1 chapter

AutoCAD TECHNOLOGY AND CONSTRUCTION

This chapter reviews management practices in construction projects and the work processes of AutoCAD technology in construction management, and finally reviews the application of AutoCAD and BIM technologies in construction management.

1.1 Construction Project Management

Maintenance management can be divided into various activities such as procurement process, schedule maintenance and project management that comprise of multi-faceted services and depend on the orientation of the organisation. The most prominent area in construction is building and infrastructure that contains three basic elements of civil, electrical and mechanical engineering. Construction management function is to generate decision and action to control and upkeep the building and infrastructure for sustainability (Sullivan *et al*., 2010). Thus, competent engineer is required to ensure the effectiveness in managing construction of any building and infrastructure facility.

Maintenance management is conducted in the pre and post-construction process and is practiced in construction industries around the world (Hamid & Alshawi, 2005). An engineer has the responsibility to improve the construction management of the building and infrastructure or otherwise, the unexpected accident appears burdening the staff for their negligent in construction management. There are many issues related to construction management problems by using conventional method (Arman, 2005). The over application of AutoCAD is among the problems which required extensive time to recover data collection. The drawing information is not handled properly,

recorded in improper database and difficult to edit and to update because the data are stored without documentation. As a result, the construction management staff are not able to improve the construction management performance such as building inspection on budget control. Meanwhile, Microsoft Excel and Microsoft Word database are not convenient and should be altered for more security and using ICT (Lazim & Samad, 2011). Computer Aided Design (CAD) is the most common software package that enables staff to trace the construction work status on building facility and monitor the labour, material and machineries for construction management. The data are tabulated into tables and are ranked based on the priorities construction to handle the critical building like old structured building. According to Labib (2004), construction management becomes better by improving AutoCAD with the decision making process to produce new effective system. Therefore, the new system could assist the construction management staff to perform better on the building defect identification, assessing and prioritising the construction. This research focuses on the deployment of a new system to improve the decision making process and develop AutoCAD application using Building Information Modeling (BIM) in managing building construction.

Building and infrastructure in construction industry need to be maintained in order to improve the building services and good working environments that meet the client needs (Awang *et al*., 2011). Conventional method (i.e. AutoCAD) is normally used for building and infrastructure construction and yet to be reviewed. Technical and managerial defects are the main problems in the conventional method in construction management. The technical defect is defined as the lack of technical expert to operate and monitor the building and infrastructure with new approaches. This is related to the knowledge exposed to the ICT application. Presently, AutoCAD is widely used in the construction management processes of building facility. AutoCAD can reduce the negligent management due to problems emerging as a result of the need to manage huge and complicated construction record drawing (Ismail, 2014). The technical defects are also because of less application technology in the equipment and machineries (Zulkarnain *et al*.,