



Understanding the potential of facilities managers to be advocates for energy efficiency retrofits in mid-tier commercial office buildings



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ABSTRACT

Realising energy efficiency opportunities in new commercial office buildings is an easier task than retrofitting older, mid-tier building stock. As a result, a number of government programs aim to support retrofits by offering grants, upgrades, and energy audits to facilitate energy efficiency opportunities. This study reports on a state government program in Victoria, Australia, where the uptake of such offerings was lower than expected, prompting the program team to consider whether targeting facilities managers (FMs), rather than building owners, might be a better way of delivering the program. The influences and practices of FMs that impact on their ability to be advocates for energy efficiency were explored. The results revealed that complex building ownership arrangements, poor communication skills, isolation from key decision making processes, a lack of credible business cases and information, split incentives, and the prospect of business disruptions can all impact on FMs' ability to drive organizational change. Future program efforts should continue to interrogate the social context of retrofits in mid-tier buildings, including other influences and influencers beyond FMs, and adapt accordingly.

1. Introduction

When it comes to energy efficiency in commercial buildings, much attention has focused on the construction and operation of new “green buildings” with their innovative designs and cutting edge technologies. Descriptions of such buildings often involve espoused benefits related to return on investment, building value and rents, corporate reputation, resource use, and tenant wellbeing, all of which outperform more conventional building types (Eichholtz et al., 2010; Miller and Buys, 2008; Simons et al., 2014). However, realizing energy efficiency opportunities in new commercial buildings is considered a far easier task compared to retrofitting existing stock (Higgins et al., 2014; Hou et al., 2016). Retrofits typically require extensive cooperation between building owners, tenants, contractors, and government authorities who are all on the “same page at the same time” when it comes to prioritizing and implementing energy efficiency upgrades. But these efforts can quickly become derailed when questions related to costs, split incentives, competing priorities, policy mandates, intangible market demand, and timeframes enter into decisions when deciding whether or not to pursue a building energy efficiency retrofit (Elmualim et al., 2010; Higgins et al., 2014; Miller and Buys, 2008).

According to Higgins et al. (2014), there are a variety of policy instruments that can be used to support retrofits of existing buildings. These include grants that reduce up-front costs, new regulations that stipulate clear standards that buildings must meet, and strategies or rating systems that make buildings' energy consumption more transparent to existing and prospective tenants and investors. Depending on the choice of instrument, these policies can require a substantial financial outlay, and need to be tailored in a way to address an identified gap in the policy space to ensure there is a significant and meaningful uptake of the incentives on offer (Higgins et al., 2014).

A recent example of such a policy initiative was the “Smarter Resources Smarter Business Energy Efficient Office Buildings Program” run by Sustainability Victoria (a statutory authority in Victoria, Australia, which has the key objective of facilitating and promoting environmental sustainability in the use of resources). The program aimed to help building owners cut operational costs, boost performance, and reduce environmental impacts through improved energy efficiency in commercial office buildings. It provided matched funding of AUS\$20,000 to AUS\$150,000 to eligible building owners to carry out a comprehensive energy efficiency opportunity analysis, building tuning upgrades, and metering and monitoring activities to

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improve building performance (Sustainability Victoria, 2014).

A distinctive feature of the program was that it specifically targeted older, mid-tier commercial office buildings rather than modern, A-grade office spaces that have already embraced energy efficiency. Mid-tier buildings are commonly defined as lower grade buildings, under 10,000 m², and are usually found across capital cities, suburban centers, fringe areas, and regional towns. Vacancy rates are typically higher, and lease terms are typically shorter, than those of premium or A-grade assets (Green Building Council of Australia, 2015). Given that some of the infrastructure and equipment would be approaching their end of life, these older buildings (constructed largely before the 1990s) provided a significant and timely opportunity to implement energy efficiency upgrades. The program claimed that by improving a building's performance, it can have significant benefits for building owners by reducing energy costs, deferring capital costs, increasing asset value and appeal to tenants, and help future proof buildings against rising energy prices (Sustainability Victoria, 2014).

The program involved a competitive, merit-based application process. However, when the funding round closed in December 2014, applications were fewer than expected (M. Dodd, personal communication, August 14, 2014). Under such circumstances, program managers typically reassess the underlying theory of change for the program – for example, the psychological, social, physical, or economic processes that are theorized will bring about the necessary changes for the targeted individual or organizations (Funnell and Rogers, 2011). In this instance, the lack of knowledge of energy efficiency opportunities and the lack of capital to take advantage of such opportunities were assumed as key obstacles to owners of mid-tier commercial office buildings, which the program aimed to address through its offerings. However, in light of the lower than expected uptake, Sustainability Victoria discovered through a consultation process that the people they were trying to reach in this sector (i.e., building owners of mid-tier commercial office buildings) were not proactively seeking out the information and offerings of the program, meaning that Sustainability Victoria needed to explore alternative ways of bringing the program's messages to them. Furthermore, the traditional channels that Sustainability Victoria had used to promote the program, which included consultants, local government and state government departments, and property and green building councils, were not effective in promoting the program, prompting the need to explore alternative networks and stakeholders as a means of better engaging with this sector (M. Dodd, personal communication, August 14, 2014).

On this latter point, given that the majority of applications to the program were submitted from facilities managers (FMs), this prompted the question whether future iterations of the program would be better served by explicitly targeting FMs rather than building owners. In this study, we explore the potential for FMs of mid-tier commercial office buildings to be successful advocates for energy efficiency to building owners. In particular, we aim to better understand the various drivers, barriers and practices that influence FMs in their everyday work, and how these might impact on their ability to persuade building owners and other key decision-makers to invest in energy efficiency retrofits.

1.1. Facilities managers and decision making to improve energy efficiency in commercial buildings

Making decisions to implement and fund energy efficiency improvements in commercial buildings is complex and involves multiple stakeholders. In part, this reflects the differing interests, constraints and strategies of the numerous parties involved in determining energy performance in buildings and those relationships are usually linked through commercial arrangements (Marquez et al., 2012). Such parties include: investors, owners, or developers; property agents and facilities management; engineers, designers, contractors and suppliers; and the tenants or users. External institutions such as government authorities also influence decision making outcomes through, for example, estab-

lishing minimum energy efficiency standards that buildings must meet.

The decision making process that ultimately results in translating a plan to actual implementation of a retrofit involves many steps, numerous stakeholders, and usually extends over lengthy time periods. Barriers to this process are numerous and include capital constraints and competing investment priorities; high implementation and transaction costs; market structure and supply constraints; regulatory barriers; information gaps; and workforce and skill barriers (Higgins et al., 2014; Marquez et al., 2012). These barriers also vary depending on the industry sector, type of ownership structure, and size of the organization (Schleich and Gruber, 2008). Furthermore, research indicates that specific barriers are linked to particular types of energy efficiency measures (e.g., lighting versus HVAC systems), and that understanding the attributes of a particular energy efficiency measure and its associated barriers is a way to extend its uptake (Trianni et al., 2014). These findings support the notion that a mix of policy initiatives are required to influence decision making that could result in improved energy efficiency of a commercial building.

Understanding the social context of decision making in commercial office buildings is also important when considering policy implementation. Decision making about energy efficiency occurs as part of a social and institutional system (Shove, 1998), and provides an additional dimension from which to view policy impacts, when rational decision making processes, as espoused in economic incentives, are often rendered insufficient to bring about change (Frederiks et al., 2015). Rather, energy efficiency decisions depend on social relationships and discussion, and an ability to negotiate the various social networks inherent in the multi-stakeholder networks of commercial properties (Palm and Thollander, 2010).

FMs are one of the stakeholders in this decision-making social landscape. Over the past three decades, facilities management has established itself as a critical, fast-growing service sector made up of a diverse and highly competitive market of FM contractors, in-house teams, and professional facilities management agencies and associations (Elmualim et al., 2010; Scupola, 2012). This growth has coincided with the ongoing expansion and consolidation of the built environment in and around major urban centers, and the need for these increasingly advanced and sophisticated buildings to be run efficiently and cost effectively, while at the same time contributing to the health, well-being, and productivity of the workforces they serve (Elmualim et al., 2010; FMA, 2014).

The duties of an FM include a broad spectrum of activities ranging from strategic operational planning to daily physical maintenance, cleaning, and meeting environmental performance targets stipulated in regulatory and industry standards (FMA, 2014). As such, FMs are seen as potentially playing a critical role in the translation and implementation of government and industry sustainability agendas (Elmualim et al., 2010, 2012). Often serving as an interface between building owners, senior management, contractors, tenants, and the building's equipment and infrastructure, FMs have the potential to influence organizational behavior from their middle management position in a number of upward (e.g., to senior management), downward (e.g., to building occupants), and sideways (e.g., to peer networks and professional bodies) directions (Goulden and Spence, 2015).

1.2. Current study

Despite this professed potential, FMs are also described as being undervalued and underappreciated, and lack the necessary skills, incentives, time, and senior management support to implement sustainability agendas to their full potential (Elmualim et al., 2012; Pitt and Hinks, 2001; Shah, 2007). Furthermore, there is limited understanding and research into the drivers and barriers that influence FMs and middle managers when it comes to sustainability issues, with much of the focus instead on macro-level studies and strategic decision-making, or micro-level studies of individual employee atti-

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