A Study on the Improvement Plan of Construction Noise Monitoring

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ABSTRACT

Noise generated from Construction site has been raised most civil complaints to 64.4 % among the environmental pollution in 2011. Therefore, local government recommends and prescribes that construction sites over a certain scale install sound level meter for noise monitoring. For example, Seoul has implemented a 24 hour noise monitoring system, with real time communication, to the large construction sites more than 10,000 m² from the end of August 2012. But it is difficult to use noise measurement data for the construction noise assessment, since the installation standards and technical specifications for construction noise monitoring system are not presented. In this paper, we proposed noise monitoring system improvement plan including technical specifications and installation standards using the investigating results of the problems of current noise monitoring system and the foreign cases.

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가 2007 24,625
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64.6 % ()
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Fig. 1

Fig. 1 Real-time evaluation system of construction noise

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Fig. 3

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Fig. 2

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(7)

Fig. 2 Location and configuration of construction noise monitoring

Fig. 3 Data management and CCTV cooperation of noise monitoring system

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Fig. 4

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(8)

Fig. 4 Noise map for construction through the cooperation of automatic measurement network

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70.2 dB(A) 5 dB(A)

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Fig. 5 Location of construction site and noise monitoring

Fig. 6 Noise measurement at tranquility facility near construction site

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Fig. 8 Outdoor microphone

Fig. 9 Microphone cover

Fig. 7 Measurement results of construction noise

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Table 1

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Fig. 10 Configuration(L) and Noise monitoring S/W(R) of DW-CNMS

Table 1 Minimum specifications for construction noise monitoring system

Section	Specification
Mic.	<ul style="list-style-type: none">• Outdoor Microphone• Performance : Free field, 1/2", Class 2• Calibration
Status board	<ul style="list-style-type: none">• Display item : Real-time, $L_{Aeq,5min}$
Storage	<ul style="list-style-type: none">• Storage item: L_{Aeq}(5min, 1hr, 1day)• Recording while generating Abnormal noise• Storage 3 month for noise and CCTV Data
Comm-unication	Telecommunication(LTE, CDMA etc.) or Ethernet(Wireless, Wire Lan etc.)
Etc.	<ul style="list-style-type: none">• 24-hours Monitoring , 1/1 Octave analysis• CCTV 2ea per microphone 1ea• GPS• Setting limit noise level by user and alarm exceed limit noise level• Type approve by Ministry of Environment

(1/3 , 5 가)

(9). Fig. 10
(10)

(1 , 5 , 1 , 1 가)
MP3 ,

Fig. 11 Location of microphone in construction site

Fig. 12 Noise measurement location using noise map

Fig. 13 Location of CCTV at construction site

Fig. 14 Status board of construction noise monitoring system

Fig. 14

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(Fig. 12).

(3) CCTV

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Fig. 13

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