necessary, and whether it is appropriate for administrative agency officials, who should remain in the background, to prepare the evaluation document. Accordingly we have obtained and organized opinions from experts and working-level people concerning these issues.

### 3. Next Steps

Based on the study results in this fiscal year, we will summarize and publish the utilization method of this Evaluation Tool and its utilization permission processes, together with an instruction manual thereof, through the NILIM website.

<sup>1)</sup> NILIM 2015 report, p.124, “Developing a Preliminary Evaluation Tool to Monitor Neighboring Noise Effects from a Manufacturing Establishment inside the City”

<http://www.nilim.go.jp/lab/bcg/siryou/2015report/ar2015hp102.pdf>

