

Electrical Design Review Based on BIM-MEP Model

Authors : Michael Liu, Sen-Chou Tsai, Yu-Tang Huang, Tai-Chun Lin, Guan-Chyun Hsieh

Abstract : This study proposes an electrical review method for mechanical, electrical, and plumbing (MEP) using building information modeling (BIM). The purpose is to reliably simplify the review work, directly evaluate the layout of electrical equipment and wiring, and calculate short-circuit current and line voltage drop based on BIM-MEP models. The study was done by MIEtech Company in collaboration with Taiwan Power Company (TPC), which is basically the unit responsible for reviewing the design of electrical appliances. This study aims to simplify the review process, reduce manual review errors, and improve the timeliness and reliability of reviews. In addition, the review system provides insight into the process and correctness of the precise integration of wiring, plumbing, and electrical equipment into the building structure, improving the safety and reliability of building electricity. In addition, it can also assist electrical engineers to use BIM to enhance the accuracy and self-detection capabilities of circuit design and improve the timeliness of the design process.

Keywords : mechanical, electrical and plumbing, building information modeling, electrical review method

Conference Title : ICSCSU 2025 : International Conference on Smart Cities and Sustainable Urbanism

Conference Location : Tokyo, Japan

Conference Dates : May 27-28, 2025