Project Title:	BIM-Automation of Gross Floor Area (GFA) Calculation, Fire Safety and Prescribed Checking for General Building Plans (GBP) Preparation
Principal Investigator:	Mr. WONG Chi Pong
Project ID:	CICR/04/19
Research Institution:	Building Information Technology Limited
Subject Area:	Building Information Modelling
Duration:	18 Months

Background

The GBPs are one of the major statutory and building control submissions for the private sector. At present, the majority of the GBP preparations are completed by traditional 2D CAD approach in Hong Kong. Using BIM to prepare the GBP will be a new approach to the construction industry. However, it is observed that even if BIM is adopted in the design, (a) GFA has to be calculated via CAD manually, and (b) the related design productions from these calculations have to be compiled manually to demonstrate compliance with the statutory requirements.

A programme was developed to apply BIM in the calculation of residential saleable area. The relevant definitions of the Residential Properties (First-hand Sales) Ordinance had been reviewed and converted to a computer source code. The developed computer programme was capable of automatically generating residential saleable areas of residential flats using a BIM model. Using this programme, this project aims to develop a tool for automatic calculation of GFA and checking of some building codes for preparation of a BIM-GBP in residential building projects.

Objectives

♦ To develop a function in the Autodesk Revit Plugin for calculating GFA;

♦ To develop a function in the Autodesk Revit Plugin for checking and performing Fire Safety calculations in compliance with the statutory requirements; and

♦ To develop a Practice Note and User Manual for the developed Autodesk Revit Plugin.

Key Deliverables

Autodesk Revit Plugin with user manual