THE ROLE OF FACILITIES MANAGEMENT AT THE DESIGN STAGE

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Facilities management is a new discipline, an exciting profession that embraces many essential areas of the built environment. The last two decades have witnessed a significant growth in the profession to the extent that there is the need to be clear on its roles both in the industry and organisation. This study looks at the role of facilities management in the procurement of a facility. It tries to highlight the advantages of the early involvement of the facilities manager in the procurement process. The methodology for this study is through interviews of professionals in construction and service providers as well as facilities managers and designers. Emphasis is placed on the attainment of value for money, Customer satisfaction and the delivery of a better building; that is economic to run, easy for the occupiers to maintain, control and manage, better able to respond to the needs of the occupants .In promoting the role of facilities managers, their influence and contributions to the design process, the facilities manager ensures the effective management of the supply chain. By promoting team work and collaboration through the design process, facilities management also encourages dialogue by indicating the benefits of partnership amongst the project team members. And while the project team takes decisions that will meet the business need of the facility over its useful life, they also make provisions for the future maintenance of the facility. The facilities manager's concern at the design stage will be the delivery of an efficient facility that is cost effective, and will respond to their subsequent roles in the facility on a day to day basis. Cost effective design solutions are then generated to meet the needs of the building objectives.

Keywords: client, procurement process, project team, facilities management, value for money

INTRODUCTION

A holistic view of the subject facilities management (FM) will involve looking at it from the definition and history of the development of facilities management, through the practice of facilities management. It touches on some very important areas of the subject in relation to customer satisfaction and providing good value for money. It looks at achieving better facility that is easy to run, maintain and manage by applying whole life costing and risk management techniques. The use of value management as a means of meeting client perceived needs. The use of technology, communication and their influence in today's business is examined. FM is examined at the pre-operations stage to see how early involvement can create effective operations, greater value for money and customer satisfaction while also providing better facility that is attractive and user friendly. 'FM at the design stage will add value to the facility by ensuring less 'rework', emphasising value for money, efficient control of the supply chain and team work'

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Enoma, A (2005) The role of facilities management at the design stage. *In:* Khosrowshahi, F (Ed.), *21st Annual ARCOM Conference*, 7-9 September 2005, SOAS, University of London. Association of Researchers in Construction Management, Vol. 1, 421-30.

DEFINITION AND DEVELOPMENTS IN THE PROFESSION OF FACILITIES MANAGEMENT

The British institute of Facilities management (BIFM) defines facilities management as the practice of coordinating the physical workplace with people and work of an organisation. Bernard Williams Associates (1999) looks at facilities management as a management process, which includes analytical and systematic approaches used to determine and deliver the agreed levels of service activities that are required to manage, operate, maintain and support a facility in a quality environment at appropriate cost to meet the business requirements. Hendrickson and Au (1988) see it as the discipline of planning, designing, constructing and managing space, in every type of structure, from office building to process plant. Becker (1990) presents a picture of FM as a subset of general management. FM is responsible for coordinating all efforts relating to planning, designing, and managing buildings and their systems, equipments and furniture to enhance the organisation's ability to compete successfully in a rapidly changing world. All the above definitions have management, workplace, people, management process in common, it is clear that FM is an umbrella term which brings together a wide range of issues for the benefits of the organisation in achieving efficiency and effectiveness at an optimal combination of cost, quality and time. The hard issues are building, equipment, furniture and the soft being people, process, safety environment, they are all the responsibilities of Facilities Management.

To obtain maximum benefit from a constructed facility, some owners and developers would add strategic planning at the beginning and facility maintenance as a follow up in the project lifecycle. Alexander(1994), Then (1999) and others after them took the definition further by looking at Facilities management as a belief in the potentials to improve processes by which workplaces can be managed to inspire people to give their best, to support their effectiveness and ultimately to make a positive contribution to economic growth and organisational success. A situation, which creates for, learned debate, for sharing and validating experience. They also advices that the future of facilities management be built on a strong programme of education and research dedicated to understanding and developing the discipline, to a collective knowledge base and to identifying and codifying best practice.

Atkin and Brooks (2002) defined Facilities management as an integrated approach to operating, maintaining, improving and adapting the building infrastructure of an organisation in order to create an environment that strongly supports the primary objective of that organisation. In practice, by creating an environment that is conducive to carrying out the organisation's primary operations, taking an integrated view of the service infrastructure, and using this to deliver customer satisfaction and value for money through support for and enhancement of the core business, you are practicing facilities management.

To understand facilities management there is the need to examine the interface with built environment, design and construction. Understanding where facilities management impacts on the design and construction process; how facilities management creates value added to the facility by users and occupants of the constructed facilities, how the use of facilities management during the design construction process can lead to gains, saving in cost and time and less failure in constructed facilities, the impact or the role of facilities management in the success of the built environment.

RELATIONS WITH BUILT ENVIRONMENT

Bosch and Pearce (2003) capitalized on the evidence that sustainable design and construction contributes to the creation of facilities that are energy efficient, cost less over their life cycle and improves worker productivity. In their review of nine guidance documents deemed to educate facilities decision makers, while offering a framework for a sustainable design process. They reported that the active participation of facilities managers during the planning, design, and construction phases ensure that sustainable strategies are not undermined after the facilities are delivered, and that future plans and policies for the facility is kept.

Okoroh *et al*. (2003) provides insights into derivation of values by users of the built environment through facilities management. They observed that a close link between life cycle planning and design, construction and facilities maintenance contributes to the derivation of value by stakeholders in hotels. Their research on the benefits of facilities management particularly in hospital and hotels supports the fact that a large proportion of the product relates to the management of the core activities, and these centres on facilities. There is the need for planning constructed facilities, the capacity, use and active maintenance policies, as well as the resources needed to cope with changing demands.

From all indications therefore, the term Facilities management can cover a wide range of services from real estate management, contact management, financial management, change management, human resource management, to health and safety and in addition to building maintenance and domestic services (such as cleaning and security) and utility supply.

THE PRACTICE OF FACILITIES MANAGEMENT

Latham (2001) says that the facilities manager is the eyes and ears of the clients. This role should exist during the construction or refurbishment phase, although that responsibility will be shared by a number of client advisers working together, hopefully, with the contractors. It comes to fruition when handover has taken place, and the eyes and ear of the client then assumes the role hand and feet as well. The last two decades have seen significant growth in facilities management, as a result of the changing business environment. Privatisation of business operations, re-engineering of business, the idea of value for money, customer satisfaction, subcontracting and outsourcing of non-core activities have all contributed in no small measure to the development of facilities management. Although the input of FM is required at the design stage, FM is at the operate stage. FM is required to manage the organisation, the people and the workplace to attain organisational goals. The implication is that effective performance and nothing less is expected of the FM role and responsibilities within the organisation. Nutt (2000) challenged FM to build its own distinctive knowledge base to underpin best practice, advance the field and bridge the gap between its promise and its performance. With this FM should be able to stand on its own and make progress. Development in technology, superior management techniques, dedicated core of worker, different approaches to building management and maintenance have all brought different light on the subject of facilities management.

Wood (2003) is of the opinion that development in communication infrastructure has facilitated new ways of working and new conceptualisation of building and building types, more on these developments includes automated and intelligent solution. FM

must be one of the fastest growing professional disciplines in the United Kingdom. As a profession it is however, in its early stages. There are many individual actions on specific issues, but there is not much in terms of a body of knowledge that facilities management can call their own. Their new initiative aims to confirm that a firm can achieve competitive advantage by minimising their facilities cost and using it as an asset rather than liability. The profession of facilities management continues to evolve to reflect this. As firms have increasingly turned to outsourcing as a means of cutting cost, increasing efficiency and improving focus on their main activities, the facilities sector have benefited immensely. Some of their functions can be in-house due to the constant demand for those services and others could be external because of their non core nature. The facilities manager will be able to provide solution that strike the most cost effective balance between capital and running costs and minimise the risk of failure or loss of functionality of the facility.

Facilities management is a large and expanding market, developing both in size and sophistication as the process and those managing and supplying develop in professional skill and understanding, it is not possible to value the profession without debating which services; commercial, professional and industrial to be included. At all levels of facilities management combining resources and activities is very vital to the success of any organisation.

METHODOLOGY

The methodology adopted in this study was a structured interview with expert in facilities management, the different professionals in the project teams with knowledge and experience in facilities provision. The issue of the procurement route option was not there as all procurement routes were examined and the experts tended to share their experience with the different projects they were involved in. Secondary data were also used to confirm the result of our survey. The survey was designed to elicit from the respondents, the benefits of the involvement of facilities management in the design process, the barriers to the involvement of the facilities management at the design stages. Ways of improving the relationship within the design team and emphasising partnership and team work while stressing value for money, customer's satisfaction and good communication.

The aim was to promote the involvement of facilities management from the design process through to hand over and their subsequent roles in the project life cycle. By so doing, create or fashion out the roles for facilities manager in building design and examine the techniques and issues that will make for the involvement of facilities management in the design process a permanent and useful one.

Questions were designed to examine the dynamics of the project team and the contributions of the facilities manager to the project team. How the facilities manager is perceived within the design team, the quality of the client brief and the interpretation by the design team.

THE VALUE CONTRIBUTION

The objective of the sturdy was to determine the roles of the facilities management in the design process and weight his contribution to the project team success.

The Procurement routes are the various options in the construction of a facility, which needs to be considered. In building a facility, each option brings in different demand and responsibilities for those involved in the procurement process. The choice

of a procurement route is dependent on emphasis placed on time, cost, quality, risk, and experience level of clients. The client usually will seek advice from the architect, quantity surveyor, contractors and project manager on the choice of the procurement path. In the UK the procurement routes mainly used in the construction industry are traditional route, design and build, management contracting, construction management, public private partnership, and private finance initiative. In this survey all the questions asked made no specific reference to any particular route as not to limit the respondent in providing answers to them.

The benefits of the involvement of facilities manager in the design process include lower cost of procurement due to reduction in design alteration and rework, provision of a facility that is better suited to the needs of the end user, a facility that is attractive to potential users and clients, the one that can respond to their needs, a facility that is easy to run and maintain, control and manage.

The barriers to the involvement of facilities management in the design process mainly centres on cost, when procuring a facility the budget usually will look at the most cost effective option and facilities managers may be powerless against the decision maker expert when the consequence of their action has significant implication for the facility to be procured. There is usually conflict between the commercial needs of the client and the operational needs of the facility provided. In most facilities there is the belief in the construction industry that client is often not the occupier and so there is no need to involve the facilities manger. To improve value for money, the project team must define clearly the needs of the client, eliminate unnecessary expenditure and obtain the optimum balance between cost, time and quality. Development in FM framework of facilities strategy must identify and translate the organisational objectives and requirement into forms that will meet the organisational needs by seeking to maximise performance of the facilities.

Partnering and team work are ways of improving the relationship between the design team members. The process of partnering and team work should start as early as possible with the attendance and commitments of all the project team members, the initial partnering workshop is the most crucial aspect of the team work process especially when the team members have not worked together before and there are no preconceived notions. The project could be a complex one and requiring extra effort and commitment. The projects stand to benefit in many ways from good team work and partnership between the design team members. Leading to better understanding of the respective team members roles, responsibilities and their competences, safer and better work environment, early problem identification and solution, elimination of conflict and litigations as issues are resolved before they get out of hand. Effective partnering will see each team member attaining their individual goal as well as the owner’s goal for the project. Proactive dispute resolution is the most cost effective solution as the construction industry’s reputation for claims, conflict, mistrust and litigation can be avoided. Good communications and freedom of expression amongst the team member will lead to better value for money and greater customer satisfaction. Partnering can be very demanding and will usually rely on trust and goodwill to succeed.

The project team is usually made up of different professionals all centred around construction, architects, quantity surveyors, structural and service engineers, civil engineers, facilities and construction management, consultants, contractors, suppliers, subcontractors, manufacturers and (the CDM planning supervisor usually required by law, s/he may come from any discipline). All working for the good of the project

under the leadership of the project manager, who may be from any discipline depending on the size and complexity of the project, the design team leader can assume the role of the project manager. The different members of the project team have their usual roles which will vary from advice to planning, supervising and implementation.

How a facilities manager is perceived within the project team will vary from project to project. The survey results confirm that, how he is perceived is based on his contributions at design team meetings; his level of education and training, his level of experience and discipline. Specific comments of how they all see facility manager can better be relayed on individual experience and cases. The DTI, BRE sturdy on applying facilities expertise in the building design (2001) highlight the role of the facilities manager in each case to be; asking the appropriate questions; providing appropriate information; set out their principles in terms of policy, strategy, objectives and preferred tactics; choose appropriate standards and key performance indicators; identify supporting best practice documentation.

In PFI, FM can add value to PFI Bids by actively engaging with the building contractors and the design teams through attending design team meetings and value management workshops. This can cover review of detailed design, design and service life, and specification decision. FM is able to effect the supply chain management and ensure that provision is made for future maintenance of the facility.

In FM organisations, Then (1999) is of the opinion that targets and benchmarks are tools used effectively by management to monitor progress towards strategic goals and objectives. FM role within organisation must be built upon an aspiration to continuously add value by providing appropriate and innovative facilities solution to business challenges through the skilful manipulation of all business resources i.e. the optimum balance between people, physical assets and technology. No matter how cost effective you are in delivering a facility, if the facility falls short of the client's objectives then you have not provided good value. Benefits are derived from the function the facility performs, so when a facility include function that do not relate to the client requirement there will be no benefit from the additional cost and overall value will fall relative to the cost. In the management of a facility, it is usually the objective that provides the framework for all decision making with regards to the facility. Katipamula, *et al.* (1999) agreed that integrated network and killer applications in the 21st century has reached the building industry in time for facility managers to respond to pressures to cut costs, increase profits, and thrive in a data-driven, decision making market. Recent development in technology, communications, the use of internet, intranet technologies has created a range of options for the facilities manager. Information can come from many different building systems such as CCTV, fire alarm, access control system and security systems. An integrated information system will result in financial savings by reducing administrative and cost of investing in IT systems, with the use of common PCs and network.

The facilities Management Association (FMA) is developing a close relationship with the Office of Government Commerce (OGC), which is keen to see all transactions handled electronically by 2005. The use of intranet in organisation makes it easy for different departments to share common information across the organisation; the internet is fast becoming the first port of call for those researching in industries and markets.

The essence of whole life cycle cost is accounting for all possible cost associated with construction and operating a building and considering these cost at their present value. Ferry and Flanagan (1999) opined that the optimum use of whole life cycle cost extends beyond the design and construction of the building into the operations and rehabilitation / disposal. The construction industry no longer places emphasis on delivering a facility at its lowest cost; there is greater awareness and desire to consider the cost over the whole life of the facility.

Construction procurement guidance, No7 whole life costs (office of government commerce (OGC)), states that all procurement must be made solely on the basis of value for money in terms of the optimum combination of whole life cost and quality to meet the users.

Philips (2000) view development in procurement process from the RIBA plan of work using the traditional approach, there are four (4) stages in the building process.

1. Preproject (up to outline planning approval)

2. Preconstruction (up to production information)

3. Construction (up to hand over)

4. Post completion.

Procurement process can be affected by the communication route, the degree of overlap between the stages, the management hierarchy in the project and the responsibilities of the key players. The process protocol map developed by consortium comprising Salford University, leading UK construction companies and clients with funding from Engineering and Physical Science Research Council (EPSRC) described the input required of facilities management as a management sub-process at each stage to be. Contributing to the design brief at conception of need stage, also to full concept design and preparation of initial maintenance plan, and the initial coordinating product model. Revising the initial maintenance plan for the model and assisting with finalising and coordinated product model. FM should undertake an ongoing review of the facilities life cycle performance. For the project to succeed, all the members of the project team must have the relevant information and be fully involved in the project. Teamwork is seriously emphasised.

A DTI led survey published at the end of 2002 found that there have been little changes from the previous years of the proportion of UK business using information and communication technology. But UK firms are now adopting a more strategic approach. Customer needs and expectations drive continuous improvement of facilities management information technology system. Building automated system (BAS) consist of electronic devices that provide interface and control for processing and control functions, making it easier to monitor and control systems in the facility or built environment thereby providing value for money.

Information technology (IT) in facilities management must be part of the organisations culture to have a positive impact on the organisations' strategic plan. It has become a prominent component of quality FM function. American Productivity and Quality Centre (APQC 1998) believe that recent technological development have allowed organisations to maximise the value of FM by simplifying key FM activities such as responding to service requests, managing property portfolios, creating the FM strategic plan, searching for information, verifying data, and interacting with other

organisational systems. Understanding customer's information needs and providing a usable solution to the customer results in satisfied customer.

CONCLUSION

In the future, a more holistic approach may see the facilities management workload effectively influenced by the earliest design decision, and future maintenance will be an integral part of the construction package, offered by the same firm as part of general service delivery. There will be the need for a wider recognition of the contribution of the facilities management to the success of the procurement of a facility. FM framework of facilities strategy must identify and translate the organisational objectives and requirement into forms that will meet the organisational needs by seeking to maximise performance of the facilities. In order to survive and flourish facilities management needs to move towards business objectives of efficiency, effectiveness and opportunities and away from concerns of efficient operation of building. FM will become a profit centre; there will be more concern for effective management of human and exceptional services. In the process creates better value for money.

In America, research conducted by the APQC reveals that good, best practice organisation treat FM as an investment, an asset that adds value, yield returns, links to strategy and enables the organisation to achieve its goal and objectives. If we in the UK are to achieve much with FM, we had better start treating it like the best practice organisation in the United States of America.

Oseland and Wills (1999) for FM to grow as a discipline, a paradigm shift is required from focusing purely on premises cost to looking at holistic business. FM should strive to understand the procurement process and the point at which their contributions to the decision making process will be most valuable to the design team. FM should also be able to justify their inclusion in the team by making the right contributions, be financial and technically aware at all times. FM should ensure their awareness of all operational decisions and implications, be involved in the determination of the design as far as can be possible. FM should take more active part in project and the design profession.

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