



## DTU says yes to operational friendly building but how should it be done in practice?

Helle Lohmann Rasmussen, Susanne Balslev Nielsen and Anders B. Møller

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SWITZERLAND



## Practical guide to FM-supported building design and construction

By René Sigg, Board Member IFMA Switzerland

**IFMA Switzerland (Swiss international facility management association) has collaborated with 26 other project partners to develop a practical guide to FM-supported building design and construction (pbFM). The guide shows how it is possible to achieve close coordination between FM and the operation and management of a building as early as in the design and construction phases. Early involvement of FM results in optimal planning of the building management and operation activities within the design and construction process.**

Buildings are usually designed to last for a long time and the operational phase of its existence has a significant impact on resource and energy consumption, as well as on costs. Facility management (FM) is a holistic, strategic approach aimed

at making buildings, workplaces and spaces continuously available and keeping them in working order while adapting them to today's changing needs. The responsibility of the facility manager is thus to manage the property throughout its lifecycle

and to control a large part of the costs incurred during that time. In order for a building to be easy to manage and to allow for a seamless transition from the construction to the operational phase, close coordination between FM and the building operation and management must be achieved early on in the design and construction phases.

This need has also been identified by the Swiss Association of Engineers and Architects (SIA). The FM planner's role in the construction process was first defined in the Swiss recommendation SIA 113 "FM-oriented building design and construction" published in 2010. The SIA 113 describes the involvement of facility management during the design and construction phases (pbFM) in accordance with SIA 112 "service model". The early involvement of FM results in optimal planning of the building management and operation activities within the design and construction process.

### FM-supported building design and construction

FM support during the building design and construction phases is most effective when it is integrated into the design at an early stage.

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## Comment

Scott Newland  
Chief Operating Officer, ECS



Over the past two years I have been fortunate enough to attend and participate in a number of European & Global Facility Management and Procurement exhibitions and congresses and have begun to hear the 'trendy' marketing Gurus start to use this new word - 'GLocal' but what does it mean?

We all know that at around the time of the Millennium, procurement changed dramatically by moving away from local buyers sourcing their services locally to having Global Corporate organisations trying to centralise these activities - firstly with a view to try to buy globally and after realising this was not possible to then try

to source regionally i.e. Americas, EMEA, APAC etc. In the end this was not possible at first so they bundled countries.

It is true that when done well and by adopting a transparent, professional collaborative approach and engaging with all stakeholders throughout the process that this can and should deliver efficiencies and process improvements and a by-product of which is normally savings.

Perhaps though this might have been taken too far whereby a person sitting remotely from where the services are required, and where quite often these services are critical to supporting the core business, has no relationship or empathy to their Colleague locally and does not understand the pressure points. Their target to drive out cost and reduce the supply chain might just be starting to compromise the local need for good standards and the ability to work with

Service Partners for a long term strategy.

In my opinion it is vital that for the success of any service based product, especially Facilities Management, where people are the difference between success or failure that there is a true spirit of Partnership between the Client and their Service Partner who is the subject matter expert.

I hear far too often from Clients and Colleagues in the industry that they have suffered from an arrogant approach where the global company delivering to them has tried to dictate what the solution should be as cost was the only factor in the relationship and where they wrongly assume that 'one size fits all! If you do not win over the 'hearts and minds' of your customer at the building or the site where you deliver your product your relationship will fail. FM should be a collaboration where the Service Partner should integrate into the Client's team and work hand-in-hand to understand the function of the site and model its approach accordingly. Of course there is always the strategic element and the need

to understand the 'bigger picture' and this is where a regional layer of management is vital to understand, manage and effectively communicate this to all the parties delivering the services and to then feed quality management information to the Client.

In conclusion I believe that for 'GLocal' to be meaningful and deliver results that the delivery should be made by local in-country, 'best-in-class', privately owned facility management companies where the owner is still active in the daily business with a passion for their product. These organisations should then be part of a unique alliance who come together to share experiences and best practises and who as a Group, can be flexible and motivated to deliver excellence to their Clients through excellent people who are looking for long term and mutually beneficial relationships.



# Practical guide to FM-supported building design and construction

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Especially during the early stages of the building design phase, the necessary measures related to building operation and management can be fully incorporated into the building. However, if the professionals responsible for operation and management are

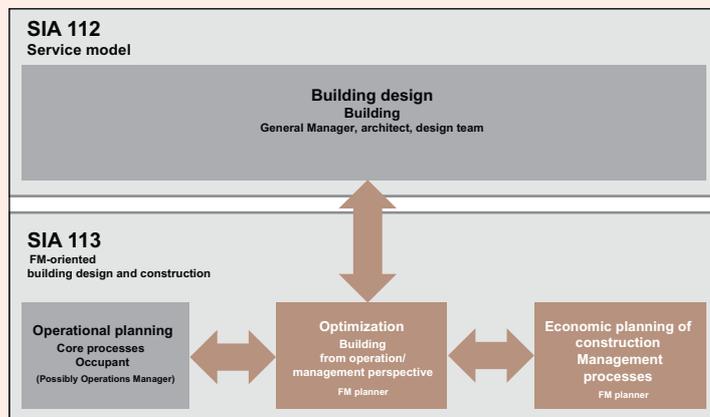


Fig. 1: Interaction between building design (SIA 112) and FM-oriented building design and construction (SIA 113).

SIA 113	Quality assurance	Review Methodology of FM-supported building design and construction (pbFM)		
	Owner perspective	Tasks related to finances/resources	Tasks related to building	Tasks related to organization
	Occupant/tenant perspective	Life cycle cost optimization Floor space efficiency	Building optimization from the management perspective	Planning of the building management
	Service provider perspective			
	Information and data management	Description Structuring	Filing	Exchange
Information and data management				

Fig. 2: Structure of the recommendation SIA 113 'FM-oriented building design and construction' with the relevant elements of FM-supported design and construction (pbFM).

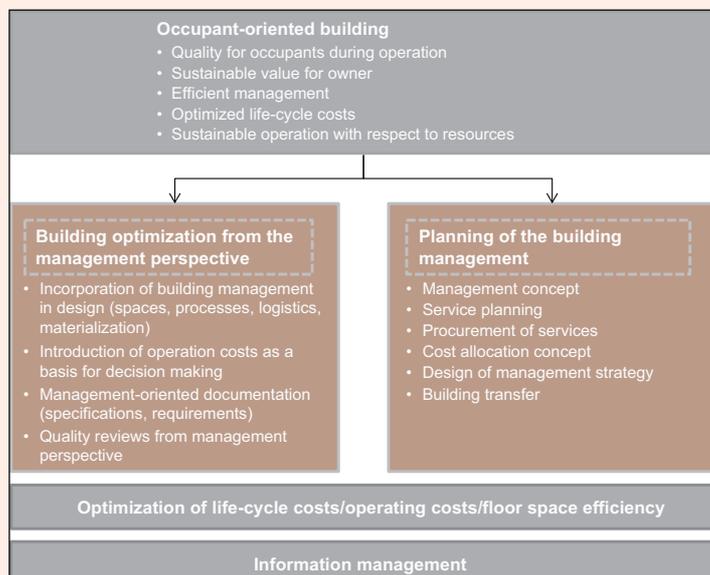


Fig. 3: Methodology of FM-supported building design and construction (pbFM).



involved too late in the design phase, unnecessary high rescheduling costs will arise.

In the early stages of the project, the priority for pbFM lies in the optimization of the building from a management perspective. As the project progresses, the focus shifts towards the planning of the building management. Building management professionals should be involved at an early stage, especially in those cases where operation and management take place within a complex organizational environment involving the various stakeholders. This concerns mainly buildings which are operated in a complex and costly manner.

## Building optimization from the management perspective

Polyvalent properties with a stable value are characterized by a high degree of usability. They are adaptable, operationally eco-friendly and have low management costs. The involvement of FM in the building design and construction phases is more general early on and becomes increasingly detailed towards the end of each stage. This phased detailing ensures that sufficient attention is given to the different issues arising at each stage and that a reasonable amount of effort is invested in every one of them. The issues emerging from the building management concept are to be drawn up in parallel to the building design. The concept also provides the specifications and requirements for the optimization

of the building from a management perspective. Here, FM-oriented building design takes into account not only the demands of the owner but also the needs of the users.

## Planning of the building management

In addition to the optimization of the building, planning the required management of the building is paramount. On the basis of the process and service model used in facility management (ProLeMo), the relevant processes and services exchanged between the parties involved (owners, managers and tenants/occupants) must be defined for the future management phase. Documentation of the results obtained from this planning process is carried out as part of the building management concept. The latter regulates the responsibilities between owners, managers and occupants, points out organizational requirements and interfaces, describes the necessary services in a process-oriented manner, and presents the expected resource and personnel requirements. On this basis, it is possible to develop the structural and procedural organization of the building management, contract out management and FM services, and compile the management documentation required at a later stage.

## Optimizing the life-cycle costs

Within the framework of 'FM-supported building design and

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construction', investment decisions are always made with full knowledge of the life-cycle costs. The performance of a cost analysis during the life cycle of a property thus

replaces the one-sided optimization of investment costs. The life cycle costs can be most easily influenced in the early design stages of a construction project. The calculation tool 'Life-

cycle cost determination of real estate' created by IFMA Switzerland offers the possibility of calculating and optimizing the life-cycle costs incurred during the 'Strategic planning', 'Preliminary studies' and 'Design' phases. The methodological approach based on phased input parameters allows the obtaining of comparable results in the respective phases even when different levels of information are available.

### Information and data management

Throughout the life cycle of a building, data are generated continuously from the design phase to the operational and renovation phases. Information and data management ensures that the information needs of all parties are met in all the stages. With an increasing IT support during both the building design and the management stages, information management,

which traditionally dealt with loosely structured documents containing text and images, now embraces object-oriented modeling of architecture, spaces and technical installations in the form of structured data. The model 'Building documentation in construction' by KBOB/IPB effectively supports the efforts for standardization of documentation in the Swiss construction and real estate sectors.

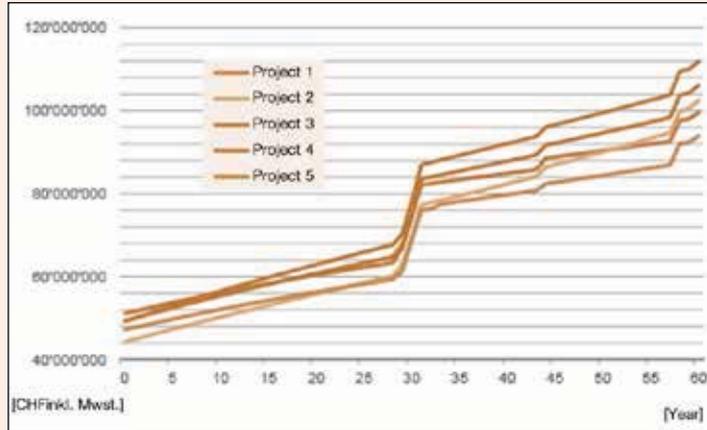


Fig. 4: Example of a life cycle costing for five different projects within the context of a competition over a period of 60 years.



**Publication**

IFMA Switzerland has collaborated with 26 other project partners to develop a practical guide to the recommendation SIA 113 "FM-oriented building design and construction". The guide takes the guidelines of SIA 113 and provides specific instructions on the implementation of the recommendation in practice. The aim of this practical guide is to promote the dissemination and implementation of the recommendation SIA 113 as well as assisting building owners in commissioning facility management services for the design and construction phases. On the other hand, service providers can obtain instructions, tools and best practice examples from this guide.

**Planungs- und baubegleitendes Facility Management pbFM**

Praxisleitfaden für die Empfehlung SIA 113

IFMA

### Project partners

Allpura, Siegfried Braun; Amstein + Walthert AG, Oliver Brückner and Robert Schneider; Ar-masuisse Immobilien, Max Marti; Axpo AG, Reto Bühler; Baudirektion Kt. Zürich, Hans-Peter Huber; Cofely AG, Hanspeter Hafner; CRB, Karl Liechti; Emch + Berger AG Gesamtplanung Hochbau, Ueli Grindat; ETH Immobilien, Walter Iten; Halter Immobilien, Andres Stierli; Hochbauamt Kanton St. Gallen, Fabienne Mäder; ICFM AG, Michael Ulli; Immobilien Aargau, Claudia Schneider; Implenia AG, Thomas Hess, Andreas Pfeiffer and Rolf Wagenbach; Infra Post AG, Michael Bürki; Intep – Integrale Planung GmbH, Irène Meierhofer and René Sigg; ISS Facility Services AG, Peter Lettenbauer; Logistikbasis der Armee, Peter Bachmann; MIBAG, Silvio Wullschleger; pom+ Consulting AG, Simon Caspar; Priora Facility Management AG, Barbara Muther and David Lunze; PSP Group Services AG, Thomas Kraft; reflecta ag, Christian Ingold; Roche Diagnostics AG, Nathalie Gammeter and Felix Schleuniger; Syngenta Crop Protection AG, Rainer Kühlmeyer; Swisscom, Jöri Engel.

