CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Building Information Modeling (BIM) is the new software that being introduced in Malaysia since 2009 during Infrastructure & Construction Asia’s BIM & Sustainable Architecture Conference. BIM has many types of software, for example Revit, Naviswork, Vector Works Architect, Tekla, ArchiCAD and etc. The first infrastructure construction project that used BIM software in 2010 is National Cancer Institute at Sepang, Selangor (Building SMART Malaysia, 2015).

Microsoft project is the traditional software that most of the planner using since 1991 because the first Microsoft Project version was product on 1990 (Azzopard, S, 2013). Once Microsoft Project start being introduced in Malaysia, most construction planner start using this software to facilitate the project planning matter. The number of project planner increase year-by-year that using this software but until now still don’t have planner not use this software (Sawyer, T, 2014).

The main problem using traditional software is the clash at the site cannot be detected early before project was started. This problem contribute to the project delay for a few days or maybe a month and sometimes the project must be reworked to resolve the problem. These situations lead to the increasing in the cost of the project (Mind Tools Editorial Team, 2016).
Comparison between this two software which is traditional software and 4D BIM software is to determine which software very relevant to use throughout project planning. This is because in Malaysia construction background related with improper planning project (Sambasivan, M & Soon, Y. W., 2007). This happen maybe because of the project planner do not have experience to handle the project and it maybe cause of the planner cannot detect the problem went checking proses. By using the traditional software, it is difficult to detect the problem because traditional software just word and chart with duration of the project until finish, different with 4D BIM software can detect the problem using visualization with duration the real project.

1.2 PROBLEM STATEMENT

Many construction industries used traditional software planner like a Microsoft Project to produce the project planner starting from site clearing until the building was finish. However, by using this traditional software, the problem like a clash cannot be detected early because this software cannot visualize the problem at the site before the project commences. These problems may contribute to the delay in construction works since it take a long time to resolve this arising problem. For example project at United Kingdom of America is to build National Health Service Care where this project is delay because of poor planned cause the budget run. Original budget was $4.68 billion, but when this problem happen this budget subsequently grown to $24 billion, with some observers estimating it could grow to as much as $40B. This project is taking 4 years to finish this project (International Project Leadership Academy, 2016). This situation may related with the quantity surveyor and the planner is don’t have any experience to handle the construction planning project. When the planner can plan this project properly the budget of this construction can be detect early even though they using traditional planning software.

However, the weakness of this traditional software planner can be resolved by using 4D Autodesk Naviswork software. These new alternative software can detect the clash at some place prior the construction work commences. For example, the clash between beam and pipe line at base area in building. This is because Naviswork software can produce
animation of the project starting from site clearing until the project finish. This software is not only give a solution to the arising problem early, but it also can launch the progress of building construction according to flow that had being already planned. Typically, the arising problems involving clash detection at site will lead to a cost overrun of the project. This is because there’s no better solution to resolve this clash problem other than re-working the problem until the project finish. Therefore, this study was conducted to do a comparative study between two scheduling software which is MS Project and Autodesk Naviswork.

1.3 RESEARCH AIM & OBJECTIVE

The aim of this study is to compare the efficiency between two scheduling software which are Microsoft Project and Autodesk Naviswork as the best alternative way in preparing a project planning. To achieve this aim, some objectives of this study have been identified:

i. To study the function and feature of traditional software, Microsoft Project planner and 4D software, Autodesk Naviswork.

ii. To develop the construction planning from traditional software, Microsoft Project to 4D software, Autodesk Naviswork.

iii. To compare the effectiveness of planning software between 4D software, Autodesk Naviswork and traditional planning software, Microsoft Project.

1.4 SCOPE OF STUDY

To achieve the objectives of this study, an industrial visit will be conducted to study the current practice of planning by the Malaysian construction industry. All related information and data will be collected from the real construction activities planning developed by the industry at Selangor Darul Ehsan. In this study, MS Project will be used because it’s widely used in the Malaysian construction industry compared to others planner software. For 4D BIM software, Autodesk Naviswork will be utilized because of its more affordable compared to other 4D BIM software and the most important, it can be integrated with MS Project.