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Practices, drivers and barriers of implementing green leases: lessons from South Australia

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Practices, drivers and barriers of implementing green leases: lessons from South Australia

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Abstract

Purpose – This paper aims to investigate the practices, drivers and barriers which influence the implementation of green leases in South Australia. Despite some efforts on legal aspects of green leases, only a few studies have examined these aspects from an operational perspective. In addition, very little empirical evidence was presented in previous studies to show how green leases work in real-life settings.

Design/methodology/approach – Data were collected using semi-structured interviews with landlord and tenant representatives who have considerable experience in green leases. These interviewees were selected via a purposive sampling technique that identified buildings which use green leases in South Australia. The concept of interface management (IM) was used to operationalize this research.

Findings – The green leases were found to be mainly initiated by tenants while government involvement, economic and environmental benefits are the main drivers in South Australia. Drivers such as staff retention, well-being and corporate social responsibility are found to be more relevant to tenants. Lack of awareness and transaction costs are the main barriers to the implementation of green leases.

Research limitations/implications – This study focuses on the South Australian context and mainly covers dark green leases. There are implications for the government's continued involvement and the promotion of lighter shades of green leases to overcome operational issues and barriers identified in this study.

Originality/value – This study contributes to the body of knowledge on the subject of green lease implementation from an operational perspective. In addition, the study introduces a conceptual framework via IM that could be used in future research endeavours.

Keywords South Australia, Commercial property, Tenancy, Barriers of implementation, Green lease, Interface management

Paper type Research paper

Introduction

As sustainable building developments become popular in Australia and around the world, schemes are being developed to harness the properties of these buildings. One of such schemes is "Green Lease" which is implemented during the occupation stage of a building. A green lease is different from a standard lease in that it incorporates environmental best practices to reduce a building's negative environmental impacts (Roussac and Bright, 2012). Included in the lease is a framework where the tenant and landlord can achieve and maintain

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energy efficiency and other sustainability goals throughout the lease term (Airst and Airst, 2010). These green leases generally aimed at commercial building owners and tenants while the state and federal governments in Australia influence its uptake through policy, regulation, incentive programmes and leadership by example (Burroughs, 2011). Apart from benefiting the environment, green leases can also result in significant cost savings to the landlord and tenant (Bonde, 2012). It enhances the performance of the building and improves the relationship between the landlord and tenant (Christensen and Duncan, 2010). This is achieved as the building uses less energy and resources which ultimately reduces operating costs (Roussac and Bright, 2012).

Green leasing is a relatively new concept which became popular in Sydney and gradually spread throughout Australia (Oberle and Sloboda, 2010; Christensen and Duncan, 2010). It is starting to take off internationally (CMS e-guides, 2011; Bright and Dixie, 2014). Although the concept has been studied in detail from a legal perspective, very little research work has been conducted from an operational viewpoint. Empirical research is lacking on issues that landlords and tenants have to face during its operation. Similarly, very few studies have attempted to explore critical factors that facilitate or impede its implementation. It is imperative to examine these concepts beyond the legal perspectives to achieve sustainability goals during a building's operation. To address these gaps in the current body of knowledge, this study investigates the issues surrounding green leasing practices in South Australia. This study also intends to identify drivers and barriers of its implementation. The aim was to collect empirical evidence that enhances current green leasing practices for both landlords and tenants.

The study mainly focuses on "Dark Green" leases promulgated by the Australian Federal Government under the Energy Efficiency in Government Operations scheme. Dark green leases are well established in the Australian property context, and government tenants use this model because it is compulsory beyond a certain threshold (Roussac and Bright, 2012). There are lighter shades of green leases in other countries (refer to Hinnells *et al.*, 2008 for the definition of various models) which are beyond the scope of this study. Within such scope, the results have implications for South Australia and other Australian states to enhance the understanding of green leases and be used as a platform to develop appropriate techniques to implement it. In addition, a better understanding of green leases and its practicalities enables tenants and landlords to channel their energies across the issues, drivers and barriers needing the most attention. As a result, the implementation of green leases is more likely to be successful.

Green leases

Traditional leases are not in a position to accommodate environmental best practices in tenanted spaces of a building (Roussac and Bright, 2012; Kaplow, 2008). A number of reasons have been identified for the above limitation while split incentives between the landlord and tenant were considered to be the main impediment (Bonde, 2012; Roussac and Bright, 2012). It occurs when parties to a lease have diverse incentives because of the set-up of the agreement between them (Bonde, 2012). In a net lease, landlords will not have the incentive to engage in environmental upgrades of capital assets as the benefits will be reaped by tenants. On the other hand, tenants will not have the incentive to save energy because the landlord pays the electricity bill in a gross lease. Green leases came into existence in various forms to improve environmental performance and energy efficiency and are becoming increasingly popular in the commercial property world (Roussac and Bright, 2012). Efficient use of energy in tenanted properties is one of the main benefits of a green lease that could well be a major driver of its implementation (Bonde, 2012). In this regard, green leases need to solve the split

incentive dilemma that often plague the property industry. According to Janda *et al.* (2016), the Sydney Better Building Partnership clauses are able to address the split incentive dilemma. Such issues could also be addressed via the Green Lease Schedule (GLS)-based dark green leases, for example, separate metering, sharing of data and energy monitoring.

Though there is no standard definition, it is well recognized that intensities of green clauses vary from "Dark Green" to "Light Green" (Janda *et al.*, 2016; Sayce *et al.*, 2009; Langley and Hopkinson, 2009). Commenting on green clauses used by Sydney's office spaces, Janda *et al.* (2016) highlighted that they mainly relate to corporation, management and recycling, information sharing, environmental sustainability, waste reduction and to a lesser extent securing a National Australian Built Environment Rating System (NABERS) rating. Similarly, Bright and Dixie (2014) classified green clauses that exist in the UK under a number of categories and provided a general definition of a green clause. The contents of these green clauses and the extent of legal commitment shown by parties decide whether the lease belongs to the darker or lighter shades. Darker versions express binding legal commitments, whereas lighter shades express non-binding aspirational intent. Therefore, the former category set standards for environmental performance, specifies monitoring and measurement methods and evaluates compliance regularly. Remedies for non-compliance are dealt with by means of formal arrangements, and disputes are resolved formally.

Although green leases have become more complex, their uptake is sporadic and are found to be specific to limited sub-sectors and geographical locations. Reviewing five case studies across the UK and Australia, Janda *et al.* (2016) found that the uptake occurs mainly in prime office spaces within the central business district (CBDs) of major cities, whereas the usage is very low in retail and sub-prime office spaces (Janda *et al.*, 2016). In addition, it is mainly used by large organizations having sustainability goals as well as those that are subject to regulatory compliance obligations (Dixon *et al.*, 2009). Hinnells *et al.* (2008) predicts that it will be hard for small organizations to adopt green leases. For Kaplow (2008) and Bright and Dixie (2014), green leases are mainly meant for green buildings. They do not see a huge potential for green leases outside the green building context. In addition, it is led by the landlord and is considered as a landlord's environmental management tool (Janda *et al.*, 2016). The exception is Australia where government tenants are leading the initiative through the GLS that was introduced by the Federal Government in 2006 (Woodford, 2007; Hinnells *et al.*, 2008). The government, in fact, mandated the use of a GLS for tenanted space over 2000 m^2 by any agency under the Energy Efficiency in Government Operations Policy (Woodford, 2007). According to Woodford (2007), more than 95 per cent of the Australian Government's greenhouse gas emissions are because of energy usage. GLS's main objective is to enhance energy efficiency and help meet GHG emission reduction targets.

Environmental leadership including corporate social responsibility (CSR) is becoming a noted trend among property developers in Australia (Newell, 2008). That also includes landlords, tenants and property professionals who are involved in properties during their occupation (Bonde, 2012; Roussac and Bright, 2012). The external push for environmental stewardship in Australia is apparent through the setting of minimum environmental standards for buildings, rating tools for its operations [NABERS, Green Star and Australian Building Greenhouse Rating (ABGR)], disclosure requirements of energy efficiency, voluntary green star ratings, etc., where the government is taking a leading role (NCC, 2016; Janda *et al.*, 2016; Australian Government, 2015; Green Building Council Australia, 2014). These externally led developments are proving to be successful in creating a climate for private initiatives to emerge (Wallace, 2015; Sayce *et al.*, 2009).

Green leases form the inter-organizational environmental governance (private–private) between the landlord and tenant (Janda *et al.*, 2016). The lease serves a regulatory role that

establishes operational practices, collaboration between parties, encourages communication and the sharing of information (Janda *et al.*, 2016). According to Christensen and Duncan (2010), green leases reflect not only changes in the wording in a traditional lease to achieve energy efficiency but also changes in the relationship between the landlord and tenant. Sayce *et al.* (2009) highlighted the importance of the interface between these two parties and investigated the ways in which this relationship is affected by their sustainability goals. Hinnells *et al.* (2008) provided the basis on which traditional leases could be turned into green leases establishing the landlord–tenant relationship. As interfaces between the two parties become the focus of a green lease, the concept of "Interface Management" (IM) was used to operationalize this research, as explained below.

Interface management

The term interface management became popular in project management literature through the systems approach where an organization is viewed as a system of interdependent sub-systems (McCarney and Gibb, 2012; Chua and Godinot, 2006). Accordingly, IM is defined in this study as "the management of communication, coordination, and responsibility across a common boundary between two organizations" (adapted from Chan *et al.*, 2005, p. 646). Chan *et al.* (2005) specify the basic elements of an interface as the "boundary" and the "interdependencies" across it. Leases serve a regulatory role in the governance of the landlord–tenant relationship through communication, sharing of information and responsibility to achieve agreed targets (Janda *et al.*, 2016). The landlord and tenant are independent organizations with an agreed operational procedure to achieve these targets. Therefore, the IM framework is integral to examining their relationships.

Interfaces between two organizations have been examined in various ways. According to Chan *et al.* (2005), these taxonomies of interfaces can be summarized as shown in Table I. Green lease typically demonstrates a contractual, physical and organizational interface between the landlord and tenant suggesting the first category that is used by Pavitt and Gibb (2003) is the most relevant to this study. According to Pavitt and Gibb (2003), *contractual interface* comprises the relationships that govern the rights and obligations of the landlord and tenant. Infrastructure that facilitates the performance of environmental obligations in a green lease is considered to be the *physical interface* between the tenant and landlord. There

Reference	Interfaces
Pavitt and Gibb (2003) and McCarney and Gibb (2012)	Physical Contractual Organizational
Archibald (2003)	Product Project
Healey (2010)	Time Geographic Technical Social
Stuckenbruck (1983)	Personal Organizational Systems
Morris (1983)	Static Dynamic
Chua and Godinot (2006)	Internal External

Table I.
Interface categories

are a large number of dimensions to the physical interface of a green lease. For example, GLS requires a 4.5-star ABGR energy performance as well as separate metering for energy usage monitoring. Generally, a property contains leased and base building spaces, the latter being maintained by the landlord. Landlord responsibilities such as building management systems, lifts, car park, communication, fire services, workplace health and safety, capital works and minor works also will be a part of the agreed performance standards. Similarly, a property could contain green-leased as well as non-green-leased spaces in a multi-tenanted facility. The interactions among these physical spaces with regard to a building's environmental performance will also be part of the physical interface.

Tenant responsibilities such as maintenance, staff level equipment, lighting controls, computer rooms, blinds, cleaning, storage and waste will also form a part of the agreed performance standards. Management of changes to fit-outs and plants that have an impact on energy efficiency performance is another component of the physical interface. When all these dimensions are put together, the landlord and tenant become responsible for operations of their respective obligations to achieve agreed outcomes. The organizational interface is the people side of the green lease equation. It consists of interactions between the persons representing the parties in fulfilling the lease obligations. The relevant stakeholders and their responsibilities including the role of tenant and landlords' energy representatives are crucial for the functioning of this interface.

The environmental management plan (EMP), building management committee (BMC) and dispute resolution mechanism are the functional apparatus that connects these three interfaces into an operational structure as shown in Figure 1. An EMP sets out the environmental standards that are targeted including the performance criteria for various obligations. EMP establishes the link between the physical and contractual interfaces of a green lease enabling both parties to commit to these standards. Standards related to utilities, furnishings, cleaning products and practices are some of the items included in an EMP (Oberle and Sloboda, 2010). GLS require a BMC to act as the link between the physical and organizational interfaces of a green lease with agreed procedures for regular monitoring of environmental obligations. GLS specify certain reporting requirements by the building management staff for the BMC to review performance. Some of these reports include: tenant and building owner fault reports; maintenance reports; building inspection reports; and monthly building services testing. GLS also require a formal *dispute resolution mechanism* as a means of linking the contractual and organizational interfaces of a green lease. It

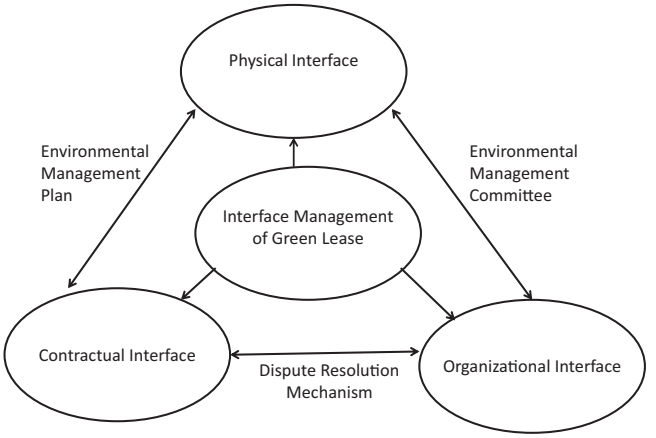


Figure 1.
Conceptual framework of IM pertaining to a green lease

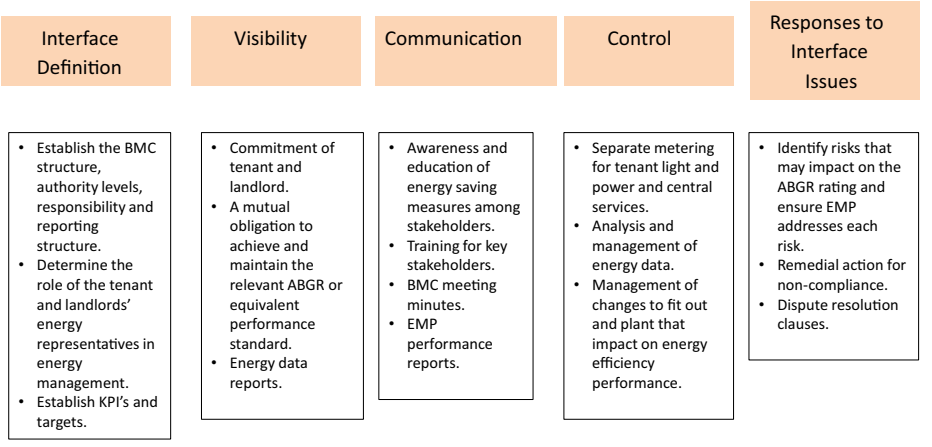
includes remedial actions for non-compliance and clauses dealing with dispute resolution. A dispute will first be reviewed by the BMC, and if the parties do not agree, then an expert will be appointed. The expert's decision will be binding (Woodford, 2007).

Chua and Godinot (2006) provided a framework to manage these interfaces using five strategies as shown in Figure 2. Based on this framework, a *clear definition of the interfaces* at the beginning of the lease with precise technical terms will help its implementation. *Visibility* refers to transparency across the boundary so that dependencies across the interfaces can be smoothly coordinated. *Communication* is the very essence of an IM system and is vital if the green lease is to be fully integrated. Communication in general occurs through quarterly meetings or other established mechanisms. Monitoring of performance is a pre-requisite of the *control* strategy which is mainly implemented through the BMC. Remedial actions and a dispute resolution mechanism are essential to deal with *interface issues*. Therefore, a green lease should generate data, enhance communication and visibility across the boundary, control interfaces and have a dispute resolution mechanism in place to resolve differences.

Research method

This study approached the research topic by applying a qualitative method of inquiry. The aim was to identify practices, drivers and barriers of green leasing in South Australia. Because of the relatively limited adoption of green buildings in South Australia, a qualitative method was more appropriate and enabled the collection of perceptions and experiences of those involved in green leases through an exploratory approach (Du Toit and Mouton, 2013). For example, out of the 1,318 currently existing certified Green Star buildings, only 100 are located in South Australia [Green Building Council Australia (GBCA), 2016]. Of these, 57 were five-star and eight were six-star rated. Buildings which have been using green leases in South Australia were identified, and the landlord and tenant representatives, leasing companies and property/facility managers of these buildings were invited to participate in an interview survey. The intermediaries identified above play a critical role in bringing the landlords and tenants together, and their inputs in this study were very useful (Roussac and Bright, 2012; Bonde, 2012).

The first interviewee provided the reference for the next and so on, enabling a snowballing effect to take place. This ensured that the interviewee had experience in green



Source: Strategies adapted from Woodford (2007)

Figure 2.
Strategies to activate a dark green lease from an IM perspective

leasing and was willing to participate in the study. However, this led to a small sample size consisting of only eight interviews, four each representing the landlord and tenant perspectives. Despite this limitation, deploying self-selected interviews yield valuable results due to people willing to express their opinions and feelings about the research questions (Seidman, 2006). As highlighted by Mason (2010), the size of the sample in qualitative research becomes irrelevant because of the fact that the value of the study is based on the quality of data. An equal number of interviewees representing the landlord and tenant was very helpful in obtaining the opinions from both sides of the interface. Except two, all other interviewees possess more than ten years of experience in the corporate real estate sector with three belonging to an environmental role, three leasing and tenancies and two asset services. Because the landlord and tenant representatives form what is called the "middle actors" in the property market, their observations and opinions are very valuable for evaluating the current practices as well as drivers and barriers of green leasing. Therefore, the purposive sampling method was suitable and justified in selecting the interviewees, whose profiles are shown in Table II.

The interviews were semi-structured, which allowed the participants to communicate their opinions on green leasing freely and for the study to receive a well-rounded response as suggested by Mitra and Wee Kwan Tan (2012). All interviews were conducted face-to-face in the respondents' workplace and were arranged through a pre-notification phone call. All interview sessions lasted from approximately 45 min to 1 h and were audio recorded and analysed using code-based content analysis. A coding procedure recommended by Bazeley (2013) was used which involved three stages: developing codes, sorting nodes into tree of nodes and constructing abstract codes. The interview questions were based on the conceptual framework shown in Figures 1 and 2 on green lease IM and its strategies of implementation. Interviewees were asked to provide their opinions based on professional judgement with regard to the practices of green leases in South Australia on physical, contractual and organizational interfaces. Views on interdependencies of these interfaces representing environmental management plan, environmental management committee and dispute resolution mechanism were also elicited from the interviewees. In these discussions, the interviewees were encouraged to disclose the drivers and barriers of green lease implementation. The next few questions were crafted based on the strategies and possible issues, as highlighted in Figure 2, while probing the drivers and barriers emanating from them. Furthermore, the interviewees were directly asked to comment on drivers and barriers of green lease implementation in South Australia. The answers provided a wealth of information with reference to practices, drivers and barriers of green lease implementation in South Australia which are reported in the following section.

Results and discussion

Practices

Interface boundaries. The performance surrounding the three interfaces in the proposed IM model was examined to understand the issues related to IM of green leases.

Interviewees commented on the *physical interface* of the green lease they have come across as being very clear. They indicated that sub-metering was made available by the landlord to monitor performance. Similar observations were made by researchers for other countries, for example, Hinnells *et al.* (2008, p. 542) identified the changes in metering obligations to be a positive move in the UK to "enable tenants to be more aware of actual energy consumption and variations over time". Interviewees agreed that fit-outs can be ideally done in an integrated fashion with the agreement of both parties because they cannot interfere with the landlord's NABERS ratings. Fit-outs and their

Code	Perspective	Gender	Description
A	Landlord	Male	The interviewee is a senior asset services operative of an international commercial real estate company having a branch office in Adelaide which provides specialist services for South Australian clients. With about 15 years of experience, Interviewee A has been working with green leases for a considerable period
B	Landlord	Female	Interviewee B is working for an international real estate agency having a branch office in Adelaide. With 12 years of experience in the sector, the interviewee has extensive involvement in green leases as a sustainability manager
C	Landlord	Male	Interviewee C is working for an international real estate consultancy company having its branch office in Adelaide covering the South Australian region. The interviewee possesses about 25 years of experience in the commercial real estate sector working with many green leases in recent times as the director of sustainability
D	Landlord	Female	Interviewee D works for an international investment management firm specializing in real estate with a branch office in Adelaide. The interviewee is a director of the office leasing team and has previously worked for the South Australian Government having more than 13 years of experience in the leasing sector. Interviewee D brings in a wealth of green leasing experience to this study
E	Tenant	Female	Interviewee E is an environmental advisor having five years of experience in the same role working for an international commercial real estate firm having a branch office in Adelaide. The interviewee has worked with many green leases in the past
F	Tenant	Male	Interviewee F is a manager working for the South Australian Government looking after government tenancies and having about 11 years of experience in a similar role. Interviewee F has extensive experience dealing with green leases from a tenant perspective
G	Tenant	Male	Interviewee F is a client manager for many government agencies having tenanted space with private landlords. The interviewee has worked in this role for about four years and dealt with green leases lately
H	Tenant	Male	Interviewee H is a senior asset planner of a leading government agency having 27 years of experience with four years in the current role. This interviewee brings in a wealth of experience dealing with green lease for the agency

Table II.
Profile of interviewees

impact on energy efficiency has been cited by past researchers as a barrier of implementing green leases (Hinnells *et al.*, 2008; Langley *et al.*, 2008). Therefore, the suggested approach is a win–win solution to both the tenants and landlords. Most interviewees observed green leases did have a positive impact on occupants' environmental behaviour in relation to the base building as well as non-green leased spaces of a multi-tenanted facility. For example, landlord interviewee (A) commenting on this highlighted, "So, it's really developing that relationship and working together to not only benefit the tenant, but the base building in that we can reduce our own energy

consumption". Landlord interviewee B gave an example of this impact on non-green leased tenants in their building:

> […] […] But I've also had some non-green lease tenants that haven't got a green lease but want to work on their energy efficiency. And that's been really advantageous, because they don't have a lease that's forcing them to do it, they're choosing to do it themselves.

This spill-over effect is encouraging and seems to enhance the popularity of green leases.

The *contractual interface* of a green lease is construed by interviewees as ambiguous due to there being different perceptions about what happens if one party does not comply with its obligations. A landlord interviewee (C) explains this vagueness through his experience:

> A green lease tries to promote a partnership. You try and achieve certain objectives such as maintaining a NABERS rating. Generally they use the words "best endeavours" to try and achieve those. There are some that I have been involved with which have penalties if you don't achieve those KPI's.

The general view held by both the tenant and landlord interviewees is that this vagueness creates a great level of uncertainty about how the contractual interface actually works.

The *organizational interface* of a green lease seems to work very well with all interviewees agreeing on the effectiveness of data monitoring and sharing, EMP, BMC and the continuous communications through meetings and other channels. For example, one tenant interviewee (E) stated that "the data sharing is a big thing". The organizational interface is critical for the success of a green lease as past research has highlighted that it comprises in addition to landlord and tenant, actors who are not part of the lease. According to Roussac and Bright (2012), landlords often outsource facilities management and building operation functions that results in a network of contractors and sub-contractors who are so remote to the lease interface. Similarly, occupiers of the building are also remote from the lease interface that they are not aware of the terms and conditions agreed upon by the landlord and tenant. However, as observed by interviewees, dark green leases make the organizational interface very clear and workable through an apparatus that links the other two interfaces very well.

Overall, interviewees confirmed the structure of the three interfaces to be operating well in a green lease. The only concern was with the contractual interface where the effectiveness of the safeguards preventing non-compliance of performance was queried.

Implementation strategies. The implementation of green leases was examined using the five strategies discussed earlier (Figure 2). Interviewees agreed that green leases were driven by tenants rather than landlords in South Australia, which is the general perception of others such as Sayce *et al.* (2009), Roussac and Bright (2012) and Hinnells *et al.* (2008) for Australia-based dark green leases. However, it is contrary to the findings of Janda *et al.* (2016) where landlords seem to be in the vanguard of green lease implementation. The tenant-led, compliant-based Australian model is not very conducive as landlords do not have the same enthusiasm, and this could lead to IM issues unless the interface definitions, visibility and controls are clearly explained from the outset. According to Janda *et al.* (2016), voluntary involvement in an environmental programme similar to green lease is affected by external factors such as regulation, economic and social as well as internal factors to an organization that include management style, organizational culture and organizational structure. Accordingly, large organizations having sustainability-friendly cultures, and the ones affected by regulations are likely to subscribe to green leases.

Interviewees were highly satisfied with the *interface definitions* of the green leases they have worked with. For example, a landlord interviewee (D) clearly spells out that "the ones that I've seen that are done properly, and the ones that are really only done properly are the commonwealth uses". The relationship across the boundary was also found to be very

effective for most green leases, as observed by majority of interviewees. For example, one tenant interviewee (E) had a very positive outlook on the relationship by admitting:

> I'm very biased because I need the data and I want to see the committees put in place. I would say that it does give a common goal to reach, there's a lot of pats on the backs and high fives. So, it can be quite beneficial.

Interviewees highlighted the importance of *visibility across the boundary* to foster a long-term relationship. A tenant interviewee (E) commented on the experience:

> Building a relationship with the landlord and you tend to build environmental savings long term […] […] […].You've got that transparency between what the tenants are doing and what the landlords are doing and how that will impact each other […] […].

Enhanced visibility inspires tenants and building operators to think beyond the green lease and help improve the entire building's energy efficiency. A landlord interviewee (A) commented on the additional benefits to the landlord:

> I guess that the major advantage is that if you've got staff in the building in the tenancies that are thinking about energy efficiency, they also identify when they see things like the base building lights on for longer than required out of hours. They might identify with places where you can cut back your energy usage for the base building side as well as their own tenancy.

Literature shows visibility playing an important role, for example, in the UK to promote energy efficiency through Energy Performance Certificates and Display Energy Certificates which potentially creates a market for efficiency (Hinnells *et al.*, 2008).

Communication is another factor all interviewees agreed on as being one of the most important ingredients for a successful landlord–tenant relationship. All agreed that communication in their respective green leases and the ones they have previously worked was flawless. A landlord interviewee (C) put this very succinctly:

> Any communication is good communication. If they're both striving for the same sort of goal it is positive. So, generally they are pretty good. I haven't had any bad experience put it that way.

According to Langley *et al.* (2008), communication is three-way: the landlord and tenant should exchange information regularly, whereas tenant–tenant communication in a multi-tenanted property is also crucial. It also recognizes the role of facilities managers and occupiers of the building and the need for communication among all these stakeholders.

All interviewees agreed on the need for proper *control* to make the relationships work. A landlord interviewee (A) explained this control function using his own building:

> The strategies are looking at firstly monitoring all the energy usage in the building and trying to find areas where you can reduce those energy efficiencies […][…]. So, if they ever had a month where the energy usage spiked they would try to explain where it was and to make sure that spike didn't continue on.

The majority of interviewees agreed that the control function is conducted by the BMC. Those meetings were held regularly, mostly on a quarterly basis, ensuring collaboration between the tenant and landlord to implement energy saving measures. The spill-over effects of a such collaboration in achieving energy efficiency of the base building are also noteworthy. For example, a landlord interviewee (A) commented on collaboration:

> It also helped the building in reducing the overall energy usage. Because if they're trying to reduce their energy it has a good effect on the building in that we don't tend to use as much energy in base building as well.

The mechanism in place to *respond to interface issues* is very useful to settle disagreements and to deal with non-compliance. However, this function is seldom used by the interviewees. For example, a landlord interviewee (B) summarized: "We didn't have any disputes in those green leases. But I could see there could be issues if there was a dispute". However, interviewees disagreed on how tough the penalty clauses should be. Some interviewees seem to be in favour of tough penalties, for example, as highlighted by one of the tenant interviewees (G):

> A penalty clause works if the building owner doesn't achieve the 5 star NABERS energy, for example, the next year the rent review will reduce from 3 per cent to 1.5 per cent, so that way it encourages the building owner to meet the standard.

However, others seem to prefer milder options, thus encouraging mutual cooperation. A tenant interviewee (H) explains their practice as an example:

> There is no financial penalty on either party […] […]. So it's done on a basis that we both want to achieve the same final result. But there is a process built into the lease to say if we are not achieving the result, then we get together identify the reasons why and then come up with an action plan.

The Sydney offices' case study conducted by Janda *et al.* (2016) highlights a similar finding that parties are hesitant to risk dispute resolution. It also emphasizes the importance of having "good faith" obligations as even the legally binding agreements are difficult to enforce. The GLS does not allow a formal process to be followed in case of dispute escalation (Woodford, 2007). GLS allows an initial Remedial Notice and a subsequent appointment of an expert to determine the issue (Woodford, 2007).

Past research has highlighted the importance of some of the above strategies for the success of green leases. For example, Langley *et al.* (2008) studied 35 commercial tenants operating from five buildings in the UK to identify issues in their current leasing practices that inhibit energy efficiency. Lack of defined obligations and responsibilities, ineffective communication and payment structures that inhibit tenants from conducting improvements were the main reasons cited for those five buildings for not operating efficiently.

Drivers

Below are the four factors that were highlighted by interviewees to be the most significant in driving green leases in South Australia.

Proactive government involvement. Interviewees contended that the involvement of government as a regulator, facilitator and an important tenant in the market is a major driver of green leases in South Australia. Interviewees were unanimous that green leases in South Australia were mainly driven by tenants, the majority of these being government agencies. One tenant interviewee (E) summarizes this observation:

> Since its emergence it has definitely been driven by tenants, but more and more, over the last year I've started to see landlords come to us and suggest that they want a green lease.

A landlord interviewee (D) confirming this observation highlights the reason why landlords are not volunteering for green leases:

> Generally they're pushed by tenants, so it's not something that a landlord would really volunteer to do, some do, but for the most part they don't volunteer to be part of.

Interviewees were very clear on the motivation to use green leases for tenants being the government mandate, whereas for the landlord, it meant securing a long-term tenant. Similar examples were cited in the literature, for example, the use of building regulations to drive

energy efficiency and carbon reduction is likely to happen in the UK for commercial new build towards zero carbon by 2019 (Hinnells *et al.*, 2008).

Economic and environmental benefits. All interviewees agreed that the economic and environmental benefits are driving green leases in South Australia. Tenant interviewees were generally in agreement, as shown in the following statements: "there is a significant reduction in energy costs" (Interviewee F); and "there's a huge savings in outgoings" (Interviewee G). One tenant (E), when asked if green clauses help with energy savings, asserted that it does "one-hundred per cent". The landlord interviewees provided more complex views. For example, according to Interviewee C, "there is that hidden cost of administration of the whole thing" – going on to say it diminishes the potential savings made from energy efficiency. Overall, it is clear that there are savings to be made in energy costs resulting from the clauses implemented by green leasing, and they are one of the main drivers of its implementation. However, it is possible that this benefit may also be attributed solely, or in part, to the impressive green ratings of the buildings themselves. There are examples from past studies that show the economic and environmental benefits to be driving green leases in other countries. A study by Langley *et al.* (2008) in the UK found that improved energy and environmental performance is the main driver for adopting green leases.

Tenant employee well-being and retention. All tenant interviewees indicated that green leasing is related to an enhancement in the well-being and satisfaction of staff through the maintenance of the green features, and it is a significant driver for increasing engagement in a green lease. For example, according to Interviewee E, "those more energy efficient or environmentally friendly properties if operated at their highest potential tend to have higher retention rates and those key indicators of happier employees". These observations were repeated by all tenant interviewees. Note that there are some limitations regarding the results for this driver. For instance, it is possible that other variables have an impact on whether staff experienced increased well-being and happiness including the improved green star rating or NABERS rating rather than the green leasing itself. The factors influencing staff happiness are quite broad and varied. For example, one interviewee (Interviewee F) stated:

> There were a lot of other influences that affected happiness and well-being. A lot of the people had come from places where they had their own enclosed offices and then they went to open plan work stations, which is a completely different style. So a lot of people didn't like it that much.

Although there are arguments over the impact of green buildings on occupier performance and well-being, past research has predicted that tenants would be willing to pay a premium for high environmental performance. According to Hinnells *et al.* (2008) at least it could affect the speed of let. Therefore, landlords cannot turn their back to the obvious benefits of maintaining a building green.

Environmental leadership and corporate social responsibility. Another important driver for implementing a green lease is tenants' policy of environmental leadership and CSR. Similar to well-being and staff retention, these sentiments were raised mainly by tenant interviewees, for example, Interviewee G:

> […][…]. Government took on the policy of being more sustainable and our Premier certainly is very driven in this area and is keen on seeing Adelaide being the first carbon neutral city, so for us that's fantastic. We all embrace it and the leasing team want to go down this path.

Although CSR is gaining momentum in the property market in Australia, many developments could be found in other parts of the world, for example, Hinnells *et al.* (2008) highlighted the change of mood among landlords and tenants with CSR being incorporated in the United Kingdom's Companies Act of 2006.

It is interesting to note a very high level of agreement among interviewees on these drivers, empirically establishing their relevance to the South Australian context. Despite issues with tenant-led green leasing in South Australia, the involvement of the government was praised by interviewees as an example of bold leadership and trend setting. The study by Hinnells *et al.* (2008) confirms this observation and concluded that the government could play a major role in promoting green leases. Similarly, economic and environmental benefits were highlighted by Bonde (2012) as a major driver of green leasing practices in Sweden. The other drivers – staff well-being, retention and CSR – are very specific to tenants. According to Kaplow (2008, p. 396), Fortune 500 companies in the USA have embraced corporate green practices because they represent marketing and public relations opportunities and improved employee recruitment, retention and productivity.

Barriers

Interviewees identified four barriers that are crucial in the implementation of green leases in South Australia. These are explained in more detail below.

Lack of awareness. Misunderstanding and lack of awareness was expressed by all interviewees irrespective of the divide as constituting a major barrier to the introduction of green lease, particularly to a landlord. For example, one tenant interviewee (F) highlighted this issue:

> Lack of knowledge, like when you have Mum and Dad landlords, a lot of them get scared away from green leases because they don't know what they are and they don't know what it means to them. They don't really appreciate the problem and the impacts it will have on them.

A landlord interviewee (A) expressed the opinion citing the main reason: "Because they believe it's going to cost them money and cause them issues, because they probably don't fully understand what a Green Lease is and what it does."

Transaction cost. It appears that transaction costs of implementing a green lease are hindering its widespread use. This concern was commonly articulated by all landlord and tenant interviewees. However, interviewees' perceptions on this factor varied significantly. For example, a tenant interviewee (H) highlighted a strong sentiment relating to the current economic situation of the state:

> On the tenants' side it is cost. If the market changes, like you have in Adelaide at the moment, bit of a downturn, companies lay off workers, then the green may not be something which is up there in importance.

Landlords were also worried about the transaction cost inhibiting the use of green leases. For example, in the words of Interviewee C:

> It does add on to cost. There's quite a bit of administration to manage that lease. <Interviewee explains the process and the costs involved> It does add cost to the whole process, so that's why you probably get people steering away from the green lease and that's from both sides, tenant and landlord.

Obligations and penalties. Having stricter obligations and resultant penalties were highlighted by landlord interviewees as another barrier of introducing green leases among landlords. Interviewee C very succinctly conveys the feelings of landlords as follows: "Landlords would want as little obligation as possible". Although this barrier is very significant among landlords, it was not highlighted by tenant interviewees.

Differences in expectations. Very similar to the above barrier, this correlates with the perceptions of the majority of landlord interviewees; as green leases are pushed by tenants, it is not something that a landlord would really volunteer to do. Some do, but for the most

part, they do not volunteer to be part of it because all it does is place an obligation on them to perform, and often there are penalties involved if they do not. For example, according to one landlord interviewee (D): "What is in it for the landlord other than securing a tenant?". Sharing the same sentiment, a tenant interviewee (H) observed: "Landlords are interested in money, that's what they are there for at the end of the day", and the interviewee went on to state, "they have to sell space, so if green sells space, then they will go down the green road".

In summary, lack of awareness on green leases was the most critical barrier in implementing green leases in South Australia according to the interviewees. According to Roussac and Bright (2012), the content and structure of the agreement need to be understood by the parties as well as other stakeholders. The landlords' reluctance to embrace obligations and heavy penalty is a symptom that landlords treat green leases differently from their tenants. Tenants normally treat property as an operational asset, whereas a landlord sees it as a physical asset (Janda *et al.*, 2016). If there is no improvement to the bottom line, a landlord will not be interested in the workings of the interfaces of a green lease. This shows the limitations of dark green leases that have been pushed by the Australian Government tenants which lack business appeal for widespread adoption, especially among landlords.

Conclusions

The purpose of this research was to investigate the practices, drivers and barriers of implementing green leases in South Australia. Using the IM framework, the study investigated the interfaces and operational strategies of green leases using semi-structured interviews among tenant and landlord representatives. Except for the contractual interface, the other two, namely, the physical and organizational interfaces, were found to operate very successfully. Contractual interface was fraught with vagueness surrounding the remedy for non-compliance of performance as landlords were hesitant to risk dispute resolution. The study showed the value of interface definition, visibility, communication, control and dispute resolution procedures for effective management of a green lease. The green leases in South Australia were mainly driven by tenants with landlords and tenants having different expectations. Lack of awareness and transaction costs were the main barriers identified by the interviewees. The study also showed that the IM framework is suitable to analyse a green lease from an operational perspective.

This study has many implications. Government involvement is highly appreciated by the interviewees, and it should continue to play a critical role as a regulator, facilitator and user of green leases. Because of numerous benefits and the push for mandatory disclosure provisions by the government, green buildings are becoming a norm rather than a trend in Australia. According to Green Building Council Australia (GBCA) (2013), the demand for green commercial spaces continues to increase throughout Australia. However, some of these buildings are not maintained as green buildings subsequent to commissioning. For example, a 4.5 star ABGR-rated building was found to be operating at a 1.5-star level during its occupation (Woodford, 2007). GBCA's recent move to introduce a new certification for operational performance highlights the importance of continuous maintenance of a green building throughout its entire lifespan. Green Star-Performance v1.1 was released in April 2016 with credits awarded across nine impact categories, these being: management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions and innovation. Although green leases could play a major role in facilitating most of the above categories, this operational standard unfortunately does not recognize the role of green leases explicitly. Such recognition could certainly motivate green building owners to implement green leases.

Government should also continue to lead as a user of green leases through the mandatory provisions discussed in this paper. However, in addition to the current GLS-based dark green lease, lighter shades should be introduced by the government. We see a high potential for lighter shades for tenancies which are less than 2000 m^2 and less than 2 years of duration. The spill-over effects from GLS-based government tenants to the rest of the building were highlighted by interviewees as an added benefit of hosting a green lease. The operators of base spaces, other non-green lease tenants and occupiers could get motivated to be more environmentally conscious by observing the green lease space. Green lease provides that initial push required to create an environmentally conscious atmosphere among users and operators of a building irrespective of whether they are part of a green lease or not. In the long run, there could be voluntary participation from private sector entities if and when they see the benefits of a green lease first hand. For such voluntary adoption to materialize, lighter shades of green leases should become commonplace in the leasing sector. Lighter shades would also likely appeal to landlords, small-scale organizations and non-prime office sub-sectors that are yet to embrace green leases. From a transaction cost perspective, lighter shades would be more cost-effective and would appeal to the private sector tenants and landlords.

Interviewees confirmed that preference for and against tough penalties was one of the main contentions and an important impediment to landlords' initiating green leases. Nevertheless, tough penalty clauses were often being watered down to "best endeavours" in real practice, and not knowing the meaning and the way this would be interpreted subsequent to a non-performance creates uncertainly among stakeholders. One of the major differences between dark and lighter shades is that the latter does not emphasize formal compliance using overly strict dispute clauses. Such "good faith" agreements are likely to attract landlords who are not willing to lock themselves into formal arrangements.

Although government intervention and spill-over effects are quite useful in promoting green leases, interviewees have clearly demonstrated that they are not widespread in South Australia. Interviewees asserted that there is a clear lack of awareness about green leases in the real estate community. To foster a culture of environmental consciousness, training programmes could raise awareness of the entire industry so that it is transformed from a state of "unaware" to "aware and active". Lack of awareness could also be overcome by active promotion of green leases among various intermediaries in the real estate industry and through education.

For researchers, these findings provide further avenues for investigating the interactive effects among the three interfaces using additional empirical research and qualitative modelling techniques. In particular, given the conflicting concerns raised by the interviewees on the role of the dispute resolution mechanism, one of the possible avenues is to examine the impacts of lighter shades of green leases on the landlord–tenant relationship. Although transaction cost was identified as a barrier, very little information is available on its details and the magnitude. Therefore, further research is needed to explore the intricacies of transaction costs related to a green lease. The IM framework is an ideal tool to venture into such investigations as it provides a conceptual foundation encompassing all facets of a green lease. Based on the implications drawn, the findings of this study have the potential to influence policy and thus to increase the likelihood of green lease adoption by tenants and landlords.

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