Building maintenance management systems

Building maintenance management just like the “ Cinderella” of construction industry. This is because building maintenance management team has to do various job and bear the function of other parties, namely architects, surveyors, engineers, or facilities managers. Building maintenance management also has never been recognized in its own right (Allen, 1993). There are numerous definitions of building maintenance as it different to different people. According to the Chartered Institute of Building, building maintenance is defined as work conducted to keep, restore or improve every facility, that is every part of a premise, site and its service to an acceptable standard. The accceptable standard is determined by the balance between the need and available resources. While White suggest that “ maintenace also is similar with controlling the condition of the building so that its feature lies within specific regions” (White, 1969). Other definition comes from Bushell and quoting from BS 3811, that defines maintenance as “ a combination of any action carry out in order to perpetuate the things in or restore it to an agreed condition” (Bushell, 1985). Another more practical definition mentioned by Allen is “ the combination of all technical and associated administrative actions to pertuate an item or restore it to a condition that it can perform its desired function”. Hence, building maintenance is very crucial as it is required since the beginning of the construction period. However, its importance was not recognized (Allen, 1993). Maintenance is needed to ensure the building perform well and the best over its life cycle (Olanrewaju, 2009). A regular and good maintenance of a building may enhance the sustainability of any building either it a heritage or non-heritage building (Arazi, 2010). Lee (1984) has elaborate more that maintenance is also required in order to ensure that buildings are

used effectively and economically as possible (Lee, 1984). Meanwhile, according to the investopedia, efficiency mean the degree of performance that reflects a process that uses the lowest amount of resources to create the greatest amount of outcomes. Efficiency is an important character as all resources such as time, money and raw materials are scarce. So, it is makes sense to conserve the resources while maintaining an acceptable level of outcomes or a general production level. Efficient also can be simply said as reducing the amount of wasted resources. Therefore, ensuring efficiency in building maintenance practices in this paper means the work undertaken in order to preserve and conserve a building to enhance the value of a building is done with the lowest amount of resources without wasting it.

Nevertheless, there are five objectives of building maintenance that are mentioned by Alner and Fellows (1990). The objectives are to ensure that the buildings and their associated services are in a safe condition, to ensure the buildings are suited for use, to ensure that the state of the building fulfill all statutory requirements, to run the maintenance work necessary in order to maintain the value of the building stock’s physical asset and also to run the work needed in order to maintain the quality of the building.

THE WAYS TO ENSURE EFFICIENCY IN BUILDING MAINTENANCE PRACTICES

In order to ensure a building is keep, preserve, restore and improve without wasting all resources, a number of efficient ways can be carried out by the property manager, building maintenance management or any related party. Firstly, the maintenance management team should involve in the design stage of the construction to draw some strategies in order to make sure the efficiency in building maintenance practices over the life cycle of buildings. A

number of the design strategies mentioned by Nayanthara (2010) are design for adequate safety, design for maintenance needs, design for the environment, plan for easy maintenance and design for efficient access. Design for adequate safety is the most crucial design strategy for maintainability of buildings. A proper design for the load carrying, joint design and detailing, structure's suitability and the piping are able to avoid many failures such as cracking and leaking of the building, therefore can provide the adequate safety againts those failures. Design for maintenance needs is also important strategy as it can reduce the maintainability cost in the future. For example in the design stage of the construction, the maintenance team has make the option to use the low-maintenance materials, components and elements in constructing the building. The selection of those materials, components and elements in design stage may lessen the maintenance cost in the future. While, there are two fragments of environment under the design for the environment, that are micro-environment and macro-environment. Micro-environment can be describe through the degree of exposure to the external climate, level and the nature of usage. While macro-environment can be evaluted as location of building and different zones such as industrial, coastal area, urban and rural. The environment aspect should be taken into account while designing the building as Malaysia has tropical climate which is high humidity, uniform temperature and has abundant rainfall throughout the year. Nayanthara also mentioned that in the design stage, the builders team should plan for easy maintenance in the future. This strategy is related to the design for the environment strategy. The builders team should choose the material that is durable in order to less maintenance work and cost, for example, the type of

paint for external wall must be weather shield so that it is long last and no need to repaint the building frequently. In addition, design for easy access for maintenance work such as roof and basement can ensure the efficient maintenance work (Nayanthara, 2010).

The second way that can be adopted to ensure the efficiency in building maintenance practices is by controlling the quality of construction or workmanship. It is very important to make an assurance of the quality during the construction stage to avoid failures such as cracks, spalling and leakage. Assurance of construction quality could be determined by the consistency of materials in the design stage and construction stage. The builders team must strictly follow the planning during design stage. In addition, the election of good contractors, consultants and efficient workers who have well experience are also essential to assure the quality of the building construction. Quality assurance in the construction stage may help in reducing the failures in the future and hence, the maintenance of buildings will be efficiently done (Nayanthara, 2010).

Strategy for maintaining buildings can be split into three strategies namely corrective, preventive and condition-based strategies (R. M. W. Horner, 1997). In ensuring the efficient building maintenance practices, a good strategy for the maintenance work should be properly done by the building maintenance team or else, the cost for maintenance will rise. The most crucial is preventive maintenance schedule. The preventive maintenance schedule must be done after the completion of the building over its life cycles. Preventive maintenance schedule is to preserve the physical of the building and wipe out the corrective maintenance cost. An efficient

preventive maintenance schedule includes daily maintenance, weekly maintenance, monthly maintenance, quarterly maintenance, bi-annually maintenance and annually maintenance. Daily maintenance for building such as cleaning the toilets, common areas, ground areas, vacuuming elevators must be done everyday, even more than once a day. Daily or routine maintenance is very important among others as it involve major operating expense. Cleaning and housekeeping work must be carefully scheduled and controlled because costs can be easily become excessive (Kyle, 1999). With the existence of preventive maintenance schedules, buildings and equipment in the building will last longer and run more efficiently. Building maintenance team also will be seen as a professional team as they work with the efficient preventive maintenance schedule.

The forth way that can be adopted is by using computer-aided system in the building maintenance work. In maintaining buildings, computerized system is very necessary because a lot of information and data such as the completion date of buildings, the contractors and engineer that involved in construction, the financial statement, information of past maintenance work, and etc that need to be recorded, saved and remembered. In addition, property atributes such as basic property information like address, telephone number, person incharge for maintenance , area, number of floor and age; component information like type and model number of boilers and pump; and maintenance information like inspection cycles and painting cycles have to be recorded and saved. Computerized system is much more efficient as it is fast in recording the ample information, retrieving any data needed and capable in analysing the data (Pitt, 1986). If the building maintenance team

work manually with the substantial data, all the works will be slower and not efficient. Maintenance schedule also can be done by using computerized system, indeed it is more effective and practical for maintenance team.

Last but not least, the implemention of Malaysia’s Building and Common Property Act 2007 is necessary in ensuring the efficiency of building maintenance practices, especially for strata property such as condominium, apartments, gated community developments, flats, commercial buildings like offices, shopping complexes, mixed developments and industrial buildings. Malaysia’s government provide this act after realizing that there is a lack in Housing Developers Act and the Strata Title Act as well as existence of wide gaps between developers and purchasers, for appropriate maintenance and management of buildings and also common property (Isma, 2011). All this while, there are many problems arise between the developers, purchasers and management corporation (MC) of strata properties. Some of the problems are developers failed to apply for the Strata Title because the management corporation (MC) is unable to be formed. The management corporation (MC) could not be formed due to the committees of the management corporation (MC) must be solely the owner of the unit and the management of the building is totally managed by them without interfered by the developer, but, the management corporation (MC) can only be formed after one-quarter of the aggregate share unit has been transferred to the owner. The management corporation’s power to practices their duty is also limited and not effective (Isma, 2011). Other than that, the problem also arise when there are defaulting developers and inefficiency property managers who take advantage and trying to make huge profits by providing

lower quality services but charging a high fee to the purchasers (Tiun, 2009). So, to eliminate the problems that are arise before, Joint Management Body (JMB) and Commissioner of Building (COB) is formed under the Malaysia's Building and Common Property Act 2007. The Commissioner of Building is created to ensure that all parties play their role effectively. The efficient building maintenance practices coukd be formed by the empowered of Commissioner of Building to issue warrant to those purchaser who does not pay the maintenance charges for six months and it is mandotary to all developers to submit the audited maintenance account yearly to the Commissioner of Building (COB) (Isma, 2011). With the provisions, building maintenance work for strata properties will be more transparent, efficient and no longer developer who take advantage towards purchasers.