C-Y HSIEH, I-C. WU. ***Applying building information modelling in evaluating building energy performance.*** *Gerontechnology 2012;11(2):170;* doi:10.4017/gt.2012.11.02.227.00 **Purpose** In order to cope with projected climate changes due to the enhanced greenhouse effect, countries around the world have invested efforts into the development of new energy resources and energy-saving techniques, in addition to reducing carbon emission. We can understand the balance between energy efficiency and consumption through a building energy performance evaluation, either on new constructions or on existing buildings. There are five main indexes for evaluating building energy performance: (i building envelope; (ii) air-conditioning and ventilation; (iii) water heating system; (iv) dynamic equipment; and (v) illumination. If the energy-saving index is considered when designing a building, low energy consumption and carbon dioxide emissions of the building are expected. Among these, building envelopes have played the most significant role. For example, reduced use of heating ventilation air-conditioning (HVAC) and lighting equipment can be achieved by simply considering the interaction between the building envelope and the surrounding environment, such as ventilation, sun and shade, and ambient lighting. **Method** This research discusses building energy performance of the building envelope in detail. Until now, in Taiwan, building energy performance has been evaluated manually, and this approach not only wastes a lot of time due to look-up tables and regulations, but is also error prone. For this reason, our research employs the concept of building information modelling (BIM)[1] in evaluating building energy performance visually and automatically to help users estimate whether their building designs have effectively met the energy-saving standards. BIM is a computer model database of building design information, which may also contain information on the building's construction, management, operations and maintenance. BIM-models are developed to better understand the buildings in detail and to provide enough information for accurate calculations. **Results & Discussion** This research implemented particular modules based on a BIM-system to encourage planners to consider engineering information synthetically in evaluating building energy performance accurately. Moreover, this research conducted an actual engineering project example to verify its feasibility. This system assists planners in identifying and understanding the possible blind spots affecting the achievement of energy-saving requirements of the designed buildings, and enables further design modifications to optimize energy-saving effects.

References

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