



**CRITICAL STRATEGIC ISSUES FOR THE INTEGRATION OF  
FACILITIES MANAGEMENT INTO THE DEVELOPMENT  
PROCESS**

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CRITICAL STRATEGIC ISSUES FOR THE INTEGRATION OF FACILITIES  
MANAGEMENT INTO THE DEVELOPMENT PROCESS

**Purpose** – This paper identifies the critical strategic issues for the integration of facilities management (FM) into the development process (DP). It explains the factors that limit the integration and recognises the best practices applied in the property development industry in the UK.

**Design/methodology/approach** – The study employs a qualitative research approach through semi-structured interviews from the FM and property development industry in the UK.

**Findings** – The study discovered that the recognition of FM in the property development industry is encouraging. However, FM has been given a low priority in the property development industry, resulting in Facilities Managers being inadequately integrated into the development process.

**Originality/value** – The paper suggests that it is imperative to understand these strategic issues to promote best practice in the industry that improve the position of FM in the property development industry.

**Keywords** – Facilities Management, development process, property development industry, best practices, FM-DP integration framework

**Paper-type** – Research paper

## 1. INTRODUCTION

This paper adopts a qualitative approach in order to identify the critical strategic issues perceived to be barriers for the integration of facilities management (FM) into the development process (DP). It builds on the rationale to integrate facilities management into the development process presented by Tucker and Masuri (2016) and attempts to explain the factors that limits the integration and recognise the best practices applied in the property development industry in the UK. The paper firstly provides a comprehensive literature review of the critical strategic issues that hinder the integration of FM into the development process. Secondly, the paper reveals the existing international studies on the FM experience in property development industry, primarily focusing on Europe and Asia. Finally, the paper explains the research qualitative research methodology adopted in order to establish the critical strategic issues, before presenting a critical analysis of the key findings of the research. The findings from this paper form part of a wider sequential exploratory strategy (Creswell, 2013), to which the qualitative findings of this study will enable the exploration of critical strategic issues to be quantitatively tested on the wider industry.

The main aim of this paper is to determine whether the production of guidelines as to how Facilities Managers could work together with Project Development teams at an early stage in the design evolution, to maximise the benefits of FM in buildings in use. To achieve the aim, the barriers that prevent it happening need to be identified and solutions to overcome the barriers proposed. This an objective of this paper.

## 2. CRITICAL STRATEGIC ISSUES TO INTEGRATE FM INTO THE DEVELOPMENT PROCESS

Before exploring the critical strategic issues to integrate FM into the DP, it is important to firstly clarify the DP definition. A fundamental component of Tucker and Masuri's (2016) study to rationalise the integration of FM in the development process (DP), was to define the DP by using Royal Institute of British Architects (RIBA) Plan of Work (2013) as a framework. The RIBA Plan of Work (2013) consists of eight stages, which are Stage 0: Strategic Definition, Stage 1: Preparation and Brief, Stage 2: Concept Design, Stage 3: Developed Design, Stage 4: Technical Design, Stage 5: Construction, Stage 6: Handover and Close Out, and Stage 7: In Use. These stages assist in conceptualising the specific stages where FM can integrate into the DP, and are further explored through the qualitative findings in this paper, to which Tucker and Masuri (2016) express that the RIBA Plan of Work (2013) is an ideal framework to define the DP as it 'considers critical current issues in the property development industry such as whole life costing, sustainability, post-occupation evaluation, building information modelling, information and communication technology, lean philosophy and comprehensive integration of all aspects in the property development industry'.

Although previous research on FM-DP integration is mostly associated with providing understanding of FM knowledge in the design stage (e.g. Damgaard and Erichsen, 2009; Jaunzens et al., 2001; Jensen et al., 2009), it could be argued that, insufficient effort has been made to identify the qualities needed to enable the Facilities Manager to be regularly involved in the property development industry and consequently optimise the value of FM in all stages of the DP. This section defines and explains critical issues that limit the integration of FM into the DP and best practices applied in the industry.

### 2.1 Perceptions

FM has been around since humans invented buildings and facilities (Elmualim et al., 2008). de Lucy (1991) asserts that FM departments in corporate organisations have been recognised as increasing productivity and producing cost savings. There is awareness to position FM in a strategic level in the organisations.

Unfortunately, it is very difficult to happen as paradigm shift in the property development industry is static (Koskela, 1992). Although Hinks (1999) and Drion et al. (2012), who believed that Facilities Management is known for its versatility and as a multi-disciplinary profession, there is evidence that Facilities Managers are in crisis of identity (Tay and Ooi, 2001; Yiu, 2008). They have to borrow other disciplines' images to enable them to be recognised in the property development industry (Yiu, 2008; p. 508). FM cannot continuously rely on the management concepts of other disciplines (Nutt, 1999), and FM must establish a unique identity for Facilities Managers. The remit of FM is wide-ranging, which contributes to the difficulties in determining the qualities that should be regarded in the strategic and operational components of the development process (Elmualim et al., 2009). Damgaard and Erichsen (2009) define operation in FM as all of the services that are prerequisites for building a system to function satisfactorily (in the use phase) including the supply, maintenance and cleaning. An operation that is viewed as a subset of FM is perceived as the most unattractive task (Damgaard and Erichsen, 2009; Wood, 2003). Therefore, this justifies why the operational aspects have poor relationships and fail to integrate into a new development projects (Spedding, 1994).

**2.2 Competence**

Sullivan et al. (2010) claim that there are numerous professionals, regardless of whether they are technical or non-technical, entering the FM discipline through natural transition or on-the-job training process. This kind of transition does not provide FM with competent Facilities Managers. This situation is causing FM to have a shortage of 'pure' Facilities Managers in which the gap is filled through the additional hiring of individuals possessing irrelevant qualifications in FM (Badger and Garvin, 2007). Sullivan et al. (2010) added that Facilities Managers are perceived to possess low levels of secondary education with very few of them willing to enhance their education due to lack of FM academic programmes. In terms of career development, the Facilities Manager is viewed as having an ill-defined career path that impedes the entrance of new talent to grow the field. Since Facilities Managers are often associated with operational aspects, they are rarely involved in the early stage of the development process. As a result, very few Facilities Managers possess sufficient knowledge and experience in the property development industry (Chodasova, 2004). One way to improve the situation is to provide continuous professional development to encourage the possession of multi-skills among Facilities Managers, as it influences their career progression (Badger and Garvin, 2007).

**2.3 Regulations**

FM in Public Private Partnership (PPP) projects is involved at all stages in the development process (Mustapa and Carrillo, 2007). The success of the delivery of a PPP project relies significantly on the ability of senior management to highlight the issues of strategic and operational aspects at the earlier stage of the development process. Nutt (2000) advises that the risks and opportunities to FM in a PPP project should be identified as early as possible. The incorporation of FM value via the Facilities Manager would assist in this aspect. PPP is perceived as a platform to encourage the integration of FM in the development process (Baldwin, 2003). Despite the growth of PPP globally, the PPP performance in the UK is shrinking due to the political situation that influences the implementation of PPP (Adair et al., 2011; p. 25). This circumstance has impeded FM from raising its profile and value.

**2.4 Organisations**

Damgaard and Erichsen (2009) identify that there are issues with organisational structures in the development project. Development projects are complex; the teams are interdisciplinary and vary

significantly. The perception, goals and interest of each individual/organisation involved in the project are conflicting. The consultants and constructor give too much focus to construction activities with short-term objectives. Meanwhile, the owner and the users perceive that the completed facilities provide a long-term business advantage to their organisation. However, it often happens that some of the owners focus on construction cost rather than operational costs (Damgaard and Erichsen, 2009), resulting in inability of Facilities Managers to play their role effectively in the decision making at the strategic level. Pitt and Hinks (2001) identify that there are structural barriers between professionals. For instance, without direct interface between Facilities Manager and project manager 'there is no opportunity for the joint consideration of strategic and operational matters ... In such circumstances the level of strategic intelligence will differ between Facilities Manager and project manager too'.

## 2.5 Knowledge Management

Elmualim et al. (2008) assert that Facilities Managers are at the forefront of delivering sustainable development. There is an argument that the diversity of the FM role has left Facilities Managers in a difficult position to effectively contribute to FM-DP integration; however, there is a more important factor: lack of understanding about sustainable development among Facilities Managers. Part of this is due to conventional education and training, the separation of which in the curriculum creates a technical knowledge gap between Facilities Managers and other professionals (Elmualim et al., 2009). These differences ultimately influence the design of the facilities, which does not meet the needs of the owner and/or users. As a result, there will be a lot of changes during the construction phase. Often, the knowledge on the change management process from design and construction stages is not effectively transferred to the Facilities Manager (Shah, 2007). Without this knowledge, the Facilities Managers are unable to play his/her role to demonstrate FM value during hand over and use stage. By the same token, it is also crucial to transfer operational knowledge at use stage to earlier stages of the development process so that lessons can be learned from previous experience (Damgaard and Erichsen, 2009). It is obvious that there is a lack of knowledge transfer between FM and the property development industry. To improve the situation, it would be beneficial for all parties involved in the development project to go along with Sun and Scott (2005), who suggest five (5) approaches of effective knowledge transfer and learning process in the development project: (i) individual to team, (ii) team to individual, (iii) team to organisation, (iv) organisation to team, and (v) inter-organisation.

## 2.6 Definition

Chotipanich (2004) claims that there are many frameworks that relate FM functions to the core business of organisations; however, Shohet and Lavy (2004) argue that FM still lacks a suitable framework for decision making at the strategic and operational levels. This is not supposed to happen, since FM is a discipline that is responsible for holding unique information on the facilities and their use (McLennan, 2000). From a project management perspective, Pitt and Hinks (2001) view FM as management of cost efficiency. Since there is a motivation for FM-DP integration, interfacing between FM and project management disciplines is inevitable. However, due to the different objectives between these disciplines, it creates a barrier to optimising the role of FM in the development process. Hodges (2005) points out that life cycle costing (LCC) has a significant impact on FM in terms of achieving sustainable development. LCC is often associated with facility costs. Brown et al. (2011), Hodges (2005) and Shah (2007) suggested that the application of LCC by Facilities Managers encourages the involvement of FM in the development process.

## 2.7 Operation

Feedback is a means of learning from experience by carrying out the processes of reflection and deduction involving analysing the experience, specifying the lessons learned and synthesising the findings to apply the learning to other conditions (Pearson, 2003). A study conducted by Bordass et al. (2001) found that users enjoy facilities that can respond positively to their life. Feedback is a means of evaluating the performance of the facilities, which is commonly known as post-occupancy evaluation (POE). However, the professionals required to carry out the tasks are not clearly defined. According to McLennan (2000; p. 169) POE falls under Facilities Manager’s responsibility at use stage. However, there are reasons why the level of implementation of POE is discouraging (Bordass et al. (2001), Cooper (2001), Eley (2001) and Zimmerman and Martin (2001)). It is identified that ‘the notion of professional liability is ... the most significant contribution to the lack of POE work’ (Hadjri and Crozier, 2009; p. 30). Facilities Managers may find that the data obtained from POE does not favour other professional colleagues.

**2.8 Communication**

Development projects involve various stakeholders with different objectives, including FM as a new discipline. The presence of a Facilities Manager in the development process is a new initiative that possibly affects the existing working system. This situation potentially creates conflict among other professionals in the property development industry, which, according to Koskela (1992), finds it difficult to accept change. The community of the property development industry is often reluctant to invest in new initiatives or innovative approaches (Ruikar et al., 2007). This, coupled with the insufficient clout (Eley, 2001) of Facilities Managers, means that they face challenges to get the knowledge to be shared with them. According to Barrett and Baldry (2003), it often happens that Facilities Managers are ‘involved at every stage of the delivery process and know every last detail about what happening’, but neglect their main role as a coordinator. This deficiency impedes Facilities Managers communicating effectively with other professionals as well as gathering knowledge within the project team.

**3. EXISTING INTERNATIONAL STUDIES ON THE FM EXPERIENCE IN PROPERTY DEVELOPMENT INDUSTRY**

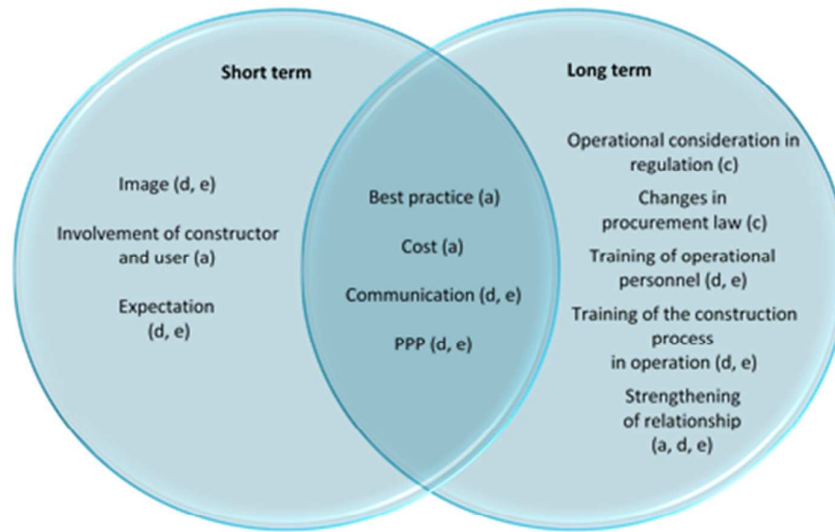
Previous sections have proven that there are issues that impede the integration of FM into the development process. This is also a basis to execute research in this area. To further clarify the potential contribution of this research to the FM-DP integration area, this section discusses research endeavours that have been performed in three (3) countries: Denmark, Portugal and Malaysia.

**3.1 Ignorance of Operational Experience in Denmark**

The study undertaken by Damgaard and Erichsen (2009) consists of literature review and interviews with nine (9) selected key informants from FM-related practitioners. In general, they found that the players in FM and the property development industry in Denmark, including academics, agreed that FM should be involved in all stages of the development process. Based on FM-specific functions produced by Jensen (2009), Damgaard and Erichsen (2009) identify the FM tasks that limit Facilities Managers’ involvement in the property development process. The research also revealed there are five (5) groups of barriers that hinder FM-DP integration, namely: (i) project-related, (ii) structural, (iii) regulatory, (iv) competence-related, and (v) sociological barriers. Damgaard and Erichsen (2009) suggest a long-term and short-term solution to integrate operational experience into the development process (refer Figure 1) which shows enhancement of regulation, education and relationship are initiatives that would be advantageous in the long term. Meanwhile, improvement of practice in the development project, project costs, communication skills and proper implementation of PPP would likely benefit both long term and short term. Also, improvement of the



Facilities Manager image, active involvement with the project team and users and fulfilling the expectations of colleagues and users would bring immediate effects for FM-DP integration.



Note: The letters in parentheses refer to the group of barriers: (a) Project related barriers, (b) Structural barriers, (c) Regulatory barriers, (d) Competence-related barriers, (e) Sociological barriers

**Figure 1** Solution to integrate operational experience into the development process. Source: Damgaard and Erichsen (2009)

Damgaard and Erichsen (2009) anticipate that the solutions above are highly unlikely to be implemented by any individual or organisation and show immediate effect. However, it is expected that the awareness to integrate FM knowledge into the strategic level of the development process is increasing. This report further revealed that there is a need to develop a more detailed guideline to enable the property development industry to optimise the role of FM in the development process. Identifying best practice in the development project would be the area where this research could contribute.

### 3.2 Lack of FM Competitiveness in Portugal

Flores-Colen and Carreira (2012) identify that lack of competitiveness in the Portuguese economy has significantly deterred the improvement of FM performance and the growth of the FM profession in Portugal. It is understood that providing facilities is increasingly complicated; they need to be built according to users' requirements and comply with sustainability agenda, for instance. The differing objectives among stakeholders in the development project require a competent Facilities Manager to coordinate effectively in order for the project to succeed. Flores-Colen and Carreira (2012) discover that the challenges that Portugal must resolve are improvement of the FM market, optimising the role of the FM department in the organisation and reinforcing educational training programmes for Facilities Managers. Despite a discouraging situation of the FM industry in Portugal, Flores-Colen and Carreira (2012) are optimistic that there are opportunities to increase the FM profile in the development process. They are promoting the implementation of POE, utilisation of LCC concept and ICT:

- a) Assessment of buildings in operation and client satisfaction through feedback exercise – POE – aiming to improve the operational knowledge of buildings in use and the possibility of fulfilling user requirements.
- b) Service integration and building management systems – concerned with enhancing interdisciplinary collaboration in property development and FM, improvement of building performance, utilisation of life cycle costing (LCC) methods for better design, construction, maintenance and operation and compliance with sustainability requirements.
- c) Application of ICT – concentrate on finding low-cost and low-disruption IT solutions such as BIM and CAFM.

To conclude, Flores-Colen and Carreira (2012), however, state that having an FM educational programme in Portugal is the most crucial solution in ‘helping to establish Facilities Manager as a profession and therefore increasing recognition’ of FM in the property development industry.

**3.3 FM Challenges in the Malaysian Property Development Industry**

Mustapa et al. (2008) claim that FM in Malaysia is relatively new and the definition of FM is poorly understood. As a result, FM is not being implemented effectively. However, the revival of the Malaysia Association of Facilities Management (MAFM) in 2009 (Malaysia Association of Facilities Management, 2014) has promoted the benefits of integrating FM into the property development industry in Malaysia. Moreover, the increasing awareness of good practice in maintenance and operation of facilities has encouraged the importance of integrating FM into the strategic level of the development process. In general, there are a number of researchers discussing the challenge to implement FM in Malaysia. Most of the issues discussed, however, are around service quality (Kamaruzzaman and Zawawi, 2010), maintenance (Nik-Mat et al., 2011) and organisation management (Abdul Mutalib et al., 2015) during the In Use stage of the facilities. Mustapa et al. (2008) stated that an investigation into the property development industry shows that no specific FM consultancy firm has been established in Malaysia. It also indicates that FM is not fully optimised in the development process. However, there has been an effort from the Malaysian Government to encourage architects and engineering consultancy firms to integrate FM expertise in the strategic stage of the development process to ensure the property development industry in Malaysia becomes much more competitive (ibid.; p. 82). Mustapa et al. (2008) identify that (i) establishing standards and regulations for FM professionals, (ii) promoting FM education and training programme to increase the number of FM experts and (iii) encouraging the use of ICT such as BIM and CAFM are prerequisites to enable Facilities Managers to demonstrate FM value in the development process. Those three (3) cases confirm that there was indication that FM is not regarded as a main element in the property development industry in Malaysia.

**4. METHODOLOGY**

The main purpose of this study is to identify the critical issues that hinder the integration of FM into the development process. It is also to enable the researcher to recognise the qualities needed to enable the Facilities Manager to be regularly involved in the property development industry and consequently optimise the value of FM in all stages of the development process. Semi-structured interviews were conducted with the intention to corroborate the ideas obtained from the literature. In addition, the interview sessions were to gather opinion and to extract new ideas from respondents who were regarded as knowledgeable and experienced professionals in relation to the subject under study.

A total 84,319 words were recorded involving ten (10) participants which were selected based on a purposive sampling method. Purposive sampling is an appropriate method to recruit the participants as it encourage deeper data mining about the topic (Creswell and Clark, 2011). The participants were selected from among



professionals who have profound experience and knowledge of FM and the property development industry in the UK. As stated earlier, the qualitative findings reported in this paper will form part of a wider sequential exploratory strategy that will quantitatively validate the critical strategic issues explored through this paper. In accordance with the ethos of an exploratory study, the ten participants were determined in order to further explore and validate the critical strategic issues identified from the literature reviewed in this paper.

The qualitative findings were analysed based on the thematic analysis, in which the focus is given to a few significant passages (Creswell, 2013) in the interview transcription. Thematic analysis is an approach of data reduction which reduces the data into meaningful groups (Grbich, 2013). The purpose of this method is to improve the management of the data through systematic stages, as specified by Grbich (2013). Framework matrix display available in NVivo 10 software is used to improve the effectiveness of sorting and synthesising the data as well developing deeper-level themes in a more systematic manner (David and Sutton, 2011). Ritchie and Spencer (2002) claim that this process is tedious and not a routine exercise as it requires careful judgement as to the meaning and significance of the data. Ritchie *et al.* (2003) have proved that the use of a thematic framework matrix has increased the depth and rigorousness of the analysis.

5. RESULTS AND DISCUSSIONS

5.1 Respondents’ Profile

The ten (10) participants who were interviewed are mainly at middle-high management level of their respective organisation as well as in property development project set up. All of the participants are responsible for physical development within their organisation.

Three (3) participants are positioned at senior level in owner/client organisation. It is believed that they have significant influence in the decision making associated with the development work in their estate, such as building new facilities, renovation, refurbishment, repair and maintenance works. This group has an important role of bringing about a significant transformation for better integration between FM and the development process. Something interesting about this group is the presence of Interviewee 9 who had a total of 43 years of work experience, of which 23 years were served formally in FM education. Interviewee 9 is a prominent figure in the FM industry and was listed as one of the UK’s 20 most influential pioneers of Facilities Management by the British Institute of Facilities Management (BIFM).

In contractor or developer set up, five (5) participants held a management position in their organisation. Some of them were previously involved in Private Finance Initiative (PFI) and Design & Build (D&B) project schemes in the UK and other parts of the world, which has given attention to incorporating FM elements in the projects. For example, to explain how extensive is the involvement of FM in the property development industry, Interviewee 10 shared his working experience in the United Kingdom (UK), United States of America (USA) and Canada. Meanwhile, Interviewee 4, who had an economic background, a non-technical education, shared his involvement in FM, particularly in maintenance and aftercare. The views given by Interviewee 4 are important as the information gathered is from a non-technical individual.

As an architect, Interviewee 8 had 15 years’ working experience involved extensively in all stages of the development process (see Table 1). Interviewee 8 provides valuable insights with respect to the role of FM in the development process. Meanwhile, Interviewee 2, who had 27 years in the property development industry of which nine (9) years were in the FM industry, expressed his confidence that FM is important in contributing to the property development industry, provided that FM is given the opportunity to play a greater role in the development process.

In order to align to Tucker and Masuri’s (2016) identification of the importance of utilising the RIBA Plan of Work (2013) to contextualise the specific stages of the DP, it was very useful to also identify from the respondents’ profiles their level of experience and involvement within the Plan of Work stages. From the interview findings, the researcher found that the experience and level of involvement of each participant can be represented against the RIBA Plan of Work 2013 as per Table 1.

As such, the RIBA Plan of Work (2013) is useful in contextualising the stages where FM may integrate in the DP, and is utilised in this study in order to determine participant selection for this qualitative element of the study (table 1).

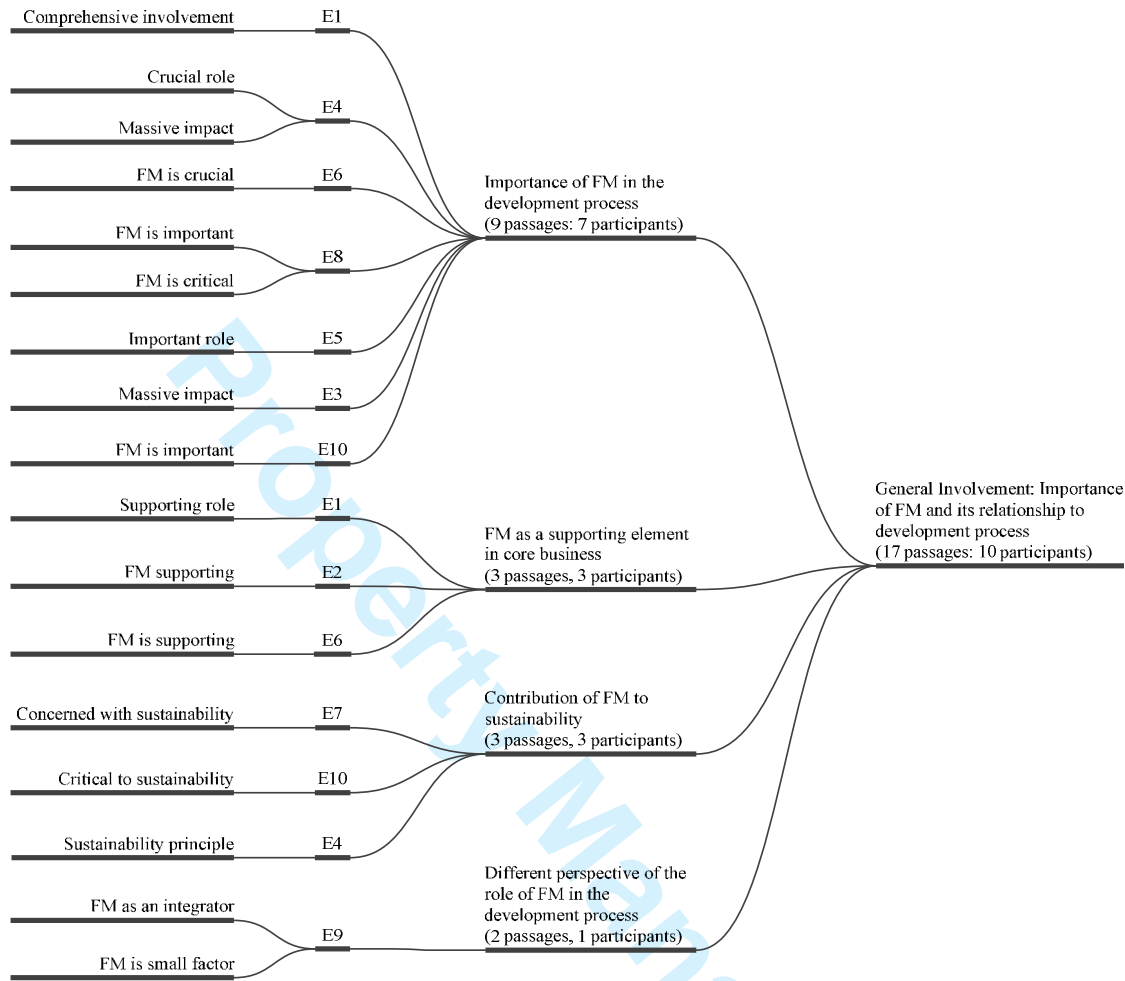
**Table 1** Participant level of involvement against the RIBA Plan of Work 2013

RIBA Plan Of Work 2013	Interviewee									
	1	2	3	4	5	6	7	8	9	10
Stage 0: Strategic Definition	✓	✓	✓					✓	✓	
Stage 1: Preparation And Brief	✓	✓	✓					✓	✓	
Stage 2: Concept Design	✓	✓	✓					✓	✓	
Stage 3: Developed Design	✓	✓	✓		✓	✓		✓	✓	✓
Stage 4: Technical Design	✓		✓		✓	✓		✓		✓
Stage 5: Construction	✓		✓	✓	✓	✓	✓	✓		✓
Stage 6: Handover And Close Out	✓		✓	✓	✓	✓	✓	✓		✓
Stage 7: In Use	✓		✓	✓			✓	✓	✓	

From the table above, it was identified that Interviewee 1 and Interviewee 3 from owner/client organisation and Interviewee 8 from architect consultation firm have been involved at all stages in the development process. Meanwhile, the involvement of Interviewee 4 and Interviewee 7, who are from contractor/developer type of organisation of which the nature of the business is building services engineering, is predominantly in Construction, Handover and Close Out, and In Use stage. This is the opposite of Interviewee 5, Interviewee 6 and Interviewee 10, whose involvements are primarily in Stage 3 to Stage 6. As an FM consultant, Interviewee 2 has extensive involvement at Strategic Definition, Preparation of Brief, Concept and Developed Design stage. Despite being a senior academician in public higher education, Interviewee 9 had experience in the first four stages as well as having continuously contributed to the FM industry at Stage 7 through a number of outstanding research works. Thus, the scope of the interviewees is significant and because of their prominence in the field, their views were deemed to be credible.

### 5.1 The Importance of FM in the Development Process

In the interviews, the participants discussed their general involvement in FM and the development process. They were also willing to share their thoughts on the importance of FM and its relationship to the development process, producing 17 related passages, which come from all of the participants. The passages were grouped into four (4) sub-themes, namely 'the importance of FM in the development process', 'FM as a supporting element to core business', 'contribution of FM to sustainability' and various 'different perspectives of the role of FM in the development process'. For easy understanding, the analysis is visualised in a form of brainstorming, as shown in Figure 2.



Note: E1 to E10 represent the interviewee

**Figure 2** Key points of importance of FM and its relationship to the development process.

These results shows that FM is unquestionably important and need to be integrated into the development process.

**5.2 Issues that Hinder the Integration of FM into the Development Process**

In order to identify the issues that hinder the integration of FM into the development process, the participants were asked semi-structured questions. The thematic analysis conducted using framework matrix display available in NVivo 10 software enable the researcher to divide the data into three (3) hierarchy: passages, sub-themes and main themes. A total of 266 passages were obtained which is divided into 35 sub-themes and nine (9) main themes (refer Table 2).

This section summarises the findings of the qualitative analysis and the inductive approach, by means of semi-structured interviews conducted with ten (10) experienced professionals in the property development industry and FM in the UK. This section focuses specifically on the feedback in relation to the barriers for FM–DP integration. The discussion identified the constraints, recommendations, expectations and suggestions to encourage the involvement of FM in the development process. The results of the interview

analysis were utilised to confirm the findings obtained in the literature reviews and further contextualise the main issues in FM and the development process.

**Table 2** Summary of qualitative analysis findings

Main themes	No. of sub-themes	Total no. of passages	Sub-themes
Perception	6	53	Less recognition due to no unique identity Unclear professional boundaries Unable to demonstrate strategic value FM as a profession of 'jack of all trades' FM is client & authoritative driven Continues to be reliant on other professions
Competence	6	40	Lack of experience Lack of operational elements in the design Chartered status Unique selling point Lack of communicative skill Multi knowledge and experience
Regulations	4	33	Unconvincing PPP implementation Collision of professional interest Recent emergence of soft landings concept Enforcement of regulations
Organisations	3	26	Huge complexity and temporary involvement Negligence of FM cost and life cycle costing Continuous professional development
Knowledge Management	4	25	Ineffective operational knowledge transfer Adaptation of lean construction Level of learning in the organisation (knowledge sustainability) Polarisation of responsibility
Management Tools	4	26	Difference of objectives between FM and project management field Lack of conceptual and theoretical framework in FM field Under-utilisation of LCC and LCM methods Utilisation of BIM
Operations	3	22	Feedback mechanism Threat to professional reputation Absence of system to deal with FM
Decision making	3	31	Contention between development planning and operation (9 passages) Level of influence towards decision making (16 passages) Evaluation of the building
Sustainability	2	10	Usage optimisation Environmental sustainability
<b>Total</b>	<b>35</b>	<b>266</b>	

6. CONCLUSIONS

The analysis of the collected data, predominantly supported the findings of the literature review and supported the notion that FM should be considered during the PD phase. It also supported many of the barriers preventing this intervention.

Under the theme of perception, the interviewees mooted that the role of Facilities Manager is seen as a ‘jack of all trades’, and therefore by implication as a ‘master of none’. This view was also supported in the published literature. There is a link between the interviewees views on perception and the other categories identified (including knowledge management) which is that Facilities Managers need to be more highly educated and as such more academic programmes in the field need to be developed. This view is also supported by the Portuguese and Malaysian researchers’ work that is summarised earlier in this paper. The competence sub theme questions gleaned the view from the interviewees, that chartered status for Facilities Managers is important. Chartered status in the context of Built Environment, implies that professionals will hold a degree and have experience at the correct level and in the correct quantity, which again supports the view of education at higher levels being important to the FM profession. Pitt and Hinks (2001) had a view that organisations need educating with regard to FM integration at the PD stage and this view is supported by the findings of the research under the organisation and knowledge management sub themes. Organisations attain learning from learned employees, and as such the more highly academically and professionally qualified the employees are, the more able they are to pass on their learning to their organisations. The interviewees stated that FMs have limited influence in the decision making process which is supported by Eley(2001) whose own research concluded that FMs do not have enough clout to attain the information they need shared with them.. Again, this supports the view that the role of Facilities Managers needs to become more qualified, at least to the equivalent standards of their peers in the PD process.

The literature review proposed that lessons of integrating FM in the earlier stages of PD could be learnt from PPP projects. However the interviewees claim that its implementation in PPP is unconvincing and earlier the literature review also highlights that the amount of PPP work is dwindling. As quoted in the literature review, Hodges(2005) states that LCC can have a significant impact on FM, but the interviewees state that LCC methods are underutilised in PD and therefore any model developed to support improvements in PD would need to stress the value of LCC methodologies.

There were two issues raised by the interviewees that had not been gleaned from the literature review in any detail. The need for a ‘system’ to deal with FM was only touched on, but was seen as being important by the interviewees. The need to use BIM as a management tool more effectively in the implementation of FM principles in the PD process was also raised as potentially effective, but this view was not ascertained in the literature review.

Thus, this paper discovers that FM has a promising position in the property development industry but there are barriers that need to be overcome if its full effectiveness can be realised. The integration of FM into the development process is a strategic approach to enhance the performance of the organisation as well as improving the operation of the facilities. It can be anticipated that FM has a brighter future in the development process coupled with a potential contribution that FM can offer to achieve sustainable development. Nevertheless, FM is expected to play an important role and integrate with other professionals in the development process to improve the buildability and operability of the facilities. This study revealed the issues impeding the FM-DP integration is relatively crucial. It shows that there is a need to establish a set of guidelines that explain the qualities required to enable the Facilities Manager to be regularly involved in the property development industry and consequently optimise the value of FM in all stages of the



development process. This will be of major benefit to FM practitioners and the developers/owners of buildings as it will provide guidance as to how FM can be considered early enough in the PD stage to ensure that best practice in the management of buildings in use can be optimised. The work also adds to a body of knowledge regarding FM that is increasing and may help to promote the development of degree programmes in FM.

The paper presented does have limitations, but as has been explained earlier, the purpose of this research was to determine a methodology to collect further data to enable the proposed guidelines to be developed.

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7. REFERENCES

Abdul Mutalib, A. F., Sapri, M. and Mohammad, I. S. (2015) Facility management knowledge development in Malaysia: added value in hospitality managerial competency. *Facilities*, 33 (1/2).

Adair, A., Berry, J., Gulati, M., Haran, M., Hutchison, N., Kashyap, A., McCord, M., McGreal, S., Oyedele, J. and Tiwari, P. (2011) *RICS Research: The Future of Private Finance Initiative and Public Private Partnership*. London: Royal Institution of Chartered Surveyor.

Badger, W. W. and Garvin, M. J. (2007) *Facilities Asset Management: "A New Career Field for Construction Management Graduates"*. In Paper Presented to the Proceedings of the Associated Schools of Construction 43rd Annual International Conference, Flagstaff, AZ, USA.

Baldwin, E. (2003) The Private Finance Initiative - What opportunities for facilities management? *Journal of Facilities Management*, pp. pp. 54-67.

Barrett, P. and Baldry, D. (2003) *Facilities Management: Towards Best Practice*, Oxford, United Kingdom: Blackwell Science.

Bordass, B., Leaman, A. and Ruyssevelt, P. (2001) Assessing building performance in use 5: conclusions and implications. *Building Research & Information*, 29 (2), pp. 144-157.

Brown, K. L., Greer, D. C. and Schwegler, B. (2011) Life Cycle Management Approach to the Design of Large-Scale Resort. in Finkbeiner, M., (ed.) *Towards Life Cycle Sustainability Management*, Berlin: Springer. pp. 229-238.

Chodasova, Z. (2004) Facility Management in Development Process. *Economics And Business Management*, 2 (6), pp. 52-60.

Chotipanich, S. (2004) Positioning Facility Management. *Facilities*, 22 (13/14), pp. 364-372.

Cooper, I. (2001) Post-occupancy evaluation - where are you? *Building Research & Information*, 29 (2), pp. 158-163.

Creswell, J. W. (2013) *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, London: Sage.

Creswell, J. W. and Clark, V. L. P. (2011) *Designing And Conducting Mixed Methods Research*, London: Sage

Damgaard, T. and Erichsen, P. B. (2009) *Implementering af drift i byggeri*. Realdania: Syddansk Universitet.

David, M. and Sutton, C. D. (2011) *Social Research: An Introduction*, London: SAGE Publications.

de Lucy, J. (1991) The Ernst & Young Approach to Facilities Management. *Property Management*, 9 (1), pp. 24-31.

Drion, B., Melissen, F. and Wood, R. (2012) Facilities Management: lost, or regained? *Facilities*, 30 (5), pp. 254-261.

Eley, J. (2001) How do post-occupancy evaluation and the facilities manager meet? *Building Research & Information*, 29 (2), pp. 164-167.

Elmualim, A., Czwakiel, A., Valle, R., Ludlow, G. and Shah, S. (2009) The Practice of Sustainable Facilities Management: Design Sentiments and the Knowledge Chasm. *Architectural Engineering and Design Management*, 5 (1-2), pp. 91-102.

- Elmualim, A., Czwakiel, A., Valle, R. C., Ludlow, G. and Shah, S. (2008) Barriers for implementing sustainable facilities management. In Paper Presented to the World Sustainable Building Conference 2008, Melbourne.
- Flores-Colen, I. and Carreira, P. (2012) Research Paper: Challenges for FM in Portugal. in, Lisbon: EuroFM Insight.
- Grbich, C. (2013) Qualitative data analysis : an introduction, 2nd ed., London ; Thousand Oaks, Calif.: SAGE Publications.
- Hadjri, K. and Crozier, C. (2009) Post-occupancy evaluation: purpose, benefits and barriers. *Facilities*, 27 (1), pp. 21-33.
- Hinks, J. (1999) *Facilities Management and the Chartered Surveyor, An Investigation of Chartered Surveyor's Perceptions*, London: Royal Institution of Chartered Surveyors.
- Hodges, C. P. (2005) A Facility Manager's approach to sustainability. *Journal of Facilities Management*, 3 (4), pp. 312-324.
- Jaunzens, D., Warriner, D., Garner, U. and Waterman, A. (2001) *Applying facilities expertise in building design*, London: Construction Reserach Communication Ltd.
- Jensen, P. A. (2009) Design Integration of Facilities Management: A Challenge of Knowledge Transfer. *Architectural Engineering and Design Management*, 5 (3), pp. 124-135.
- Jensen, P. A., Damgaard, T. and Kristiansen, K. (2009) The Role of Facilities Management in Building Project. In Paper Presented to the Paper for Changing Role '09 Conference, The Netherlands.
- Kamaruzzaman, S. N. and Zawawi, E. M. A. (2010) Development of facilities management in Malaysia. *Journal of Facilities Management*, 8 (1), pp. 75-81.
- Kincaid, D. (1994) Integrated Facilities Management. *Facilities*, 12 (8), pp. 20-23.
- Koskela, L. (1992) *Application of the new production philosophy to construction*. Stanford: Stanford University.
- Macomber, J. D. (2001) The Design And Construction Process. in Teicholz, E., (ed.) *Facility Design And Managment Handbook*, New York: The McGraw-Hill. pp. 431-440.
- Malaysia Association of Facilities Management (2014) Malaysia Association of Facilities Management, Available at: <http://www.mafm.org.my/History/q?doit=showclass&cid=14> [Accessed 15th January 2015]
- McLennan, P. (2000) Intellectual capital future competitive advantage for facility management. *Facilities*, 18 (3/4), pp. 168-171.
- Mustapa, M. and Carrillo, P. M. (2007) Facilities Management Knowledge In PFI's Projects. in ARCOM Doctoral Workshop: Facilities, Refurbishment and Maintenance Management, Sheffield, United Kingdom: Association of Researchers in Construction Management (ARCOM). pp. 12-20.
- Mustapa, S. A. H. S., Adnan, H. and Jusoff, K. (2008) Facility Management Challenges and Opportunities in the Malaysian Property Sector. *Journal of Sustainable Development*, 1 (2), pp. 79-85.

Nik-Mat, N., Kamaruzzaman, S. and Pitt, M. (2011) Assessing The Maintenance Aspect of Facilities Management through a Performance Measurement System: A Malaysian Case Study. *Procedia Engineering*, 20, pp. 329-338.

Nutt, B. (1999) Linking FM practice and and research. *Facilities*, 17 (1), pp. 11-17.

Nutt, B. (2000) Four competing futures for facility management. *Facilities*, 18 (3/4), pp. 124-132.

Pearson, C. (2003) BSRIA Technical Report: Feedback from Facilities Management. Berkshire: BSRIA.

Pitt, M. and Hinks, J. (2001) Barriers to the operation of the facilities management: property management interface. *Facilities*, 19 (7/8), pp. 304-307.

Ritchie, J. and Spencer, L. (2002) Qualitative data analysis for applied policy reserach. in Bryman, A. and Burgess, R. G., (eds.) *Analyzing Qualitative Data*, London: Routledge.

Ritchie, J., Spencer, L. and O'Connor, W. (2003) Carrying out Qualitative Analysis. in Ritchie, J. and Lewis, J., (eds.) *Qualitative Reseach Practice: A Guide for Social Science Students and Researchers*, London: Sage.

Rondeau, E. P., Brown, R. K. and Lapides, P. D. (2006) *Facility Management*, New Jersey, USA: John Wiley & Sons.

Ruikar, K., Anumba, C. J. and Egbu, C. (2007) Integrated use of technologies and techniques for construcion knowledge management. *Knowledge Management Research & Practice*, 5, pp. 297–311.

Shah, S. (2007) *Sustainable Practice for Facilities Manager*, Oxford: Blackwell Publishing.

Shohet, I. M. and Lavy, S. (2004) Development of an integrated healthcare facilities management model. *Facilities*, 22 (5/6), pp. 129-140.

Spedding, A. (1994) *CIOB Handbook of Facilities Management*, Harlow: Longman.

Sullivan, K., Georgoulis, S. W. and Lines, B. (2010) Empirical study of the current United States facilities management profession. *Journal of Facilities Management*, 8 (2), pp. 91-103.

Sun, P. Y.-T. and Scott, J. L. (2005) An investigation of barriers to knowledge. *Journal of Knowledge Management*, 9 (2), pp. 75-90.

Tay, L. and Ooi, J. T. L. (2001) Facilities management: a "Jack of all trades"? *Facilities*, 19 (10), pp. 357-362.

Tucker, M and Masuri, M.R (2016) The rationale to integrate facilities management into the property development process, *Property Management*, Vol. 34, No. 4 ISSN: 0263-7472

Wood, B. (2003) *Building Care*, Oxford: Blackwell.

Wood, B. (2006) The role of existing buildings in the sustainability agenda. *Facilities*, 24 (1/2), pp. 61-67.

Yiu, C. Y. (2008) A conceptual link among facilities management, strategic management and project management. *Facilities*, 26 (13), pp. 501-511.

Zimmerman, A. and Martin, M. (2001) Post-occupancy evaluation: benefits and barriers. *Building Research & Information*, 29 (2), pp. 168–174.