Identification of space management problems in public hospitals: The case of Maharaj Chiang Mai Hospital

Purpose:
In the past decades, public hospitals in Thailand have developed gradually and been characterized by an incremental development of hospital facilities. First, this study aims to investigate the factors that have caused the incremental development and how such development has affected the hospital's architectural layout. Second, the paper assesses the functional quality of nonclinical areas in the Maharaj Hospital to identify space management problems.

Design/methodology/approach:
The first part of the study is based on a literature review of the Thai health-care landscape. The second part includes the functional quality assessment of nonclinical areas, walk-through observations and documentation. Obtained data were synthesized using building quality method and measurement criteria and analytical drawing techniques for design assessment.

Findings:
The first part identified three factors: the lack of local general practitioners, the limited number of public hospitals and the implementation of Thailand’s universal coverage scheme. These factors have resulted in a dramatically high number of patients in public hospitals. The second part identified problems regarding poor accessibility, a low level of spatial flexibility and poor spatial orientation. These problems are related to a lack of appropriate strategic space planning and lack of integration of the Thai culture into hospital design processes.

Practical implications:
An identification of space management problems is a prerequisite to the improvement of hospital facilities.

Originality/value
This paper presents the first study of space management problems concerning nonclinical areas in Asian hospitals.

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Organisations: Implementation and Performance Management, Management Science, Department of Technology, Management and Economics
Contributors: Prugsiganont, S., Jensen, P. A.
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Source: FindIt
Source-ID: 2444535509
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

Initiatives to integrate operational knowledge in design: a building client perspective

Purpose – This paper aims to focus on deliberate actions by the building client to integrate knowledge of facilities management, in particular building operation, in design and construction of sustainable facilities. Examples of current practices are studied to answer the following questions: Which initiatives to enable operational friendly and sustainable buildings are currently used by building clients in Denmark? Which initiatives could be appropriate to use in the future, and which parties are in the best position to implement the various initiatives?

Design/methodology/approach – The study is a hermeneutic multi-method study, which consists of a review of former research, a case study and a survey. It starts with theoretical background based on earlier research with the aim to identify initiatives to ensure the use of operational knowledge in building design. Hereafter, the paper presents, analyses and discusses two studies: a case study of current practices at a university campus organisation and a survey of five swimming facilities. All cases are from Denmark.

Findings – In all, 31 initiatives to enable use of operational knowledge in building design were initially identified. In the case study, 11 additional initiatives were found. The case study and the survey of swimming facilities show different degrees of implementation, varying from 18 to 31 initiatives implemented. However, the studies show that introducing the initiatives is
not sufficient; it takes deliberate actions to get the initiatives well implemented. Within the building client organisation, three main actors should care for implementing the initiatives: Top management, building client division and operation division.

**Originality/value** – Research-based literature on practices in relation to knowledge transfer from operation to design is limited. This paper provides insights into deliberate efforts on transferring knowledge from operation to design among Danish building clients.

### General information
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Organisations: Implementation and Performance Management, Management Science, Department of Technology, Management and Economics, Oslo Metropolitan University, NNE A/S  
Contributors: Rasmussen, H. L., Jensen, P. A., Nielsen, S. B., Kristiansen, A. H.  
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### Access over ownership: meeting facilities in Lyngby-Taarbæk Knowledge City

**Purpose**  
This study aims to investigate the attitude towards shared space in an urban context with a particular focus on meeting facilities. The Lyngby-Taarbæk City of Knowledge is used as a case, as this organisation has a vision of sharing facilities to stimulate regional development.

**Design/methodology/approach**  
The attitude towards shared space in the Lyngby-Taarbæk City of Knowledge is studied in a three-step qualitative research process. An initial survey investigated the City of Knowledge’s members’ attitude towards shared space in general, a workshop further explored motivations and practical needs and a second survey investigated the attitude towards shared meeting facilities. The Brinkø Typology of Shared Use of Space and Facilities is used as the theoretical framework for the study (Brinkø et al., 2015).

**Findings**  
This study shows that the respondents are very positive towards the concept of shared space but more reluctant when it comes to sharing own facilities. A majority of the informants are often using externally owned facilities for meetings and events and prefer professional meeting facilities to schools, universities and sports facilities. This points to a need for developing relevant service concepts, if a shared space strategy with focus on meeting facilities were to be used to increase the use rate of existing buildings not already intended for this use.

**Originality/value**  
This study adds to the so far limited amount of scientific knowledge on the topic of shared space.
space, by investigating the attitude towards shared space among a specific group of people, in relation to the use of external meeting facilities.

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Organisations: Department of Management Engineering, Systems Analysis, Campus Service
Contributors: Nielsen, S. B., Berg, R. B.
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**Sustainability in facilities management: an overview of current research**

**Purpose:** Climate adaptation, energy efficiency, sustainable development and green growth are societal challenges for which the Facilities Management (FM) profession can develop solutions and make positive contributions on the organisational level and with societal-level effects. To base the emerging sub-discipline of sustainable facilities management (SFM) on research, an overview of current studies is needed. The purpose of this literature review is to provide exactly this overview. Design/methodology/approach: This article identifies and examines current research studies on SFM through a comprehensive and systematic literature review. The literature review included screening of 85 identified scientific journals and almost 20,000 articles from the period of 2007-2012. Of the articles reviewed, 151 were identified as key articles and categorised according to topic. Findings: The literature review indicated that the current research varies in focus, methodology and application of theory, and it was concluded that the current research primary addresses environmental sustainability, whereas the current research which takes an integrated strategic approach to SFM is limited. The article includes lists of reviewed journals and articles to support the further development of SFM in research and practice. Research limitations/implications: The literature review includes literature from 2007 to 2012, to manage the analytical process within the project period. However, with the current categorisation and the access to the reviewed journals and articles, it is possible to continue with the latest literature. Practical implications: The article provides an overview of theoretical and practical knowledge which can guide: how to document and measure the performance of building operations in terms of environmental, social and economical impacts? How to improve the sustainability performance of buildings? What are the potentials for and barriers to integrating sustainability into FM on strategic, tactical and operational levels? Originality/value: The paper presents the most comprehensive literature study on SFM so far, and represents an important knowledge basis which is likely to become a key reference point for pioneers and scholars in the emerging sub-discipline of SFM.

**General information**
Publication status: Published
Organisations: Department of Management Engineering, Systems Analysis, Aalto University, Ramboll Group AS
Contributors: Nielsen, S. B., Sarasoja, A., Ramskov Galamba, K.
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BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.06 SJR 0.485 SNIP 1.187
Towards sustainable public FM: collective building of capabilities

Purpose

Public facilities management (FM) is in the unique position of aligning building projects and FM with the policies of sustainable development at societal level. However, sustainable facilities management (SFM) is an emergent profession, and there is a need to build a code of conduct for SFM in FM organisations. The purpose is to develop and test a workshop based concept for collective building of capabilities targeting in-house FM organisations, in particular public in-house FM organisations.

Design/methodology/approach

This research explores the role of public facilities managers and examines how an empowerment process can help FM employees develop collective competences for SFM. The methodologies used are literature review, and a 3–year-long action research process in the Danish local authority, Albertslund, which is internationally recognised for its innovative and green profile.

Findings

This paper describes the phenomenon of public SFM imbedded in societal steering paradigms and suggests a framework for a sustainable FM code of conduct. The suggested "Next generation SFM code of conduct" support the employees in taking a proactive strategic position in which translation between politics, strategy, tactics and daily practice becomes the basis for prioritisation and decision-making. The capabilities needed is FM knowledge (including FM know-how, understanding of technologies for sustainability and public governance); it is the FM code of conduct, and it is control of own practice to be obtained through strategies and planning, collaboration and education.

Research limitations/implications

This study is based on findings in a single local authority, why the findings are primary valid for concept development to be further developed and tested. However, the local authority of Albertslund is recognised as a front runner in green FM, why this case, compare to other cases, represents a relatively mature thinking in terms of FM contribution to sustainability at societal level. When this FM organisation express a need for developing collective competences for sustainability in FM, it can be assumed that less mature FM organisations needs it even more. The findings seem relevant beyond public FM organisations.

Practical implications

The produced framework for a sustainable FM code of conduct is useful for educational purposes as well as for strategic decision about FM organisations collective competence profile. The use of workshops for the building of collective competences might be useful for many other organisations and not only public FM organisations.

Social implications

Public FM organisations manage significant shares of existing buildings and can be a driver for societal change if they have the capabilities. This paper provides an answer to how these collective capabilities can be build within an organisational development process, through dialogue and collective reflections.

Originality/value

This paper is a pioneer in understanding the capabilities needed in FM organisations to take leadership in an integration of sustainability in FM processes.

General information

Publication status: Published
Organisations: Department of Management Engineering, Centre for Facilities Management, Systems Analysis, DTU Climate Centre, Capital Region of Denmark
Contributors: Ramskov Galamba, K., Nielsen, S. B.
Purpose – This paper aims to explore shared use of space and facilities as a concept, and present and illustrate the use of a typology to help classify and describe the different options for sharing space and facilities within buildings for optimised use of a building portfolio.

Design/methodology/approach – The content presented is based on a cross-sectional study with an inductive approach. The results are based partly on secondary data in the form of a literature review and a mapping of 20 examples from Europe, USA and Australia, and partly on primary data from observations and interviews with key actors from two cases in Denmark and an illustration case from Ireland.

Findings – The typology classifies and describes four archetypes of sharing between different people, building owners and organisations, to be used when discussing, planning, establishing and evaluating new and existing shared spaces.

Research limitations/implications – The typology is the result of a first exploration of shared use of facilities and does not claim to be fully comprehensive or final.

Practical implications – The typology is intended for both researchers and practitioners, and aims at increasing the understanding of sharing as a way to minimise the need for building new by better utilisation of the existing building stock.

Originality/value – Shared space and facilities is a relatively new topic with not much research undertaken. This typology provides a language for discussing shared spaces and a base for further developing the research field.
Best papers from the CIB Facilities Management Conference 2014

Future Research Agenda for FM in the Nordic Countries in Europe
The study is based on theory from innovation systems and strategic foresight. First, a review of literature was carried out and an innovation systems model of the FM sector was developed. Secondly, four national workshops were held involving FM practitioners and researchers from Denmark, Norway, Sweden and Finland. Third, the results of the workshops were presented and discussed at a Nordic FM conference in August 2011. Finally, an adapted Delphi survey was carried out as a final data collection and validation of the findings. This article has the main focus on the results of the Delphi survey.
Reflecting on future research concerning the added value of FM

Purpose
– This paper aims to summarize recent research findings and reflections on The Added Value of Facilities Management (FM) and to outline perspectives for future research and development of the added value of FM.

Design/methodology/approach
– The article is based on reflections on contributions to the recently published book “The Added Value of Facilities Management” and related future studies, as well as further exploration of five main themes.

Findings
– Added value is expected to be central in the future development of FM, which is confirmed by recent foresight studies. There is a need for a better understanding of alignment between FM and core business, performance measurement methods and how models such as the FM Value Map can be of value to the involved stakeholders. Corporate social responsibility (CSR), sustainability and branding have great potential to add value and to elevate FM to become a strategic partner with corporate top management. Management of stakeholders’ perception of value and relationships are essential aspects as well and need further attention.

Research limitations/implications
– The article is based on the conclusions of several studies that aimed to explore items for further research, on the ideas of all co-authors of “The Added Value of Facilities Management” anthology and on further exploration of five main themes, and not on an extensive review of recommendations for further research to be found in a huge number of research reports.

Practical implications
– The findings and ideas for further research on the added value of FM deliver input to further professionalization of FM.

Originality/value
– This paper provides important input to the future research agenda on the added value of FM and sheds new light on five particular research topics.

General information
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Organisations: Department of Management Engineering, Production and Service Management, Centre for Facilities Management, Delft University of Technology, University of Zurich, Aalto University
Contributors: Jensen, P. A., van der Voordt, T., Coenen, C., Sarasoa, A.
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Peer-reviewed: Yes

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Source: PublicationPreSubmission
Source-ID: 100178757

Urbanising facilities management: The challenges in a creative age.

General information
Publication status: Published
Organisations: Department of Management Engineering, Planning and Management of the Built Environment
The facilities management market in Denmark

Purpose: To present the results of market surveys in Denmark, which have been based on and used to test a proposal for a new European standard for a taxonomy of Facilities Management (FM). Design/methodology: The market research included surveys of both the client side and the provider side and was carried out by a management consultant company by telephone interviews based on definitions developed from drafts for the European FM taxonomy standard by a university researcher, who is a member of the standardisation work group. Findings: The proposed taxonomy for FM is in general a good basis for researching the market but particular the definition of space including acquisition as well as development, administration, operation, maintenance and utilities in the same main product is problematic. Research limitations/implications: The market research is limited to the Danish market, but the results of the test of the proposed European standard for a FM taxonomy has implication for all of Europe. Practical implications: The results of the test of the proposed European standard for a FM taxonomy should lead to adjustments in the way space is treated in the taxonomy before it becomes accepted as a new European standard. Originality/value: This is the first time that the proposed taxonomy standard for FM has been tested in empirical research.

The Facilities Management Value Map: a conceptual framework

Purpose: To present a conceptual framework - the FM Value Map - to understand and explain the different ways that FM can add value to a core business, and possibly to the surroundings. Design/methodology: The value map has been developed based on inductive reasoning from an analysis of a large number of cases in an explorative empirical study of FM best practice in the Nordic countries of Europe. It has been tested and modified from discussions with practitioners in a NordicFM project group and aligned with the current European standardisation of taxonomy for FM. Findings: The FM
Value Map was successfully tested in a number of case studies from companies in the 5 Nordic countries. Research limitations/implications: The present version of the FM Value Map is not seen as a final model, but as a result of an initial development. The model should be tested and validated further and also refined. Practical implications: The FM Value Map can be used in general to provide a better understanding of the value and contributions of FM, for instance by FM organisations in the dialogue with their customers. Originality/value: The FM Value Map is a unique conceptual framework, and a comparison with other models shows that it provides the most holistic framework by including the impacts on the surroundings and all relevant stakeholders.

General information
Publication status: Published
Organisations: Planning and Management of the Built Environment, Department of Management Engineering
Contributors: Jensen, P. A.
Pages: 175-188
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Scopus rating (2010): SJR 0.348 SNIP 0.59
Original language: English
Keywords: inductive reasoning, added value, conceptual framework, strategic mapping, best practice, Facilities Management.
Source: orbit
Source-ID: 262435
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

The Origin and Constitution of Facilities Management as an integrated corporate function
Purpose – To understand how facilities management (FM) has evolved over time in a complex public corporation from internal functions of building operation and building client and the related service functions to become an integrated corporate function. Design/methodology/approach – The paper is based on results from a research project on space strategies and building values, which included a major longitudinal case study of the development of facilities for the Danish Broadcasting Corporation (DR) over time. The research presented here included literature studies, archive studies and an interview survey. Findings – The analysis shows that the building related and service related functions have developed separately for a long period starting at operational level and with the tactical and strategic levels being introduced at later stages, when the organisation had grown considerable. Only within the last 20 years have integrations occurred starting with a vertical integration of the operational, tactical and strategic levels separately for the building related and service related functions. Later on a horizontal integration of building related and service related functions takes place and a fully integrated corporate Facilities Management function are established. Research limitations/implications – The paper presents empirical evidence of the historical development of FM from one case and provides a deeper understanding of the integration processes that are crucial to FM and which can be an inspirational basis for further research on the organisation of FM. Practical implications – The results provides an insight in principles for the organisation of FM, which is important for managers within FM. Originality/value – This is probably the first in depth study of the origin and constitution of FM in a complex public corporation.

General information
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Organisations: Planning and Management of the Built Environment, Department of Management Engineering
Contributors: Jensen, P. A.
Pages: 490-500
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Peer-reviewed: Yes

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Scopus rating (2008): SJR 0.487 SNIP 0.6
Criteria for the indoor environment for energy performance of buildings: A new European standard

General information
Publication status: Published
Organisations: Indoor Environment, Department of Mechanical Engineering, Aalto University, BBA Binnenmilieu B.V.
Contributors: Olesen, B. W., Seppänen, O., Boestra, A.
Pages: 445-457
Publication date: 2006
Peer-reviewed: Yes

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Original language: English
Source: orbit
Source-ID: 194597
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Managing facilities in a Scandinavian manner: creating a research agenda

Presents the aims and needs of research in facilities management (FM) at the section of Planning and Management of Building Processes at BYG*DTU. As the building stock in Denmark is rapidly increasing, socio-demographic developments implies profound changes in both the needs of inhabitants and the way that buildings are used, combined with an increased consciousness of sustainability. Buildings should be seen as long-term 'investments' while also keeping in mind the construction sector's needs for increased productivity, long-term product quality and enhanced value. This is the background for developing a research position. Identifies the Scandinavian Way as using FM on a multiactor level, rather than just to serve the interests of a single organisation. The aim is to focus on small and medium sized enterprises, non-profit associations and tenants, as well as the bodies administrating infrastructure within the mainstream FM field. There is an urgent need to address how society can best manage the growing (and decaying) building stock, to develop life-cycle
rooted infrastructure and building design, and finally allow buildings to be appropriated by their current and future users.

**General information**
Publication status: Published
Organisations: Section for Planning and Management of Building Processes, Department of Civil Engineering
Contributors: Elle, M., Engelmark, J., Jørgensen, B., Kock, C., Nielsen, S. B., Vestergaard, F.
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Source-ID: 140835
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