

# Challenges and Solutions for Facility Management in Housing Societies

Sanjay Karodpati<sup>1\*</sup>, Uday Kakde<sup>2</sup>

<sup>1,2</sup>Department of Civil Engineering, Dr. D. Y. Patil School of Engineering, Pune, India

**Abstract:** The study focuses on the challenges faced in facility management (FM) by the housing society of 900 flats with 4000 residents and their solutions. FM is essential however it is perceived as an evil and unnecessary activity. FM is a job delegated to persons with no knowledge of basics and treated as secondary task. Discussions were held with various stakeholders of housing society to understand the issues and arrive at the solutions. The research papers on the FM were perused to understand the FM in housing societies prevalent in the environment. The records and documentations were found to be lacking in the society. Digitization of data is non-existent which prevent implementation of building information modeling (BIM). BIM is enabler for FM in the present environment considering the fast pace of information age. The awareness level of the residents in the FM in and around the city is alarmingly low which is causing loss of hard earned money as is evident from the fact that the society has not yet installed roof top solar photovoltaic grid connected system thereby causing loss of about 5 lakhs rupees per month. The strategic FM which will encompass BIM is found to be the solution for the society.

**Keywords:** Facility management, building information Modeling, Digitization, Built drawings.

## 1. Introduction

The Facility maintenance (FM) of residential housing society is complex task which comprises from day to day work to taking decisions impacting quality life of residents in complete lifecycle of the facility. The task becomes complex by virtue of different perceptions of the members residing in the housing society. Facility Management is defined as a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and now technology as well. It is the integration of above elements which pose challenge. However Facilities management services in India have been growing steadily over the years and are set to witness significant momentum over in coming years. It is observed that facility management services have few organized players and mostly unorganized small operators. There is tendency in housing societies to delegate the job of FM to unprofessional who are not qualified for undertaking this specialized and multidisciplinary activity. Facilities management business is largely unorganized in India and operates on low margins due to assigning low priority being accorded to it. Besides facilities management services are

primarily concentrated in and around metros with low penetration in Tier II and Tier III cities. FM is essential, however is considered as evil and non-significant activity. However out that FM has been frequently considered a discipline primarily focused on maintenance services for organizations' buildings and other physical resources that are generally provided from a cost-cutting perspective. FM "shapes the business, not just supports the business". Thus, a strategic approach to FM should be introduced (Tucker and Pitt, 2009) converting challenges into opportunities. The residential complexes constructed in years before 2005-06 where the drawings were in the form of blue prints and not in auto-cad pose additional challenges. Thus in absence of digital data the management of information becomes challenging. The reactive FM was observed in the housing society rather than proactive one. Building Information System (BIM) is one of the most prominent initiatives frequently addressed by scholars and practitioners as a game-changer in construction industry in general and FM in particular. In order to fully reap the benefits of BIM in FM, however, further research is required. It will be an endeavor in this paper to investigate the challenges against successful implementation and realizing the benefits of BIM in FM.

## 2. Methodology

- A. The two prong strategy of survey with the residents and literature survey were adopted for understanding the challenges of FM in housing societies and thereby arriving for their possible solutions
- B. The discussions were done with number of residents of huge residential society in Pune which has 900 flats and population of approximately 4000 persons. The society office persons and management committee members were interviewed for their valuable inputs. The main observation is the lack of digital data which prevents in adopting BIM approach for FM. The following issues are identified as challenges for maintenance of the huge residential complex.

### 1) Land Records

The drawings are in the form of physical copy which are scattered and have become dilapidated. The files are maintained in haphazard manner and not properly docketed. The data

\*Corresponding author: sanjay.karodpati@dypic.in

mining was a challenge. The society had lodged case against builder for not getting the possession of the land as is due to them. The area statement of land of the society premises is not clear. It takes lot of study and scrutiny for arriving at the figures depicted on drawings. There was necessity to carry out total station survey for getting the data of land. However now the society has got auto-CAD drawing. The total station survey was carried out for getting the auto CAD drawings which did cost the society quite an amount.

#### 2) *Housing cooperative society act*

There is only one hard copy of the document in office. The Elected members of the society as well as maintenance staff are not well versed with the document which keeps them in constant state of ignorance. The knowledge of the contents and its application by proper interpretation of rules is paramount for running efficient society. This was found lacking.

#### 3) *Litigation*

The society is fighting court cases for getting its due share from the builder. The insufficient data on land and lack of knowledge on housing society rules is putting society in disadvantage. The committee members have to hire advocates for pleading the case. The hiring of advocates at times is unavoidable but feeding him data on all records is incumbent on the members which exactly is a problem. Deficit of data is apt description of the situation. Due to lack of strategic FM conveyance deed of the society is held up which is costing good amount of money in court cases.

#### 4) *As Built Drawings*

This is nonexistent. The builder at that time did not hand over the as built drawings to the society. Besides the committee members during that time were also not aware of the documents required to be asked from builder. Thus both of the above mentioned factors have complicated the day to day and lifelong maintenance of the residential complex. The layout of the water supply lines, underground electrical cables, sewerages layout, plumbing layouts etc. are not known to committee members. They rely on the background knowledge and experience of maintenance staff that were there from the start of the project. This complete reliance on these staff is not advisable since at stake is huge financial loss and not to mention safety of the residents.

#### 5) *Water Scarcity*

The major issue confronting all the residential societies of Pune is water scarcity. As mentioned above in the absence of layout of water lines, details of various plumbing fixtures, absence of the water pump house drawings in auto-cad etc. is causing water wastages. There is no method of checking the water given and consumed in the premises. Thus the old adage comes true 'the one which cannot be measured cannot be controlled'.

#### 6) *Electricity Bills*

The ever increasing electricity bills to the tune of one crore per year is heavy burden on the society budget besides which will have cascading effect on the allied maintenance tasks. The society is unable to implement rooftop solar photovoltaic system which will reduce the burden of electricity to half. The reason appears ignorance of the members and lack political will

of the authorities at the helm of affairs. Very few societies have gone for rooftop solar photovoltaic system in Pune. This reflects poor strategic FM.

#### 7) *Disaster Management Plans*

The firefighting plan is defunct in the absence of serviceable equipment. The builder has provided an elaborate firefighting system while handing over, however due to lack of professional knowledge on the FM the system has gone out of service which will require huge cost for its rehabilitation. This is the case with majority of societies.

#### 8) *Waste Management*

The Vermiculture plant exists in society for disposing wet garbage. However its functioning is questionable considering complaints of the residents. Professional upkeep of Vermiculture plant is found lacking as was observed from the discussions with the residents.

#### 9) *Sewage Treatment Plant*

The sewage treatment plant is not working efficiently as per the norms of government. The drawings of the plant were neither studied by the members nor the testing of treated sewage done which reflects lack of professional FM.

#### 10) *Finance*

There is lack of budget control mechanism in the present system of FM in the society. The audits are not carried out regularly and follow up on the previous audits is missing.

#### 11) *Housekeeping and security*

The major portion of budget of the housing society goes in these two important functions which cannot be neglected and are daily works. There is lot of scope in improvements in efficacy of work and savings of money if these are integrated in BIM. Thus by incorporating CCTV cameras strategically with the help of BIM security can be enhanced.

### 3. Results and Discussion

1. There are numerous challenges in FM for housing societies however then there are also solutions to it. Further challenge is prioritization to ensure that the right activities are receiving adequate management attention. BIM enabled FM is the one which requires attention of the housing societies. The huge data that is required for efficient FM can only be obtained through digitization of data. The first prerequisite for all the societies is to get the auto-CAD drawings of the buildings. Similarly as built drawings of the premises is must for the maintenance and upgraded works. The general lack of understanding of FM amongst members of society is a hindrance for efficient maintenance. The FM is either taken care by the society staff that are overburdened by other day to day to work or by the estate manager who is not technically competent.
2. The total expenditure for one month in FM of housing society of 900 flats in Pune is 21 Lakhs. The approximately distribution of various components is as follows. Electricity 10 lakh (50 %), security 4 lakh (19%), housekeeping 3 lakh (14%), salary 2 lakh (9%), Annual maintenance contract 1 lakh (4%) and sundry maintenance 1 lakh (4%). The distribution share of expenditure in percentages is shown in pie diagram.

Table 1

The effective FM can be achieved by suggesting following methods as enumerated in following table

S. No.	Description of Item	Problem Area	Remedy	Remarks
1	Original Drawings and as built drawings	Auto-CAD and as built drawings not available.	Digitization of paper drawings, getting survey done for as built drawings.	This will help in BIM
2.	Documentation	Limited hard copies	Digitization.	This will make available to entire society in cloud.
3.	Litigation	Lack of knowledge	Professional FM	This will fast track the issues and save money.
4.	Water and Electricity	high bill amount of electricity	Roof top photovoltaic grid connected system	Strategic FM is the answer.
5.	Waste	Waste management	Energy Audit and action on it.	Strategic FM is the answer.
6.	Disaster Management	Defunct Firefighting system	Rectifying the system by giving it top priority.	BIM will facilitate in cost effective system.

3. The complex nature of tasks and fast pace of life suggests to outsourcing of FM. The key will be integrating all the services of FM.

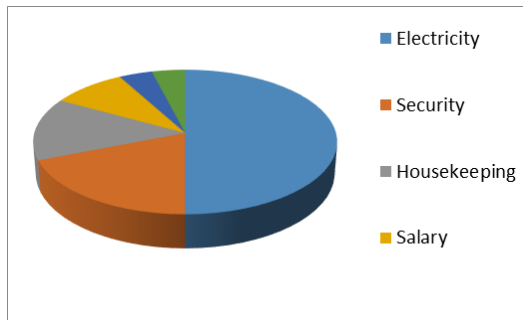


Fig. 1. Pie chart showing expenditures of various components of the FM

#### 4. Conclusion

The challenges in FM in housing society are numerous but it gives lot of opportunities for new methods to carry out the task. The present age of digitization has given rise of BIM which will make the FM cost effective and efficient. However, lack of awareness in the residents for professional FM is the hindrance for implementation. BIM is the most viable solution for

efficient information management in the FM sector FM represents the largest part of operating expenses in the society. Investing the hard earned money of the residents in strategic FM and its outsourcing will go in long way to tackle the challenges of housing societies.

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