

CONSTRAINS IN INTEGRATING FACILITIES MANAGER IN THE PROJECT DEVELOPMENT PROCESS IN CONSTRUCTION INDUSTRY

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ABSTRACT

The role of a Facility Manager is to optimize the building performance and ensure smooth operations. The importance of having a facility manager in the development phase of construction projects has been recognised by a majority of the construction companies around the world. Sri Lankan construction sector is yet to recognize the full potential of the Facility Manager, especially in fine tuning a construction project and thus ensuring better operations later. The aim of this research was to identify the potential roles of a Facility Manager and constraints in integrating a Facility Manager in building project development process in Sri Lankan construction industry.

In order to achieve the objectives of this research 9 semi structured interviews were conducted among FM and non-FM professionals of the building construction sector and 4 expert interviews were conducted among experienced building construction professionals. Through the interviews, it was identified that Facility Managers have several potential roles in a construction project such as facilities consultant, facilities manager, facilities advisor, facilities supervisor, maintenance advisor and lighting planner. Moreover, several constraints such as limited authority, financial constraints, communication lapses, lack of resources, cost variations and knowledge gap etc. which have restricted the involvement of a FM were recognized through the interviews. Finally, the expert opinions were used to recognize how to integrate the FM in to construction projects by mitigating the constraints and how to utilize the FM knowledge and competencies for building project development process.

Keywords: *Building Construction; Construction Industry; Constraints; Facility Manager; Project Development Process.*

1. INTRODUCTION

Chodasova (2004) has described the project development process as a concept that comprises various processes starting with the project initiation, preparation, design, construction; proper space utilization and building operation. According to Brat (1996), project development process requires an integrated multi-disciplinary approach to have a better final output.

As to Barrett and Baldry (2003) building processes which includes designers, clients and end users are lacking the communication between the end users and the other group of designers and client. The lack of communication makes designers and clients to take decisions based on their experience than looking at the end user requirements. Barrett and Baldry (2003) further indicated that improper communication has affected the cost-effective nature, operability and the maintainability of the project.

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Even though various experts are involved in a project development process, some building defects can be identified. “The Building Research Establishment in England conducted a survey of building failure patterns and their implications and found that 58 percent of the defects have originated from faulty design” (Seeley, 1986).

Keaikitse (2012) states that the Building requires many limited natural resources to construction, operation and maintenance, thus making a larger impact in both direct and indirect ways to the environment. Therefore, the need of designing a simple and cost-effective maintenance of facilities are being highlighted throughout the life cycle of the facility including project conception phase, design phase, construction phase and post construction phases.

Alexander (2009) found that Facilities Management is the discipline responsible for “coordinating all efforts related to planning, designing and managing buildings before and after the construction”. In Sri Lanka facilities management is a budding profession and their role is mostly limited to operational and maintenance phase of a project. The facilities managers’ skills and competencies can bring many value additions to projects if they can involve in projects from the beginning.

There are many organizations and professional groups involved in project development in Sri Lankan construction industry such as Quantity Surveyors, Architects and Engineers etc. However, currently Facilities Managers are not involved in project development processes. In general, Facilities Managers are employed as maintenance or management executives after the construction. It directly helps to reduce the maintenance needs and help to manage the building in an efficient way. According to a study by Silva (2011), the involvement of Facility Manager in the early stage of buildings is important to ensure benefits as mentioned above.

Thus, the aim of this research was to identify the potential roles of a Facility Manager in the project development process and constraints in integrating a Facility Manager in project development process in Sri Lankan Construction industry. Accordingly, study initially identified the benefits of appointing a Facility Manager in project development process which was followed with examination of the current practice of Facilities Managers in project development process in Sri Lanka. Next presents the literature review on importance of facilities manager in project development process with special emphasis to construction industry.

2. LITERATURE REVIEW

Facility Managers are looking after the operations and the building management and thus they always have a direct contact with the facilities end users (Jensen, 2009). The communication with end user enables them to clearly identify the requirements of a facility and vast knowledge gathered through such experiences make them valuable in planning new facilities. Lehrer (2001) assert that the facility management profession has developed to some extent through demand led elements such as the need for cost reduction in the operation and maintenance of buildings.

Mohammed and Hassanain (2010) further argued on the direct involvement of Facility Manager in project development process exclaiming that it reduces the future problems which can be raised in maintenance as a Facility Manager has practical knowledge gained by performing different tasks during the operation stage of certain facilities. These can be used to identify significant design decisions which should be addressed in design phase as they affect the facilities maintainability. As per Ranawakage (2010) a facility can more efficiently provide its intended purpose of supporting the business, when a facility manager is there to look after the building.

Erdener (2003) states that a Facility Manager who is responsible for the maintenance management activities throughout the operational lifespan of the facility can make a greater impact on functionality enhancing, sustainability enhancing and the profitability enhancing and, moreover it can enhance the maintainability of projects. This view is supported by El-Haram and Agapiou (2002), who also insisted that a Facility Manager should be involved in project development process from design stage. Involvement of Facility Managers in project design directly impact on how buildings are designed, built, commissioned and refurbished and moreover it enables to take decisions which affects the efficiency and cost effectiveness of operation and maintenance of the building. Silva (2011) suggests that if a Facility Manager can be involved in the project

development process in Sri Lanka; better high-rise buildings can be constructed considering the past due to the ability of the FM to incorporate knowledge gained through the operational phases of existing structures.

According to Larsson (2002) the design phase is initiated once the contract is signed by the developer. Architects provide some of the basic services beyond planning such as schematic and final design, preparation of construction documents and administration of the agreements. This is due to the gap between developer and builder which creates communication issues. This view is supported by Silva (2011) who suggests Facility Managers as the professionals with the ability to fill the gap between developer and builder. Kincaid (1994) further indicated the inclusion of a FM during project proposal preparation and construction will lower the operating costs and increase the efficiency of services during the operational phase. Moreover, Johnson *et al.* (2008) has indicated that although a project team includes number of professionals, a FM has more input in the project development phase.

According to Erdener (2003), current research and practice suggests that the role of the facility manager have no connection with programming and design phase and it only starts with the occupancy phase despite many effective decisions are being made which affect to the operation in the design phase. It is common that those design decisions are not addressing the advantages of the realistic user needs, requirement of operational and functional activities and issues of maintenance. This is mainly due to the usual impression that the expertise of the facility manager is considered by a majority of clients and professionals as operational in nature. Silva (as cited in Mohammed and Hassanain 2010) has suggested that a facility manager can design spaces on different uses of the building before its occupied, he can give suggestions on passive energy conservation and he can advise on passive practices of a good performing building which can be adopted in the designing phase.

Korsvold (2004) has indicated that the current approach of Facilities Manager in project development process is totally differing from theory. However, Silva (2011) states that Facility Managers are being neglected as potential professionals in the construction sector by the property developers in Sri Lanka.

3. RESEARCH METHODOLOGY

Data collection was mainly done through semi structured interviews and expert interviews. The main aim of the interview was to identify the current practice of integrating Facility Managers to the project development process in Sri Lanka. The interviews were carried out among Facilities Management professionals and Non-Facilities Management professionals. Furthermore, detailed information from the professionals who have high insight in aggregated and specific knowledge were obtained to recognize the current situation as well as recommend solutions to create a better future for the profession.

At the data collection stage, data relating to the current practices related to the role of Facilities manager in project development process were collected and the role of facilities managers in project development process was assessed using semi structured interviews.

Table 1 and 2 show the FM and Non-FM professionals interview profile and the experts profile respectively.

Table 1: FM and Non-FM Professionals Interview Profile

Interviewee code	Interviewee title	Interviewee experience
FM 1	Facilities Manager	10 years
NFM 1	Project Manager	9 years
NFM 2	Mechanical Engineer	5 years
FM 2	Facilities Engineer	5 years
NFM 3	Project Manager	10 years
NFM 4	Civil Engineer	11 years
FM 3	Facilities Manager	4 years
NFM 5	Project Manager	16 years
NFM 6	Electrical Engineer	8 years

Table 2: Experts Interview Profile

Expert code	Interviewee title	Interviewee experience
E1	Mechanical Engineer	15 years
E2	Project Manager	16 years
E3	Civil Engineer	10 years
E4	Facilities Manager	10 years

Interview analysis attempts to find similar inception or base ideas under same concepts rather than stating the actual words they have used. Therefore, as a data reduction method, code-based content analysis was used in this study to extract the most important concepts for reliable and comparable interpretation.

Experts selected for the interview had a minimum of ten years' experience in the construction industry. All the experts were involved in construction related project for the last two years which enabled them to have sufficient knowledge to provide a view on potential role for a FM in a construction project. The focus was to grab the opinions of FM and Non-FM professionals about the potential role that a FM could play in the project development process of a construction project.

4. RESEARCH FINDINGS

Based on the data collected, potential role of a FM in the project development process was analysed under different perspectives. The research findings were categorized under the following headings to discuss the probable role and constraints faced by a FM in the project development process as well as the remedies to overcome the challenges.

4.1. IMPORTANCE OF A FACILITIES MANAGER IN A PROJECT DEVELOPMENT PROCESS

Project development process is incorporated from planning stage to disposal of a construction. It is done by many professionals and experts, sometimes including or excluding a facilities manager. There is a fact that the most disciplines involved in project development process would not be doing work after completing the construction. Facilities Managers are the professionals who will manage a building after construction. Accordingly, a FM possesses the knowledge of building requirements which can be utilized to acquire number of benefits during the project development process. As per the views of the respondents' number of facts which describe the importance of having a FM in a project development process have been identified:

- Reduce operational and maintenance costs
- Ensure sustainable development
- Ensure standardized construction
- Maximize space utilization
- Reduce energy consumption

Majority of the respondents (92%) agreed with the fact that having a FM in the project development process would reduce operational and maintenance costs during the operational phase of the building. Out of the respondents 73% indicated that having a FM professional in the project development process would ensure sustainable project development. Majority of the Non-FM professionals indicated that FM is not essential in securing sustainable development. Majority of the respondents indicated that a FM would provide energy saving solutions in the long term operational process of the building. Apart from the above, FM was considered to be playing a vital role in several other aspects such as human resource handling and time management. Five factors mentioned above were recognized as key elements of having FM in a project development process.

4.2. CONTRIBUTION OF A FACILITIES MANAGER IN THE PROJECT DEVELOPMENT PROCESS

Multiple professionals involve in a construction process from the planning stage. In order to make a project more successful it is essential to get the service of the right professional at the right time. Through the study, it was recognized that the FM can involve in a project development process in different roles. As per the

responses of the FM and non-FM professionals FM can contribute under the following roles in a project development process.

- Facilities Supervisor: Provide advices during the construction process about the user requirements which in latter stages will provide easy adoptability for the user.
- Facilities Consultant: Provide consultation to make the building sustainable, user friendly and increase the functionality during the construction process.
- Integrator: Work as the communicator between the user and the builder to make the project more versatile. Act as the project coordinator throughout the construction process and integrate the facility to suite the user.
- Maintenance Advisor: Provide an insight to the maintenance practices of the potential facility and thus build the structures with sufficient provisions for maintenance.
- Facilities Manager: Involve in the project from the beginning and gain a thorough insight to the building and its ailments to work through its life cycle.

All the respondents agreed that under the prevailing circumstances of the construction industry, adding a professional who will manage the facility after construction will be extremely useful. Respondents further indicated that contribution as a Facilities Consultant and Facilities Supervisor would have a significant impact to the project development process. Respondents further acknowledged the fact that construction industry has not identified this potential of a Facilities Manager due to several constraints.

4.3. CHALLENGES FACED BY FACILITIES MANAGERS IN THE PROJECT DEVELOPMENT PROCESS

Facilities Managers face several challenges in project development process. These challenges differ depending on the project size, location and the company. When considering about project development process various people may involve with different knowledge, experience and various disciplines. According to the view of the FM respondents, a FM has to face the following challenges during a project development process.

In most of the situations the Facilities Managers are being underestimated by their stakeholders. All the FM respondents identified this as a major issue which restricted the involvement of a FM in the project development process. Facilities Managers tend to focus more on the future costs which is likely to increase the present cost of a project. Therefore, the project stakeholders hesitated to accept the involvement of a FM in the project development process. According to the FM respondents in most of the situations FM has to work under the project manager or Engineers. As a result of that the FMs authority has been limited which is recognized as another major issue. No separate fund is allocated to Facilities Managers to do their design in project development process. Facilities Managers always work with other stakeholders with their allocated fund. Therefore, Facilities Managers always work under the financial constraints. As mentioned before number of different professionals involve in the project development process. Therefore, Facilities Managers are facing challenges to create the efficient communication between Facilities Managers and other professionals who are working in a project development process.

The field of Facilities Management is now occupied by various disciplines. According to the view of the FM respondents this has reduced the employability of the FM professionals in the project development process. According to the view of the FM respondents, FM professionals lacked in-depth knowledge about certain aspects. As a result of this knowledge gap FM professionals hesitate to take up a role in a project development process. All the respondents indicated that the lack of understanding about the FMs role by developer and the consultant has also resulted an issue in getting the FM involved in a project development process. Project developers' choice is recognized as the final choice in a construction project. When developer or owner thinks Facilities Managers are not needed in project development process for particular project, Facilities Managers will lose the chance to work in.

Based on the respondent views, identified challenges were ranked as follows:

- Stakeholders reluctance to hire a FM during the project development phase
- Lack of understanding about the FMs' potential role
- Limited authority FM has during the project development process
- Competition among similar professions in obtaining the position
- Lack of funds provided for the FM during the process

These challenges have restricted the FM becoming an active part of the project development phase. As a result, FM professionals, have also restrained from entering into the construction industry during this phase. FM respondents confirmed this by citing several industry examples and respondents who are involved in the construction industry confirmed the above findings.

4.4. REMEDIES TO OVERCOME THE CHALLENGES

It is evident through the interviews that challenges have restricted the significant contribution a FM can provide in the project development process. To identify the probable solutions for the aforementioned challenges several expert interviews were carried out. Experts provided viable solutions which would in long term improve the involvement of the FM in the project development process.

- Promoting Facilities Management

Most of the challenges FM professionals have faced is a result of the lack of awareness about the profession. Therefore, it is necessary to promote the profession within the Sri Lankan context. To eliminate this challenge a wide variety of actions were suggested by the experts. Most of them are marketing tools such as Exhibitions, Expos, Meetings, Rallies, television programmes, newspaper articles, magazines, advertisements and websites. Experts further indicated that immediate actions should be taken to improve the awareness about the Facilities Management professionals. Furthermore, it is necessary to provide a clear idea about the job role of the FM and thereby eliminate the general practice of getting the FM involved in the project operational phase.

- Continuous practice and experience gaining

Lack of knowledge was also recognized as a major issue in getting the FM involved in the project development stage. According to the view of the experts it is necessary to keep on practising in the industry to improve the knowledge. Especially FMs should practice more in the construction industry and gain more experience to reduce the knowledge gap.

- Setting clearer objectives

When someone with more exposure of any other field than Facilities Management is involved, he might be weighing more to his own idea rather than aligning with the project objectives. One way to overcome this is focus more about achieving overall objectives of the project. Setting clearer objectives in a perception of a facilities manager is better. It will be more efficient to recruit a facilities manager who can carry out this workload more professionally.

- Authorize the FM

This is another significant challenge faced by the FMs when they work in the industry. FM respondents indicated that lack of authority is a major issue in making a considerable impact to the project development process. Allowing facilities manager in a position where he can go through others designs before the final approval and make suggestions and differences will be an answer to this problem.

5. CONCLUSIONS

Facilities management is not a well-established profession in Sri Lanka yet. This scenario suggests that there are plenty of gaps to be identified and must be full filled to establish facilities management. The research problem, the role of Facilities Manager in project development process is a slightly touched area. A very few literatures provide role of facilities management in project development process. When considering the unawareness of the Facilities Manager this may cause a huge draw back to the facilities management field in Sri Lanka.

This research has examined the impact of the facilities manager by elaborating the project development process and the role of facilities manager. The main aim of the project was to identify the potential roles a FM can play in the construction project development phase. Whilst achieving this aim, this research has also identified some of the key constraints that have restricted the FM being an integral part of the project and with the expert support remedies were identified to improve the involvement of FM professionals in the construction project development phase.

Throughout the literature survey it was clear that the field of facilities management is broad and continues to widen verities in the facilities management scope as different entities have different approach to the profession. To balance the research perspective, the viewpoints have been changed as facilities managers' point of view and non-facilities managers' point of view. The significant benefits suggest that the strategic and tactical management function of Facilities management can help to align the projects goals and resource with his professional skills.

A Facilities Manager can get sustainable development, make the construction meet the clients need with highest potential, maximize the space utilization and energy saving, minimize the operational and maintenance cost, eliminate the design errors of the project and implement local standards and regulations. Furthermore, a Facilities Manager can reduce expectation failures of clients and developers, negative impacts related to efficiency, productivity and sustainability, health and safety, and maintainability. The two different standpoints of Facilities Managers and non-Facilities Managers have been mostly same. They both suggest that there are gaps to be full filled in project development process and a Facilities Manager is able to fulfil them.

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