

C-W. FENG, Y-J. CHEN, K-W. LEE. **BIM model-based Mechanical, Electrical and Plumbing (MEP) integration and coordination system.** *Gerontechnology* 2012;11(2):74; doi:10.4017/gt.2012.11.02.323.00 **Purpose** The MEP-system of building projects has become more complex as demands for a better living environment in modern buildings increase. However, given the complexity and uniqueness of MEP-trades, the different fields of designers and contractors have difficulty sharing information with each other. In other words, the interface integration problems between different disciplines are a common problem in MEP-projects¹. Effective and continuous communication between MEP-disciplines should be developed. This study proposes an IFC-based information model that employs BIM² technology to assist the stakeholders of the construction projects to exchange information according to their needs. **Method** First, the process of different MEP-disciplines was systematically analyzed³. Then the possible conflicts between trades were identified. The study developed necessary and important attributes required for the MEP-BIM-objects. These developed BIM-objects will later serve as the core of the communication platform, through which project participants can easily access and share information. In addition, a better information integration mechanism for MEP-systems will be developed throughout different phases of the project life cycle. **Results & Discussion** This study intends to take the advantages of BIM-tools to promote the constructability of MEP-piping work by creating a 3D-model which can provide construction information on the basis of the component attributes. These attributes in turn are derived from the construction requirements in terms of estimation, procurement, allocation, priority, and testing. The case study indicates that the piping work sequence can be determined by the component attributes such as the logical relationships and the priority factors. This analysis could feasibly result in an efficient way for MEP subcontractors to execute their job.

References

1. Korman TM, Tatum CB. Prototype Tool for Mechanical, Electrical, and Plumbing Coordination. *Journal of Computing in Civil Engineering* 2006;20(1):38-48
2. Eastman C, Teicholz P, Sacks R, Liston K. *BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors*, 2nd edition. Hoboken: Wiley; 2011
3. Feng CW, Chen YJ. Applying MD CAD Model to Streamline Information Transformation for Construction Project Planning. *Proceedings of the 2008 Architectural Engineering National Conference: Building Integration Solutions*, Denver; 2008

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