



Computers to Review Design Errors in Construction Projects

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Presenting performance outcomes on the digitization of construction standards on the 15th with plans to complete all the work by 2026

The Ministry of Land, Infrastructure and Transport (MOLIT, Minister WON Hee-ryong) revealed the results of the 'Digitization Project of Construction Standards (2022~2026)' for this year, which has been being promoted as part of the Smart Construction Revitalization Plan (July 2022), and held the performance presentation hosted by the MOLIT and organized by the Korea Institute of Civil Engineering and Building Technology to hear opinions from related experts on Friday 15 December at the Construction Center.

Around 100 experts from industry, academia, and research fields, as well as design and construction practitioners, attended the briefing session of the performance outcomes, and an invited lecture by a specialist from Singapore in digital construction policy was also featured.

In the past, people in charge of design and construction had the inconvenience to check related construction standards one by one when creating and reviewing drawings, however, once the digitization of construction standards is completed, computers are supposed to perform these tasks automatically determining



whether the construction standards are compliant, which is expected to improve work efficiency by reducing review time and design errors.

For instance, when reviewing the appropriate amount of reinforcing steel for a specific member of framework (columns and walls, etc.), the computer determines whether it is adequate or not required by construction standards, while letting it re-examine if there is insufficient results by confirming 'inadequate' to prevent design errors.

Digitization of construction standards involves the following 3 stages: ① producing standard maps linking related construction standards to the design/construction procedure diagram for each facility, ② establishing library* that allows users to check construction standards for each procedure and member in a BIM** environment based on standard maps, and ③ including Ontology (representation of relationships and concepts between objects in a form that can be processed by computers) work that converts information in the library into a language (format) that computers can understand.

* Library refers to a set of information (documents and data, etc.) used by computer programs commonly and repeatedly

** Building Information modeling is a technology that integrates and manages digitized information across all stages as the three-dimensional models including construction information

MOLIT launched the digitization work (2022) beginning with the construction standards for bridges and architecture, which are closely related to people's lives and safety and have relatively many quantified contents, and currently have completed the library, then, will be carrying out ontology work in both fields while making construction standards libraries in other fields in parallel.



Director General for Technology and Safety Policy of the MOLIT KIM Tae-o expressed, “It is expected that the efficiency of task performing in the related fields could be enhanced by the digitization of construction standards resulting in activation of BIM and automatic review of design errors.”

Adding, “We will rapidly pursue the digitization of construction standards in major fields by the year of 2026, starting with the areas of bridges and architecture”.