STRATEGIC FACILITIES MANAGEMENT SYSTEM IN RELATION WITH BUILDING PERFORMANCE; THE SIGNIFICANCE AND RELATIONSHIP

Yuhainis Talib¹, Priya Rajagopalan² and Hisham Elkadi³

¹Deakin University, Australia, yab@deakin.edu.au
²Deakin University, Australia, priya.rajagopalan@deakin.edu.au
³Deakin University, Australia, hisham.elkadi@deakin.edu.au

Healthcare design frequently involves complex concepts that are difficult to measure and evaluate because the building require a modern, quality, functional and therapeutic environment. For this specific reason, facilities management has become a very important support system to ensure smoothness in healthcare business. Facilities management in healthcare building is a complicated system involving multiple layers of administrative division and sub-divisions. Building performance such as building impact, function and quality prove to have significant impact on strategic facilities management. This paper will do an extensive review of strategic healthcare business management as a holistic approach and examine how facilities management can effectively manage their division with consideration and understanding of building performance. The correlation between strategic facilities management and building performance will be identified and a framework for strategic FM system with regards to building performance will be developed.

INTRODUCTION

Facilities management (FM) operation is usually set after the building has been completed. An organisation like healthcare is involved with complex and dynamic buildings with multi operations. The daily critical operation in healthcare demands the maintenance to be done continuously as well as to be planned ahead periodically. In early era, in regards to business performance FM was viewed only as a financial indicator (Tucker and Pitt 2009). However, FM has moved from being simple maintenance activities to corporate investment initiatives reflecting the provision of desirable and relevant work space to required demands of end-users (Edum-Fotwe, Egbu et al. 2003) Building performance such as building impact, function and build quality prove to have significant impact on strategic facilities management. Even, some maintenance work does not appear to be effective because of the building performance itself. Hence, building structure will be deteriorated due to so many factors such as unplanned services and aging fast. Effective maintenance system is known as an art to prevent and delay the rate of deterioration but that does not always solve problem. Design and facility still use the incorporated FM requirement in traditional ways; design the facility, and then design its management after the facility has been constructed (Edum-Fotwe, Egbu et al. 2003).
Noor and Pitt (2009) believed that in order to establish FM organization into business strategies, management team need to provide adequate resources, ample working space and practical guidelines to the FM operational system. By knowing, and being expert in how buildings perform, FM operation can become more strategic in its management.

To develop a business function, Atkin and Brooks (2000) have highlighted three stages. First, analysis stage is to incorporate business objectives, needs and policies. Then, review of resources, processes, system and the physical assets in terms of space, function and utilisation. Second, solution stage, whereby it involves judging options, evaluating the organisation’s objectives and developing the FM strategy. Third, implementation stage completes the strategy development process through the establishment of an implementation plan through procurement, training and communication. The author then ensures that, upon completion, the FM strategic management should form part of the organisation’s strategic and operating plan. FM is capable to carry out the strategic roles if FM division have a distinctive knowledge-base on how to source and evaluate between intra-firm administrative governance and inter-firm contractual arrangements (Yiu 2008).

The objective of this paper is to explore the significance of building performance associated with FM service delivery in regards to large healthcare organisation. The critical analysis on building performance is then being reviewed in regards to FM service delivery. A public healthcare organisation will be chosen in order to test the significance. The correlation between strategic facilities management and building performance was identified and a framework for strategic FM system with regards to building performance was developed.

BUILDING PERFORMANCE IN RELATION TO FM

Building has always been an important physical aspect to life. It develops in tandem with human civilization development. Nevertheless, facilities management can be excellent in its function if buildings are built in generously diligent way with acceptable quality. The cost of quality can be understood in terms of “economics of the design quality” or “economics of the conformance quality” (Kazaz and Birgonul 2005). The continuous quality of a building then depends on facilities management repair and maintenance exercises. However, quality has many meanings, but in the final analysis it is a “bottom line” issue. It might be erroneous to think of quality as only aesthetics, or gold painting, or as a” degree of excellence (Kazaz and Birgonul 2005) and design fault cannot be rectified by genius facility manager team. Williams, Purdey and International Facilities and Property Information Limited. (2005) highlighted that one of the important features in assessing FM performance, which is the contribution that facilities make to organisational effectiveness

Research done by Ornstein et. al., (2009) found that the causes of incompatible reality of the use of the building is due to the technical standard and the regulation requirement. The same authors concluded that there is a lack of information and knowledge of how best design can
support the well-being of patient in hospital and more time should be dedicated to planning and preparation, and proportional resources. Space is an important element where it represent how big the scope of building maintenance. Standard space is important in the organisation because it is related to structure of organisation, people and type and amount of work space occupied (Edum-Fatwe, 2003) as spatial attributes reflex the behaviour (Alalouch & Aspinall, 2007). Five significant advantages of space standard highlighted by Alalouch, Aspinall and Smith (2009) are;

i. To increase facilities performance and responsiveness to users’ requirements.

ii. Controlled or reduced costs;

iii. Functional and equitable office assignments

iv. Assurance of worker health and safety code and regulatory compliance

v. Simplified work space modifications and expansions.

Certain spatial properties have been shown to be connected to people’s movements in space, functional use of space, and other aspects of behaviour (Alalouch & Aspinall, 2007, pg. 346). However, as for now there is little research considering how building performance can bring a very significant impact to the effectiveness of the FM operation, especially on the effectiveness that involve functionality, impact and built quality. Users should be viewed as central to the building instead of being engineered out (Atkin and Brooks 2009).

Adapted from United Kingdom National Health Service (UK NHS) Toolkit, Achieving Excellence Design Evaluation (AEDET) Toolkit Evolution is an assessment to provide comprehensive evaluation of the design of healthcare environments. It is one of BREEM toolkit by Department of Health, United Kingdom. Originally in 2002, NHS Environment Assessment Tool (NEAT) was a self-assessment tool. It was then replace by Building Research Establishment Environmental Assessment Method (BREEM) Healthcare (B4H) when NEAT was considered not suitable to be a credible standard the NHS as public sector bodies. BREEM at a glance is an environment bodies that engage with environmental issues for building in United Kingdom (www.dh.gov.uk).

AEDET is a benchmarking tool to assist in measuring and managing the design of their healthcare facilities in regard to the building performance such as functionality, Impact and build quality (Figure 4.1). It was developed to encounter the complexity of healthcare design which is difficult to measure and evaluate. This toolkit will enable the user to evaluate as design by posing a series of clear, non-technical statements, encompassing the three key areas of impact, build quality and functionality (www.dh.gov.uk). AEDET is sometimes supported by other measurement tool which is called ASPECT (A Staff and Patient Environment Calibration Tool), but since this study did not involve patient, this tool was omitted and only used AEDET as a stand-alone tool.
Once the building is occupied, concerns with quality become even more important. Facilities management is responsible for management and maintaining quality in buildings range from technical maintenance to user’s satisfaction to ecological sustainability (Vischer & Preiser 2005, p. 13). The measurement is in regards to the components of the building are of high quality and fit for their purpose ((www.dh.gov.uk).

THE SIGNIFICANT RELATIONSHIP

Performance measurement has to be meticulous in a way it is practical to FM operation and technique, otherwise it seems to be superficial (Amaratunga and Baldry 2002). Chan, Lee and Burnett (2001) concluded that performance measurement is subject to sensitive users’ requirement that need a variety of engineering system to operate due to different areas that are dynamic and complex. With effective utilisation of all corporate resources, the FM function emerged as an important corporate discipline (Edum-Fotwe, Egbu et al. 2003). On the other hand, Goyal and Pitt (2007) viewed that innovation in FM is an enabler adding value to the organization. FM that has streamlined core focused approach to service management tends to naturally produce its own innovative solutions. However, the same author found that FM process receives most attention within the FM field only. In contrast, Tucker and Pitt (2009) viewed that any performance measurement tools will not only apply to FM but establish strategic business processes that will be embedded into organisation business culture. However, these authors commented that accessibility of FM benchmarks within the industry still remain scarce.
Alexander (1996) concluded that there is evidence of inadequate service delivery and recognition of the adverse consequences of undervalued and under-utilised facilities for corporate performance. He added organisation needs concept of excellence, teamwork, total quality and service. FM must link to corporate mission and objectives to enhance their service delivery. Almost every strategy that is chosen to satisfy the organisation’s stated needs ultimately has some impact on business, buildings and the building users (Vischer and Preiser 2005). FM theory in organization lies in three elements that can be associated with, namely process, place and people (Alexander 1996). First, process in regards to FM strategic management is FM business operation. It is a support service to core business operation by the organisation. Second, building is place, where the core business runs by FM service delivery support and third is building users is people. Third, people are users and a human factor involved in the core business operation as well as FM support service operation.

Due to the complexity of healthcare functions and needs and their multi-faceted characteristics, the healthcare system needs a progressive and periodic review such as benchmarking, key performance indicators (KPIs) and other types of performance measurement on its building performance to develop a strategic FM system. The application of specific FM system has to be suited to the nature of healthcare business operation. Process of FM then must be defined for FM to “orchestrate” activities and events, in order to create stronger sense of purpose and value in FM (Rogers 2004). The same author advised that FM division must implement rigorous and disciplined measurement. However, misdirect objectives occur when external benchmarking does not fit internal process in organisation (Tucker and Pitt 2009). Thereby, building performance needs to cater very specific function of the core operation in those particular buildings and in regards to the FM service delivery. Huge organisation such as healthcare may have many different buildings and those serve the difference purpose. In addition to that, sometimes changing or merging in terms of building functions occur due to expanding in core services. The changing process internally or externally may reflex how the building performs. Thereby, any innovative moves that lead to strategic management should be reviewed periodically and hand to hand with building performance measurement to ensure validity. Increasingly, process of managing facilities has now become more challenging due to the complexity of healthcare building itself. Explicit statements of performance requirements and effective performance management can support changing needs of the building per se (Robathan 1996). He then highlighted three appraisal of building performance, namely representation, measurement and evaluation. These include identification of users needs, their conversion into performance requirements of building and services and development into performance-based specifications.

Cooper (1996) claims auditing facilities provides an external datum against which to measure performance. However, he also argued that the disadvantage is that this datum is not geared to an organisation’s specific needs and requirements. Especially in regards to various organisations with wide range of stakeholders such as healthcare. Similar view by Booty (2009) claimed that many organisations do not record sufficient performance-related information. Large organisation such as healthcare need extensive insights on the various
approaches available for measuring the performance of such facilities as well as identifies the building performance. The result of any Key Performance Indicators (KPIs) will leads to best practices in facilities management operation financially. Indeed, high correlation between financial and performance prediction occurred by applying integrated healthcare facilities maintenance management (Lavy and Shohet 2009).

How can FM process be innovative with business strategic management if the accessibility of FM benchmarks remains scarce? FM is not about reducing running costs of building or maintaining cost but business as a whole. Performance measurement is a vital tool (Zairi and Sinclair 1995) and needs uplifting tools for balancing multiple measures across multiple levels (Hlavacka, Bacharova et al. 2001). Tucker and Pitt (2009) believed that the scarcity of FM holistic approach in business solution may cause ineffective performance measurement application. Periodic task by expertise may be needed to handle the validity and continuation of performance measurement, such as space planning. These tasks are required if organisation have merged, enlarged or had an extension or renovation works.

**PROPOSED STRATEGIC FM FRAMEWORK**

A building performance framework according to AEDET Toolkit will be developed. First, types of buildings under the healthcare organisation in relation to healthcare core services for example hospital, aged care and community health centre will be identified. From these types of buildings, FM service deliveries in the chosen buildings will be determined. AEDET toolkit then will be applied to identify the effect of building impact, function and build quality for every type of building. From the results, the KPIs of building performance in relation to healthcare core business activities will be developed.

![Figure 4.2 – Building performance framework](image)

The results will be used to develop a Strategic FM system (Figure 4.2). This framework can offer significant KPIs in relation to process, place and people. Process of FM service delivery can be based on KPIs that has been achieved. Place such as space and planning integrate with building and people that occupied the building integrate with vast kind of users. The elements of FM, buildings and users then can be integrated to develop a holistic strategic FM system. The integration comes through the existence of performance measurement system. The application of performance measurement may ease decision making processes and ensure strategic FM system aligned with business management especially on whether to be maintained or changed, buildings reused or built new, merged or outsourced.
CONCLUSION

In order to achieve better understanding in building performance, periodic assessment should be based on such operation that involve people (users) and process (business operation) that are engaged in the specific building (place). This assessment should also consider types of facilities service delivery involved in such core activities. Past literature has proved that building performance assessment has brought significant enhancement in healthcare operation but it was practically neglected by high cost of maintenance. To ensure healthcare business organisation (core operation) and FM service operation (non-core operation) is effectively manage, management of both should be aware of cause and the effect by building performance. This awareness and efficient measures can bring additional value to the core and non-core operations. Therefore, such redevelopment or renovation on building, merging, adding or eliminating core operation process should be carefully and periodically reviewed. This can ensure buildings performance at the best level.

This paper demonstrates that performance measurement theories may lead to significant changes and value the organisation towards achieving holistic approach in strategic FM business. The existence of strategic FM then will lead to supporting the healthcare business objectives. Finally, KPIs on building performance can assess and guide FM division in understanding the cooperated business objective together with physical ability of the buildings. Further research can demonstrate the generic KPIs to benchmark the FM service delivery and align with business objectives strategically. Finally, this study is significant because it presents a theoretical framework for interpreting how building performance can be benchmarked significantly when applied to FM service delivery.
REFERENCES


