

MANAGING CHALLENGES OF HIGH-RISE RESIDENTIAL BUILDINGS IN SRI LANKA: A FM FRAMEWORK

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ABSTRACT

High Rise Residential Building (HRRB) is a fast-growing trend in Sri Lanka. These are regulated and managed by the Management Corporation (MC). However, In Sri Lankan context MC is poor performance has led to various issues and challenges in HRRB. Hence, to better manage as well as overcome such issues and challenges by suitable professional concept in HRRB. Thus, the study was aimed to develop Facilities Management (FM) solutions to manage issues and challenges of the HRRB in Sri Lanka. To achieve the aim four objectives were formulated. As, to investigate the issues and challenges of managing the HRRB, current management practices, possible FM solutions to mitigate the identified issues and challenges and develop a framework to manage the HRRB in Sri Lanka. A qualitative research approach was followed to achieve the aim of the research wherein case study method was selected as the most appropriate research method. The required data were collected via semi structured interviews and analysed using cross case analysis. The findings of the study revealed issues and challenges in HRRB falls into three main categories, namely building management, finance and resident related issues. Subsequently, the issues and challenges faced by the MC of HRRB in Sri Lankan context, and FM solutions adapted to overcome such as issues and challenges were identified. Hence, a framework has been proposed in this study to successfully manage issues and challenges in HRRB in Sri Lanka. This research increases the present level of awareness and importance associated with effective management practices for HRRB management within the scope of FM. Further, it introduces a framework for well managed the HRRB.

Keywords: Facilities Management; High Rise Residential Buildings; Management Corporation; Sri Lanka.

1. INTRODUCTION

1.1. HIGH RISE RESIDENTIAL BUILDINGS

High-Rise Residential Buildings (HRRB) are also called “vertical cities”, having the potential to decongest urban sprawl (Kavilkar, 2014). These structures have developed into an economy generating industry, gaining worldwide popularity day by day. HRRB are parts of a multi-owner property that are owned by individuals, a property comprising land with a building or buildings of more than one unit of residential or non-residential accommodation (Anthonisz and Perry, 2015). HRRB facilities operate on a full-time basis, seven days a week and involve multiple individual user concerns and requirements, many of which are subjective (Wild et al., 2010). Consequently, there is a need to respond and adapt to almost constantly changing conditions. Each HRRB has its own unique features, challenges and opportunities.

The HRRB provide several significant and common features for residents that can be enjoyed by the residents, namely swimming pool, gymnasium, landscape, 24 hours security system, sports court and so on (Che-Ani et al., 2009). Thus, these features must be well maintained to ensure their functionality. The features are used in two different capacities, such as common area or shared spaces, and individual (end users) in high rise residential developments (Che-Ani et al., 2009). HRRB are vitally important when considering the sustainable design of cities and communities (Alyokhin et al., 2006). The HRRB standard is accountable for all management and maintenance aspects of the overseen properties and common facilities therein. Unfortunately,

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most of the HRRB schemes are not effectively managed by the existing Management Corporation (MC), leading to challenging issues during the course of their life cycle (Rashidah et al., 2016).

1.2. EVOLUTION OF HRRB PROFILE IN SRI LANKA

The concept of HRRB living dates back to the ancient roman empire, where citizens lived within the metropolis in the city centre in control of their own individual housing units but sharing common facilities with every other. This way of dwelling enabled a greater comfy and safe environment, which even nowadays, is the top cause of many humans to move into HRRB in Sri Lanka. Low rise residential building improvement has been in existence for more than 50 years in Sri Lanka (Kim, 2014). And the historical development of the Sri Lankan residential building industry is closely connected with the political changes that took place during the last five decades. In this respect, the significance economic adjustments may be categorized into pre and post economic liberalization period. The government channelled maximum investment into the building sector and was involved in the provision of low and middle income residential flats for the poor and the middle-income groups (Weddikara & Devapriya, 2001).

Several past studies clearly accepted that the periods before 1977 were mostly unfavourable condition of property markets and the demand for the government HRRB reduced with time due to various reasons. The main reason was the bad maintenance of flats, for example garbage disposal, painting, services of common areas, lack of privacy (Hansen & Mladenović, 1997). In most of the instance the developer and the designer did not give much thought to post construction management aspects of these HRRB (Hansen & Mladenović, 1997).

1.3. CHALLENGES IN HRRB

The HRRB are facing unique challenges based on the functions of HRRB. The challenges of HRRB may be daunting and its outcome uncertain, but it must nevertheless be faced and dealt with (Hui, 2005). Studies have identified challenges under three area, namely building management, financial and resident-related (Che-Ani et al., 2009). Building management has been widely discussed in relation to HRRB (Wahab et al., 2016). It plays an integral role in the building operation. The building management of HRRB is very distinct due to the complicated arrangement for the MC (Ho & Liusman, 2016). The building management of the common areas of a building is a major challenge to its owners. There is a need for cooperation and coordination among them to maintain the shared facilities and common areas such as the entrance lobby, lifts, staircases, lighting system, drainage pipes, roof (Ho & Liusman, 2016). The building management also tends to get the least priority in the HRRB. Effective property management and facility maintenance is important in the economic aspects of high-rise living (Tiun, 2006). Building maintenance (Che-Ghani et al., 2016), energy management (Ali et al., 2010; Lecamwasam et al., 2012), service contract management (Hui & Tsang, 2004; Smith et al., 2004), waste management (Yeheyis et al., 2012), and property management (Noor et al., 2013; Yau, 2011) are the common challenges identified under building management of HRRB.

One of the primary challenges on HRRB is financial management (Adamu, 2012). Service charge and sinking funds are an amount of money accumulated by MC to fund the maintenance and improvement works in HRRB. Development and maintenance works are important to be performed to ensure that the building and its facilities are in good condition (Wahab et al., 2016). However, the lack of awareness in financial management makes it challenging to manage HRRB (Hassanain et al., 2013). The source in HRRB comes from the service charge and sinking fund collected from the residents. If these funds are insufficient, the efficiency of financial management will be affected and financial activities may not be done frequently and diligently (Wahab et al., 2016). Hence, challenges such as complexities of managing sinking fund (Tawil et al., 2012; Wild et al., 2010), utilities charge collection (Fanny et al., 2011; Ho and Gao, 2013; Mohd-Tawil et al., 2009), operation and maintenance budget administration (El-Haram & Horner, 2002), and handling procurements (Alexander, 2013) have been identified as financial challenges in managing HRRB.

In practice, most MCs under function because they do not have the expertise to run and maintain the HRRB residents' need (Irfan et al., 2008). If the MC fails to function nicely as stipulated in other regulatory bodies, the residents of the unique housing complex have the proper to summon the stated MC (Irfan et al., 2008). Most resident related challenges spring from this under function of MCs. Maintaining expected quality of life and safety (Belvisi et al., 2016; Al-Jokhadar and Jabi, 2017) and encouraging residents' active participation in

HRRB management (Housing, 2003; Wekerle et al., 1980) are the two most common challenges the MCs face in managing HRRB.

Now a day, the HRRB has faced to the Problem of resolve all customer complaints, proper way, as well as disputes among residents, environmental, social and psychological issues related with HRRB, difficult to managing outsource people for daily maintenance activities. Therefore, this study will be attempted to identify a simple and efficient framework to be implemented properly FM concept in HRRB. In HRRB, some studies have been carried out on managing of HRRB building. However, the gap highlighted the need of a proper framework to manage the challenges in HRRB based on FM practices in Sri Lanka.

1.4. ROLE OF FACILITIES MANAGEMENT IN HRRB

Facilities Management (FM) has extensive responsibilities for providing, maintaining and developing a number of services, which range from property strategy such as space management, building maintenance, administration and contract management including catering, cleaning and security in HRRB. FM at corporate level contributes to the delivery of strategic and operational objectives, while providing safe and efficient environment, which is necessary to the performance of the concerned business, on day to day level (Che-Ani *et al.*, 2009). As an increasing number of HRRB have been developed over recent decades, the demand for FM has also grown accordingly.

According to the Robathan (1996), FM services in HRRB have three levels.

- Lower level – the day to day support of operations such as maintenance, security, day to day communication services.
- Planned function- it includes space planning, building projects, building management system, resource, finance management, health and safety. At this level the facilities manager acts on strategic demand and develop tactical plans in line with the strategy.
- Board level – the director of the facilities that the HRRB, plant and services business need to be managed as assets that produce return on investments.

Myeda (2014) stated that the effective FM contributes to the delivery of operational objectives. On a day to day level, FM provides a safe and efficient working environment essential to the performance and business, whatever its size and scope. According to Ancarani and Capaldo (2005), the aforementioned obvious forms of FM services into two categories, as Hard FM and soft FM. Hard FM related to the management and maintenance of property, while the Soft FM includes to the management of support services, the build environment, including infrastructure facilities such as estate and property, indoor air, structure and fabric, water supply and electricity comes under the first category (Hard FM) and catering, cleaning, waste management, security system describes the latter category (Soft FM).

In HRRB practice, FM has been adopted differently, and in different contexts. The responsibility of FM in an HRRB management may differ from other contexts. In HRRB, this is typically conducted at all times of the day, every day of the year. The FM can be handled by an individual or a team, with services capable to be delivered by dedicated 'in-house' professionals or 'out-sourced' in whole or part to external providers (Hui & Tsang, 2004). An important role of the Facilities Manager is to provide services, meet varying expectations, support, and information, be a respectable listener, and deal with conflict to create a community environment residents are enthusiastic to call home (Irfan *et al.*, 2008). Their role includes dealing with several contractors and suppliers in carrying out maintenance and improvements, and providing services such as security, cleaning, and property maintenance (Noor *et al.*, 2013).

In HRRB, the Facilities Manager may be essential to manage staff and be part of the recruitment and induction process. Therefore, there are again required to have excellent people management skills (Irfan *et al.*, 2008). Their relationship with sustenance staff and contractors is critical in ensuring the building is a great place to live and work. FM services in the past were restricted to building operations only, however today the activities undertaken by Facilities Managers can extend throughout an entire HRRB life cycle.

Considering the involvement of FM in HRRB life cycle, it is apparent that the challenges of HRRB can be dealt with by ensuring sound FM practices incorporated to management of HRRB. Hence, this study aimed to develop FM solutions to manage challenges of HRRB in Sri Lanka.

2. RESEARCH METHODOLOGY

Considering the need of in-depth analysis of the nature of FM practice in HRRB, case study approach was selected to conduct this study. Three cases were selected from the Colombo metropolis, each having more than hundred dwelling units. Cases were examined mainly by conducting semi-structured and face-to-face interviews. The interviews were conducted with three key participants of the HRRB management team. Interviews were held with nine managerial level employees, each having more than five years of experience in the HRRB industry and Facilities Management. Table 1 briefs the case selection.

Table 1: Case Briefing

Case	A	B	C
Age of Building/Facility (Years)	7	4	8
Dwelling Units	300	475	200
Interviewee	Property Manager Maintenance Engineer Facilities Executive	Head of Condominium Property Manager Maintenance Engineer	Head of Condominium Property Manager Maintenance Engineer

Interviews were semi-structured as it allows in-depth and free flow of information from interviewees, whilst at the same time providing a framework/guide for conducting the interview. Data were collected under challenges of HRRB and possible solutions to those challenges. The collected data were analysed using content analysis. Cognitive mapping and NVivo software were used to perform the content analysis. Findings of the study are discussed in the subsequent section.

3. RESEARCH FINDINGS

3.1. CHALLENGES IN BUILDING MANAGEMENT

Building management has been identified as crucial in HRRB management by various researchers (Ho & Liusman, 2016; Smith *et al.*, 2004; Tiun, 2006; Yeheyis *et al.*, 2012). This includes maintaining the premises, managing energy consumption, handling service contracts and all housekeeping activities including waste management. Case study findings also suggested that, building management activities can often be challenging. According to the interviewees, when considering the building management of HRRB, the key objective is to protect the building property's value by ensuring a good and healthy condition of the building and facilities. In the case studies, it was revealed that most building management challenges occur due to poor maintenance of the facility. Also, according to the respondents, energy management issues, waste handling and difficulty in managing outsourced contracts led to several challenges in HRRB management.

3.2. FINANCIAL CHALLENGES

The financial activities are considered as non-core business activities, and managing these activities are often challenging. Financial challenges were one of the main types of challenges in HRRB management, as identified in the literature (Adamu, 2012; Hassanain *et al.*, 2013; Wahab *et al.*, 2016). This was asserted in the case studies as well. The interviewees pointed out that, in handling finances related to HRRB management, the situations like inadequate awareness, procedures, and funds make it challenging to smooth operation of the HRRB. According to all three cases, HRRB financial activities included preparing and monitoring the maintenance budgets, cost analysis, maintaining the procurement procedures, handling appropriate service charge collection and sinking fund management, and issues in managing these activities can lead to problematic situations.

3.3. RESIDENT RELATED CHALLENGES

According to the literature review, the issues brought up by resident behaviour of the HRRB can be difficult to manage since those need smooth and precise management in order to retain the tenant. Also, when building management and financial challenges are not managed properly, they also can lead to resident related

challenges (Housing, 2003; Wekerle *et al.*, 1980). The interviewees agreed that resident related challenges are the most sensitive and important issues in managing HRRB, since their core business is dependent upon the residents of the building. According to the findings of the case studies, residents are concerned about the quality of life, safety and security within the HRRB. Hence, whenever these aspects are of poor quality, it is challenging to retain the residents. Also, the interviewees pointed out that, in some instances, residents themselves behave in challenging manners that make the management of HRRB difficult.

Hence, the interviewees pointed out that careful planning is required to overcome these challenges. Also, they pointed out that the FM has a significant role to play in doing so. The next section looks in to the findings of the empirical study on FM role in HRRB.

3.4. FM SOLUTIONS TO OVERCOME HRRB CHALLENGES

According to the literature findings, FM scope in HRRB spans from day to day activities to strategic planning (Robathan, 1996). Only one case has employed a facilities executive out of the three cases, and in the other two, all FM work was handled by the maintenance manager with the help of their property managers. During the case studies, the interviewees agreed that, FM is mainly about taking care of the HRRB premises and creating the pleasant, cost effective, and safe environment for the tenants to live in. The interviewees pointed out that, commonly in a HRRB, the FM is expected to manage facilities operation and maintenance activities, and outsourced contracts. Also, the FM is held responsible for improving the quality of services provided for residents. Monitoring the financial management of the HRRB was another area FM was expected to be engaged in. Further, the FM needed to be able to develop and implement practices that support the overall performance of the building. As identified by the interviewees, the main competencies expected from a FM in a HRRB are;

- Operation and maintenance of plant and equipment
- Communication management
- Quality management
- Leadership and strategy in managing non-core activities
- Finance and business skills
- Fluency in environmental sustainability

In applying these competencies to solve the identified challenges of HRRB, FM has to undertake both day to day activities as well as strategic planning as per the interviewees. For instance, the property manager of case B pointed out that, a FM is expected to daily monitor the energy consumption of the building as well as to develop long term plans to reduce or conserve energy consumption of HRRB. Further, in Case A, the maintenance engineer argued that, in handling the residents' behaviours and complaints, with the human resources management skills, the FM is the best mediator to increase the awareness of residents regarding various challenges they themselves pose on HRRB management.

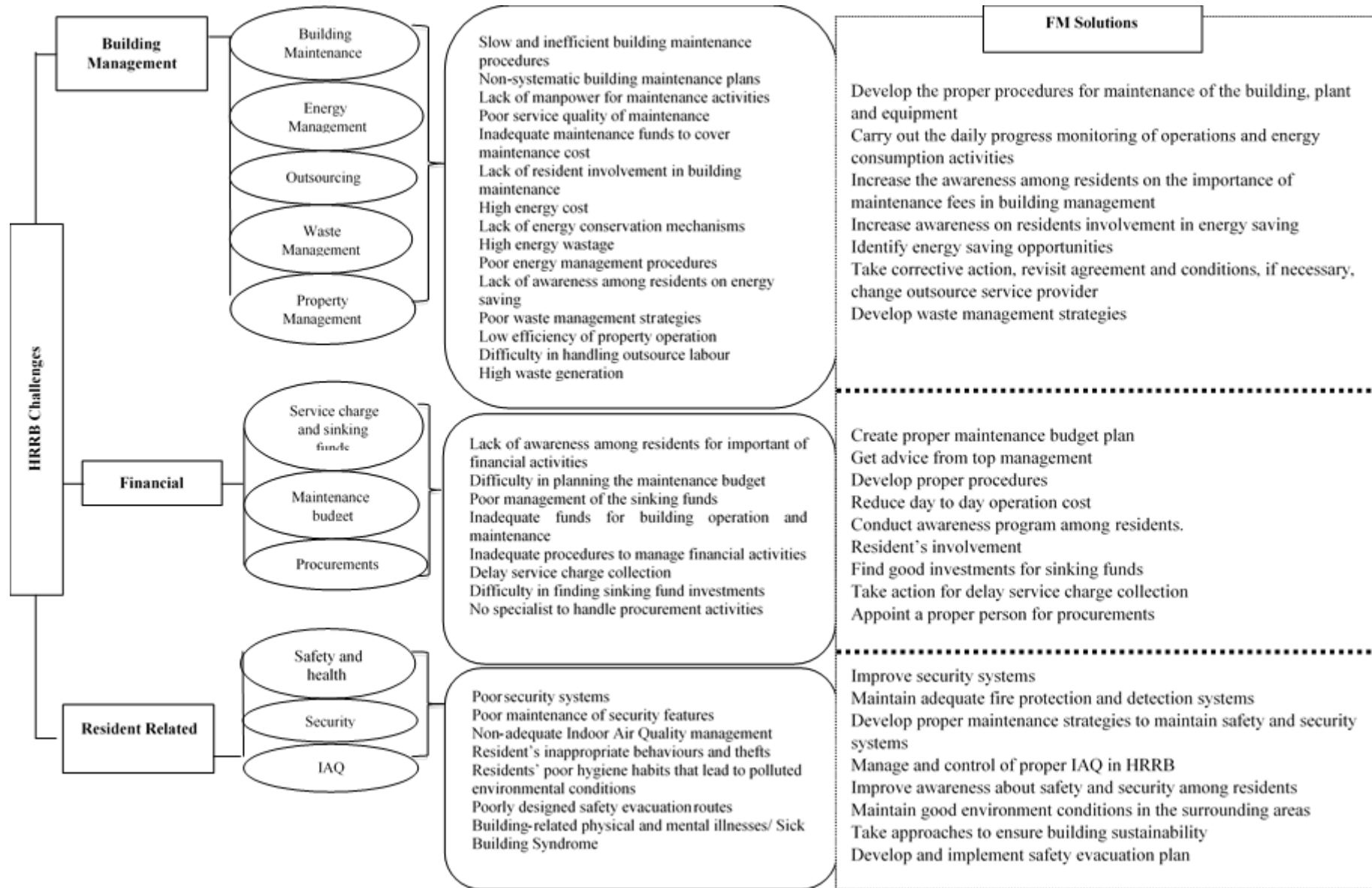


Figure 1: FM Framework to Manage HRRB Challenges

3.5. FM FRAMEWORK TO MANAGE CHALLENGES OF HRRB IN SRI LANKA

Based on the literature and empirical findings, the challenges of HRRB were identified under three main categories as, building management, financial, and resident related. Further, the FM scope and practice were evaluated in relation to HRRB, leading to identify solutions to overcome the challenges in HRRB management. By incorporating these findings a framework was developed to assist the FM and related professionals in HRRB industry. This framework delivers the strategies which can be used to mitigate issues and challenges of HRRB management practices. Figure 1 denotes the developed framework.

4. CONCLUSIONS

With the rapid urbanisation and scarcity of land, HRRB industry has developed in to a fast growing and profitable industry. However, managing a HRRB is challenging as number of factors make the HRRB different from other types of buildings such as commercial or manufacturing buildings. For instance, the dwellings in HRRB are more than rent spaces when it comes to the residents. These dwellings provide the residents with homes, and different residents have different expectations from their homes. Hence, it is the duty of the management of HRRB to maintain acceptable quality standards and provide the residents with a good quality service. Thus, employing a FM in HRRB emerged as a good solution to overcome most of the challenges as FM is about integrating people, process and technology to provide the customer with the best experience within the company.

A literature review was first undertaken to identify the challenges in managing HRRB, as well as the FM scope and practices in HRRB. A case study was then undertaken to identify the scenario in Sri Lanka, related to the study. The study identified various challenges that may occur in managing HRRB under three main areas, namely, building management, financial, and resident related. These challenges were interrelated and concurrent depending on the management, as well as the residents. Further, the involvement of FM and possible FM solutions to the challenges were also identified. These were used to develop a FM framework that could assist the FM professionals and HRRB management to effectively manage HRRB challenges and provide the residents with quality living spaces, while benefiting the organisation as well.

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