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# Sustaining Sustainability in Large Real Estate Investment Management Firms

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# Sustaining Sustainability in Large Real Estate Investment Management Firms

**Executive Summary.** In this exploratory paper, we examine real estate managerial decisions; specifically, who is responsible in large real estate investment management for sustaining sustainability at the firm and asset operational level. These decisions are distinct from the acquisition of sustainable buildings. We employ 93 semi-structured interviews conducted with professionals at direct lenders, executive search firms, life insurance companies, owner-operators, private equity funds, publicly-traded REITs, third-party real estate service firms, and tax credit syndicators. Results indicate five unique approaches to sustaining sustainability at the asset and firm level: corporate, property manager, asset manager, and consultant driven, as well as stand-alone strategies. Further, interviewees suggest that the value proposition of sustainability initiatives can be enhanced through management collaboration to leverage unique data streams.

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By the end of 2016, ~38% of the office building stock in the top 30 U.S. markets had been certified with an ENERGY STAR or LEED eco-label, with a number of buildings having both. Representing nearly 50,000 buildings and an area of ~7 billion square feet (CBRE, 2015 & 2016), this trajectory evidenced an important segment of growth in demand for sustainability in the commercial property market. A significant increase in demand for, or at the very least interest in, sustainable single-family homes (Sanderford, McCoy, and Keefe, 2017), multi-family buildings (Bond and Devine, 2016a), retail space (Thompson, 2007), and industrial facilities (Harrison and Seiler, 2009) has also been observed over the last two decades. With rising market shares and increased data availability, the attendant empirical research (e.g., Miller, Spivey, and Florance, 2009; Eicholtz, Kok, and Quigley, 2010; Wiley, Benefield, and Johnson, 2010; Devine and Chang, 2017) supports the hypotheses of early scholarship (Pivo and McNamara, 2005) that investing in sustainable real estate is often good business practice. Investors can do well and do good concurrently.

Indeed, a number of positive effects from sustainability across different types of real estate are identified in the literature including superior asset values, premium rents (though not rent rate growth premiums), attractiveness to capital markets, advantageous technologies generating operational economies, lower occupant churn, and the need to offer fewer incentives to attract and retain tenants. Two broad conclusions might be drawn from this body of scholarship. First, sustainability is substantively dynamic and exists as a part of many management decisions. Firms are implementing complex agendas that capture value at acquisition and also during asset, portfolio, and firm operations (Muldavin, 2010). Second, given the dominant research focus on sustainable asset acquisitions, there is a need to examine who could be responsible for sustaining the sustainability (and by extension the value proposition) of assets within portfolios and as part of broader firm-level operations. Given the substantive dynamism of property sustainability, management teams must be adroit in the way they work and assign responsibility for these important strategic tasks (Hopkins, Read, and Goss, 2017).

While there is substantial evidence that real estate investors are embracing sustainability in meaningful ways, there is limited consideration in the literature as to who should be charged with creating durable competitive advantage, or put more plainly, sustaining sustainability after acquisition. It stands to reason that real estate asset managers may be well suited for the task because they are typically charged with maximizing the value of the individual properties in their portfolios (Read, Hopkins, and Goss, 2016). However, real estate fund managers may also have an incentive to participate in sustainability initiatives as a result of their return-driven responsibilities at the portfolio level (Larsen, 2010), whereas property managers may seek to exploit sustainability as a means of optimizing operations and creating the "small monopolies" (Graaskamp, 1993) that come from intense familiarity with facilities. These interrelated motivations suggest multiple roles in the management hierarchy may be charged with sustaining sustainability after acquisition and promoting it within the organizations they represent.

In this paper, we focus on responsibility for sustainability relative to both properties and firm operations, not on the initial acquisition decisions relative to sustainable buildings. We build on recent work by Devine and Yonder (2017), who examine how the benefits of eco-certification agglomerate within U.S. and international REITs. By decomposing cash flow streams, their work helps illustrate the distinct channels through which sustainability practices contribute to firm value. Both property operations and firm-level value aggregation are noted. Here, focusing on the decisions and roles of asset managers vis-à-vis sustainability, we make a contribution to the portfolio management literature.

Drawing on the results of a series of semi-structured interviews conducted with 93 knowledgeable real estate practitioners working in asset management or in conjunction with asset managers for some of the largest real estate investment and service firms in the U.S., we address the following research questions: (1) How are large real estate investment management firms grappling with the process of sustaining sustainability following asset acquisition? (2) What roles do asset managers play in the process? (3) What steps, if any, are being taken to improve asset management practices to enhance the value proposition of sustainability when focused on asset and portfolio operation and firm operational decisions (as distinct from initial acquisitions of sustainable properties)?

Analysis of the interview data suggests little consensus in practice or perception, with some firms calling on their asset managers to play extensive roles in sustainability initiatives and others allocating the responsibility elsewhere in their real estate management hierarchies. These decisions appear to be driven by a combination of corporate culture and prevailing beliefs about how the benefits associated with sustainability manifest themselves in the performance of real estate investment portfolios. The interview results also indicate that a growing number of firms are reevaluating their approach to sustainability by encouraging cross-disciplinary collaboration, frequently led in whole or in part by asset management departments. And while many such efforts were reported to be in their infancy, interviewees generally perceived them to have great promise in helping real estate investment management firms embrace sustainability in ways accretive to operational efficiency, revenues gains, and corporate social responsibility mandates.

## Literature

The oil crisis of the 1970s and the issuance of the Brundtland Commission report in 1987 catalyzed conversations about sustainability across dozens of industries. Building upon triple-bottom-line and corporate social responsibility discussions that occurred in management, finance, law, and allied fields, real estate scholars have assessed sustainability within the built environment. Indeed, three areas related to the focus of this paper have been examined in the real estate literature: (1) the incorporation of sustainability into real estate investment decisions; (2) the value proposition of sustainable real estate; and (3) the allocation of responsibility for sustainability initiatives within firms.

Broadly, the arc of these sub-sections within the literature suggests that real estate investment management firms pursue sustainability initiatives for different purposes and are confronted with tradeoffs when evaluating their benefits. Moreover, implementing sustainability initiatives has been shown to yield significant economic and financial benefits. While researchers suggest that asset managers can play a role in areas associated with sustainability initiatives (e.g., cost reductions and revenue growth), it is unclear how, if at all, they have been tasked with sustaining sustainability for the real estate investment management firms in which they work. Given the exploratory nature of this paper and our research questions, in this section we provide a selective review of the research from both the real estate finance and economics literature, as well as conversations occurring in real estate property and facilities management, to highlight the need for further work in this area.

### Incorporating Sustainability into Real Estate Investment Decisions

The real estate investment process logically forces real estate executives and managers to confront trade-offs. Relative to sustainability, managers must evaluate how to balance social and environmental needs while concurrently generating minimum acceptable rates of return. The sustainable real estate literature illustrates the framework of tradeoffs clearly. Several studies including Batty (2006), Fellows (2006), Liu (2006), Heywood and Kenley (2008), Pivo and McNamara (2008), and Eicholtz, Kok, and Quigley (2010) articulated the competing values and market, resource, temporal, environmental, process, technology, and policy factors present within sustainable real estate investment decisions.

While understanding the context in which decisions are made, investors must also focus on specific areas when evaluating sustainability in real estate. Ellison and Sayce (2007), in a paper presaging the creation of the Global Real Estate Sustainability Benchmark (GRESB), articulated measures that provide managers with substantive guidance. They stressed that investors should evaluate an asset's operational efficiency, climate control, pollutant reduction, water consumption and waste, waste management, locational efficiency, and building (material) quality prior to investment. Pivo (2008) provided a deeper discussion of individual firms implementing specific actions around each of these topics. Larsen (2010) extended the line of inquiry and emphasized the importance of evaluating tenant demands, potential gaps between perceived and realized benefits from technologies and programs, and the need to generate internal (firm) and external (clients/tenants/etc.) benefits when analyzing sustainability investment decisions.

In a complementary fashion, managers' perceptions of sustainability have also been explored in the literature; a critical step in peeling back the complexity of incorporating the concept in real estate investment decisions. Warren-Myers (2012) studied large commercial property owners and found heavy emphasis on resource efficiency. Wilkinson (2013) found that Australian managers' understanding of sustainability was predominantly technical and financial; a finding that complemented the market complexity and ratings scheme requirements and system operations described in Gabe and Rehm (2014). Though it appears that resource conservation and operational efficiency lead the sustainability research, Ang and Wilkinson (2008) posited that technical and financial lenses were not the only ones through which investors understood sustainability. Along with Lee and Chan (2010), these authors found that some investors were motivated by the corporate social responsibility mandates within their firms and as a result pursued sustainability investments for social rather than financial reasons.

Literature on the obverse of the investment decision, the operation of real estate assets as facilities, provides an important perspective about incorporating sustainability into real estate decisions. Where facilities managers generally oversee the operational aspects of real estate assets (Wood, 2006), their work helps create value through resource efficiency initiatives (Shah, 2007). Analyzing perceived obstacles to sustainable facilities management practice, Elmualim et al. (2010) and Wright and Wilton (2012) found that facilities managers believed though investors may be motivated by corporate social responsibility goals, obstacles to sustainability program implementation included time constraints, path dependency, lack of senior management knowledge and appreciation of sustainability, and lack of financial resource allocation.

For real estate investment managers, it is critical to appreciate the dynamic and complex nature of sustainability when working to incorporate it into investment and operational strategies. Failing to do so may limit their ability to create and sustain a competitive advantage across investment, operations, and within their firms.

## Assessing the Value Proposition of Sustainable Real Estate

A dominant theme in the scholarship on sustainability in commercial real estate has been the study of its value proposition. The importance of this large cluster of studies is difficult to understate as the work examines risk-return questions and illustrates the complexity and diversity of the contextual settings in which sustainability initiatives are evaluated from a financial perspective.

Initial work by Kats et al. (2003) analyzed the cost differentials between green and traditional commercial construction and found a slight sustainability premium. Additional research from RICS (2005), Pivo (2005, 2008), Scheer and Woods (2007), Pivo and McNamara (2008), and Sayce, Sundberg, and Clements (2010) laid the foundation for future econometric analyses by introducing concepts from the triple-bottom-line, corporate social responsibility, the extent to which a fiduciary obligation to consider sustainability criteria in real estate investment exists, and the data infrastructure needed to make adequate evaluations.

From this foundation, Miller, Spivey, and Florance (2008) published the first examination of the business case for sustainable commercial real estate investment, providing the first evidence that green certified buildings traded at higher prices and commanded higher rents than did traditional comparable buildings. Eicholtz, Kok, and Quigley (2010), Pivo and Fisher (2010), Fuerst and McAllister (2011), and Wiley, Benefield, and Johnson (2011) confirmed the value proposition existed and added incrementally to the evidence base (e.g., that sustainable buildings have lower tenant churn and higher occupancy than similar traditional buildings). More recent work revealed increased probability of tenant re-leasing, lower tenant improvement expenses, and increased tenant satisfaction in eco-certified buildings (Devine and Kok, 2015). Holtermans and Kok (2017) confirmed prior value proposition research across time and found that green buildings had higher rent, occupancy, and pricing levels than non-green buildings. They also contributed a significant new finding; that is, that green buildings have not outperformed similar non-green buildings on rental rate growth.

While much of the sustainable real estate research has focused on office assets and the perspectives of office portfolio owners (e.g., Newell, 2008), the evidence base has been expanded to include studies on industrial, multi-family, and residential real estate. Importantly and qualitatively, the evidence from these asset classes tends to point to similar conclusions. The business case for sustainable real estate is strong and empirically supported. Eicholtz, Kok, and Yonder (2012) and Sah, Miller, and Ghosh (2013) discerned that REITs with greater numbers of sustainable buildings in their portfolios have superior stock prices and are more attractive to investors, echoing comments about attractiveness to capital from Larsen (2010). Devine and Yonder (2017) extended this line of inquiry. They decomposed U.S. and international REIT income streams and identified the unique channels through which value from sustainable buildings flow and agglomerate.

Additionally, An and Pivo (2017) studied the value proposition from the debt investors point of view and discovered that owners of sustainable buildings were less likely to default on their mortgage obligations. Devine and Chang (2017) modeled the benefits of sustainable buildings to retail space users (tenants) and noted that LEED certified retail bank locations captured above average deposits and deposit growth. Harrison and Seiler (2012) examined industrial property transactions and found that sustainable facilities traded for premium prices, although only in markets that favored more liberal political candidates. In the first study on multifamily transactions, Bond and Devine (2016a) observed a rental premium for sustainable properties in the U.S. Similarly, although using different data sets, both Bloom, Nobe, and Nobe (2012) and Kok and Khan (2012) discovered that homes with sustainable attributes commanded premium prices when compared to similar traditional homes. Kaza, Quercia, and Tian (2014) investigated the probability that owners of sustainable homes would default on their mortgage obligations, finding that there was a significantly reduced odds.

In addition to the value proposition research, there has also been a focus on next generation questions about how sustainability spreads across markets, tenant preferences, and the role of certifications in the market place. For example, Sanderford, McCoy, and Keefe (2017) identified many of the factors, including policy and climate, associated with increased diffusion of green housing certifications across the U.S., echoing the findings of Kok, McGraw, and Quigley (2011) analyzing the same phenomenon in the office market. Further, Robinson, Simons, Lee, and Kern (2016) detailed tenant preferences within sustainable commercial buildings. Additionally, Freybote, Sun, and Sun (2015) observed that a sample of condominiums in sustainably certified neighborhoods (e.g., LEED ND) did not sell for premium prices, although they were still highly desirable housing units. Pivo (2014) noted that locationally efficient affordable multi-family buildings were less likely to experience mortgage default. Additionally, and rather importantly, the literature has also revealed that sustainability can increase the reputation and attractiveness of firms to capital (Larsen, 2010) and that sustainability in real estate is more broad and complex than eco-certification programs (Warren-Myers, 2012).

With respect to the sustainable technology, policy, and decision making, Koebel et al. (2015) discovered that climate, market, and policy factors each influenced U.S. homebuilders' choices to install highly energy-efficient windows in new homes. Sanderford, Keefe, Koebel, and McCoy (2015) extended these findings to water distribution, HVAC, and other technology decisions. Bond and Devine (2016b) confirmed that public policy tools play a critical role in the adoption of green housing technology, drawing on earlier work from Kontokosta (2011), Simons, Choi, and Simons (2009), and Simcoe and Toffel (2014) on the trajectory of policy supporting sustainability in the real estate markets.

Together, the value proposition literature and the literature building upon it point towards an increasingly complex and multidimensional understanding of sustainability. It seems clear that while more than simply buying eco-certified buildings, sustainability agendas can create value at the property, portfolio, and firm levels across dimensions of cost, revenue, transaction, capital attraction, and firm reputation. However, it is also clear that there is an opportunity to dig more deeply into the operation of sustainable buildings. As asset operation is a channel through which value accrues in sustainable buildings, it is increasingly important to develop a more refined understanding about who, in the management chain, is responsible for sustaining the value proposition of sustainable real estate after acquisition and across time. Digging deeper into management responsibility will also reveal more about asset and firm operational decisions that real estate investment management firms must confront around sustainability.

### Allocating Responsibility for Sustainability Initiatives

While the economic case for sustainable real estate investments has been examined extensively in recent years due to the increasing availability of data germane to this line of inquiry, Warren-Myers (2012) noted that much less attention has been devoted to the work of the parties responsible for bringing the financial benefits to fruition. Hopkins, Read, and Goss (2017) contended that this is a notable gap in the literature because many real estate practitioners have access to unique sources of information that may allow them to contribute to sustainability initiatives in significant ways. For example, portfolio managers, asset managers, property managers, and third-party consultants often have very different levels of familiarity with investment strategies, market conditions, tenant demands, and building systems (Christudason, 2002; Wai-chung Lai, 2006; Carswell and Smith, 2009; Bayer, Gamble, Gentry, and Joshi, 2010; Kyro, Heinonen, and Junnila, 2012; Zeiba, Belniak, and Gluszak, 2013) that are all part of the sustainability equation. Epstein and Roy (2001) posited that these differences create a need to understand how those involved in real estate investment management interact and assume responsibilities, which by extension has important implications for the study of sustainability (Smid and Nieboer, 2008; Larsen, 2010; Muldavin, 2010; Andelin, Sarasoja, Ventovuori, and Junnila, 2015).

There is also a need to examine how real estate investment management firms allocate functional responsibilities for sustaining sustainability initiatives post acquisition because recognized best practices appear to be somewhat limited in the field. Falkenbach, Lindholm, and Schleich (2010) emphasized the point by arguing that many such firms fall victim to the "circle of blame," where ambiguous and evolving demands encourage real estate practitioners to express commitments to sustainability, while simultaneously attributing a lack of progress in the area to other members of their respective organizations. This type of behavior can generate tension between individuals working in different real estate management capacities at a time where competitive pressures are increasing the need for both collaboration and cooperation (Palm, 2013; Muczynski, 2015). As a result, there is a need to identify more comprehensive approaches to sustainability, as well as management strategies that have proven effective in practice (Hopkins, Read, and Goss, 2017).

## Data & Methods of Analysis

In the context of this extant literature and the diversity of professional practice, this exploratory study draws from a population of 257 of the largest real estate investment and service firms in the U.S. compiled with the assistance of trade journal rankings. Executives working in real estate asset management or in conjunction with asset managers at each of these organizations were asked to participate in semi-structured interviews exploring the state of the industry and the professional responsibilities of those employed therein. Approximately 36% ultimately agreed to be interviewed, creating a sample comprised of 93 individuals working on behalf of direct lenders, executive search firms, life insurance companies, owner-operators, private equity funds, publicly-traded REITs, third-party real estate service firms, and tax credit syndicators.

The interviews were conducted over the telephone and typically lasted between 30 and 60 minutes. A series of prompt questions were provided to the interviewees in advance to guide these conversations. Similar to many other studies found throughout the real estate literature, this approach was chosen to encourage interviewees to interact with the research team in a rather informal manner and candidly discuss their perceptions about a host of real estate issues relevant to their particular line of work (Dixon and Pottinger, 2006; Levy and Lee, 2009; Palm, 2013; Read, Hopkins, and Goss, 2016). The following prompts consistently elicited responses about sustainable real estate management practices even though the term sustainability was not specifically presented to the interviewees by the research team:

- Based on your experience, what are the primary roles and responsibilities of asset managers? How do they differ from property managers and portfolio managers?
- Based on your experience, please describe any areas in which the roles and responsibilities of portfolio managers, asset managers, and property managers tend to overlap. What steps can be taken to address redundancies?
- Based on your experience, how do asset managers allocate their time? What professional responsibilities tend to receive the most attention? What professional responsibilities receive too little attention?
- Based on your experience, please describe any policies or procedures asset managers are responsible for developing/implementing to ensure operational consistency at the property level across their portfolios?
- Based on your experience, what recommendations would you offer to improve communication and collaboration among portfolio managers, asset managers, and property managers?

Consistent with exploratory social science techniques, the interview transcripts were analyzed using guidance from Thomas (2006), among others. The research team relied on inductive logic to assess the underpinning structure of real estate managers' responsibilities and to examine the processes, tools, and strategies they use to guide them in creating value and minimizing risk. Though there are noted limits to this approach, the findings on sustainability and responsibility for it in the property and firm operational decision chain rose out of the survey process. Evident from the interview questions, these topics were not directly tested using a deductive interview question and hypothesis testing protocol. Instead, that these themes that welled up within respondents' answers to broader questions suggested an important set of ideas to explore relative to real estate managerial decision making.

Purposeful sampling was chosen as the most appropriate means of selecting research participants because it ensured all interviewees had sufficient knowledge of the topics of interest (Levy and Peterson, 2013), whereas telephone conversations were used to collect the data because they have proven to be an efficient way of obtaining input from a national sample of real estate executives (Hopkins, Read, and Goss, 2017). Interview transcripts were independently reviewed by members of the research team at the end of data collection to identify notable trends and/or themes related to sustainability. More specifically, attention was devoted to identifying the parties responsible for sustaining sustainability initiatives within a given organization and the perceived reasons for allocating these responsibilities in the manner described. The coding procedures were designed to both explore the practices adopted by industry leaders in this particular area and limit the risk of researcher bias in the interpretation of interview results (Roberts and Henneberry, 2007). Several unique, yet interrelated, approaches to sustaining sustainability emerged organically through this process.

## Interview Results & Discussion

While there is a great deal of variability in the way large real estate investment management firms approach sustainability, the results of our interviews suggest five alternatives are rather pervasive in industry. They can be identified according to who is primarily responsible for exploring, promoting, and maintaining sustainability within an organization. The first approach is corporate-driven, the second property-manager driven, the third asset manager-driven, the fourth consultant-driven, and the fifth stand-alone. Each reflects different underlying beliefs about the benefits real estate investors derive from various sustainability initiatives, as well as divergent perspectives regarding the parties best equipped to ensure such initiatives translate into higher property values and rates of return.

Each approach appears to have strengths and weaknesses that real estate investment management firms must consider when determining how they should embrace sustainability and ultimately incorporate it into their management practices. The interviews also offer some evidence that firms experiencing the greatest success in the area of sustainability are integrating features of the five disparate approaches into singular and cohesive management platforms, often led in whole or in part by asset management departments or professionals. What follows is a distillation of the results of the interviews described in the data and methodology section. Each section describing an approach contains a brief discussion of the associated positive and negative externalities or implications.

## Corporate-Driven Approaches

Firms adopting corporate-driven approaches to sustainability are often motivated by a belief that they serve as an effective means of raising capital in the global marketplace for the acquisition of institutional-quality real estate assets. Thus, senior executives and portfolio managers are intimately involved in crafting strategies that are conspicuous in nature and easily communicated to debt and equity providers. An asset manager working for a private equity fund concisely summarized this approach, stating: "Our sustainability commitments are all about what we convey to the client or investor."

Some of these commitments come in the form of company-wide corporate social responsibility mandates, while others are narrowly tailored to appeal to investors in specific real estate funds or managed accounts. Common examples include pledges to reduce water and energy consumption, participle in GRESB reporting, and maintain environmental designations such as LEED or ENERGY STAR. These objectives are built into property-level business plans at the time assets are purchased and relayed to asset managers and property managers for implementation.

The primary advantage of promoting sustainability in the top-down manner described is that it links real estate investment management firms' efforts to the demands of capital market participants, thereby helping ensure financial resources are available to bring goals to fruition. Corporate-driven strategies also send a signal that sustainability is an organizational priority that must be taken into account when management decisions are made.

Nonetheless, and echoing the literature, the approach is not without its shortcomings because strategies developed at the corporate level do not always reflect feedback received from asset managers and property managers who are more familiar with the physical attributes of the properties in their portfolios, the characteristics of the real estate markets in which they are located, and the demands of the tenants in place. Overlooking the views of these professionals may therefore impinge on a firm's ability to promote sustainability in ways that simultaneously aid in fundraising and improve the operational efficiency of the properties in their care. There is also the potential threat of firms becoming complacent if they wait for unequivocal signs of market demand for sustainable design features or operating practices rather than proactively seeking out new opportunities.

## Property Manager-Driven Approaches

Property manager-driven approaches to sustainability are in some ways the antithesis of corporate-driven approaches because resource conservation efforts come about in a bottom-up manner. They are frequently adopted by real estate investment management firms that do not perceive sustainability to be of critical importance to either the capital providers they pursue or the tenants they serve due to the markets or property types in which they invest. Sustainability initiatives are therefore only put in place when there are defined cost savings and relatively short-term payback periods.

A director of property management working for an owner-operator described this approach to sustainability as follows: "Sustainability isn't an explicit part of our strategy, [but] we are always looking for ways to improve efficiencies and increase returns that come from the ground-up on an ad hoc basis." Echoing the literature, property managers were perceived to be in the best position to identify these opportunities because of their understanding of building systems and maintenance issues.

Since property manager-driven approaches to sustainability are opportunistic in nature, they may encourage creative thinking and the exploration of innovative ways of solving practical problems at the property level. Furthermore, emphasizing cost savings increases the probability of sustainability initiatives contributing to resource conservation rather than being put in place simply for marketing purposes.

The challenge lies in keeping property managers focused on sustainability in light of their other professional responsibilities, while not getting frustrated in the event the recommendations they make are not followed by the asset managers or ownership groups to whom they report. "Sustainability initiatives are hard and they take time to implement," opined an asset manager working on behalf of an owner-operator. "There is a lot of pressure to get budgeting and business plans done, so adding more work [for property managers] isn't easy." It may also prove difficult for some property managers to conceptualize sustainability in ways that extend beyond maintaining environmental certifications or administering "green" lease provisions, as these tasks are often under the prevue of operational personnel who have few other responsibilities related to sustainability.

## Asset Manager-Driven Approaches

Real estate investment management firms that charge their asset managers with promoting sustainability frequently do so because they believe these professionals are uniquely well positioned to assess whether such efforts are accretive to the investment strategies guiding their portfolios. As an asset manager working for an insurance company noted: "We view asset managers as owners' representatives and feel like sustainability fits into our group for that reason."

Individuals working in this capacity use the information available to them to determine whether environmental certifications, sustainability-oriented capital improvements, or refined management practices are likely to enhance a property's competitive profile or bring operating expenses in-line with market norms. They may also consider whether new policies or procedures related to sustainability are needed for an entire portfolio to improve operational performance. Asset managers engage in these activities by tracking market conditions, conducting financial analysis, and monitoring sustainability commitments made to investors, among other things. Some firms adopting this approach to sustainability have dedicated sustainability directors in asset management departments, while others do not.

Empowering asset managers to take the lead on sustainability can make a great deal of sense as these real estate practitioners are typically evaluated according to their ability to hit targeted rates of return and maximize property values over defined holding periods. This creates an incentive for them to use both the proprietary and nonproprietary data at their disposal to consider how investments in sustainability are likely to impact revenues, costs, and the attractiveness of their properties to the real estate capital markets. Asset managers are also heavily involved in capital budgeting and the oversight of property management and leasing teams. This requires them to identify sustainability initiatives with the greatest potential to increase investment yields and convey that information to onsite personnel in clear property-level business plans. These are by no means easy tasks, as indicated by an asset manager working for a publicly-traded REIT: "Sustainability influences so many areas of our company that it's tough to know where to deploy resources first." Another asset manager working for an insurance company added that asset managers must not only make these tough decisions, but also "put together analytics to show the value to our tenants and clients."

## Consultant-Driven Approaches

Rather than tackling sustainability internally at the corporate, property management, or asset management level, some real estate investment management firms elect to outsource a portion of the responsibility to third-party service providers with a high level of expertise in the area. Consultant-driven approaches to sustainability such as this come in a variety of different forms that range from the procurement of energy audits and other à la carte services on a one-off basis to much more robust and customized arrangements designed to help a firm reduce the environmental impact of its entire real estate portfolio over the long term. Between these two extremes, many firms choose to adopt the sustainability platforms of sophisticated third-party property management companies working on their behalf, while requiring their portfolio managers and asset managers to continuously explore ways to use sustainability initiatives to help raise money and enhance the competitive position of individual properties. Unsurprisingly, these consulting arrangements are structured in a goal-dependent manner and are heavily influenced by the characteristics of the clients served.

Outsourcing arrangements can be beneficial because they provide real estate investment management firms with a great deal of flexibility. One of the consultants interviewed highlighted this point: "Sustainability is largely market specific or tenant specific [and] we have a sustainability group and a whole group of project managers that can implement a variety of different strategies." Another interviewee employed by a private equity fund mentioned another potential advantage of outsourcing associated with specialization: "Working with large operators across the country helps you see trends in property management" and "what your competitors are doing in the marketplace [related to sustainability]." Both of these benefits were perceived to be significant in scenarios where real estate investment management firms were still "feeling their way" in the realm of sustainability and open to considering alternative ways of achieving their financial goals. On the other hand, a reported downside of outsourcing sustainability initiatives was the threat of creating redundancies in the management hierarchy with internal and external parties looking at the same issues.

## Stand-Alone Approaches

Stand-alone approaches to sustainability generally involve the creation of a dedicated position, committee, or department solely responsible for leveraging resource conservation to the benefit of individual buildings, real estate portfolios, or an entire real estate investment management firm. They are motivated by a belief that sustainability initiatives can create meaningful value on a number of fronts and must be continually vetted to keep up with emerging market trends. Some firms hire sustainability directors that report directly to senior management, while others form standing committees or "green teams" comprised of practitioners from different departments who engage in collaborative activities to take advantage of their unique perspectives.

The former of these strategies benefits from focus and the latter from interdisciplinarity, which can be combined in some instances, as described by an asset manager working for an owner-operator: "We have a sustainability department and sustainability manager who brings concepts to the asset management team for specific buildings or the portfolio as a whole. We implement when we can for social responsibility, marketing, and economic efficiency reasons." Whomever is responsible for sustainability initiatives in this type of setting may serve in an advisory role or have a great deal of autonomy to direct the work of asset management and property management professionals.

Accountability is the fundamental advantage of stand-alone approaches. By charging a select individual or group of individuals with responsibility for identifying, evaluating, and advising on all matters related to sustainability, firms create important touch points within their organizational hierarchies. This may prove essential to sustaining sustainability because it can get lost in the shuffle in situations where the parties charged with such initiatives also have a number of other professional responsibilities that demand their attention. As one of the asset managers interviewed suggested: "Someone has to take leadership and have a passion for [sustainability] or it will die on the vine."

The most notable disadvantage of stand-alone approaches stems from the difficulty in implementation. Since individuals, committees, and departments responsible for sustainability initiatives cannot do their work alone, they must be able to communicate effectively with both senior management and operational personnel to convey their ideas. This challenge led an asset manager working for an owner-operator to state: "Sustainability is a work in progress in our company, so is consistency in expectations." Sentiments such as this were relatively common among real estate investment management firms interested in increasing their commitments to sustainability, while nonetheless struggling to identify the most beneficial ways of doing so.

### The Need for Collaboration and Cooperation

The five approaches described above appear to be accurate representations of the ways in which many real estate investment management firms allocate responsibility for sustainability. However, they do not tell the whole story because several interviewees noted that the organizations they work for are taking steps to break down disciplinary boundaries in an effort to promote greater collaboration and cooperation. For example, some stated that senior executives within their firms were increasingly calling on both asset managers and property managers to help craft corporate sustainability policies. Others pointed out that defined channels of communication were being put in place within their firms to facilitate the exchange of ideas related to solar energy, smart water usage, LED lighting programs, and environmental certifications, just to name a few topics. Still others reported investing in the development of internal expertise in the area of sustainability, while retaining external consultants when necessary to fill knowledge gaps. All of these examples arguably reflect the growing importance of sustainability in the real estate investment management industry and the corresponding impact on the companies operating therein.

Cross-disciplinary endeavors in the sustainability space were acknowledged as important for a number of reasons. First, individuals working in different capacities throughout real estate investment management firms were noted to not only have specialized knowledge bases, but also access to unique sources of data and information that allow them to make valuable contributions to decision-making processes. Second, ongoing communication amongst such individuals was deemed necessary to ensure all members of management teams understand the corporate goals related to sustainability, their relation to investment strategies, and the practicality of implementation at the property level. Third, leveraging the expertise of individuals with different backgrounds was identified as being fundamental to communicating the value proposition of sustainability to investors in terms grounded in an understanding of both real estate and capital markets.

### Enhancing the Value Proposition

Among the interviewees describing integrated approaches to sustainability, many highlighted the importance of keeping it simple when possible. Portfolio managers and asset managers were encouraged to create a list of sustainability initiatives that should be considered for all properties under management, while simultaneously establishing "payback benchmarks" that trigger "expedited review or near automatic approval" of capital improvements recommended by operators. These strategies were perceived to promote a combination of top-down and bottom-up thinking about sustainability. "We are working on formalized ways to encourage [our people] to share information through established systems," said one of the asset managers interviewed. "It is hard when you own as many assets as we do, but we are focusing on identifying best practices across product types and requiring a justification when asset managers decide not to pursue them."

Emphasis was also placed on the need to make investments in information technology with the explicit objective of accommodating efforts to push rents and reduce costs through resource conservation. Category management software was presented as one such example. "Analytics are increasingly important," said an asset manager working for a publicly-traded REIT. "We have notice systems that immediately make us aware when things are outside the norm so we can respond." Real estate investment management firms were perceived to be ill-equipped to fully leverage their institutional capacity in the area of sustainability without systems such as these in place to facilitate the free flow of information across departmental boundaries. Investments in new technology were therefore viewed by many of the interviewees as one way of helping skeptics reconsider sustainability initiatives and view them as "value creating opportunities, not just red ink."

Finally, several of those participating in the research spoke of the importance of creating a corporate culture where sustainability is viewed as an ongoing commitment to process improvement, rather than simply a means of conveying a "green" corporate image or appealing to select tenants via environmental certification programs. This can be a challenge when real estate practitioners conceptualize sustainability and operational efficiency as separate and distinct issues, as reflected in the following comment made by an asset manager working for a public-traded REIT: "Our asset managers aren't really involved in sustainability initiatives. They should always be looking for efficiencies through the implementation of systems and procedures, but [sustainability] isn't a front and center priority." Changing these perceptions may prove necessary for a real estate investment management firm to embrace sustainability in ways likely to yield long-term financial benefits.

## Summary & Industry Implications

The real estate literature has grown to include discussions and analyses of sustainability. At present, it includes research focused on incorporating sustainability into real estate investment decisions, the value proposition of investing in an array of types of sustainable real estate, and discussions about who is responsible for implementing sustainability initiatives within real estate firms after property acquisition. Focused on large real estate investment management firms, this exploratory study drew upon the findings from 93 semi-structured interviews conducted with professionals at direct lenders, executive search firms, life insurance companies, owner-operators, private equity funds, publicly-traded REITs, third-party real estate service firms, and tax credit syndicators. Our objectives were to explore how large investment management firms were sustaining sustainability following asset acquisition and to examine who was responsible for it within the management chain.

The interview data, when analyzed inductively, suggested five types of strategies employed by large real estate investment management firms to sustain sustainability. These firms utilized corporate-, property manager-, asset manager-, and consultant driven approaches or several stand-alone approaches. Interviewees also suggested that the value proposition of sustainability could be enhanced by promoting collaboration between asset and property managers; leveraging unique sources of information relative to revenues and expenses; ensuring conformance with firm investment strategies; more adroitly communicating the value proposition to different stakeholders; and working to build institutional knowledge within firms.

While there is evidence in the literature that suggests that multiple members of the management chain, including asset managers or the asset management function within firms, can influence each part of the value proposition of commercial real estate, there has been limited discussion of who is responsible for sustaining sustainability after property acquisitions. For large real estate investment management firms, one could make a strong case that the asset manager is well positioned to help create and maintain the durable competitive advantage described in the sustainable real estate literature; however, there does not appear to be sufficient evidence or opinion to suggest consensus. As the first and descriptive step in exploring who is responsible for sustaining sustainability within large real estate investment management firms, this paper offers initial conclusions. However, given the size of the industry and the growing importance of sustainability to it, more research is needed to examine issues of responsibility for sustaining sustainability in large firms.

With respect to research-practice implications, as real estate investment management firms continue to refine the way they approach sustainability, there is a need for further applied research examining potential barriers to cross-sector collaboration within these organizations. This is necessary because there are reasons to believe competitive pressures may prevent sustainability initiatives from remaining the exclusive domain of any one person or department over the long term. Furthermore, attention must be devoted to the unique characteristics of firms that may make one approach to sustaining sustainability more appropriate than another. This type of context-specific analysis is important because real estate investment management firms are by no means homogenous. By focusing on these issues, there is an opportunity to gain a better understanding of how firms can more effectively sustain sustainability within their organizations in ways that are accretive to both the value of individual properties and the performance of the real estate professionals charged with their oversite.

Additionally, the findings suggest a need for a nuanced push for education among industry participants and researchers alike. In this study, the interviewees were active participants in the management of existing real estate assets seeking to create minimum acceptable rates of risk-adjusted returns. Their observations about responsibility for and utilization of sustainability in property and portfolio operations were separate and distinct from the responsibility for and analysis of acquisitions of properties bearing some sustainability marker (e.g., eco-labels or certifications). At the least, this suggests the importance of developing greater understanding about the differences between construction and design certifications and those that focus on multiple life-cycle and operational aspects of in-situ facilities. The results also point to the need for continued discussion about real estate managerial decision making among researchers and practitioners. Articulating who is responsible for value creation, who is responsible for sustaining or magnifying value, and how sustainability influences managerial strategy continues to be an important conversation.

## References

An, X. and G. Pivo. Default Risk of Securitized Commercial Mortgages: Do Sustainability Property Features Matter? SSRN Working Paper, 2017.

Andelin, M., A. Sarasoja, T. Ventovuori, and S. Junnila. Breaking the Circle of Blame for Sustainable Buildings—Evidence from Nordic Countries. *Journal of Corporate Real Estate*, 2015, 17:1, 26–45.

Ang, S.L. and S.J. Wilkinson. Is the Social Agenda Driving Sustainable Property Development in Melbourne, Australia? *Property Management*, 2008, 26:5, 331–43.

Batty, S. Paradoxes of Sustainable Development: Property and Participation. Property Management, 2006, 24:3, 207–18.

Bayer, C., M. Gamble, R. Gentry, and S. Joshi. AIA Guide to Building Life Cycle Assessment in Practice, 2010. Retrieved from http://www.aia.org.

Bloom, B., M. Nobe, and M. Nobe. Valuing Green Home Designs: A Study of ENERGY STAR Homes. *Journal of Sustainable Real Estate*, 2011, 3:1, 109–26.

Bond, S. and A. Devine. Certification Matters: Is Green Talk Cheap Talk? *Journal of Real Estate Finance and Economics*, 2016a, 52:2, 117–40.

——. Incentivizing Green Single-Family Construction: Identifying Effective Government Policies and Their Features. *Journal of Real Estate Finance and Economics*, 2016b, 52:4, 383–407.

Carswell, A. and S. Smith. The Greening of the Multifamily Residential Sector. *Journal of Engineering, Design and Technology*, 2009, 7:1, 65–80.

CBRE. Maastricht University, Real Green Research Challenge. National Green Building Adoption Index, 2015 and 2016.

Christudason, A. Legislating for Environmental Practices within Residential Property Management in Singapore. *Property Management*, 2002, 20:4, 252–63.

Devine, A. and N. Kok. Green Certification and Building Performance: Implications for Tangibles and Intangibles. *Journal of Portfolio Management*, 2015, 41:6, 151–63.

Devine, A. and Q. Chang. Does a Green-Certified Storefront Mean More Income? Estimating Financial Benefits of Certification for Space Users. 2017 Working paper cited with permission. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2590168.

Devine, A. and E. Yönder. Decomposing the Value Effects of Sustainable Investment: International Evidence. 2017 Working paper cited with permission. www.ipf.org.uk/resourceLibrary/decomposing-the-value-effects-of-sustainable-real-estate-investment—international-evidence-2017-nick-tyrrell-research-prize.html.

Dixon, T. and G. Pottinger. Lessons from Real Estate Partnerships in the U.K.: Drivers, Barriers and Critical Success Factors. *Property Management*, 2006, 24:5, 479–95.

Eichholtz, P., N. Kok, and J. Quigley. Doing Well by Doing Good? Green Office Buildings. *American Economic Review*, 2010, 2492–2509.

Eichholtz, P., N. Kok, and E. Yonder. Portfolio Greenness and the Financial Performance of REITs. *Journal of International Money and Finance*, 2012, 31:7, 1911–29.

Ellison, L. and S. Sayce. Assessing Sustainability in the Existing Commercial Property Stock: Establishing Sustainability Criteria Relevant for the Commercial Property Investment Sector. *Property Management*, 2007, 25:3, 287–304.

Elmualim, A., D. Shockley, R. Valle, G. Ludlow, and S. Shah. Barriers and Commitment of Facilities Management Profession to the Sustainability Agenda. *Building and Environment*, 2010, 45:1, 58–64.

Epstein, M. and M. Roy. Sustainability in Action: Identifying and Measuring the Key Performance Drivers. *Long Range Planning*, 2001, 34:5, 585–604.

Falkenbach, H., A. Lindholm, and H. Schleich. Environmental Sustainability: Drivers for the Real Estate Investor. *Journal of Real Estate Literature*, 2010, 18:2, 201–23.

Fellows, R. Sustainability: A Matter of Energy? *Property Management*, 2006, 24:2, 116–31.

Freybote, J., H. Sun, and X. Yang. The Impact of LEED Neighborhood Certification on Condo Prices. *Real Estate Economics*, 2015, 43:3, 586–608.

Fuerst, F. and P. McAllister. Green Noise or Green Value? Measuring the Effects of Environmental Certification on Office Values. *Real Estate Economics*, 2011, 39:1, 45–69.

Gabe, J. and M. Rehm. Do Tenants Pay Energy Efficiency Rent Premiums? *Journal of Property Investment & Finance*, 2014, 32:4, 333–51.

Graaskamp, J. Fundamentals of Real Estate Development. *Journal of Property Valuation and Investment*, 1993, 10:3, 619–39.

Harrison, D. and M. Seiler. The Political Economy of Green Office Buildings. *Journal of Property Investment & Finance*, 2011, 29: 4/5, 551–65.

Heywood, C. and R. Kenley. The Sustainable Competitive Advantage Model for Corporate Real Estate. *Journal of Corporate Real Estate*, 2008, 10:2, 85–109.

Holtermans, R. and N. Kok. On the Value of Environmental Certification in the Commercial Real Estate Market. DOI: 10.1111/1540-6229.12223. Forthcoming in *Real Estate Economics* 2017/18.

Hopkins, E., D. Read, and R. Goss. Promoting Sustainability in the United States Multifamily Property Management Industry. *Journal of Housing and the Built Environment*, 2017, 32:2, 361–76.

Kats, G., L. Alevantis, A. Berman, E. Mills, and J. Perlman. The Costs and Financial Benefits of Green Building. A Report to California's Sustainable Building Task Force, 2003.

Kaza, N., R. Quercia, and C. Tian. Home Energy Efficiency and Mortgage Risks. *Journal of Policy Development and Research*, 2014, 16:1, 279.

Koebel, C., A. McCoy, A. Sanderford, C. Franck, and M. Keefe. Diffusion of Green Building Technologies in New Housing Construction. *Energy and Buildings*, 2015, 97, 175–85.

Kok, N. and M. Khan. The Value of Green Labels in the California Housing Market: An Economic Analysis of the Impact of Green Labeling on the Sales Price of a Home. UCLA and Maastricht University, 2012.

Kok, N., M. McGraw, and J. Quigley. The Diffusion of Energy Efficiency in Building. *American Economic Review*, 2011, 101:3, 77–82.

Kontokosta, C. Greening the Regulatory Landscape: The Spatial and Temporal Diffusion of Green Building Policies in U.S. Cities. *Journal of Sustainable Real Estate*, 2011, 3:1, 68–90.

Kyro, R., J. Heinonen, and S. Junnila. Housing Managers Key to Reducing the Greenhouse Gas Emissions of Multi-Family Housing Companies? A Mixed Method Approach. *Building and Environment*, 2012, 56, 203–10.

Larsen, T. Implementing ESG in Private Real Estate Portfolios: The Case of U.S. and Pan-Europe Core Fund Managers. *Journal of Sustainable Real Estate*, 2010, 2:1, 249–67.

Lee, G. and E. Chan. Evaluation of the Urban Renewal Projects in Social Dimensions. *Property Management*, 2010, 28:4, 257–69.

Levy, D. and C. Lee. Switching Behaviour in Property Related Professional Services. *Journal of Property Research*, 2009, 26:1, 87–103.

Levy, D. and G. Peterson. The Effect of Sustainability on Commercial Occupiers' Building Choice. *Journal of Property Investment & Finance*, 2013, 31:3, 267–84.

Liu, A. The Framework Underpinning Conflicting Keys in Sustainability: Harmony-in-Transit. *Property Management*, 2006, 24: 3, 219–31.

Miller, N., J. Spivey, and A. Florance. Does Green Pay Off? *Journal of Real Estate Portfolio Management*, 2009, 14:4, 385–400.

Muczynski, A. An Integrated Approach to Real Estate Portfolio Management. *Real Estate Management and Valuation*, 2015, 23:5, 5–16.

Muldavin, S. Value Beyond Cost Savings: How to Underwrite Sustainable Properties. Green Building Finance Consortium, 2010.

Newell, G. The Strategic Significance of Environmental Sustainability by Australian-Listed Property Trusts. *Journal of Property Investment & Finance*, 2008, 26:6, 522–40.

Palm, P. Strategies in Real Estate Management: Two Strategic Pathways. *Property Management*, 2013, 31:4, 311–25.

Pivo, G. Walk Score: The Significance of 8 and 80 for Mortgage Default Risk in Multifamily Properties. *Journal of Sustainable Real Estate*, 2014, 6:2, 187–210.

Pivo, G. and J. Fisher. Income, Value, and Returns in Socially Responsible Office Properties. *Journal of Real Estate Research*, 2010, 32:3, 243–70.

Pivo, G. and P. McNamara. Responsible Property Investing. *International Real Estate Review*, 2005, 8:1, 128–43.

——. Sustainable and Responsible Property Investing. In *Sustainable Investing: The Art of Long Term Performance*, C. Krosinsky and N. Robins (eds.). London: Earthscan, 2008, 117–27.

Pivo, G. and UN Environment Programme Finance Initiative Property Working Group. Responsible Property Investing: What the Leaders Are Doing. *Journal of Property Investment & Finance*, 2008, 26:6, 562.

Read, D., E. Hopkins, and R. Goss. Working Effectively with Asset Managers and Institutional Owners. *Property Management*, 2016, 34:4, 280–96.

Royal Institute of Chartered Surveyors (RICS). Green Buildings, Growing Assets. London, 2005.

Roberts, C. and J. Henneberry. Exploring Office Investment Decision-Making in Different European Contexts. *Journal of Property Investment and Finance*, 2007, 25:3, 289–305.

Robinson, S.R. Simons, E. Lee, and A. Kern. Demand for Green Buildings: Office Tenants' Willingness-to-Pay for Green Features. *Journal of Real Estate Research*, 2016, 38:2.

Sah, V., N. Miller, and B. Ghosh. Are Green REITs Valued More? *Journal of Real Estate Portfolio Management*, 2013, 19:2, 169–77.

Sanderford, A., A. McCoy, and M. Keefe. Adoption of Energy Star Certifications: Theory and Evidence Compared. *Building Research & Information*, 2017, 46:2, 1–13.

Sanderford, A., M. Keefe, C. Koebel, and A. McCoy. Factors Influencing U.S. Homebuilders' Adoption of Green Homebuilding Products. *Journal of Sustainable Real Estate*, 2015, 7:1, 60–82.

Sayce, S., A. Sundberg, and B. Clements. Is Sustainability Reflected in Commercial Property Prices: An Analysis of the Evidence Base. Project Report. RICS. London, U.K., 2010.

Scheer, R. and R. Woods. Is there Green in Going Green? SBM, April 2007.

Shah, S. *Sustainable Practice for the Facilities Manager*. John Wiley & Sons. 2007.

Simcoe, T. and M. Toffel. Government Green Procurement Spillovers: Evidence from Municipal Building Policies in California.

*Journal of Environmental Economics and Management*, 2014, 68:3, 411–34.

Simons, R., E. Choi, and D. Simons. The Effect of State and City Green Policies on the Market Penetration of Green Commercial Buildings. *Journal of Sustainable Real Estate*, 2009, 1:1, 139–66.

Smid, J. and N. Nieboer. Energy-Efficient Asset Management for Professional Landlords. *International Journal of Strategic Property Management*, 2008, 12:1, 19–34.

Thomas, D.R. A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 2006, 27:2, 237–46.

Thompson, B. Green Retail: Retailer Strategies for Surviving the Sustainability Storm. *Journal of Retail & Leisure Property*, 2007, 6: 4, 281–86.

Wai-Chung Lai, L. Private Property Rights, Culture, Property Management and Sustainable Development. *Property Management*, 2006, 24:2, 71–86.

Warren-Myers, G. Sustainable Management of Real Estate: Is It Really Sustainability? *Journal of Sustainable Real Estate,* 2012, 4: 1, 177–97.

Wiley, J., J. Benefield, and K. Johnson. Green Design and the Market for Commercial Office Space. *Journal of Real Estate Finance and Economics*, 2010, 41:2, 228–43.

Wilkinson, S. Conceptual Understanding of Sustainability in the Australian Property Sector. *Property Management*, 2013, 31:3, 260–72.

Wood, B. The Role of Existing Buildings in the Sustainability Agenda. *Facilities*, 2006, 24:1/2, 61–7.

Wright, T. and H. Wilton. Facilities Management Directors' Conceptualizations of Sustainability in Higher Education. *Journal of Cleaner Production*, 2012, 31, 118–25.

Zieba, M., S. Belniak, and M. Gluszak. Demand for Sustainable Office Space in Poland: The Results from a Conjoint Experiment in Krakow. *Property Management*, 2013, 1:5, 404–19.

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