J. LI, Z. HUA. ***An object library approach for managing construction safety components based on BIM.*** *Gerontechnology 2012;11(2):416;* doi:10.4017/gt.2012.11.02.314.00 **Purpose** One of the potential solutions for designers' lack of safety expertise in design decision is utilizing IPD to allow for constructor input[1]. But how this is to be done is often unclear because few cases from either practice or research can be found. In this study we tried to develop an IPD-method to facilitate 'safety in design' with the contractor's knowledge using an object-oriented programming (OOP) approach[2] for design decision based on BIM. **Method** Our principal research method is simulation of the decision process in OOP[2] in a case study. The integration of contractor's knowledge in construction safety is achieved by setting parameters for construction safety investment[3,4] with contractor's input into a construction safety component library (CSCL)[5-7], e.g. scaffolds, boards, barriers, etc. under the proposed IPD-framework[1]. **Results & Discussion** A prototype of CSCL using one OOP-language, C#, is developed in Microsoft Visual Studio 2010 to Autodesk Revit 2012 with a completed construction project for demonstration. The results show that CSCL is a semi-automated tool with contractor's knowledge of construction safety for design decision. It is consistent with the theory that BIM is not only a type of software but a knowledge repository for in-depth collaboration, information sharing and knowledge re-use among all parties involved in a project. New issues and rethinks including level of detail (LoD)[5] on company's library, IPD-evaluation metrics, and BIM-development method[8] addressing construction safety management, are also recommended in the final part.

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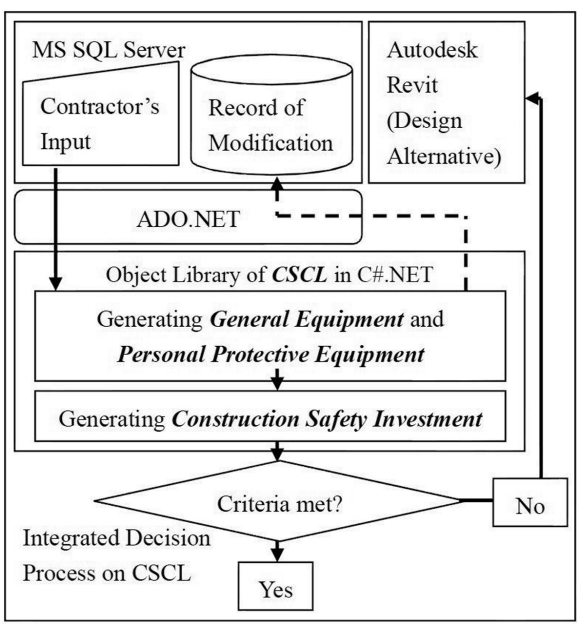

Figure 1. Diagram of the system and information flow of the prototype