

Green property management for commercial buildings

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Abstract

This research examines the practice of green property management (GPM) for commercial buildings. Property management is the process of taking care of properties so as to meet the interests of all people having an interest in the property. The extent of damage to the environment from current unsustainable living today has driven building users and operators to adopt a more environmental practice towards property asset management. Nevertheless, practice for GPM experiences different understanding on the concept and hence, there is no standard practice towards it. In this research, the procedures and methods of developing the green property management framework examines some of the property management requirements for the practice of GPM, in particular, for commercial buildings. In particular, it examines the work procedures in current property management practice by property professionals and to integrate performance measurement by the GBI in designing the framework for GPM practice.

Keywords: commercial buildings, green, property management, framework.

1 Introduction

This research examines the practice of green property management (GPM) in Malaysia. Property management is the process of taking care of properties so as to meet the interests of all people having an interest in property. According to the Hong Kong Productivity Council [1], green property management is driven by the new business model which takes into consideration sustainable measures to manage buildings in urban areas since it is one of the largest contributors to carbon emission. The approach to GPM particularly in Malaysia suggests that there is a need for a proper framework to practice GPM. This involves the



commitment of those involved in the buildings; every party must understand and be willing to change for the betterment of the world environment. The lists may include naming a few, building managers, owners, relevant authorities, investors, tenants and others dealing with buildings. The commitments of those involved will include having pre-empted knowledge, planning and actions to be taken by the different parties. There is indeed a need to define the working system in GPM to be followed. Since going green is about performance measurement, there is also a need to define what measurements are desired. The current rules of the green building in Malaysia or the Green Building Index (GBI) adopted some form of green performance measurement towards an award achievement for the green building status. The award of the green status are bounded by relevant rules and have to be observed by building owners to maintain their green status. In moving towards GPM, there have to be similar rules imposed to everyone; this would require interest and support for all new and ongoing procedures that are developed. Similarly performance measurement may be required. In this research, the procedures and methods of developing the green property management framework examines some of the above requirements for the practice of GPM. In particular, it examines the work procedures in current property management practice by property professionals and to integrate performance measurement by the GBI in designing the framework for GPM practice.

2 Literature review

Green property concept is a relatively new concept in property although it has been widely discussed in other areas. This concept which originates from the concept of sustainability is aimed at improving living condition, and is a gradual transition from the one-way property management to the integrated management of social economic environment; in the context of property management issue. Sustainability has increased importance in recent years at all levels of stakeholders, including government, tenants, investors, developers, owners and the community (Newell *et al.* [2]). Sustainability has also increased international awareness that sustainability is a number one priority as the property industry has a major impact on the environment [3]. Building contributes up to 50% of CO₂ emissions, 40% of energy requirements, 16% of water usage, 40% of solid landfill waste, 50% of raw materials and 71% of electricity consumption [4–6]. Green building advocates realised early on that existing developments represent a major opportunity for achieving energy and water savings and reducing the overall environmental impacts of building operations. After all, in any five-year period, new construction and major renovations affect only a small fraction of the existing building stock. As a result, the USGBC created the LEED for Existing Buildings (LEED-EB) standard in 2004, as a means to benchmark building operations against a variety of sustainability criteria. Due to an increase in awareness of the need to minimise the impact of development on the environment, the concept of sustainable development has been introduced. Sustainable development concept comprises of three pillars which consist of

economy, social and environmental. In theory, sustainable development is defined in terms of the pattern of structural changes in natural and man-made capital stock, inclusive of human capital and technological capabilities, which ensures the feasibility of at least a minimum socially desired rate of growth in the long run [6].

With environmental concerns demanding more consideration in development, the sustainability concept has become a national issue. As most countries become even more developed, physical development is a necessity to meet the physical space of demand and supply. Consequently, real estate sector emerge as the main sector in many countries concurrent with the country's development. According to Goodland [7], environmental sustainable is defined as 'seeks to improve human welfare by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded, in order to prevent harm to humans'. Environmental sustainable is focusing on bio geophysical aspect which means maintaining or improving the integrity of the life supporting systems of the Earth [8]. With the sustainable concept arising in many countries, all projects need to take into account sustainable features such as the modelling of elevations and choice of materials. There is no doubt that applying the sustainability concept to development projects will benefit not only organisations but also their parent-countries, through better monetary returns, an improved image among communities, and reduced damaging effects to the environment. Nevertheless, organisations should conduct a cost benefit analysis before applying this concept to their projects. Activities by any property sector involving building construction and operation will result in a major impact on the environment. According to Wilkinson *et al.* [9], the built environment is responsible for around half of all greenhouse emissions. Newell and Manaf [10] mentioned that buildings contribute up to 50% of carbon dioxide emissions, 40% of energy requirements, 16% of water usage, 40% of solid landfill waste, 50% of raw materials and 71% of electricity consumption. From the sustainability point of view, this information indicates that the property sector needs to reduce the impact on the environment.

3 Methodologies

The application of the new institutional economic framework in the context of assessing the green property management practice will need to integrate the suitability of the institutional economic theory to property management. Having defined the application of the NIE framework to the property management process, there is a need to integrate the green criteria into the property management task. As identified earlier, the GBI has been the basis of the move for green buildings. Hence, for green property management, the incorporation of the GBI rule into the property management task is one way to assess GPM practice. The six criteria defined need to be incorporated in the property management process so as to enable the green process in property management task. All the six criteria need to be defined according to the rule of the property management task. The six criteria are as follows: (i) Energy efficiency;



(ii) Indoor environment quality; (iii) Sustainable site planning and management; (iv) Material and resources; (v) Water efficiency and (vi) Innovation.

The GBI specification are fitted with the property management task and it appears that fitting the management task and development may differ in some aspects. However, further adjustments may be required at a later stage of the research. All the aspects described above can be formulated in the working framework for assessing green property management. The property management standards which are work procedures in property management issued by the Board of Valuers, Appraisers and Estate Agents in accordance with the Valuers, Appraisers and Estate Agents Act, 1981. According to the Act, property managers are governed by the Act. Hence, services offered to the society must adhere to requirement of the standards provided. This is to observe the need of the society for quality services and to safeguard the public against unprofessional services. Thus by observing the requirement of the standards passed, the property managers have fulfilled their liability to the public as suggested in the standards code of practice. Standards are necessary to ensure practitioners provide an acceptable standard of professional services; this forms a basis for best practice in property management services. The standards provide specification and procedures for all the different aspect in property management process.

The coordination of the GBI criteria and the property has enabled property management practices to be evaluated in green terms. Although it has only provided some rough ideas of the green criteria in performing property management task, it has provided some ways to look into matters of green property management. In the course of data collection, it may give some other input related to the matter.

4 Results and findings

The tools for evaluating GPM comprises of items for green criteria and the integration with the entire property management task. As identified earlier, the GBI has been the basis of the move for green buildings. Hence, the continued effort for green management will be to incorporate the GBI rule into the property management task. The six criteria defined need to be incorporated in the property management process so as to enable the green process in the property management task. All the six criteria need to be defined according to the rule of the property management task. However, for the purpose of this research, the criteria on sustainable site planning and management were excluded since property management is about post occupancy matters. A further index will later be developed in similar term for the continued green effort in the occupation of properties. The aims are to reward buildings with green property management practice. Table I suggests the tools that were developed to assess green property management. Generally the tools developed are workable where it has included the main green elements in the property management task. Although it was included, the panel felt that they needed to add further detail to some items. The items are as below:

4.1 Energy efficiency management in buildings

4.1.1 Lighting

The panel suggested that the use of lighting devices must consider energy saving ability. Thus the use of T8 to T5 LED can save up to about 40% of energy. This could be one of the easiest way to go green.

The other aspect on lighting is to adopt the zoning of lighting so that only reasonable lighting is used to light up some area.

4.1.2 Air conditioning

The use of Variable Air Volume (VAV) is another way of saving energy as it could also detect temperature of space and adjusting to a reasonable temperature would be an energy saving move. Another suggestion by the panel to save energy on the cooling of the space is to make use of air blower. A blower uses less energy consumption compared with air conditioning.

4.1.3 Water provision

Another aspect that was considered that can have an effect on energy is to select a high efficiency water pump that has uses a low voltage. Another aspect on water saving is the use of dual flush devices for toilets and the use of antibacterial pipes material.

4.1.4 Firefighting equipment

Panels also advise on the selection of good materials for firefighting equipment such as the use of halon gas.

4.2 Encouragement for the use of hybrid cars

One way to reduce carbon emission from cars is by the use of hybrid cars. Thus, managers are encouraged to reserve parking for hybrid cars so as to reward guests who are green conscious.

4.3 Participants' behaviour in green property management

The ability to distinguish agents' behaviours in GPM is important, as they are the variables that will determine GPM practices. The driving force for GPM, which are the rules affecting their actions, the facilities and other constraints towards GPM will determine the success or failure of GPM. The following information analyses the effect of attitudes and behaviours on GPM.

4.4 Green practice for property management

Analysis on the survey suggests that the general view of property managers is that property managers are actually keen on GPM. This is shown through their responses on the following: According to the survey conducted, the majority of the respondents are keen on GPM with more than half adopting green policies to support green management practices. The drives for GPM are mainly driven by economic pressure. The economy may either provide incentives or disincentives



for adopting GPM. The incentives may either be in the form attractive rentals and high profile tenants. The economic disincentives may be due to the high cost of installing devices for energy and water control or using green materials. Other factors that have an impact on the practice of GPM are the legal as well as other social factors. In preparing the management plans, the response showed that many of the green aspects are being considered in their management plans suggesting that managers are quite particular on the issues of sustainability and included the green criteria elements in their plan. The same pattern appeared when managing buildings; the majority considered green elements in managing properties. Some of the green criteria that had less consideration in the building management were the use of SOP for GPM and the use of green materials for managing buildings.

From the survey, the other aspects of property management such as administrative, financial, health and safety and tenants' management were not adopted by managers. This suggests that they do not believe that these are important for GPM. They may not have important impact on GPM. The survey revealed some of the important findings on GPM practice. Firstly the most important elements in GPM are the energy saving and water saving functions. Installing devices may help to facilitate this. Nevertheless, since the economy is the main driving force for GPM, property/building managers may have to appraise the savings against the cost of installation. Other small efforts for supporting GPM are the use of energy efficient bulbs for lighting. Having examined the mechanism for GPM, the inclusion of green criteria in managing buildings can actually be practiced if managers and owners are serious about it. The analysis shows that the majority of the respondents apply some elements of green criteria in managing buildings and only a few (10-20%) adopt all the criteria for GPM. This suggests that they may be managing green buildings. The main concerns is the management of conventional buildings and adopt the green practice. There may be problems that will deter the push towards practicing GPM. What these problems and constraints are will need to be examined further and in detail, as the survey did not give much information.

This section manages to achieve two objectives for this research. The first objective identified the current practice of green property management concept in terms of Green Building Index (GBI). This was achieved in the earlier parts of the section where the elements of GBI are positioned accordingly with the property management standards and a tool for assessment was developed. Using the tool, a survey was done to find out the attitude of major participants in the industry particularly the property managers. This was one of the objectives attained in the research. The findings of the survey showed that the main important elements in GPM are energy and water efficiency and that many of the respondents to the survey have somehow adopted the GPM. This showed that property and building managers were concerned with saving the environment. Nevertheless, the economic considerations for not following GPM are some of the constraints faced in GPM practices. Although the survey had shown some indication on agents' behaviours in GPM, it did not provide the in-depth explanation on the outcome of the property management problems. There

seemed to be other elements that could have contributed towards the outcome of the GPM process; an in-depth investigation using case study is required to be able to understand the whole process. This will be covered in the next section.

5 Green property management current practice

The next section presents the case studies selected for the research. A total of seven buildings are selected to determine the property management system and how it has affected GPM practice. This section will analyse the problems affecting GPM practices in terms of changing business practices, attitudes towards space and location requirements and its impact on GPM practices. Furthermore, it will also determine how the current structure presents the causal effect of GPM. The institutional analysis indicates how legislation on the current GPM practices is lacking in providing the structure for green property management. The different outcomes on the business operations of green and non-green buildings as observed through the selected case studies suggest that there is a change of business practices, which may have an effect on GPM. This can be seen from the way companies choose their office space, the investment features that developers see as well as the potential of the business area of the building location. The first aspect can be seen from the tenants' profile of the green buildings examined. Tenants occupying green buildings are mainly international tenants or high profile companies. These tenants sometimes specify the type of buildings they need to occupy. As an example, the British Council occupies the first two floors in Menara Binjai. The green building certification or MSc status attached to the property has attracted high profile tenants.

The objectives of getting good tenants occupying the commercial space and maintaining the status quo of the building is achievable. This is by getting prestigious and well-known developers to develop green buildings on the commercial space. Apart from the green awards, there are also other awards sought by developers such as the Multimedia Super Corridor Award (MSC). This is seen as an advantage to secure good tenants. Hence, developers should plan their development such that it incorporates buildings that are sustainable and 'intelligent' which can provide tenants with a healthy and safe environment for their business. There is also a change in pattern in the locality where these buildings operate. Since location is the main factor affecting business operations, green building development has an advantage over many other building developments located in the main business area of Jalan Ampang; thus establishing an identity of its own. Therefore, GPM not only affects the management of buildings but it also shapes the way for business space selection.

Apart from changing business practices, GPM also influences business attitudes towards building space. This can be seen by the seriousness of property managers in their daily operations. Managers must meet the requirements of the controlling body so as to continue with their green status. The buildings will be audited by the relevant agencies certifying their status. Failure to meet the requirements will mean their Green status will be withdrawn. This will improve the building manager's profile and reputation in terms of managing buildings

space. The impact of location on GPM practice can be seen from the pattern of green buildings' development. It can be seen that green buildings are built around prime commercial areas particularly within the vicinity of KLCC. Our case studies showed that there are two green buildings located at the prime area of Jalan Ampang. Besides these two buildings, there are other green buildings in the vicinity such as Felda and KLCC buildings. The KLCC building is following the same trend and going green as it is being retrofitted and is seeking the green certification from LEEDS. The changing trend towards green building suggests two things. First, building owners are concerned and aware that potentially high profile tenants prefer to occupy green buildings. Second, besides being green, prime location is an added factor that can attract good tenants. A look at the map will clearly show how location can impact the buildings' potential. The analysis from the case studies showed that there are some differences between the management of green and non-green buildings. The success of having a continued green status for buildings is advocated as a form of performance measurement for the building. The audit performed by the various authorities awarding green building status meant that all buildings are required to meet green property standards. Hence, properties are managed to ensure that the green certification continues. This suggests that as far green buildings are concerned, they appear to be almost problem free; they have the right specification in place and the proper authority to monitor the building.

The problem with the conventional building is that there is little or no practice of green property management; this is an important point to note. This is a serious situation since most of the commercial buildings in Malaysia are conventional buildings. As green buildings move towards green property management, a clear structure must exist where managers, owners and the authority can operate the same way. This will also impact performance measurement. Nevertheless, the measurement would have to be more lenient since conventional buildings cannot operate on the same terms as green buildings. The tools set for green property management can be used for this purpose. However, detailed specifications will need further study.

6 Defining the economic, institutional and legal framework for GPM

In defining the economic, institutional and legal framework for GPM, there is a need to identify how GPM can be approached. In the literature, green property management is seen as 'the managing of the property applying green procedures'. Relating it to the similar process of green building development, it could be established that social, economic and legal forces determine these procedures and the outcomes that are derived from the process. The legal forces that must be observed are the GBI rules and the Property Management Standards that define how GPM should operate. They form the legal framework for the operation of GPM. Similarly, in defining the economic institutions, there is a need to identify what economic variables drive the need for GPM to operate. In the analytical analyses, we have demonstrated based on all our case studies that



green building development is economically driven, as their target is to attract high profile tenants. Hence, occupying green properties is economically driven while for conventional buildings; the way to compete is to retrofit the building. There seems to be a different way for GPM where the objective is to see how it could be practiced. The need to define the social and legal framework is the starting point for the GPM.

7 Participant attitudes in GPM

The structure for operating GPM relies on the behaviours of agents or participants to bring about specific outcomes that shaped the property management activities. Having identified the tools in previous section, the tools were tested on property management activities by distributing questionnaires to property management sections of both green and non-green buildings. The attitudes of property managers suggest that many of them have practised energy and water saving which are the main items in green property management suggesting that there is a conscious effort at including green practice in property management. The case studies revealed that management plans are drawn according to the objectives of the building owners. This has caused green building to be managed according to the specification of GBI or other authorities granting the green awards. This is made possible by the equipment built together with the facilities. This is in particular with the energy efficient measures. The auditors of the relevant authority will audit all the buildings that were granted green certificates. This suggests that GPM will be sustained. In the case of conventional buildings, property and building managers not too concern with adherence to the strict measures and specifications resulting in management only focusing on how to make tenants comfortable to operate their business. Nevertheless, they share the main drivers of their activities, which are the economic and legal implications. As suggested in previous section, the drive for green buildings and to sustain it is to attract high profile international tenants. Similarly for conventional buildings, owners are not willing to incur further expenses on retrofitting the buildings, as this will affect net returns on capital outlay. Since many tenants are satisfied with all the facilities, there is no necessity to adopt green practices. The rules or institution affects how agents or participants behave and this shapes property management practice in Malaysia.

8 Conclusions

Having examined the nature of GPM, there are beneficial outcomes to the practice of green property management in Malaysia. The theoretical background has enabled the research to move towards examining the GPM as a process of agents' behaviour and relations towards the structure for GPM operation to bring about a specified outcome. Having examined the rules or institution for property management, it was disclosed that there are differences in practice for managing green and conventional buildings, the reason being that they operate under different structures. Hence, those gaps must be addressed by creating a structure

that will enable them to operate GPM. While sustainable development still remains a fuzzy concept, sustainable design and green building concepts are increasingly transparent due to the well-established principles and physical application. The concept of nature as a model, the importance of identity and place, and land use planning, find a commonality in green building. Added to this, the embodied energy and passive energy design elements found in historic buildings and historic preservation become inherently understood as a form of sustainable development and design. This research found that sustainable development and design as we know it today is in many ways a reinvention of the wheel: a return to vernacular design elements with the addition of new technology and innovation in building materials and systems, with a consideration for global implications. The social, economic and political influences manifested in design from the Industrial Revolution until today have combined to define modern sustainable design. Historic preservation and green building grew out of history in similar ways, both starting at the grassroots level. As sustainable development gained momentum in the mid-1980s and early 1990s, LEED was created, and very quickly became a powerful tool in defining and shaping green building practice through its widespread application in both the private and public sectors. However, the more it gained recognition, the more criticisms it attracted. LEED certainly does have its limitations in many respects, yet it continues to thrive and gained recognition.

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