

# DEFINING FACILITIES MANAGEMENT (FM) IN THE MALAYSIAN PERSPECTIVE

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## ABSTRACT

Facilities Management is well defined and understood here in the UK and it is easy to make the same judgement for other modern day countries, where the construction industry is well established and iconic structures dominate the city landscapes. In Malaysia, the picture seems quite different with various professionalisms having their own perspective on the definition of Facilities Management. It will be interesting to see if this research can identify a unifying approach to the concept of Facilities Management within the Malaysian market place.

Keywords: Asset management, Definition, Facilities Management, Malaysia, Property Management.

## 1. INTRODUCTION

Facilities Management (FM) can be summarised as creating an environment that is cohesive to carry out an organisation's primary operations, taking an integrated view of the infrastructure services and use it to give customer satisfaction and value for money through support for an enhancement of the core business (Noor and Pitt, 2009). However, since FM has been identified as a multi-disciplinary area of development and opportunity, it has resisted a universal definition (Nutt, 1999).

FM is one of the fastest-growing professions in the UK and was one of the main cost-cutting initiatives during the 1970s when outsourcing of services became popular. Since then, significant efforts to define FM within the UK market have evolved and FM is now regarded as a prominent profession in this market (BIFM, 2010).

Unlike in Malaysia, the discipline is still in its infancy and its related duties are fragmented with limited knowledge on the subject. The awareness on the importance of FM is often not being discussed, whether in the public sector or private sectors. However, initiatives are being taken by many institutions to ascertain an approach to improve the management of national assets and facilities management throughout the nation (Sulaiman et al., 2008). In 2007, the first National Asset and Facility Management Convention (NAFAM) were held in August to address the current issues and future challenges in managing national assets and facilities. This convention showed that the FM profession has evolved and adapted to meet the demands of a fast growing built and human environment industry. Agreeing to an annual NAFAM, the Prime Minister has urged both the public sector and private sector to come up with a more effective and efficient procedural framework in order to continuously improve the management of national assets and facilities. This convention was a major revolution to

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the future changes with regards to the perception of FM professions and practices in Malaysia (Sulaiman et al., 2008) Nonetheless, there is no consensus among the FM practitioners on a common FM definition which suits the Malaysian FM market. Several branches of FM dominants such as property management, building maintenance and asset management practitioners define FM based on their own perception. This makes FM more ambiguous in the Malaysian context, hence inspiring the researcher to undertake this element as part of the research objective. Therefore this paper set the scene by exploring the FM scenario in Malaysia, and then emphasizes on the primary research undertaken to complete the study objective.

## **2.0 METHODOLOGY**

The research is conducted through five phase's mixed-methods research design in collaboration with Construction Industrial Industry Board of Malaysia (CIDB) and a prominent local FM service provider. Through these alliances, relevant FM stakeholders are identified as the respondents to the research undertaken.

### Defining FM in the Malaysian Context

For the purpose of this study, definitions for FM were elaborated and concluded. In order to come out with the said definitions in the Malaysian context, the research was undertaken according to five phases, adopted from Pathirage *et al.* (2008) as indicated in Figure 1:

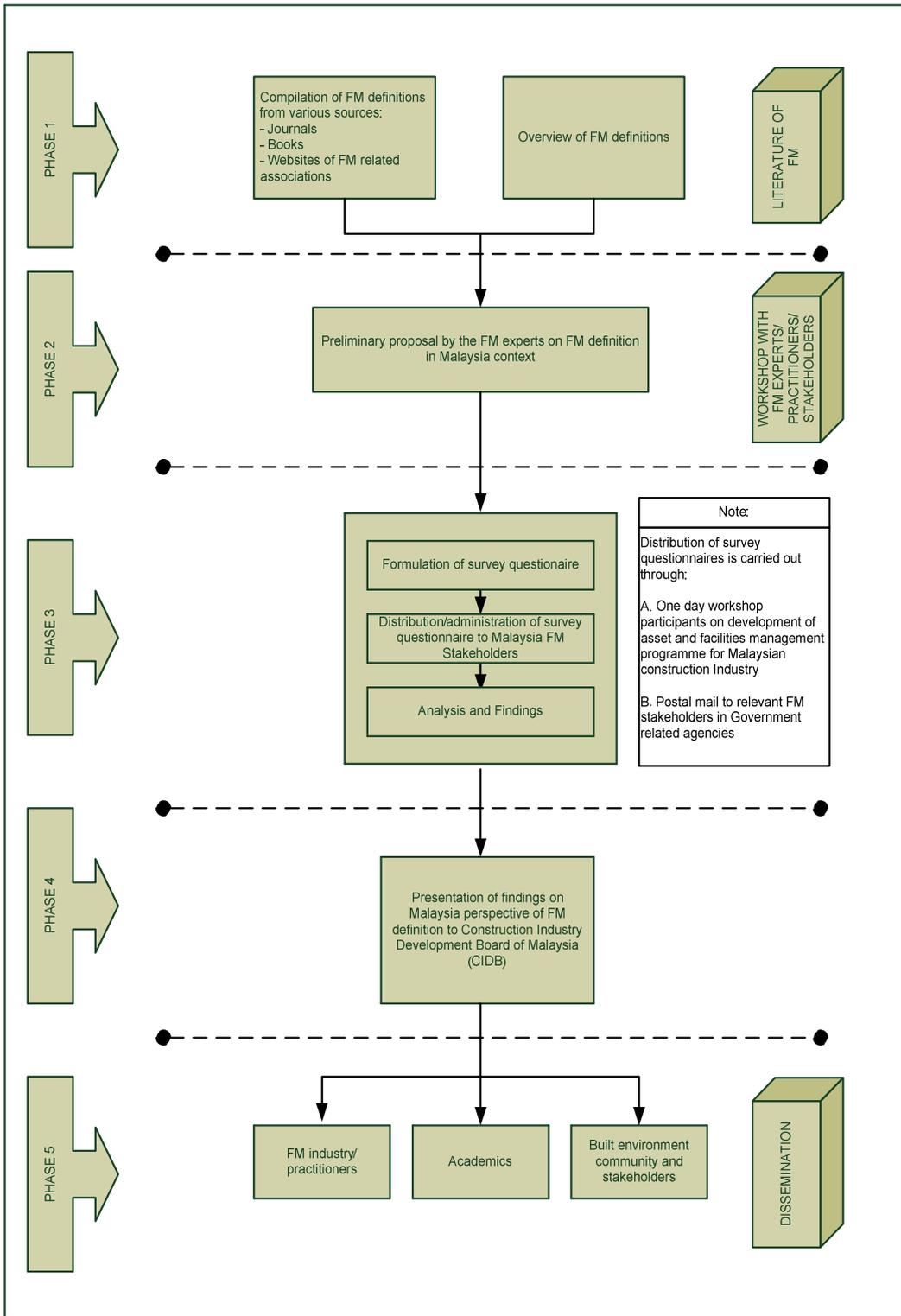


Figure 1: Research Methodology – Defining FM in the Malaysian perspective  
 Source: Self study adopted from (Pathirage *et al.*, 2008)

#### a) Phase 1

Phase 1 identified key FM definitions based on a comprehensive literature review from published and unpublished materials such as prominent FM academic journals, websites of FM related associations and other related materials. The compilation of FM definitions provides an overview of FM definitions that are widely used in the FM arena. The purpose of reviewing published literatures on FM is to develop the fundamental understanding on key issues and challenges that surrounds the subject. It covers all aspects of understanding on FM ranging from definition, role and responsibilities, best practices and relationship with existing established processes procedures to legal requirements. The sources of references were taken from published journals and FM professional bodies internationally.

#### b) Phase 2

The findings in Phase 1 were used as the basis on Phase 2 of the study. At this stage a workshop with various FM experts representing all FM stakeholders was conducted to identify a suitable FM definition that fits Malaysian FM business environments. The experts are local FM practitioners and asset owners that are divided into four groups to discuss possible FM definition that suits to the local context. All of the groups were provided with the list of FM definitions that was compiled in Phase 1. The list was used as a guideline for the experts to discuss and later to come out with a sole definition of FM for each group. At the end of the workshop each group was required to present and defend the rationality of FM definition that was produced by the group. Four definitions of FM were produced by the experts and reckoned as a preliminary proposal in defining FM in Malaysian context.

Workshops and forum were conducted for the CIDB Asset and Facility Management Working Group and other stakeholders. The purpose was to:

- Provide an insight on the FM Industry overview that was developed.
- Achieve convergence on concepts and nomenclature.
- To discuss and exchange ideas on how to “drill down” the asset management programme to the FM operators.

Three FM workshops and one forum were conducted during the study period. These workshops and forum covers the following area of studies:

#### a) Workshop 1

To Study Past & Current Industry Scenario (where we are now)

- Group task covering:
  - FM definitions
  - Identifying FM stakeholders & authorities
  - Recognising FM as a profession
  - FM competency
  - Legal, standards & development programmes

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b) Workshop 2

- Examine trend & upcoming practices in FM (where we want to be)
  - Group task covering the FM trend in Malaysia

c) Workshop 3

- Identify Issues & Challenges (how to get there)
  - Group task covering FM issues and challenges

The workshops were attended by representatives from asset owners, asset managers, facility managers, service contractors, government departments/agencies and academia/researchers.

c) Phase 3

Phase 3 of the study focuses on taking on the result of Phase 2 to wider FM stakeholders. A questionnaire survey strategy was adapted at this stage. The questionnaires were distributed via:

- Attendees of one day seminar on development of assets and facilities management programme for the construction industry; and
- Postal to relevant FM stakeholders in the government related agencies.

There were 122 respondents to the survey exercise and this data was statistically analysed using the SPSS software.

FM questionnaire survey was conducted to identify current practices employed by both government and private sectors in implementing FM initiatives. The evaluation and analysis of the survey feedbacks are then used to:

- a. Identify respondent profile;
- b. Measure industry perception on FM;
- c. Identify common current practices on FM;
- d. Identify common issues and problems that surround the implementation of the FM initiative; and
- e. Measure acceptable definition of FM in the industry.

Nominal and ordinal questions are used in the survey to identify the profile of respondents. In this section information on classification of respondents' organisation, their involvement, key roles, years of experience and area size of the facilities under their management are sought after. These questions are used as independent variables in determining perception of the respondents on FM as highlighted in item (b) to (e) above. The level of perception was then rated using a five-point interval scale under the following criteria; strongly agree, agree, neither agree nor disagree, disagree and strongly disagree. Participants also had the opportunity to state their opinion at the end of each survey questions. Feedback on area of FM competencies, opinion on the need of recognising and regulating FM as a profession in Malaysia were gathered using nominal scale.

The collected data were analysed by using Statistical Package for the Social Sciences (SPSS) software. Descriptive analysis technique was used to classify and prioritise the different response of the participant as needed. Kruskal-Wallis Test is used to identify any significant differences between the groups of respondents in defining FM.

A structured questionnaire survey form was developed to obtain the perception and level of understanding about FM from both public and private sectors. A total of 245 forms were distributed to various organisations in both sectors. The respondents were selected based on the following criteria:

- Government- Federal & State Government (including Local Councils/Authorities)
- Government-linked Companies – Asset owners
- Public Listed Companies – Asset owners and managers
- Private Limited Companies – Facility managers, service contractors, consultants and construction contractors

The rate of response to this questionnaire survey is 49.8%. 43.4% respondents were from the private limited companies in facility management, operation & maintenance services, FM consultant and construction contractors. This is followed by 21 respondents from state government with a percentage of 17.2%. Government agencies have 12 respondents with a percentage of 9.8% followed by 11 respondents from Public Listed Companies and Government Link Companies with a percentage of 9.0% respectively. Federal government has 8 respondents with a percentage of 6.6% and ‘Others’ have 6 respondents with a percentage of 4.9%. The respondent profile summary result is tabulated in Table 1.

*Table 1: Respondents Profile by Organisation Classification*

No	Organisation	Respondent	Percentage (%)
1	Private Limited Companies	53	43.4
2	Local Councils/Authorities	21	17.2
3	Government Agencies	12	9.8
4	Government-linked Companies	11	9.0
5	Public Listed Companies	11	9.0
6	Federal Government	8	6.6
7	Others	6	4.9
<b>Total</b>		122	100.0

d) Phase 4

The outcome of the Phase 4 exercise was presented to CIDB as the owner of the study undertaken. The definition was debated, refined and verified by the CIDB Sub Working Group (SWG) members.

e) Phase 5

The final phase (Phase 5) was the dissemination stage of the study. In this stage, the Malaysian perspective of FM definition was established and shared to FM stakeholders and the built environment community at large.

This paper focuses on the results and findings of phase 3 of the study.

## 2. OVERVIEW ON FM DEFINITIONS

Numerous definitions of FM have risen in recent years (Alexander, 1999, Becker, 1990, Hinks and McNay, 1999, Nutt, 2000, Pitt and Tucker, 2008, Tay and Ooi, 2001, Then, 1999, Varcoe, 2000). However, many of these definitions provide widespread variance on the understanding of what FM is, how it operates, and to what extent it offers sustainable opportunities for businesses (Tay and Ooi, 2001). Barret (1995) provides a more robust FM definition but restricts the FM paradigm to buildings, while neglecting the diverse nature of the FM profession.

Nevertheless, Tay and Ooi (2001) argue that the identity crisis (Price, 2002, Yiu, 2008) of FM may be due to it being a relatively new discipline as compared to other classical management disciplines (Yiu, 2008). While this discipline is still in the process of evolving, it is hard to generalise a universal definition of FM (Bell, 1992, Goyal, 2007, Nutt, 1999). Failure in finding the sole definition of FM is evident in Tay and Ooi (2001) when they provide a summary of various definitions given by previous individuals and organisation in searching for a common meaning of FM. However FM paradigm in the last decade was inclined towards defining FM as significant value adding elements rather than merely coordination of non core and physical property related activities to an organisation (Table 2).

*Table 2: FM definitions*

Organisation	Definition of FM
Chotipanich (2004)	The support function coordinating physical resources and workplace, and support services to user and process of works to support the core business of the organisation
Pitt and Tucker (2008)	The integration and alignment of the non-core services, including those relating to premises, required to operate and maintain a business to fully support the core objectives of the organisation.
RICS (2009)	A discipline that improves and supports the productivity of an organisation by delivering all needed appropriate services, infrastructures, etc. that are needed to achieve business objectives
Noor and Pitt (2009)	Creating an environment that is cohesive to carry out an organisation's primary operations, taking an integrated view of the infrastructure services and use it to give customer satisfaction and value for money through support for an enhancement of the core business
IFMA (2010)	Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology.
BIFM (2010) and BSI (2007) (known as BS EN15221-1:2006)	Facilities management is the integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary activities.
Kamaruzzaman and Zawawi (2010)	A balance between technical, managerial and business acumen that may be related to operational, tactical and strategic decision-making processes.

On top of difficulties in determining a clear demarcation of FM functions against other disciplines (Waheed and Fernie, 2009), Yiu (2008) argues that FM struggles to position and conceptualise its distinctive knowledge-base as compared to other management disciplines. The focus of arguments over FM definition are merely on “what should FM be” rather than “why FM can be” thus forbids its competitive position within the strategic roles in organisations. As a result FM is perceived to emulate property management and building professional practices theory (Kincaid, 1994) and narrowly positioned to undertake building engineering related activities.

Pursuing de Bruijn *et al.* (2001) perspective of FM as an ideological process and set of competences of professional practices, Chotipanich (2004) unpack the range of relevant practices that make up FM under a cluster of support services as indicated in Figure 2.

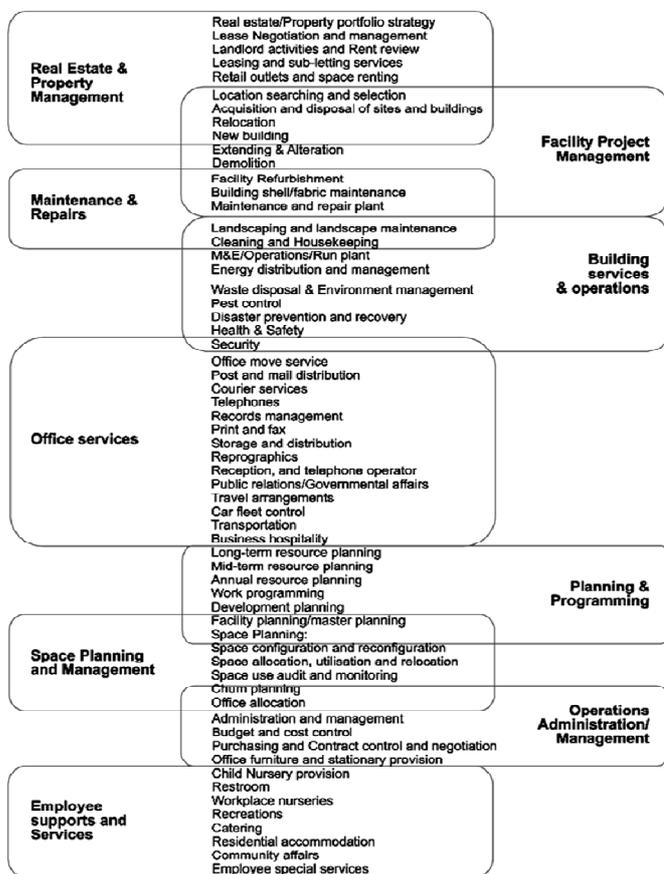


Figure 2: Cluster of support services

Source: Chotipanich (2004)

In order to establish its unique identity, Yiu (2008) contends that FM should be positioned as hybrid of strategic management and project management and proposes four conceptual strategic management roles that FM should focus on namely; the sourcing of services, the sourcing of workspaces, the sourcing of funds from infrastructure facilities and sourcing of performance.

Extensive review of the literature reveals that it is a valid concern to inquire how FM can be practiced in the absence of any definition as to what it is being practiced (de Bruijn et al., 2001). This view is supported by Chotipanich and Nutt (2008) since different support arrangement offered by FM are required in different business sectors, in different types of organisation, different countries and culture. FM being a developing profession resists a uniform international definition thus requires a specific contextualisation that suits a particular working environment (RICS, 2009). It is evident that defining FM is instrumental prior to moving on further with the scope and subsequent FM fundamentals.

### **3. FM IN MALAYSIA**

#### *3.1 FM evolution in Malaysia*

Like any other countries in South East Asia and Asia Pacific region, FM in Malaysia is described as a second wave market by the FM industry (Moore and Finch, 2004). Their study revealed that the region acknowledged a common FM definition as set by the industry. However it is noted that the research findings could not be generalised and adopted by respective countries in the constituency due to limited sample size used in the study. Moore and Finch (2004) identified that the Malaysian seems confuse over FM identity and coined FM as a subset of property management profession.

In Malaysia, property assets in the form of building and infrastructure are commonly managed by an in-house, out-source service team or combination of both through co-sourcing approach where subject-matter experts or service providers are combined within the in-house team to undertake the responsibility of delivering the necessary FM services. NAPIC (2009) reported that as at Q3 of 2009, there are more than 26 million square meters of existing stock of commercial properties (combination of shopping centres and purpose built offices) in Malaysia. While the values of all properties are still being studied by NAPIC, the above information shall be sufficient to indicate that Malaysia has significant values of assets owned by both public and private sectors.

The term asset management in the financial market is commonly confused with property management in the physical asset development domain. However, with the introduction of Valuers, Appraisers and Estate Agents Act in 1981 (incorporating all amendments up to 1<sup>st</sup> January 2006), property management means the management and control of any land, building and any interest therein, excluding the management of property-based businesses. (Property-based businesses includes; a hotel, motel, hostel, plantation, quarry, marina, port, golf course, cinema, stadium, sports complex and hospital.)

During the rapid development and privatisation in the Sixth Malaysian Plan (1990-1995), the country has experienced a sudden increase in demand for services mainly in the operation and maintenance of physical assets. This has created a lot of economic activities for the private sectors to undertake massive engineering and non-technical service contracting mainly in public-owned buildings and infrastructure. Services are provided by individual contractors mainly focussing on specific tasks such as mechanical, electrical, civil, cleaning, hygiene, landscaping, ground keeping and waste disposal. These maintenance contractors are often

engaged on a short to medium term service contracts by various government departments, local authorities and private companies.

The demand for maintenance contractor further increased during the Seventh Malaysian Plan (1996-2000) with the completion of mega development projects such as the KL International Airport in 1998, National Sports Complex Bukit Jalil in 1998, the Petronas Twin Towers in 1999 and Putrajaya in 1999. The sudden increase in demand for operation and maintenance services has prompted the market to improve the overall service delivery capacity to a higher level of quality, reliability and value. It was during this period that the country was introduced to an integrated service known as facility management.

FM has been well accepted as outsourcing since mid-90s until today with earned revenues of USD 268.1 million in 2006, with estimates to reach USD 535.0 million in 2013(Sullivan, 2007). It has been implemented at government owned facilities in the form of privatisation and medium-term service contracts. The earliest privatisation of FM service contracts we implemented in the public health services by the Ministry of Health and followed by the Federal Government Buildings located at all states in the country. Whereas in the private sector, Telekom Malaysia was the leading Government Link Company (GLC) to outsource the FM services for all non-telecommunication facilities in the Peninsular Malaysia.

In the year 2002, the International Islamic University of Malaysia implemented a comprehensive facility management outsourcing service contract for the Gombak Campus and later migrated to the Kuantan Campus. The Northern University of Malaysia however chose to implement a co-sourcing approach in delivering a comprehensive FM programme in managing the main campus in Sintok, Kedah. Similarly during the same period, the Public Works Department had also implemented Comprehensive Facility Management Service contracts in managing the Putrajaya Federal Government Buildings. These were some of the prominent government-owned facilities which were operated and maintained by FM service providers in the form of outsourcing service contract. The FM service provider is a 'one-stop' centre for the asset owner to get all support services with a well defined agreed service levels and customer's expectation requirements

In the Eighth (2001-2005) and Ninth (2006-2010) Malaysian Plan, the practices involve property, maintenance and facility management that exist in both public and private sectors in various forms of engagement. The engagements of these managers are generally found as follows:

- Property managers – residential and commercial buildings.
- Maintenance managers – facilities owned and operated by in-house team.
- Facility managers – public and private buildings/facilities which require a comprehensive scope in technical and non-technical services.

In 2007, maintenance had taken the spot light of events when multiple failures of government-owned building hit by series of unprecedented failures which caused an alarming situation for the construction and maintenance contractors. These events have prompted the Government to relook on the current practices in managing the development and maintenance of public buildings which seemed to be ineffective and poor in supervision. Relevant government circulars and policies delineating guidelines to effectively managing facilities failed to inculcate maintenance and facilities culture in the country (Kamaruzzaman and Zawawi, 2010). A more robust, systemic and cost-effective approach is required to stop this

from occurring in the future. Subsequent to these catastrophic events, the Public Works Department in collaboration with a private company in facility management services had jointly organised a convention known as National Asset and Facility Management Convention 2007 (NAFAM 2007) to address these pressing issues and set to meet the following objectives;

1. To create awareness on current issues and challenges in managing government assets.
2. To assess the strength and weaknesses of current system, its effectiveness and efficiency.
3. To explore ways to maximise and improve the quality of government assets.
4. To formulate a blueprint or master plan for centralised national asset and facility management.

The asset management concept was promoted during NAFAM 2007, and consequently has brought the government to formulate a new policy for managing the public asset. A committee chaired by the Chief Secretary to the Government of Malaysia has introduced a comprehensive Government Asset Management Policy and a Total Asset Management Manual that will set a new direction for the government ministries, department and agencies to better manage the public asset using life-cycle approach. This new approach covers the entire life-cycle of the physical assets from planning to construction during the project development phase and operational to disposal during the facility management phase.

Knowing the importance of establishing a formal organisation to undertake the national FM agenda as suggested in Moore and Finch (2004), at present, there are two established associations known as Malaysia Association of Facilities Managers (MAFM) and Malaysian Asset and Project Management Association (MAPMA) formed by interest group representing FM stakeholders in undertaking the promotion and development of Asset and Facility Management initiatives. However both organisations are currently focussing on creating the awareness on the importance of acknowledging FM as a profession in the country.

### *3.2 Current Perception of Asset and FM in Malaysia*

FM has not been well defined in the Malaysian context against similar practices in managing the built environment resulting conflicts between professionals disciplines as to which one should be recognised as licensed proprietor (Kamaruzzaman and Zawawi, 2010). In the current property market, a property manager focuses on building operations which involves space management, maintenance management, security management, property valuation, acquisition and disposal. Maintenance manager on the other hand focuses only on operation and maintenance of engineering equipment or installations within the physical built-up of a facility or building. A facility manager integrates the various multi-disciplinary functions at strategic, tactical and operational levels to deliver the required services as defined by the asset owner or the end-users. Finally, an asset manager looks into a systematic approach of maintaining, upgrading and operating physical assets cost-effectively by combining engineering principles with sound business practices and economic theories as a tool to deliver logical decision by the asset owners.

Based on the segmentation above, it is quite complicated to draw a demarcation line to separate these functions according to the respective tasks. There seems to be an overlapping of tasks yet independent when it comes to specific assignments. In the Malaysian job market, this is clearly stated based on the variety of vacancy advertisements for asset manager, property manager, maintenance manager and facility manager posted by the employers through Jobstreet.com.my and JobsDB.com.my website. In order to understand similarities and differences between the four professions in Malaysia, a desktop analysis was carried out by compiling relevant competencies and job descriptions required by the employers as advertised in two popular online employment agencies known as Jobstreet.com.my and JobsDB.com.my.

However, in view of the current demand and supply of skilled and semi-skilled personnel in relation to the management of built-environment, the following descriptions can be suitably applied to segregate the four management functions in the Malaysian context:

#### Asset Manager

An asset manager is commonly concerned about the business value of the asset. It views the asset value from the business owner's perspective i.e. looking for the business profitability – how the asset (and its associated costs – current and future) could reflect in the business owner's balance sheet and profitability. Based on the current employment trend, employers are keen to search for managers with finance or business background to be as an asset manager. Being the asset owner's business advisor, it is quite uncommon to see an asset manager's job responsibilities in Malaysia to include maintenance as part of his responsibilities. Key responsibilities for the asset manager position are always related to investment, funds, financing and taxation.

#### Property Manager

Whilst an asset manager concerns about the business profitability, it is important that any decisions made for an asset (acquisition, selling, leasing, rental etc.) is properly advised, bearing in mind the current and future value of the asset. For this, a registered property manager comes into the picture. Apart from advising and forecasting the value of an asset, a property manager also plays important roles in the processes of the space marketing and negotiation on behalf of the asset owner, including of any asset acquisition. Apart from doing valuation as its professional practice, a property manager also takes the burden of the asset owner on tenancy management, collects rents and executes eviction process if needed so. Based on most job requirement advertised in Malaysia, a property manager is also required to extend his services in the area of maintenance management which are normally outsourced to specialised service provider.

#### Facility Manager

A recently built or acquired asset or property possesses several vital issues to be handled with. Proper handover from the construction team, warranty issues, management of supply, maintenance, safety, health & environment as well as business continuity planning shall be among the important considerations of a facility manager. All these considerations shall be planned, organised, implemented, controlled and reviewed towards zero interruption of the business operations. This includes complaint handling, event management and disaster

recovery. Most employers' advertisements for a facility manager position would require the candidate to be responsible with all said matters and activities.  
 Maintenance Manager

Among common responsibilities of a maintenance manager required by employers include operation and maintenance, plant shutdown, materials and parts management and other engineering activities such as root cause analysis, condition monitoring (Thermography scanning, oil and vibration analysis), equipment data analysis as well as site supervisory. In this case, the qualification requirement is used to be from engineering background.

Based on the analysis of the employment opportunities in the asset and property market, the segmentation of key tasks, similarities and differences can be summarised as Figure 3. The findings reckoned activities such as maintenance and contract management are common to all four disciplines, while others are common to two or more trades. There are also responsibilities and/or activities that are core competencies for individual trades respectively. Based on core competencies in each 'bubble' in the diagram, it is noted that employers in Malaysia require finance or business background for an asset manager, valuation or real estate related for a Property Manager, engineering or technical competencies for maintenance manager posts and a mixed background (management, technical, business etc.) for a facility manager. The findings are also inclining to the Chotipanich (2004) study that highlighted overlapping functions between clusters of support services between professions indicated in Figure 2.

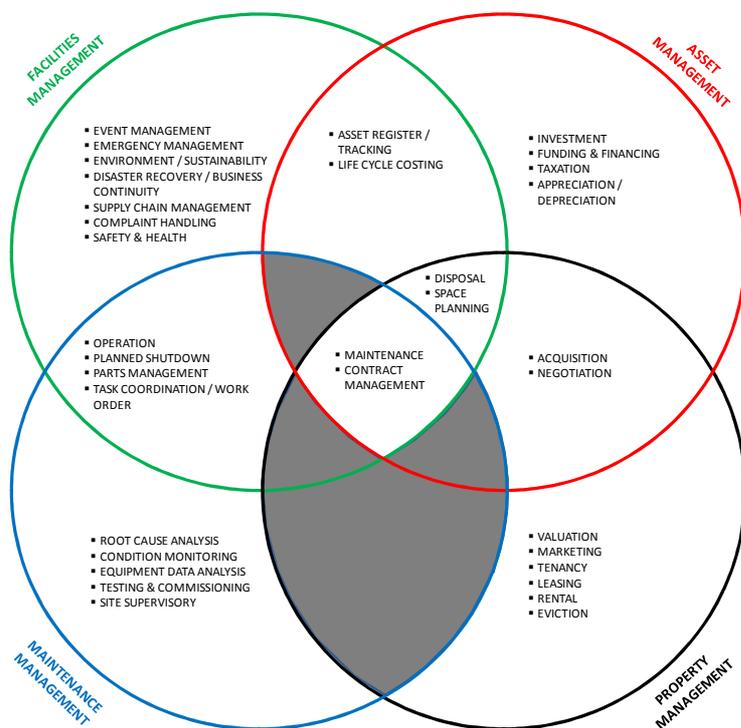


Figure 3: The overlapping functions on asset by various disciplines in Malaysia  
 Source: Self study

#### 4.0 SURVEY ANALYSIS AND RESULTS

#### 4.1 Existing Understanding, practice and workplace experience on FM

With the overlapping functions by various disciplines, different organisations tend to have their own understanding and practice. These may result, whether directly or indirectly on the existing workplace experience. To explore this, data from the questionnaire survey is further analysed. A radar chart was constructed to identify the existing level of understanding of FM, existing practice and workplace experience as indicated in Figure 4:

#### 4.2 Scoring Allocation and Survey Scores

Good	Acceptable	Moderate	Bad	Poor
5	4	3	2	1

Table 3: The current FM paradigm in Malaysia

	Strongly agree	Agree	Neither agree of disagree	Disagree	Strongly disagree
<b>SECTION A: Understanding Facilities Management</b>					
In my opinion, Facilities Management has no difference compared to Building Maintenance Management	1	2	3	4	5
It is important to consider the cost of operation and maintenance of an asset/facility throughout its life cycle cost during the planning/acquisition stage of the asset/facility	5	4	3	2	1
Environmental and facility sustainability factors should be among vital consideration when planning a new facility	5	4	3	2	1
Facilities Management approach is not needed when an organisation has already engaged disintegrate maintenance service contractors (e.g. air-conditioning, electrical, plumbing etc.)	1	2	3	4	5
As long as there is no breakdown to the current facilities, there is no need of proactive monitoring and continuous improvement to the facilities	1	2	3	4	5
<b>SECTION B: Existing FM practice in your workplace</b>					
My organisation has a complete organizational setup on asset & facilities management	5	4	3	2	1
My organisation has full information on the performance of our outsourced maintenance contractors and the assets/facilities	5	4	3	2	1
Maintenance activities in my workplace usually concentrate on corrective maintenance (repair works) rather than preventive maintenance resulting in higher cost	1	2	3	4	5
My organisation keeps track of the cost of its assets/facilities throughout their life cycle – from acquisition/purchase, operation, maintenance, upgrading up to disposal / total replacement	5	4	3	2	1
My organisation used to focus on its corporate image by providing more budgets on aesthetical repair/refurbishment, not to other facilities that physically support the business activities (e.g. mechanical & electrical systems)	1	2	3	4	5
<b>SECTION C: Current FM issues in your workplace</b>					
The performance level of maintenance at my workplace is currently satisfactory	5	4	3	2	1
We have adequate competent personnel handling the management of asset/facilities in our organisation at all levels	5	4	3	2	1

My workplace used to have recurring maintenance problems with less chances of overcoming it	1	2	3	4	5
My organisation does not have financial constraint for the management of our assets/facilities especially when it comes to repair works or periodical maintenance program	5	4	3	2	1
It is always easy to trace previous decisions and actions made to the asset/facility	5	4	3	2	1

*Table 4: Understanding of Asset and FM*

Score	Good	Acceptable	Moderate	Bad	Poor
In my opinion, Facilities Management has no difference compared to Building Maintenance Management	16	44	18	40	3
It is important to consider the cost of operation and maintenance of an asset/facility throughout its life cycle cost during the planning/acquisition stage of the asset/facility	53	66	2	0	0
Environmental and facility sustainability factors should be among vital consideration when planning a new facility	55	66	1	0	0
Asset & Facilities Management approach is not needed when an organisation has already engaged disintegrate maintenance service contractors (e.g. air-conditioning, electrical, plumbing etc.)	19	75	12	13	1
As long as there is no breakdown to the current facilities, there is no need of proactive monitoring and continuous improvement to the facilities	48	56	5	10	3
<b>TOTAL</b>	<b>191</b>	<b>307</b>	<b>38</b>	<b>63</b>	<b>7</b>

*Table 5: Existing FM practice in the workplace*

Score	Good	Acceptable	Moderate	Bad	Poor
My organisation has a complete organizational setup on facilities management	12	57	26	21	3
My organisation has full information on the performance of our outsourced maintenance contractors and the assets/facilities	7	59	27	24	3
Maintenance activities in my workplace usually concentrate on corrective maintenance (repair works) rather than preventive maintenance resulting in higher cost	8	43	19	37	13
My organisation keeps track of the cost of its assets/facilities throughout their life cycle – from acquisition/purchase, operation, maintenance, upgrading up to disposal / total replacement	11	56	31	19	3
My organisation used to focus on its corporate image by providing more budgets on aesthetical repair/refurbishment, not to other facilities that physically support the business activities (e.g. mechanical & electrical systems)	6	38	38	29	9
<b>TOTAL</b>	<b>44</b>	<b>253</b>	<b>141</b>	<b>130</b>	<b>31</b>

Table 6: Current FM issues in the workplace

Score	Good	Acceptable	Moderate	Bad	Poor
The performance level of maintenance at my workplace is currently satisfactory	5	74	18	23	1
We have adequate competent personnel handling the management of asset/facilities in our organisation at all levels	9	49	33	27	3
My workplace used to have recurring maintenance problems with less chances of overcoming it	2	35	39	42	2
My organisation does not have financial constraint for the management of our assets/facilities especially when it comes to repair works or periodical maintenance program	6	33	32	48	3
It is always easy to trace previous decisions and actions made to the asset/facility	5	55	35	25	1
<b>TOTAL</b>	<b>27</b>	<b>246</b>	<b>157</b>	<b>165</b>	<b>10</b>

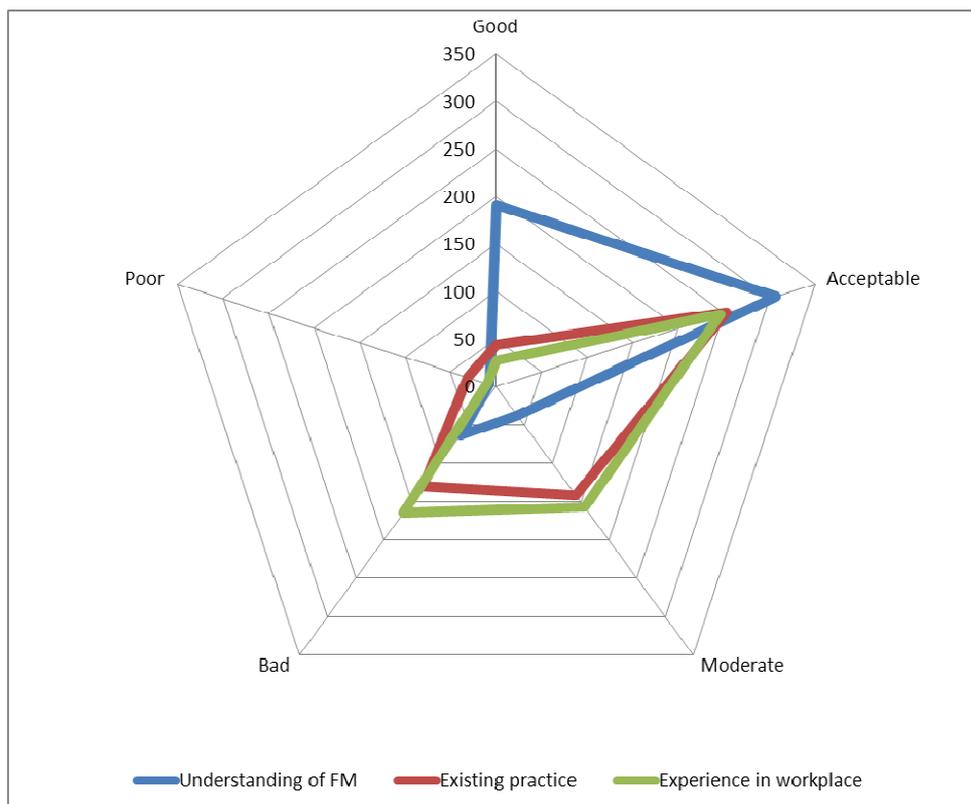


Figure 4: Results on understanding, existing practice and experience of FM

Figure 4 is derived from the tabulation and scores of Table 3 to Table 6 above. It is evidenced that most of the respondents have sufficient the level of understanding of Asset and Facility Management (82% score 'good' and 'acceptable' level of understanding). Very few have low level of understanding (only 11% scored 'bad' and 'poor').

However, only 50% of the respondents demonstrated that they are exercising good and acceptable practice in their workplace, with a significant score of ‘bad’ and ‘poor’ practices (27% combined).

Subsequently, only 45% of the respondents seem satisfied with their experience in their own workplace (‘good’ and ‘acceptable’) with 29% are having ‘bad’ and worst (‘poor’) experience in their workplace.

Apart from the scoring result, the radar chart shows close relationship or similarity between the organisation’s current practices with the experience they faced. The radar chart demonstrates that most organisations that are not exercising good practices face unfavourable experiences in their workplaces. However, the radar chart shows that the level of understanding does not closely correspond to the quality of practices in the workplace. This could suggest that there are organisations that are deliberately not exercising good Asset and Facility Management practice despite their adequate level of understanding.

#### 4.3 Defining FM in the Malaysian Perspective

Existing FM definitions as indicated in Phase 1 of the research methodology section were compiled and used as guidelines in defining FM in the Malaysian perspective during the first workshop conducted. The workshop members, represented by various FM stakeholders, were divided into four groups. Each group is required to come out with an FM definition. The four different definitions were presented, debated and concluded which detailed in Table 7. These four definitions were put into test in the form of AFM questionnaire survey exercise.

*Table 7: The proposed definitions for the Malaysian FM market*

Definition	Proposed definition
A	A strategic and integrated management of facilities to continuously meet the requirements and performance standards of stakeholders.
B	A multi-discipline profession ensuring continual satisfactory functionality of asset by integrating people, processes, work place, technologies & environment.
C	An integration of multi-disciplinary activities to develop, maintain and sustain the agreed services of facilities.
D	The management of multi-disciplinary activities to ensure continuous functionality of the built environment by linking and integrating people, place, processes and technology.

The above definitions were tested in a questionnaire survey and analysed through the following procedures:

1. Kolmogorov-Smirnov one sample test (to test the normality of the distribution of data)
2. Frequency distribution and cross tabulation tests (to identify the trends in percentage among categorical variables)

3. Kruskal-Wallis Test (to identify any significant differences between the groups of respondents in defining FM)

*Kolmogorov-Smirnov one sample test*

Kolmogorov-Smirnov test is a method to identify of whether the distribution of data as a whole deviates from a comparable normal distribution (Field, 2009). The result for variables tested using this method shown a high significant level ( $p < 0.05$ ) from a normally distributed data set. As suggested by (Tucker and Pitt, 2009), further tests in determining differences between variables had to be a non-parametric inferential analysis.

*Frequency distribution and cross tabulation tests*

In order to obtain a valid representation from the survey, the above analyses are carried out based on the number of valid cases from the total of 122 respondents. By that virtue, all of the missing cases are excluded from the investigation. Table 8 represents the case processing summary for classification of respondents according to FM definitions that is earlier highlighted in Table 7.

*Table 8: Cross-tabulation of all valid cases and percentages for FM definitions*

Cross-tabulation respondent vs FM definition	Cases					
	Valid		Missing		Total	
	N	%	N	%	N	%
Classification of respondent organisation * A strategic and integrated management of facilities to continuously meet the requirements and performance standards of stakeholders (Definition A)	116	95.1%	6	4.9%	122	100.0%
Classification of respondent organisation * A multi-discipline profession ensuring continual satisfactory functionality of asset by integrating people, processes, work place, technologies & environment (Definition B)	117	95.9%	5	4.1%	122	100.0%
Classification of respondent organisation * An integration of multi-disciplinary activities to develop, maintain and sustain the agreed services of facilities (Definition C)	116	95.1%	6	4.9%	122	100.0%
Classification of respondent organisation * The managing of multi-disciplinary activities to ensure continuous functionality of the built environment by linking and integrating people, place, processes and technology (Definition D)	116	95.1%	6	4.9%	122	100.0%

*Table 9: Result of FM definitions according to frequency*

Scale		Definition %			
		A	B	C	D
Positive	Strongly Agree	16.4	23.9	18.1	28.4
	Agree	60.3	69.2	66.4	65.6
	<b>Total</b>	<b>76.7</b>	<b>93.1</b>	<b>84.5</b>	<b>94.0</b>
Neutral	Neither Agree or Disagree	17.2	5.2	12.1	4.3
Negative	Disagree	6.0	1.7	3.4	1.7
	Strongly Disagree	0	0	0	0
	<b>Total</b>	<b>6.0</b>	<b>1.7</b>	<b>3.4</b>	<b>1.7</b>

Five attitudinal interval scales that are used in the survey (strongly agree to strongly disagree) were reclassified into three perception groups of positive, neutral and negative. The highest percentages of positive scale (combination percentages of agree and strongly agree) will be used as the most acceptable definition for the Malaysian market. Based on the analysis in Table 9, it is identified that definition D is acknowledged as the most acceptable FM definitions by a marginal difference of 0.9% as compared to definition B.

*Kruskal-Wallis Test*

Kruskal-Wallis Test is the non-parametric alternative to a one-way between-groups analysis of variance. Sharing the same principle to the Mann-Whitney test, the analysis allows three or more between groups comparison of scores on some continuous variables where it is based on ranked data (Field, 2009, Pallant, 2001). Since there are seven groups representing FM stakeholders in the survey, the result of less than 0.05 (in the Asymp. Sig. value) will statistically indicate any significance difference in the level of opinion towards the FM definition in the Malaysian perspective. Based on the findings as highlighted in Table 10, there were no significant associations found across the groups on their opinion on all of the FM definitions in the Malaysian perspective. It is evidence since all of the statistical significance values are more than .05.

*Table 10: Significant association between groups on opinion of FM definitions*

Kruskal-Wallis Test Result	Definition A	Definition B	Definition C	Definition D
Chi-Square	10.145	4.463	3.596	12.534
df	6	6	6	6
Asymp. Sig.	.108	.614	.731	.051

## 5. CONCLUSIONS AND RECOMMENDATIONS

Based on the overall findings of the study, two conclusions can be derived:

### *Review of Asset and Facility Management Industry*

It was found that the evolution of AFM in Malaysia starts from the property management and maintenance management practices. Hence future development of asset and facility management programme must integrate key activities within property and maintenance domains as part of the overall asset management plan of the physical built environment. There are overlapping functions between property, maintenance, facility and asset management which must be clearly demarcated to ease the implementation of a successful AFM programme. The existing in-house, out-source and co-source practices are not guided by any standardised fundamental requirements. Hence it is difficult to achieve uniformity in the overall service delivery quality. The need to establish a body to regulate the profession, an association to promote good FM practice, a professional development institution to support research and training requirement, and a centre of FM excellence to provide valuable information sharing platform must be critically considered in the future development of FM master plan.

The Malaysian FM market is still lacking significantly on awareness and recognition of the industry. Enforcement, consolidation of acts/regulations/guidelines, government incentives and asset ratings need to be considered for future programmes that will promote good FM practices in the Malaysian business environment. Based on the workshop, seminar and questionnaire survey analysis, the study concluded the following FM definition as acceptable in the Malaysian context;

*“THE MANAGEMENT OF MULTI-DISCIPLINARY ACTIVITIES TO ENSURE CONTINUOUS FUNCTIONALITY OF THE BUILT ENVIRONMENT BY LINKING AND INTEGRATING PEOPLE, PLACE, PROCESSES AND TECHNOLOGY.”*

### *Industry Feedback*

Through the questionnaire survey carried out in this study we have identified a number of suggestions or recommendations from several industry players or stakeholders which are relevant for the development and progress of the industry. Of these identified areas, five key points from suggestions that are relevant to FM in Malaysia context was identified. These suggestions are arranged in the order of importance as follows:

- Malaysian Standard in Asset and Facilities Management

Malaysia needs to come out with its own standard that is acceptable by all organisations and be adapted based on our climate and environment.

There is strength to adopt the total FM system known as asset management system or computerised maintenance system. It gives the advantage of gaining power of information that assist for any decision making through a structured analysis from the data. So, it is important for asset and Facility Management in Malaysia to standardise its maintenance practices and make IT as a compulsory element in the FM standards.

- Best Practice Guidelines for the Malaysian Facility Management

CIDB is to develop, maintain and implement guidelines for FM practices among the industry practitioners and organisations. These guidelines may come in the form of policy, manual, procedure and detail procedure that will give a clear definition on how FM programmes can be successfully implemented.

- Facility Managers Qualification

The tertiary education centres (universities, polytechnics and skill training institutions) should establish a proper collaboration to develop the required FM training modules that can churn highly competent workforce for the Malaysian market. This collaboration should also take into consideration matters related to research & development, research commercialisation and internships. FM tertiary programmes should be competitive with the renowned international FM institution or association.

- Regulating FM industry

Further to the questionnaire survey and workshop sessions, there is significant evidence that the FM practitioners look forward for an FM profession to be regulated and monitored by a professional body. The industry prefers to regulate the individual professional and organisation via a professional institution representing the industry and practitioners.

- FM Certification

In view of the need to enhance the current FM practices, it is important that a government agency (proposed - CIDB) to take the lead to introduce a certification process that will certify the competency level of practicing individuals and service providers or FM consultants. FM Certification will provide a platform to standardise the practices, control and monitor the practitioners/FM service providers, and provide some form of authority for enforcement.

- To review the Valuers, Appraisers and Estate Agents Act 1981

In Malaysia, only property management practice is recognised through the main professional body. The Board of Valuers, Appraisers, and Estate Agents (BOVAEA), providing little identity for property management as a profession in its own right and leading to the perception that FM is part of property management (Moore and Finch, 2004). FM is a profession that is dynamic and has its own set of competencies and professionalism. Therefore, it is high time for the existing legislative perspective to be reviewed to enable FM to be recognised in the local market.

## 6. REFERENCES

- Alexander, K. (1999) *Facilities management*, London, E&FN Spon.  
 Barret, P. (1995) *Facilities Management: Towards Best Practice*, Oxford, Blackwell Science Ltd.  
 Becker, F. (1990) *The Total Workplace*, New York, NY, Van Nostrand Reinhold.  
 Bell, J. (1992) Facilities management and changing professional boundaries. *Facilities*, 10, 161-173.

- BIFM (2010) Homepage of British Institute of Facilities Management.
- BSI (2007) BS EN 15221-1:2006 (E). BSI.
- Chotipanich, S. (2004) Positioning facility management. *Facilities*, 22, 364-372.
- Chotipanich, S. & Nutt, B. (2008) Positioning and repositioning FM. *Facilities*, 26, 374-388.
- De Bruijn, H., Van Wezel, R. & Wood, R. (2001) Lessons and issues for defining "facilities management" from hospitality management. *Facilities*, 19, 476-483.
- Field, A. (2009) *Discovering statistics using SPSS*, Sage Publications Ltd.
- Goyal, S. (2007) Determining the role of innovation management & measurement in strategic facilities management: ensuring optimisation & continuity. *Ph.D Thesis*. Liverpool John Moores University.
- Hinks, J. & Mcnay, P. (1999) The creation of a management-by-variance tool for facilities management performance assessment. *Facilities*, 17, 31-53.
- IFMA (2010) Homepage of the international facilities management association.
- Kamaruzzaman, S. & Zawawi, E. (2010) Development of facilities management in Malaysia. *Journal of Facilities Management*, 8, 75-81.
- Kincaid, D. (1994) Measuring performance in facility management. *Facilities*, 12, 17-20.
- Moore, M. & Finch, E. (2004) Facilities management in South East Asia. *Facilities*, 22, 259.
- NAPIC (2009) Malaysia Commercial Property Stock Report Q3 2009 *Malaysia Property Stock Report*. Putrajaya, National Property Information Centre.
- Noor, M. & Pitt, M. (2009) A critical review on innovation in facilities management service delivery. *Facilities*, 27, 211-228.
- Nutt, B. (1999) Linking FM practice and research. *Facilities*, 17, 11-17.
- Nutt, B. (2000) Four competing futures for facilities management. *Facilities*, 18, 124-132.
- Pallant, J. (2001) *SPSS survival manual: a step-by-step guide to data analysis using SPSS for Windows (Version 10)*, Allen & Unwin.
- Pathirage, C., Haigh, R., Amaratunga, D. & Baldry, D. (2008) Knowledge management practices in facilities organisations: a case study. *Journal of Facilities Management*, 6, 5-22.
- Pitt, M. & Tucker, M. (2008) Performance measurement in facilities management: driving innovation? *Property Management*, 26, 241-254.
- Price, I. (2002) Can FM evolve? If not, what future? *Journal of Facilities Management*, 1, 56-69.
- RICS (2009) *RICS Practice Standards, UK: The strategic role of facilities management in business performance*, Coventry Royal Institution of Chartered Surveyors (RICS).
- Sulaiman, N., Baldry, D. & Ruddock, L. (2008) The Development of Facilities Management Education in Malaysia: Universiti Tun Hussein Onn Malaysia (UTHM). IN Cásenský, D. M., Ahmed, D. V., Eaton, P. D. & Sutrisna, D. M. (Eds.) *BuHu 8th International PostGraduate Research Conference*. Technical University in Prague, Czech Republic, University of Salford.
- Sullivan, F. (2007) Malaysia Opening to Third-Party Integrated Facilities Management Services.
- Tay, L. & Ooi, J. T. L. (2001) Facilities management: 'a jack of all trades?'. *Facilities*, 19, 357-362.
- Then, D. S. S. (1999) An integrated resource management view of facilities management. *Facilities*, 17, 462-469.
- Tucker, M. & Pitt, M. (2009) National standards of customer satisfaction in facilities management. *Facilities*, 27, 497-514.
- Varcoe, B. (2000) Implication for facility management of the changing business climate. *Facilities*, 18, 383-391.
- Waheed, Z. & Fernie, S. (2009) Knowledge based facilities management. *Facilities*, 27, 258-266.
- Yiu, C. Y. (2008) A conceptual link among facilities management, strategic management and project management. *Facilities*, 26, 501-511.